



Practitioner Diversion Awareness Conference

Drugs of Abuse and Trends

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Course Objectives

- **Discuss the Public Health Epidemic.**
- **Review the common drugs of abuse.**
- **Discuss the relationship between pharmaceutical controlled substances and heroin.**



Course Objectives

- **Discuss the violence related to controlled substance prescribing and dispensing.**
- **Review key research and studies involving the impact of indiscriminate prescribing of controlled substances.**



Questions to Discuss

At the completion of this block of instruction you will be able to answer the following questions:

- 1. Which country, per million population, has the largest amount of drug induced deaths ages 15-64?**
- 2. Where does Ohio rate in the United States in the amount of Hydrocodone dispensed?**



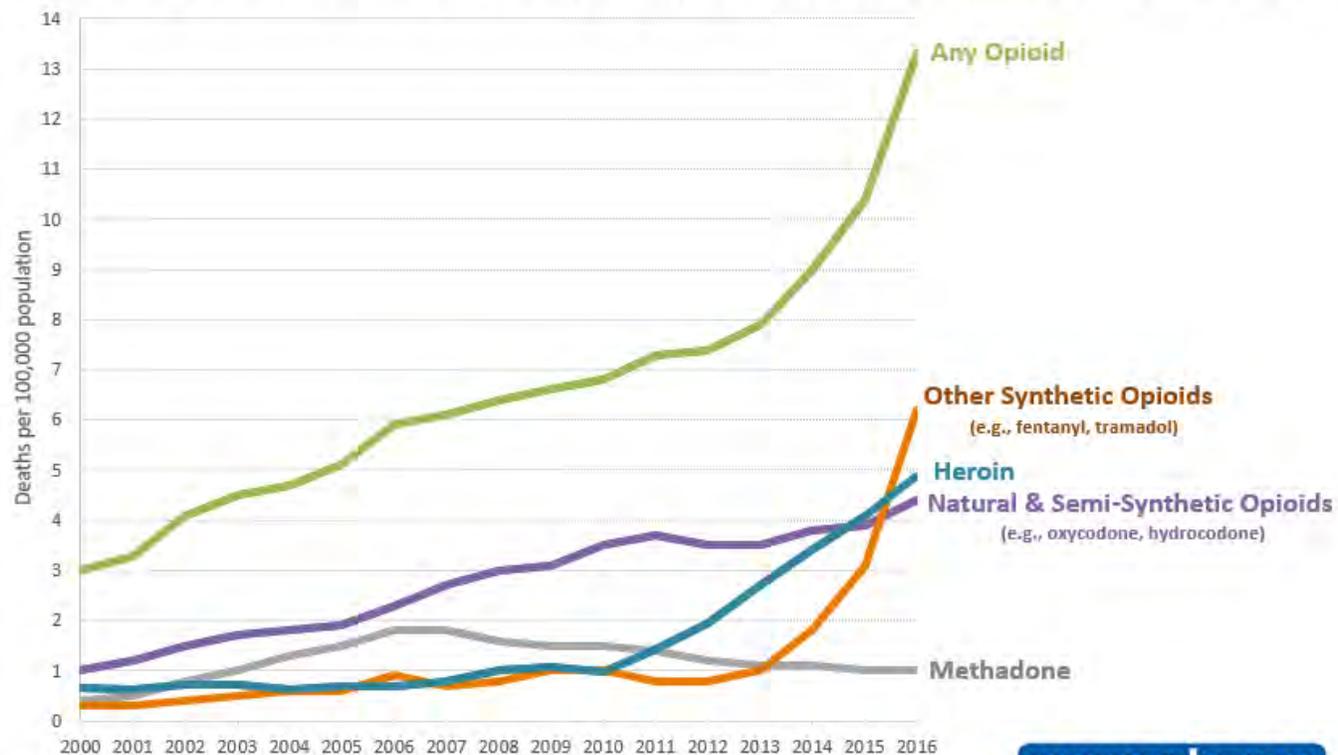
Questions to Discuss

- 3. What percentage of the world's hydrocodone production does the United States consume? (trick question)**
- 4. What is the most misused prescription controlled substance pain reliever in the United States?**
- 5. What percent of heroin users began their addictions with prescribed pain relievers?**



The Problem – People Are Dying

Overdose Deaths Involving Opioids, by Type of Opioid, United States, 2000-2016

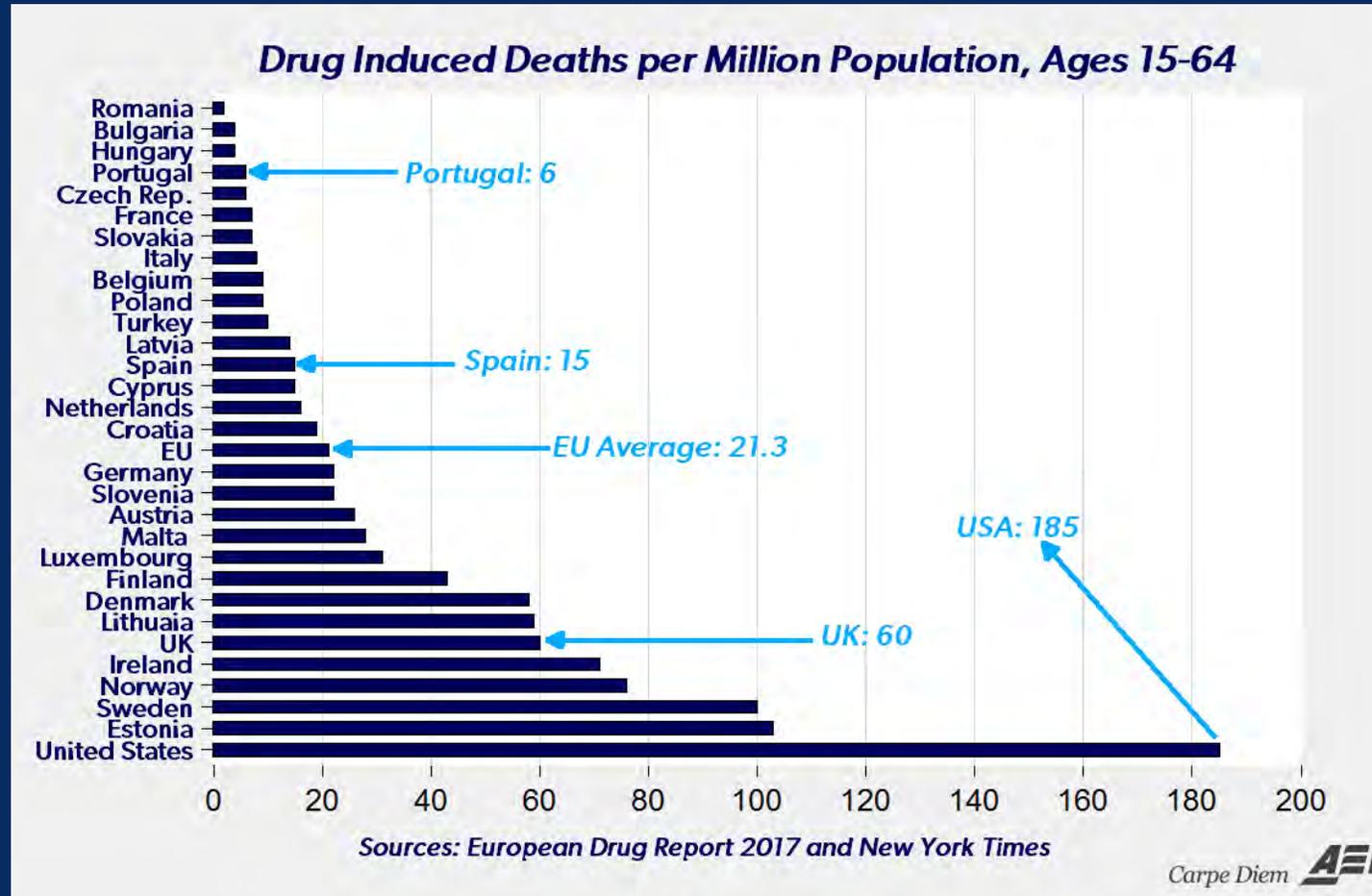


SOURCE: CDC/NCHS, National Vital Statistics System, Mortality, CDC WONDER, Atlanta, GA; US Department of Health and Human Services, CDC; 2017. <https://wonder.cdc.gov/>.





The Problem – People Are Dying





Drugs of Abuse

The top 5 distributed scheduled controlled substances in the United States:

2017

- 1. Hydrocodone**
- 2. Oxycodone**
- 3. Codeine**
- 4. Buprenorphine**
- 5. Morphine**

2018

- Hydrocodone**
- Oxycodone**
- Amphetamine**
- Methylphenidate**
- Codeine**



Where Does the United States Rank In Consumption?

Drug Name	United States (Pop. 320 Mil.)		China (Pop. 1.37 Billion)		World (7.3 Bil)
	Percent	Tons	Percentage	Tons	Tons
Hydrocodone			0.00%	0.001	36.3
Oxycodone			1.08%	0.9	83.2
Morphine			3.92%	1.6	40.8
Codeine			2.66%	7.6	285.5
Methadone			4.56%	1.5	32.9
Fentanyl			0.32%	0.006	1.85

Source (2017). INCB data, International Narcotics Board: Comments on Reported Statistics on Narcotic Drugs.



Hydrocodone

- **Hydrocodone / Acetaminophen (toxicity)**
- **Similarities:**
 - **Structurally related to codeine**
 - **Equal to morphine in producing opiate-like effects**
- **Brand Names: Vicodin[®], Lortab[®], Lorcet[®]**





Hydrocodone

- **October 6, 2014 moved to SCHEDULE II**
- **Street prices: \$2 to \$10 per tablet depending on strength & region**





The Trinity Cocktail



Hydrocodone

Opioid



Muscle Relaxant

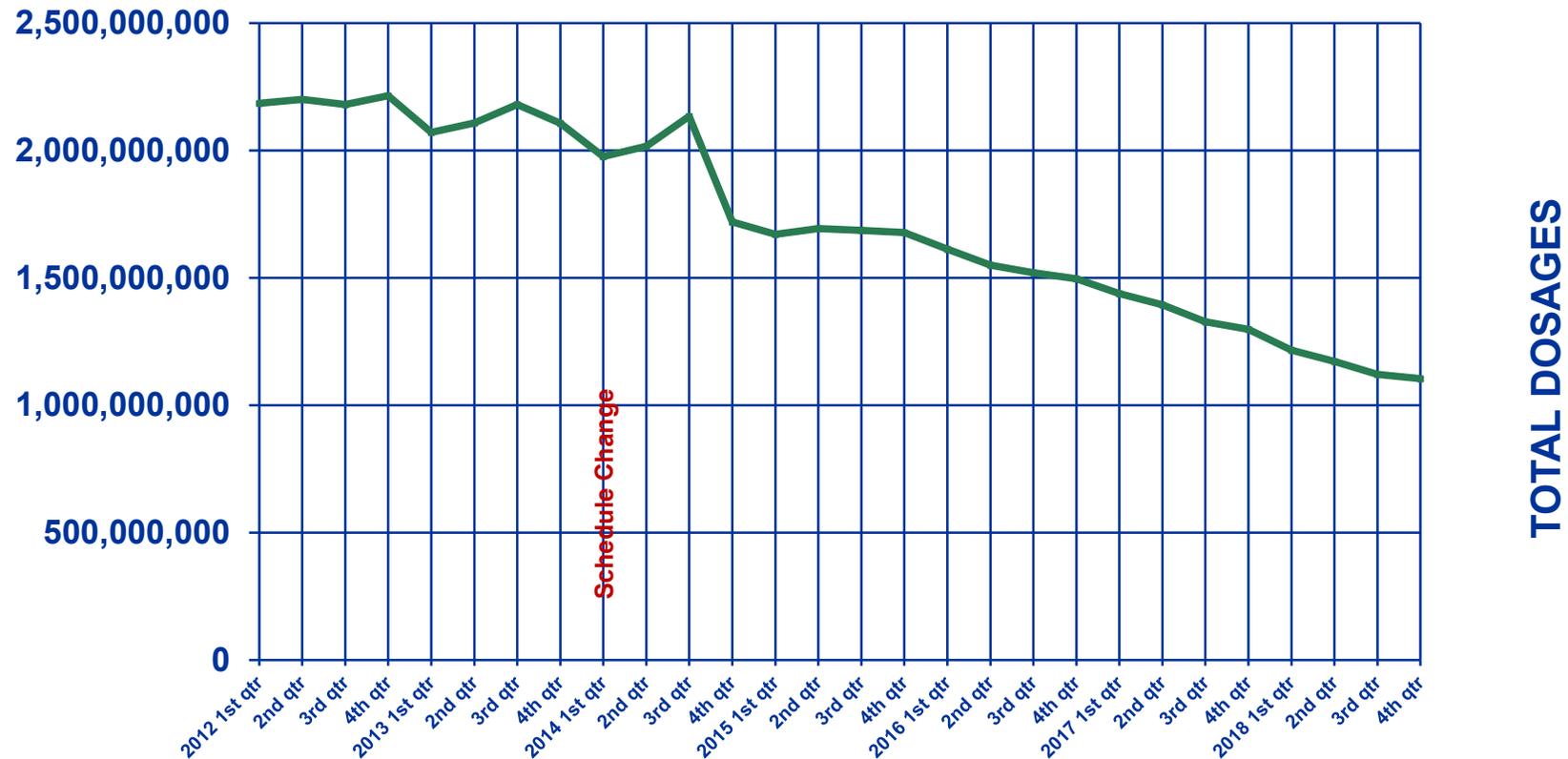


Alprazolam

Benzodiazepine

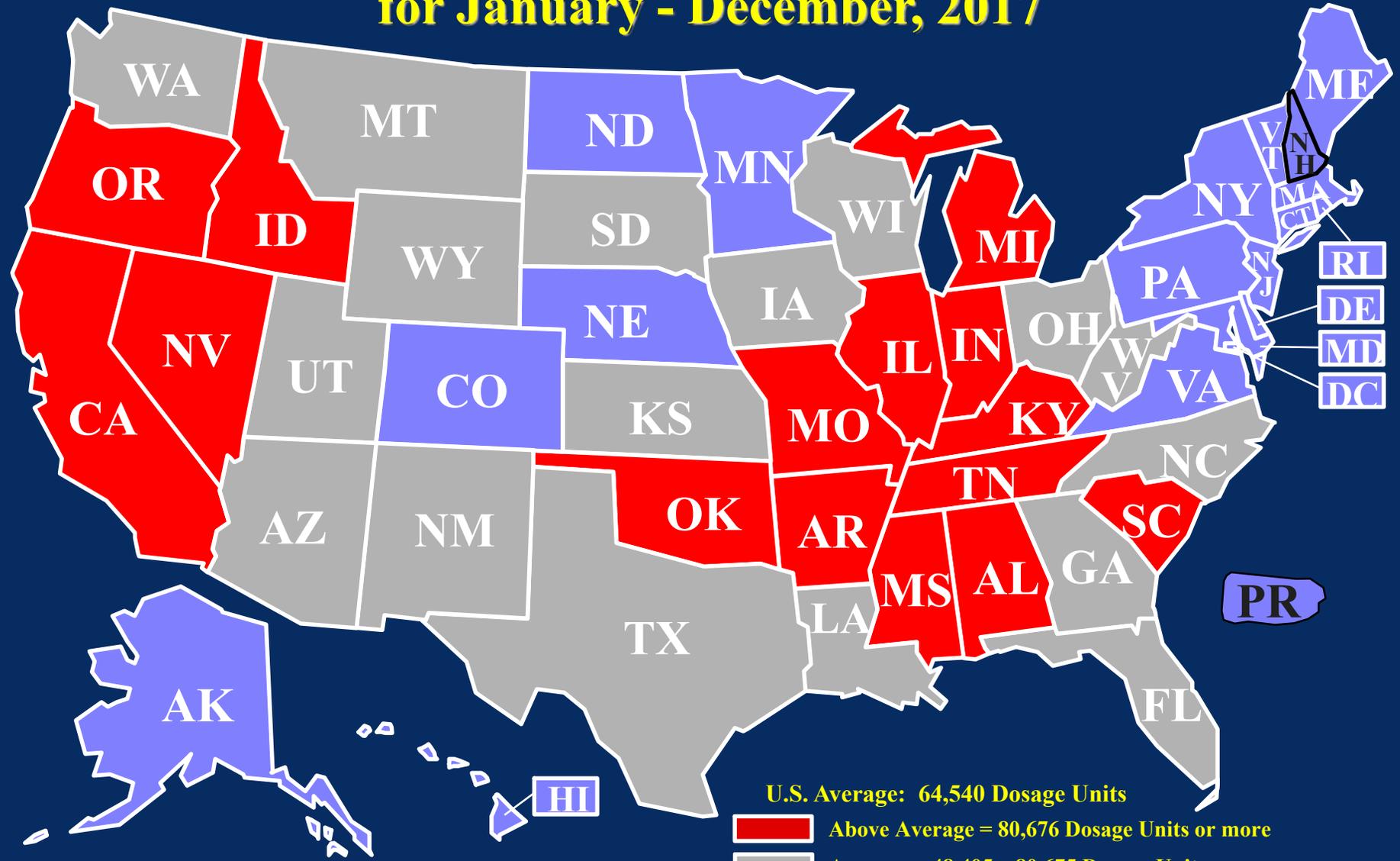


Hydrocodone Distribution 2012-2018 U.S. Average





Purchases of Hydrocodone for January - December, 2017



U.S. Average: 64,540 Dosage Units

- Red:** Above Average = 80,676 Dosage Units or more
- Grey:** Average = 48,405 – 80,675 Dosage Units
- Blue:** Below Average = 48,404 Dosage Units or less
- Black:** Zero Dosage Units



Hydrocodone Distribution

Retail Pharmacies

State Ranking* - Hydrocodone

Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL
1	KY	3,188,067	12	NV	1,945,054	23	IA	1,377,053	34	ME	968,733	45	NH	504,394
2	AL	3,170,657	13	KS	1,928,574	24	UT	1,374,397	35	AK	918,542	46	DE	456,158
3	OK	2,893,355	14	WV	1,901,637	25	WY	1,316,359	36	ND	886,377	47	MD	402,421
4	AR	2,861,115	15	SC	1,864,541	26	NE	1,284,863	37	PA	876,701	48	CT	385,228
5	TN	2,397,920	16	OR	1,766,073	27	NC	1,261,528	38	VA	847,729	49	MA	351,637
6	IN	2,396,883	17	MT	1,664,945	28	FL	1,192,359	39	CO	830,638	50	NJ	253,277
7	MI	2,370,022	18	TX	1,585,340	29	OH	1,168,451	40	HI	806,587	51	VI	181,725
8	ID	2,335,084	19	GA	1,584,913	30	SD	1,140,159	41	RI	724,803	52	DC	153,144
9	MS	2,146,729	20	CA	1,559,081	31	NM	1,139,457	42	MN	656,179	53	GU	46,909
10	LA	2,133,678	21	IL	1,540,258	32	AZ	1,103,984	43	NY	592,057	54	PR	5,740
11	MO	1,994,749	22	WA	1,392,248	33	WI	1,067,834	44	VT	545,467	55	AS	0

* *Business Activity – Pharmacies only*

Source: Drug Enforcement Administration, Office of Diversion Control,
Pharmaceutical Investigations Section, Targeting and Analysis Unit
Most current ARCOS information as of 08/27/2016

U.S. Drug Enforcement Administration
Office of Diversion Control



Hydrocodone Distribution

Practitioner's Office

State Ranking* - Hydrocodone

Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL
1	HI	25,091	12	NV	4,893	23	IA	3,488	34	LA	2,482	45	KS	1,635
2	GA	8,376	13	FL	4,766	24	NJ	3,100	35	SD	2,456	46	AR	1,594
3	MO	7,351	14	MT	4,760	25	WI	3,053	36	NY	2,134	47	SC	1,028
4	WY	6,988	15	WA	4,593	26	MN	2,990	37	OH	2,082	48	VT	991
5	CA	6,775	16	ID	4,333	27	UT	2,951	38	MA	2,053	49	DC	897
6	ND	6,551	17	AL	4,114	28	CT	2,667	39	GU	2,018	50	NM	883
7	MD	6,484	18	AZ	4,089	29	NE	2,602	40	TX	2,015	51	MS	571
8	IL	6,041	19	TN	3,925	30	MI	2,576	41	DE	1,993	52	NH	135
9	AK	5,300	20	VA	3,815	31	RI	2,537	42	ME	1,882	53	AS	0
10	CO	5,219	21	OK	3,670	32	IN	2,528	43	WV	1,867	54	PR	0
11	OR	5,173	22	KY	3,511	33	PA	2,508	44	NC	1,718	55	VI	0

* *Business Activity – Practitioners only*

Source: Drug Enforcement Administration, Office of Diversion Control,
Pharmaceutical Investigations Section, Targeting and Analysis Unit
Most current ARCOS information as of 08/27/2016

U.S. Drug Enforcement Administration
Office of Diversion Control



OxyContin®

The
1990s





OxyContin®

- **OxyContin® controlled release formulation of Schedule II oxycodone:**
 - **The controlled release method of delivery allowed for a longer duration of drug action and contained much larger doses of oxycodone.**
 - **Abusers easily compromised the controlled release formulation by crushing the tablets for a powerful morphine-like high.**
 - **10, 20, 40, 80mg available.**



OxyContin®

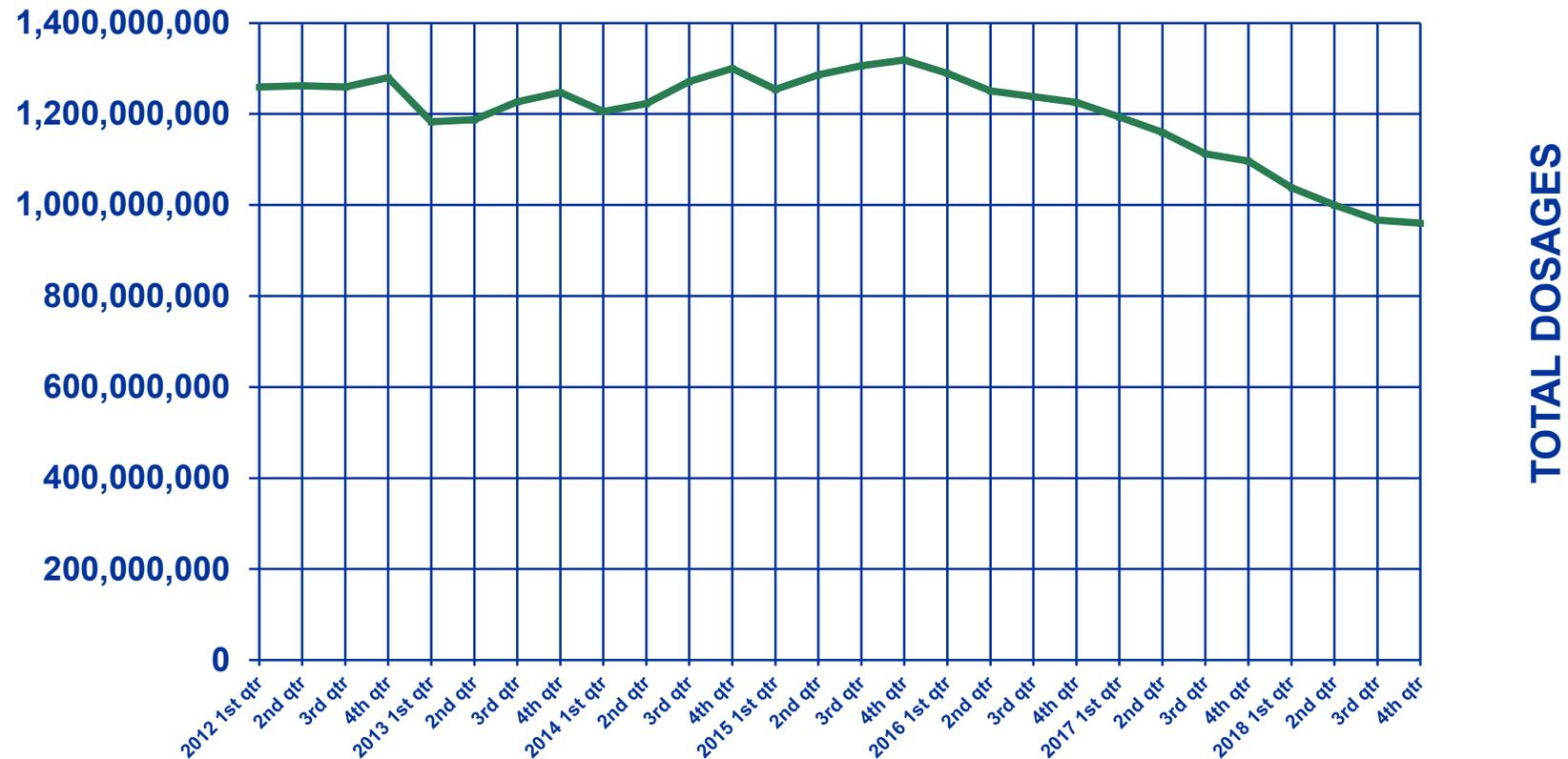
- **Effects:**
 - **Similar to morphine in effects and potential for abuse/dependence.**
 - **Sold in “Cocktails” such as:**
 - **Oxycodone, Soma ® and Xanax®**



OxyContin®

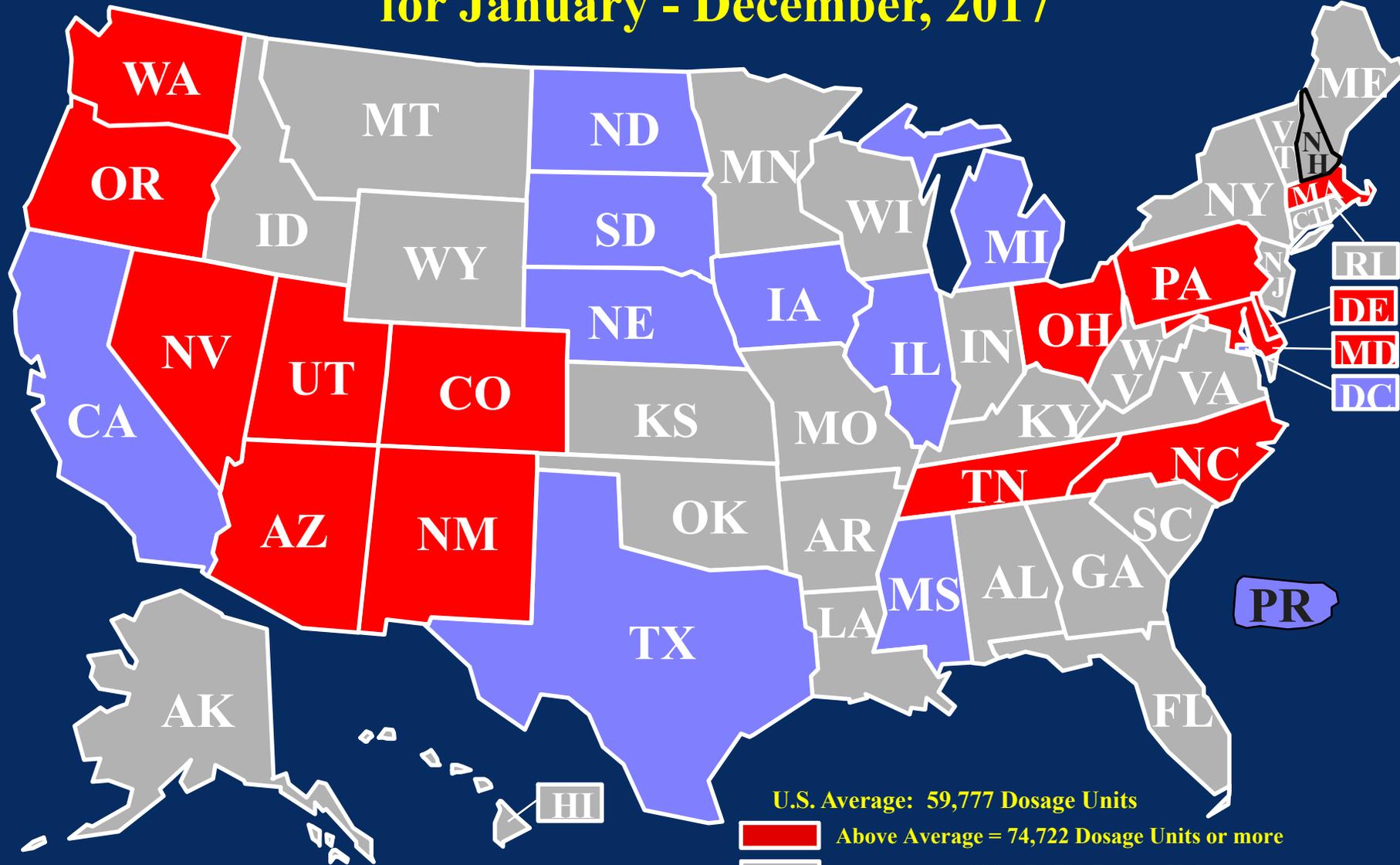
- **Street price: Approx. \$80 per 80mg tablet**
- **90 tabs prescribed a month =**
- **\$7200 a month income.**
- **\$85,400 year.**

Oxycodone Distribution 2012-2018 U.S. Average





Purchases of Oxycodone for January - December, 2017



U.S. Average: 59,777 Dosage Units

- Red:** Above Average = 74,722 Dosage Units or more
- Grey:** Average = 44,833 – 74,721 Dosage Units
- Blue:** Below Average = 44,832 Dosage Units or less
- Black:** Zero Dosage Units



Oxycodone Distribution

Retail Pharmacies

State Ranking* - Oxycodone

Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL	RANK	STATE	TOTAL									
1	TN	2,210,000	12	OK	1,612,469	23	ME	1,351,121	34	VA	1,154,898	45	MI	745,202
2	DE	2,184,853	13	FL	1,573,010	24	CO	1,340,700	35	IN	1,145,469	46	ND	719,122
3	AZ	1,981,541	14	OH	1,522,968	25	KS	1,339,171	36	WI	1,144,344	47	SD	657,859
4	NC	1,952,249	15	SC	1,522,007	26	CT	1,331,781	37	RI	1,109,030	48	CA	611,674
5	OR	1,815,155	16	AL	1,484,259	27	AR	1,306,212	38	VT	1,095,364	49	IA	604,770
6	UT	1,789,318	17	NJ	1,451,008	28	WV	1,290,420	39	NY	1,075,752	50	IL	345,035
7	NV	1,785,517	18	MO	1,421,093	29	MA	1,263,347	40	MS	1,070,969	51	TX	327,842
8	MD	1,713,608	19	WY	1,420,181	30	AK	1,260,635	41	MN	1,028,595	52	PR	194,453
9	KY	1,688,158	20	GA	1,383,768	31	LA	1,245,386	42	HI	914,721	53	VI	194,309
10	PA	1,659,693	21	NH	1,381,153	32	ID	1,231,659	43	DC	829,225	54	GU	186,292
11	WA	1,620,092	22	NM	1,372,984	33	MT	1,188,490	44	NE	795,049	55	AS	0

* *Business Activity – Pharmacies only*



Oxycodone Distribution

Practitioner's Office

State Ranking* - Oxycodone

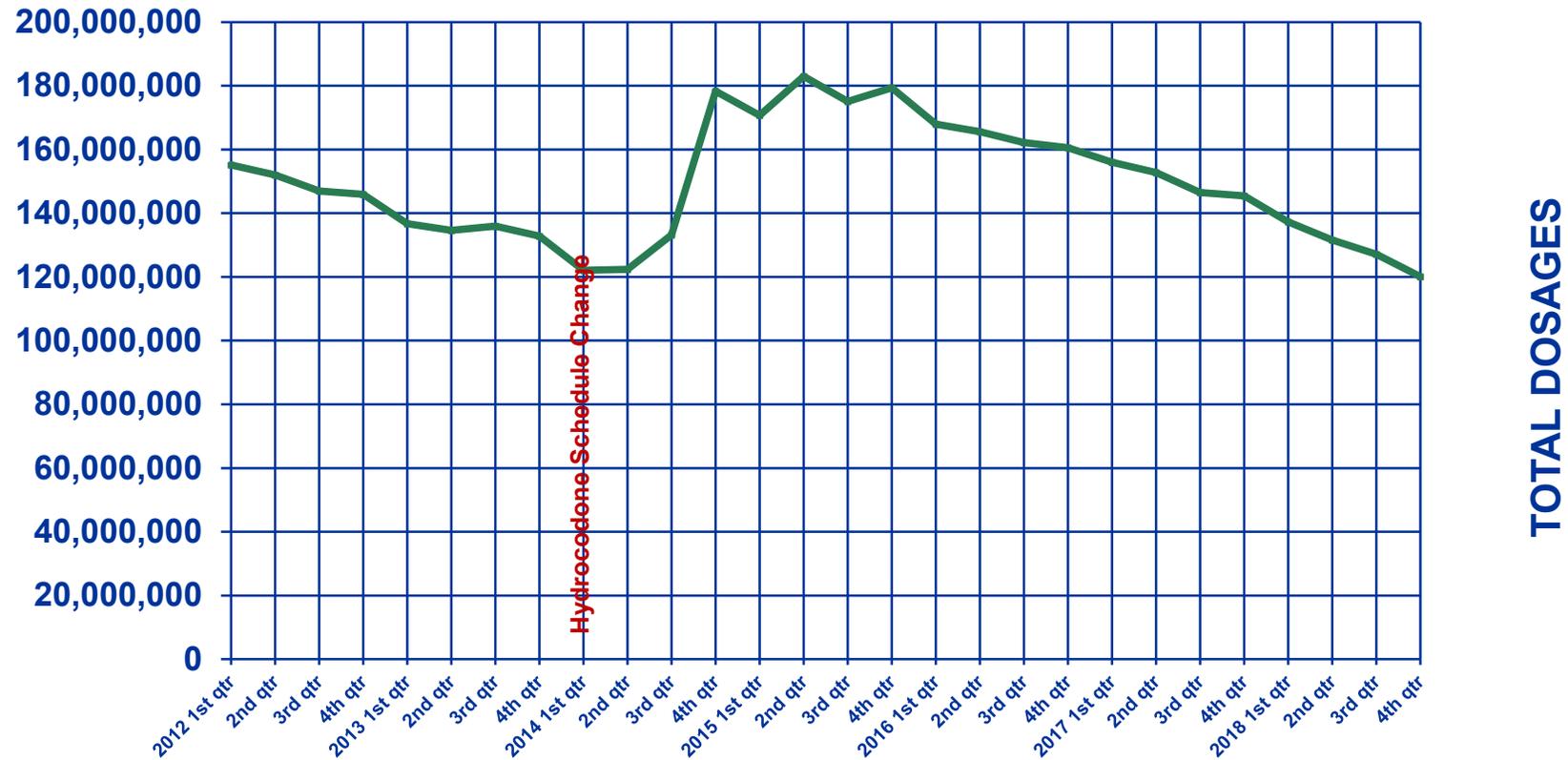
Average Per 100K Population*

January – December 2018

RAN K	STAT E	TOTAL	RAN K	STAT E	TOTAL	RAN K	STAT E	TOTAL	RAN K	STATE	TOTAL	RAN K	STAT E	TOTAL
1	HI	15,444	12	OR	916	23	VA	412	34	IL	170	45	KY	78
2	KS	10,236	13	OK	906	24	MO	355	35	RI	154	46	SD	74
3	MD	4,916	14	NV	879	25	ME	346	36	NM	151	47	NC	71
4	GA	2,808	15	AZ	849	26	NJ	342	37	OH	143	48	DE	56
5	CT	2,711	16	ID	825	27	CA	296	38	MT	142	49	TX	48
6	CO	2,623	17	AK	703	28	PA	294	39	MS	140	50	WV	5
7	WI	1,643	18	IA	685	29	MI	284	40	IN	131	51	AS	0
8	TN	1,366	19	NY	609	30	AR	216	41	MA	97	52	GU	0
9	NE	1,124	20	WY	463	31	FL	214	42	SC	90	53	PR	0
10	AL	1,065	21	ND	448	32	NH	198	43	UT	87	54	VI	0
11	MN	1,036	22	DC	432	33	WA	182	44	LA	86	55	VT	0

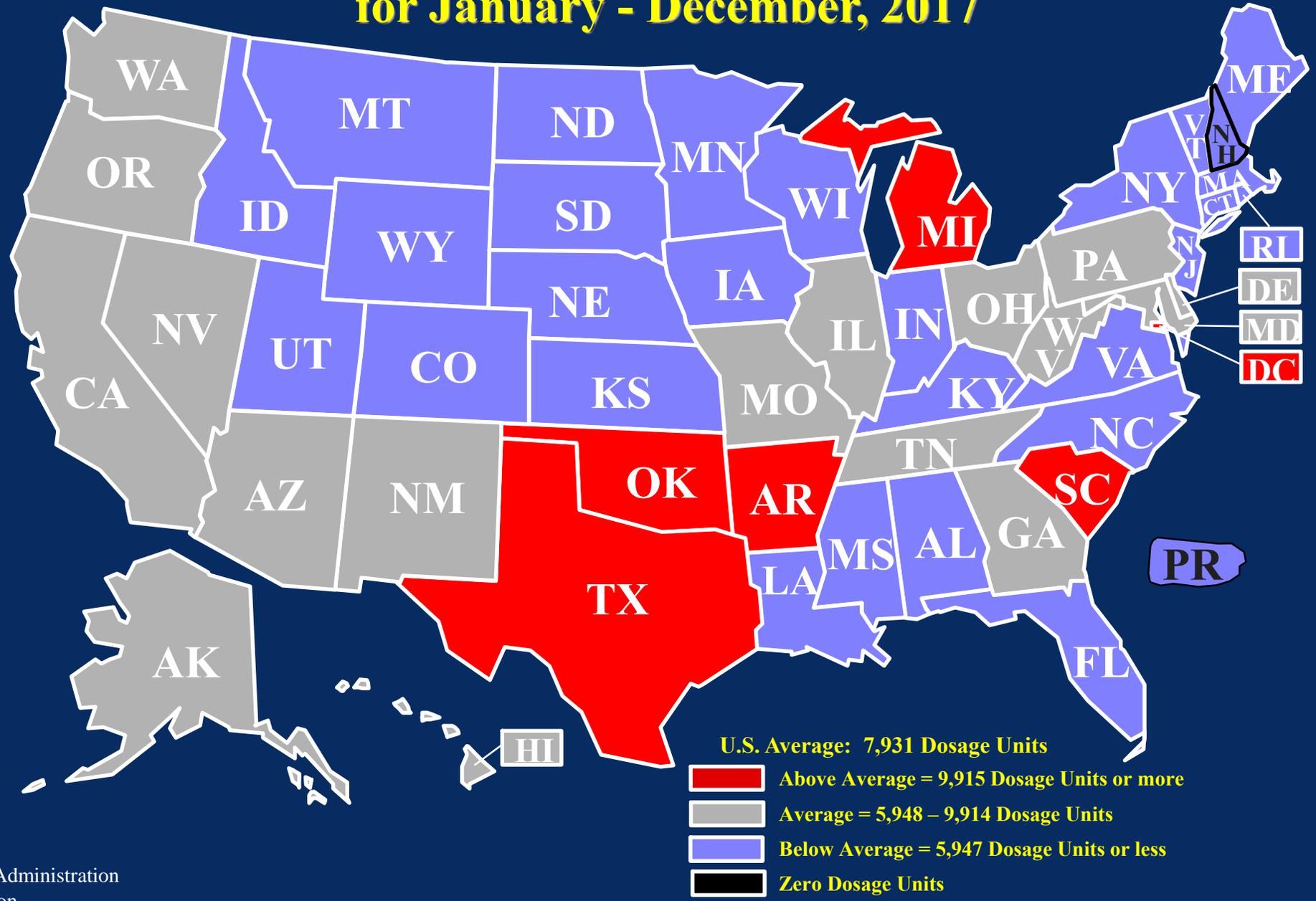
* *Business Activity – Practitioners only*

Codeine Distribution 2012-2018 U.S. Average





Purchases of Codeine for January - December, 2017





Codeine Distribution

Retail Pharmacies

State Ranking* - Codeine

Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL
1	TX	505,219	12	KY	141,682	23	LA	113,768	34	IN	96,976	45	VA	83,520
2	OK	272,151	13	AL	139,516	24	FL	112,693	35	OH	95,253	46	CT	82,760
3	AR	271,241	14	GA	133,520	25	OR	111,626	36	MIN	94,743	47	RI	81,878
4	MI	261,427	15	DE	132,170	26	WA	110,793	37	NV	94,691	48	NH	75,292
5	WV	242,176	16	PA	125,881	27	MS	109,319	38	IA	91,701	49	UT	69,372
6	SC	232,103	17	MD	125,457	28	HI	106,366	39	ND	91,272	50	VT	67,624
7	DC	231,075	18	AZ	124,883	29	SD	105,988	40	NY	91,233	51	GU	66,945
8	IL	169,563	19	KS	120,025	30	NM	100,164	41	MA	89,803	52	NC	63,091
9	TN	154,312	20	NJ	114,641	31	VI	99,158	42	AK	88,865	53	CO	53,869
10	CA	152,756	21	WI	114,520	32	ID	99,146	43	WY	85,560	54	PR	51,687
11	MO	149,003	22	MT	113,835	33	ME	98,277	44	NE	83,664	55	AS	0

* *Business Activity – Pharmacies only*



Codeine Distribution

Practitioner's Office

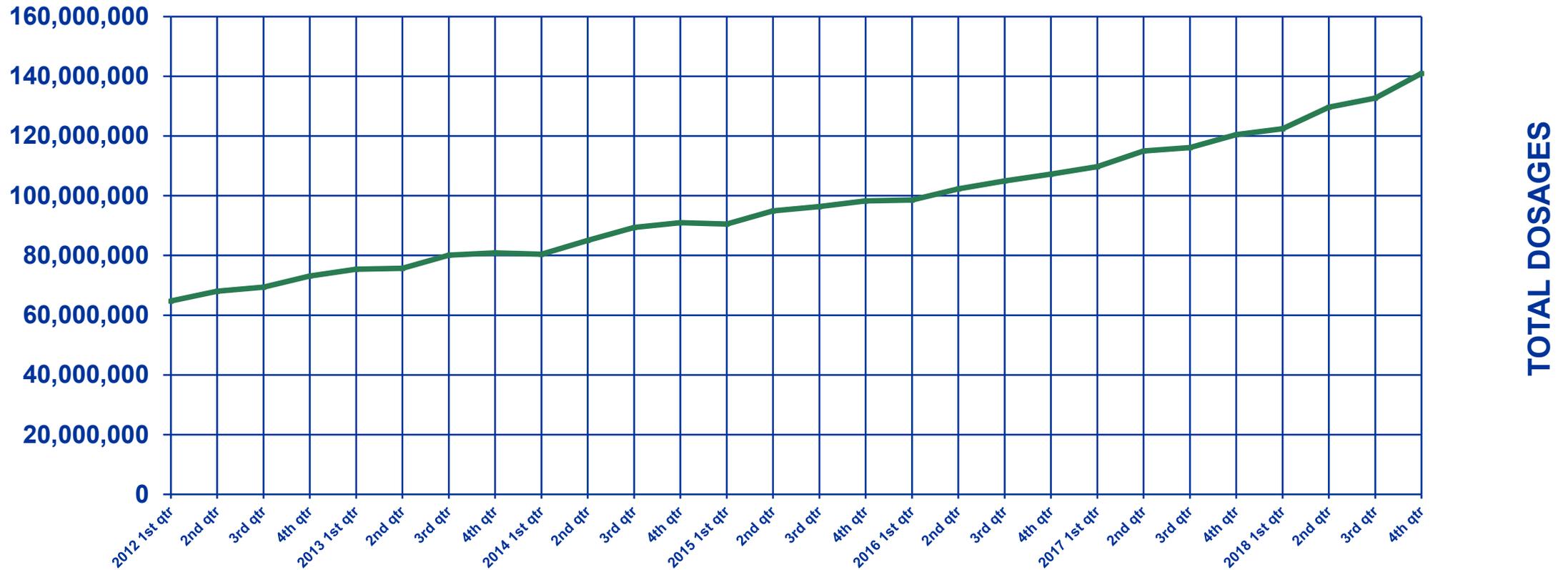
State Ranking* - Codeine

January – December 2018

RANK	STATE	TOTAL												
1	OR	5,055	12	OK	2,106	23	ME	950	34	ND	378	45	CT	166
2	MD	4,887	13	HI	1,802	24	MI	847	35	IA	365	46	NV	161
3	WA	4,624	14	AZ	1,558	25	MT	778	36	AK	341	47	WV	126
4	PA	4,168	15	TN	1,520	26	AR	737	37	WI	330	48	GU	112
5	ID	4,086	16	KS	1,387	27	NM	707	38	KY	324	49	NC	83
6	NE	3,604	17	WY	1,277	28	MA	667	39	FL	297	50	VT	32
7	DE	3,240	18	MN	1,214	29	CO	650	40	IN	273	51	NH	8
8	CA	2,353	19	IL	1,206	30	TX	608	41	SD	270	52	AS	0
9	NJ	2,236	20	AL	1,156	31	UT	590	42	OH	199	53	PR	0
10	MO	2,227	21	NY	1,116	32	MS	549	43	SC	188	54	RI	0
11	VA	2,192	22	GA	1,072	33	LA	523	44	DC	166	55	VI	0

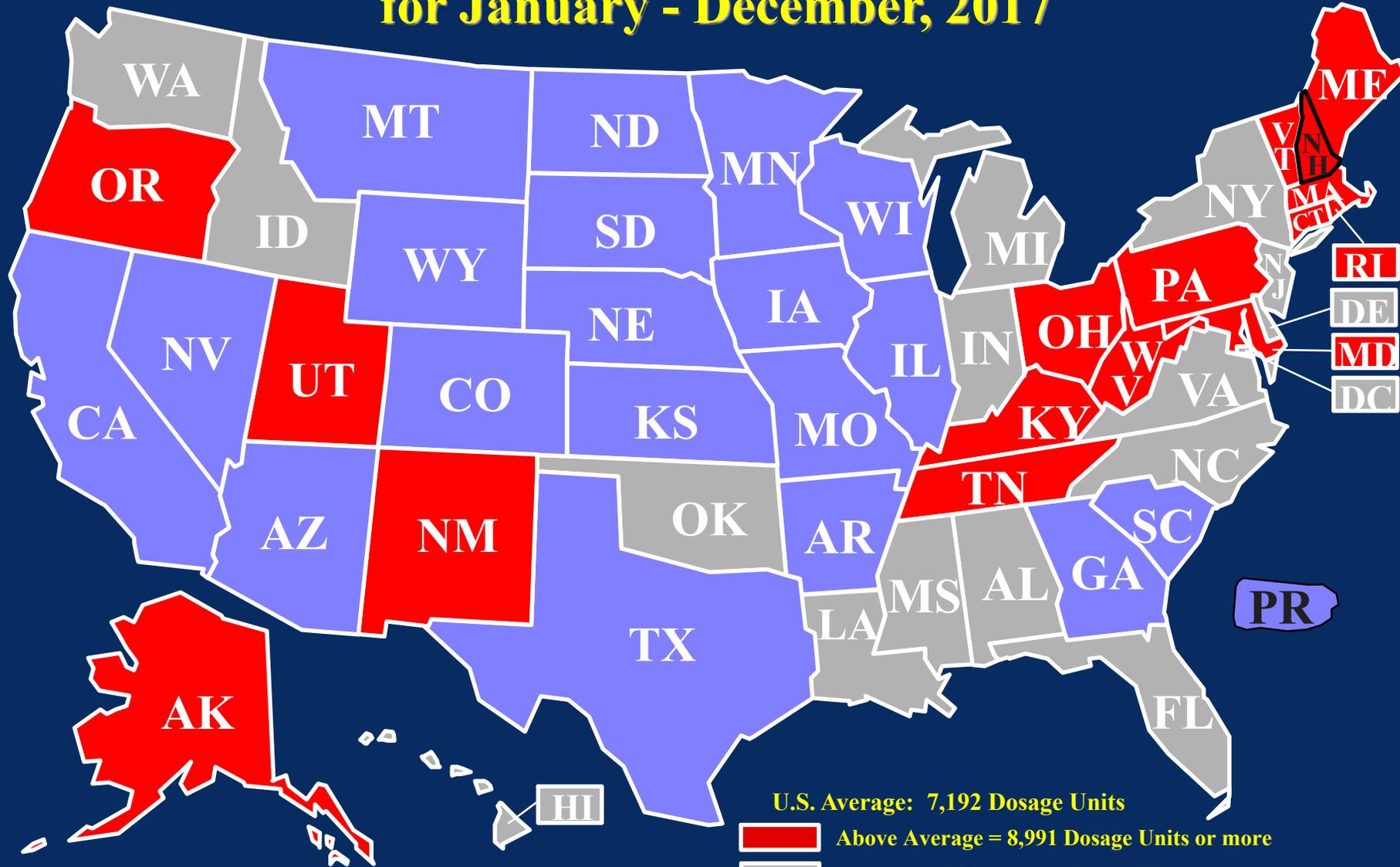
* *Business Activity – Practitioners only*

Buprenorphine Distribution 2012-2018 U.S. Average





Purchases of Buprenorphine for January - December, 2017



U.S. Average: 7,192 Dosage Units

- Above Average = 8,991 Dosage Units or more
- Average = 5,394 – 8,990 Dosage Units
- Below Average = 5,393 Dosage Units or less
- Zero Dosage Units



Buprenorphine Distribution

Retail Pharmacies

State Ranking* - Buprenorphine

January – December 2016

RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL
1	PA	28,632,630	12	NC	12,666,510	23	OK	5,028,870	34	CO	3,449,388	45	DC	948,058
2	NY	26,334,358	13	MD	11,198,506	24	UT	4,798,024	35	MN	3,128,264	46	AK	939,668
3	OH	23,863,496	14	AL	10,798,187	25	MS	4,709,566	36	NM	3,072,006	47	MT	800,302
4	FL	22,418,290	15	VA	9,784,675	26	SC	4,704,158	37	AR	2,479,442	48	IA	678,446
5	CA	20,000,798	16	WA	8,625,526	27	WI	4,644,726	38	VT	2,322,104	49	NE	608,378
6	MA	19,450,268	17	LA	8,192,852	28	AZ	4,471,392	39	NV	1,647,162	50	WY	537,876
7	KY	16,316,338	18	IN	8,149,080	29	OR	4,437,130	40	ID	1,566,592	51	ND	407,022
8	TN	16,195,006	19	GA	7,601,450	30	MO	4,380,400	41	KS	1,246,834	52	SD	200,018
9	TX	13,816,536	20	CT	7,171,048	31	ME	4,172,150	42	HI	1,221,196	53	VI	11,694
10	NJ	13,725,036	21	WV	6,927,694	32	NH	3,722,984	43	PR	1,202,522	54	GU	530
11	MI	13,360,490	22	IL	6,690,938	33	RI	3,512,246	44	DE	1,164,006	55	AS	0

*** Business Activity – Pharmacies only**

State Ranking* - Buprenorphine

January – December 2017

RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL
1	PA	31,897,154	12	NJ	14,400,630	23	OK	5,808,752	34	RI	3,802,198	45	PR	1,198,536
2	NY	28,764,435	13	MD	12,398,238	24	OR	5,359,120	35	CO	3,764,922	46	AK	1,142,032
3	OH	26,158,834	14	AL	12,176,008	25	SC	5,304,810	36	NM	3,551,104	47	MT	1,088,812
4	FL	24,177,806	15	IN	10,318,702	26	UT	5,276,228	37	AR	3,079,406	48	IA	778,188
5	CA	22,395,194	16	VA	10,116,024	27	WI	5,127,856	38	VT	2,728,532	49	NE	679,226
6	MA	21,142,180	17	WA	10,093,418	28	MO	5,088,882	39	ID	1,854,894	50	WY	637,180
7	TN	17,800,288	18	LA	9,763,600	29	MS	5,028,064	40	NV	1,838,896	51	ND	450,332
8	KY	17,661,612	19	GA	8,291,451	30	AZ	5,018,492	41	DE	1,444,186	52	SD	235,578
9	NC	15,506,116	20	IL	7,924,872	31	ME	5,004,694	42	KS	1,356,664	53	VI	7,850
10	MI	14,961,338	21	CT	7,765,608	32	NH	4,219,292	43	HI	1,330,424	54	GU	480
11	TX	14,517,894	22	WV	7,391,406	33	MN	3,855,608	44	DC	1,205,572	55	AS	0

*** Business Activity – Pharmacies only**

State Ranking* - Buprenorphine

Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL	RANK	STATE	TOTAL									
1	VT	484,947	12	DC	242,437	23	AK	176,679	34	WY	129,534	45	IL	70,058
2	KY	460,434	13	OH	240,905	24	MI	171,800	35	AR	126,356	46	CA	68,624
3	ME	433,536	14	LA	240,307	25	NJ	171,447	36	MO	121,349	47	TX	64,770
4	WV	410,609	15	MD	234,745	26	NY	169,185	37	WI	107,414	48	KS	50,820
5	RI	399,457	16	OK	210,494	27	OR	168,248	38	HI	101,835	49	NE	44,275
6	NH	350,898	17	UT	204,999	28	DE	165,081	39	GA	95,134	50	SD	36,332
7	MA	341,614	18	NM	202,037	29	FL	143,015	40	AZ	92,584	51	IA	30,784
8	TN	308,847	19	NC	200,449	30	SC	140,671	41	CO	89,355	52	PR	27,014
9	AL	300,725	20	IN	196,758	31	ID	139,300	42	MN	88,826	53	VI	6,055
10	PA	289,959	21	WA	187,888	32	MT	138,149	43	ND	82,067	54	GU	151
11	CT	242,795	22	MS	182,902	33	VA	137,444	44	NA	78,500	55	AS	0

* *Business Activity – Pharmacies only*



Buprenorphine Distribution Practitioner's Office

State Ranking* - Buprenorphine

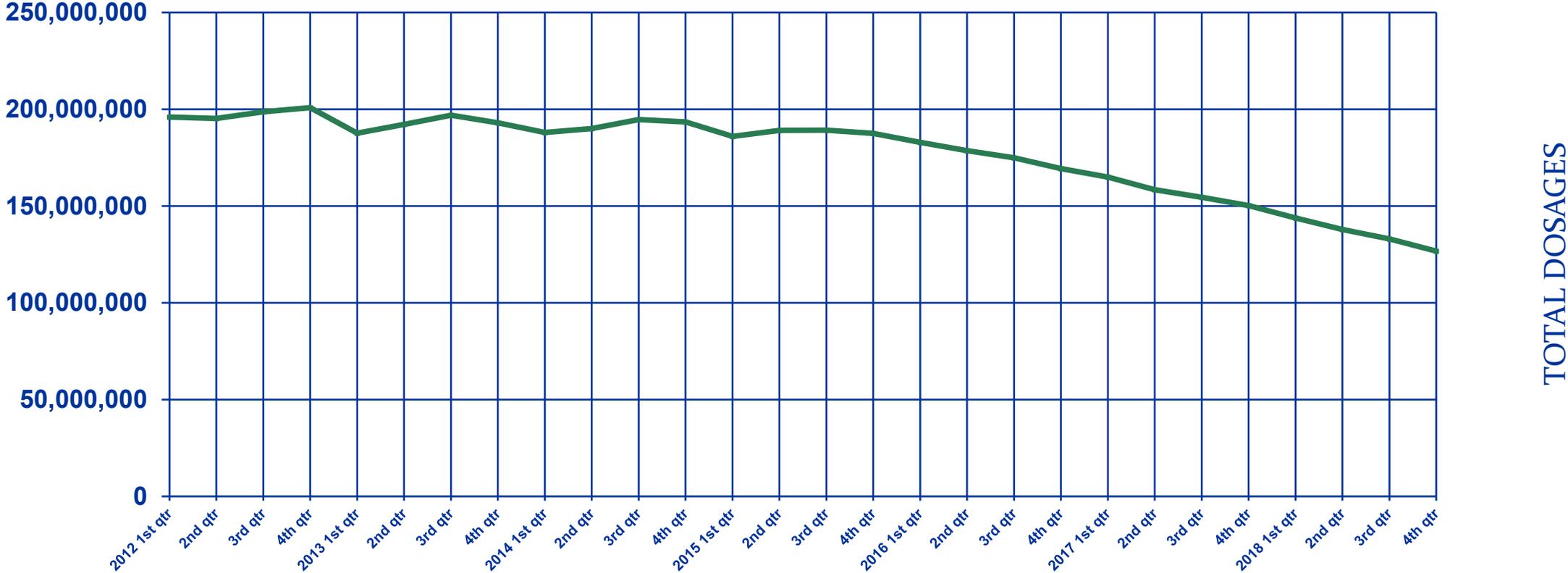
Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL												
1	OK	1,681	12	WA	276	23	OH	99	34	MN	6	45	HI	0
2	NJ	1,319	13	FL	260	24	NY	89	35	MS	6	46	ID	0
3	PA	1,197	14	KS	223	25	MO	70	36	AK	4	47	IA	0
4	OR	819	15	KY	215	26	TN	44	37	NE	3	48	MT	0
5	MD	714	16	NV	209	27	AL	43	38	AR	1	49	NH	0
6	MI	697	17	DE	194	28	RI	24	39	UT	1	50	PR	0
7	ND	571	18	WI	193	29	VA	12	40	CT	1	51	SD	0
8	GA	345	19	NC	169	30	IL	10	41	NM	0	52	VT	0
9	TX	339	20	AZ	123	31	ME	10	42	AS	0	53	VI	0
10	CO	333	21	SC	119	32	MA	9	43	DC	0	54	WV	0
11	CA	310	22	IN	101	33	LA	7	44	GU	0	55	WY	0

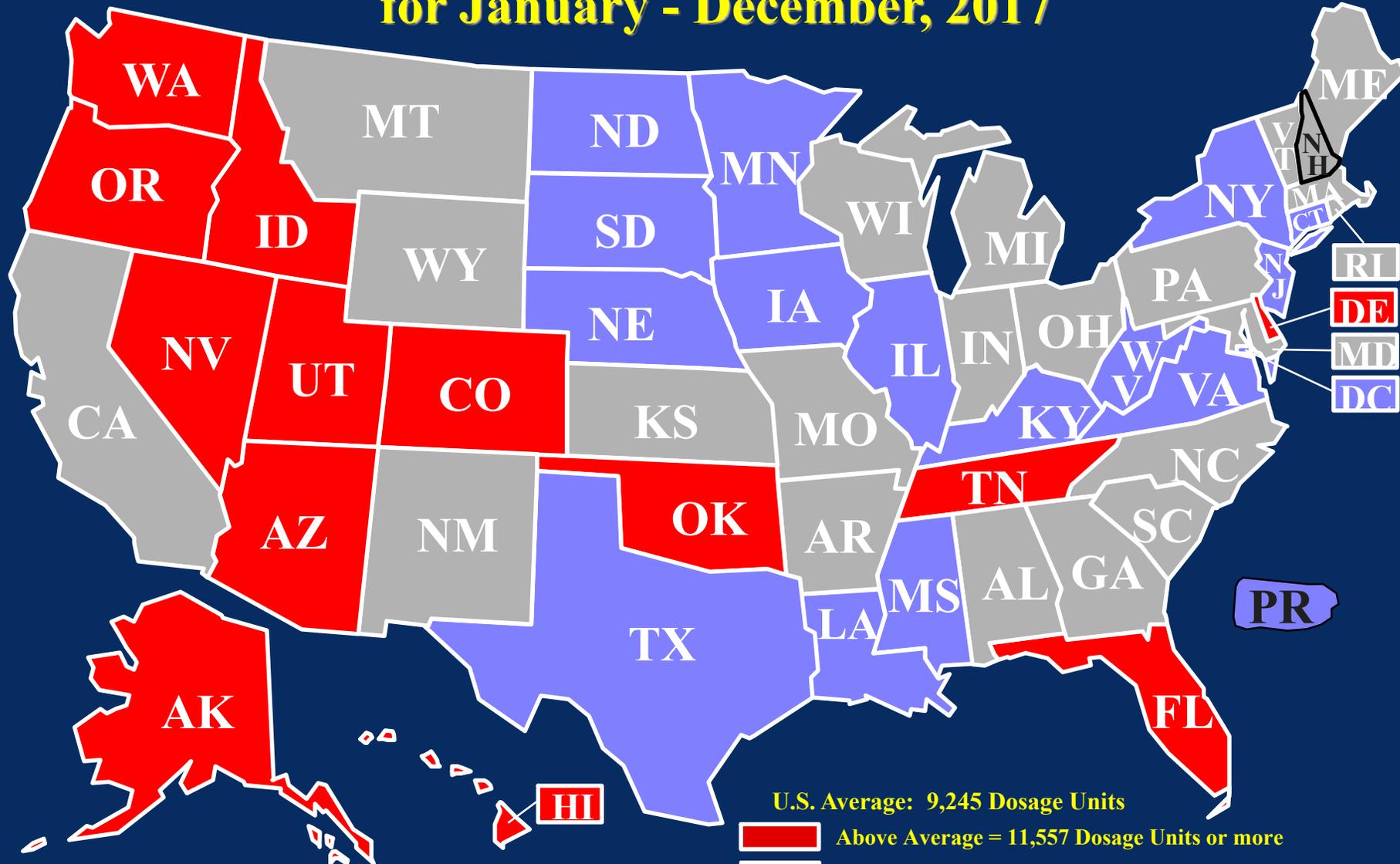
* **Business Activity – Practitioners only**

Morphine Distribution 2012-2018 U.S. Average





Purchases of Morphine for January - December, 2017



U.S. Average: 9,245 Dosage Units

- Red:** Above Average = 11,557 Dosage Units or more
- Grey:** Average = 6,934 – 11,556 Dosage Units
- Blue:** Below Average = 6,933 Dosage Units or less
- Black:** Zero Dosage Units



Morphine Distribution

Retail Pharmacies

State Ranking* - Morphine

Average Per 100K Population*

January – December 2017

RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL	RANK	STATE	TOTAL
1	CA	60,913,914	12	GA	15,355,060	23	AL	9,511,142	34	CT	4,567,002	45	AK	1,473,762
2	FL	52,506,746	13	IL	13,192,538	24	NV	9,043,506	35	IA	4,521,494	46	RI	1,436,700
3	PA	27,696,706	14	OK	13,168,648	25	SC	9,000,106	36	ID	4,260,124	47	VT	1,366,218
4	TX	27,030,444	15	OR	12,086,298	26	MA	8,973,426	37	NM	3,614,402	48	WY	1,155,140
5	MI	24,389,222	16	MO	12,005,800	27	UT	7,079,132	38	DE	3,138,174	49	SD	1,118,600
6	AZ	24,289,066	17	WI	11,892,570	28	LA	7,064,228	39	WV	2,748,100	50	ND	793,054
7	TN	21,307,364	18	MD	11,696,950	29	MN	7,026,794	40	NH	2,646,192	51	DC	395,986
8	NY	19,588,310	19	IN	11,488,818	30	AR	6,816,812	41	NE	2,614,002	52	PR	144,200
9	NC	17,324,028	20	NJ	10,597,684	31	KY	6,319,422	42	ME	2,537,514	53	GU	86,000
10	WA	17,261,578	21	VA	10,505,418	32	KS	5,733,764	43	MT	2,528,222	54	VI	16,800
11	OH	16,478,018	22	CO	9,988,810	33	MS	4,708,468	44	HI	2,510,052	55	AS	0

** Business Activity – Pharmacies only*

State Ranking* - Morphine

Average Per 100K Population*

January – December 2018

RANK	STATE	TOTAL												
1	DE	309,560	12	MI	204,317	23	MO	174,440	34	MS	136,518	45	MN	110,865
2	AZ	309,248	13	AR	197,608	24	CO	174,310	35	NE	130,204	46	NJ	104,662
3	OK	288,281	14	VT	192,735	25	MD	169,992	36	WV	128,171	47	ND	101,041
4	NV	281,845	15	AK	188,841	26	ME	163,782	37	IA	127,287	48	TX	97,170
5	TN	277,809	16	PA	186,194	27	NC	161,881	38	KY	123,626	49	IL	90,079
6	OR	268,950	17	WY	182,632	28	HI	155,542	39	MA	123,362	50	NY	88,803
7	FL	251,780	18	SC	182,074	29	IN	151,025	40	SD	120,836	51	DC	52,246
8	ID	242,980	19	NH	180,023	30	NM	150,568	41	OH	120,709	52	GU	42,930
9	UT	231,859	20	KS	179,011	31	GA	144,684	42	CT	117,384	53	VI	12,930
10	WA	224,540	21	WI	178,761	32	CA	140,747	43	VA	114,819	54	PR	3,791
11	MT	219,208	22	AL	176,818	33	LA	137,337	44	RI	114,554	55	AS	0

* *Business Activity – Pharmacies only*



Morphine Distribution Practitioner's Office



State Ranking

Average Per 100K Population*

Morphine

January – December 2017

RANK	STATE	TOTAL												
1	HI	1,449	12	CO	90	23	CA	32	34	OR	10	45	LA	0
2	MD	973	13	FL	76	24	NY	30	35	IN	8	46	ME	0
3	OK	938	14	AK	63	25	TN	23	36	MN	6	47	MS	0
4	NV	797	15	KS	61	26	MO	22	37	NJ	6	48	NH	0
5	AL	546	16	MI	55	27	SC	19	38	NE	5	49	ND	0
6	CT	539	17	WY	53	28	KY	16	39	NM	5	50	PR	0
7	GA	402	18	DE	42	29	PA	15	40	TX	5	51	RI	0
8	ID	270	19	WA	42	30	NC	14	41	IL	4	52	SD	0
9	WI	158	20	AZ	41	31	MA	11	42	AS	0	53	VT	0
10	UT	107	21	MT	40	32	IA	10	43	DC	0	54	VI	0
11	VA	104	22	AR	34	33	OH	10	44	GU	0	55	WV	0

* *Business Activity – Retail Practitioners*

Source: Drug Enforcement Administration, Office of Diversion Control, Pharmaceutical Investigations Section, Targeting and Analysis Unit
Most current ARCOS information as of 08/27/2016

State Ranking* - Morphine

January – December 2018

RANK	STATE	TOTAL												
1	HI	1,117	12	DE	51	23	NE	11	34	GU	0	45	NC	0
2	OK	820	13	UT	51	24	TX	7	35	IN	0	46	ND	0
3	MD	802	14	MI	42	25	NJ	6	36	IA	0	47	OH	0
4	GA	270	15	AR	38	26	MO	3	37	KS	0	48	PR	0
5	CT	260	16	MT	30	27	MN	3	38	KY	0	49	RI	0
6	ID	249	17	VA	29	28	SC	2	39	LA	0	50	SD	0
7	AL	200	18	CA	20	29	AZ	1	40	ME	0	51	TN	0
8	CO	109	19	WA	19	30	IL	1	41	MA	0	52	VT	0
9	WI	85	20	FL	16	31	AK	0	42	MS	0	53	VI	0
10	NY	57	21	OR	13	32	AS	0	43	NH	0	54	WV	0
11	NV	56	22	PA	11	33	DC	0	44	NM	0	55	WY	0

* *Business Activity – Practitioners only*



Drug Trends



Heroin and Fentanyl



CHANGE

**CHANGE IS THE ONLY CONSTANT IN
THE DRUG WORLD**



Heroin

- **The raw material (opium) to manufacture heroin comes from the poppy plant.**
- **The raw material (opium) comes from outside of the U.S. –Asia, Pakistan, Afghanistan.**
- **Heroin comes in through different drug routes – primarily through Mexico.**
- **Production : 2011 (30 MT's), 2016 (81) 2017 (111)**
- **Heroin use has increased in the last 5 years.**



Fentanyl

- **Fentanyl is a synthetic opioid.**
- **Fentanyl is very powerful (50-100 times more potent than heroin).**
- **Dealers are combining Fentanyl with Heroin, pills, marijuana, counterfeit pills, etc.**
- **Carfentanil (100 times more potent than Fentanyl).**

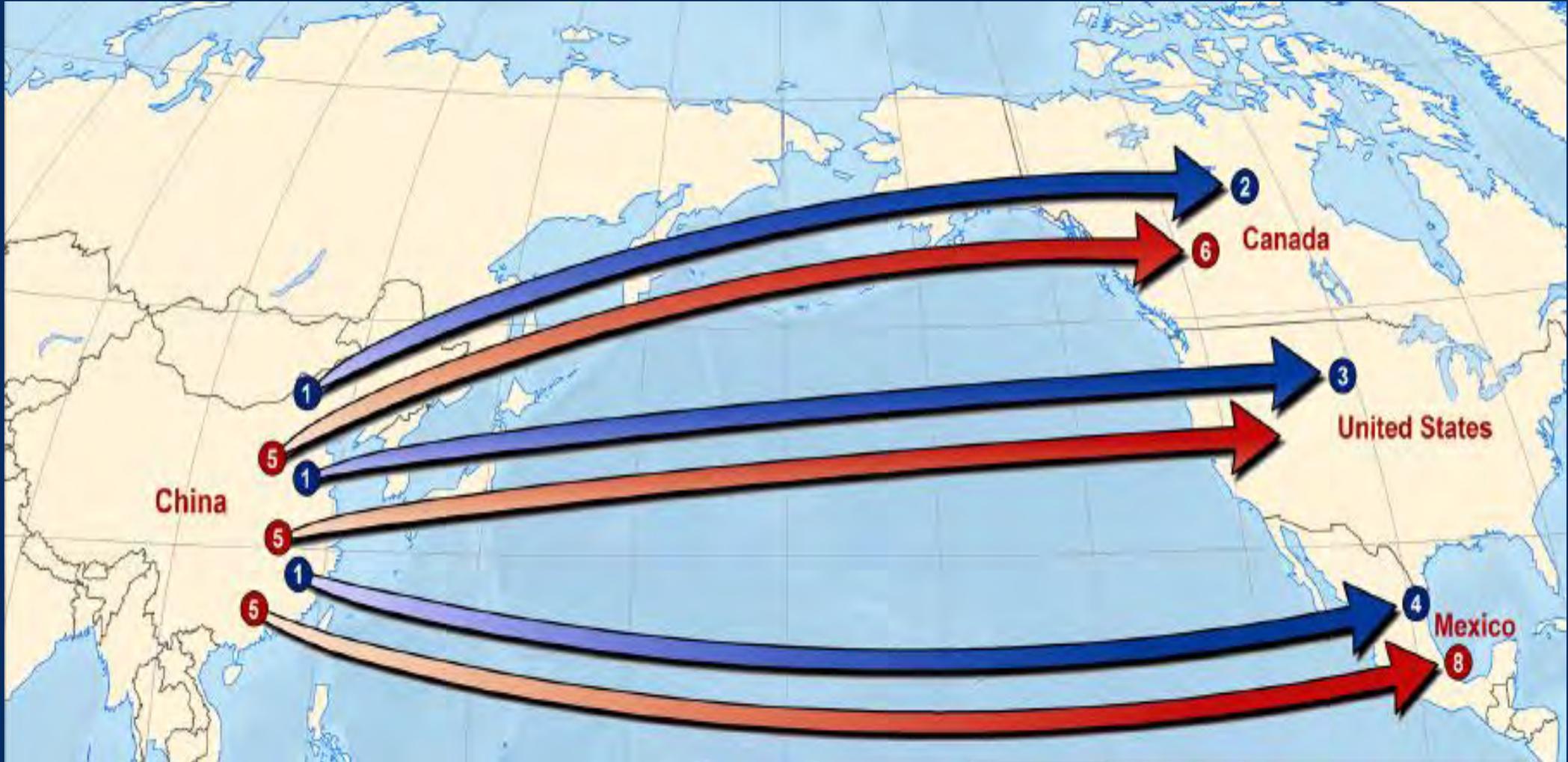


Drug Economics

Drug	Cost per kg	Approximate # kg produced from original drug procurement	Wholesale Price per kg (in Massachusetts)	Estimated Revenue per 1 kg starting product
Heroin	\$5,000 - \$7,000 (from Columbia)	1 kg	\$80,000	\$80,000
Fentanyl	\$3,300 – \$5,000 (from China)	16 – 24 kg	\$80,000	\$1,280,000 – \$1,920,000



Fentanyl





Fentanyl

- Is purchased from China and shipped directly to the United States or smuggled through Mexico.
- May 2015 Chinese Customs seized 46 Kilos of Fentanyl and 26 Kilos of acetyl fentanyl.
- 6 customs officers became ill
- 1 in a coma after handling.





Fentanyl

- Produced in clandestine labs in the United States.
- DEA LA Field Division
- Residential location
- 3 pill presses
- Powder mixing equipment
- Ventilation equipment





Fentanyl





Fentanyl





Fentanyl Dangers to Practitioners

- Be cautious when inventorying personal items in ED or the hospital.
- Be cautious when touching patients.
- Be cautious when going through a patient's personal items.
- Don't **ever** take back a patient's medications.



From Pills to Heroin



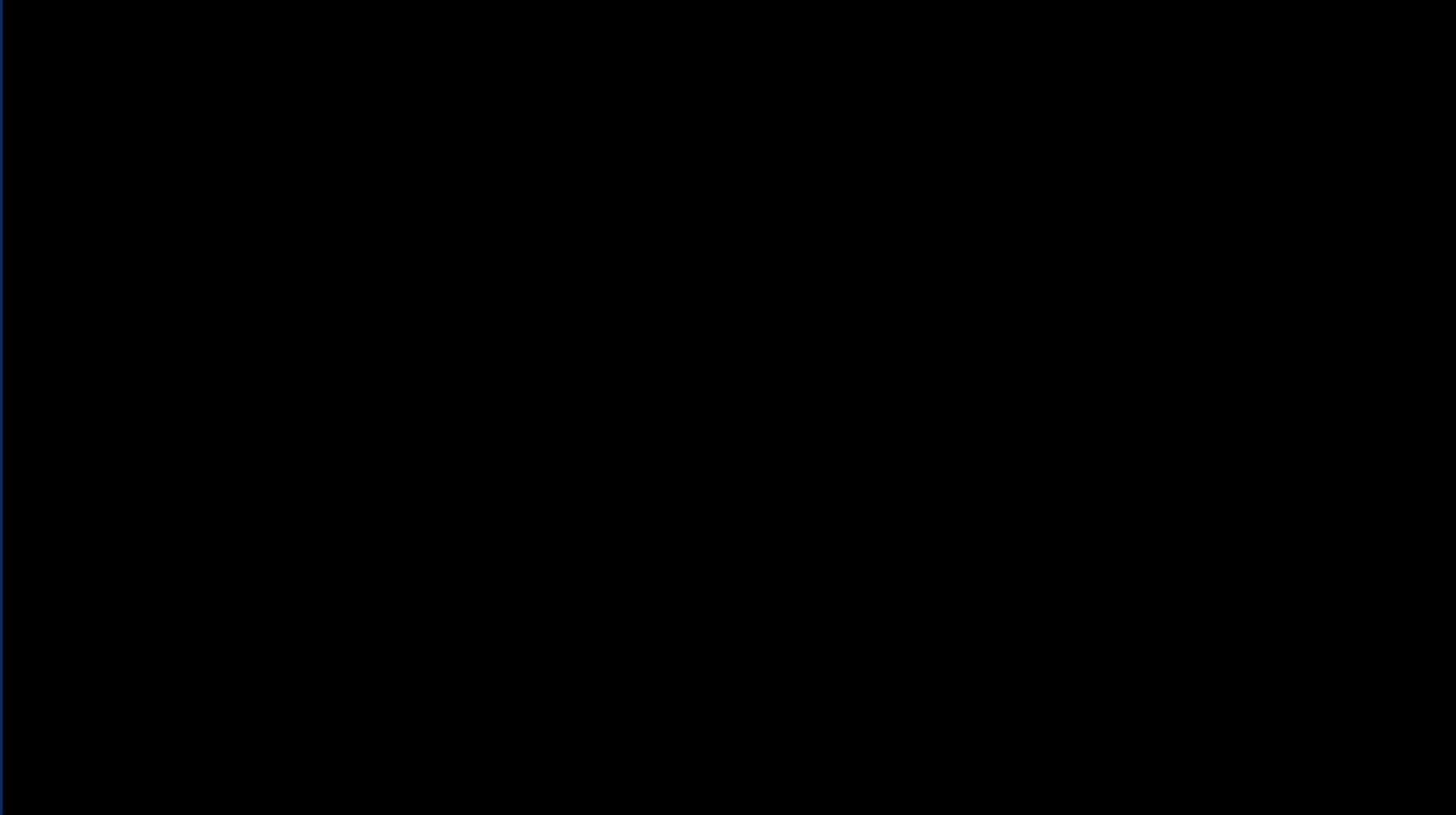


From Pills to Heroin

- 75% of heroin users switched after first using controlled substance prescription pain relievers.
- Heroin is much cheaper than prescription drugs.
 - Deck: 1 small bag of heroin (\$8 to \$10)
 - Bundle: 10 bags of heroin



From Pills to Heroin





Prescription Drug Abuse Trends



Prescription Drug Abuse

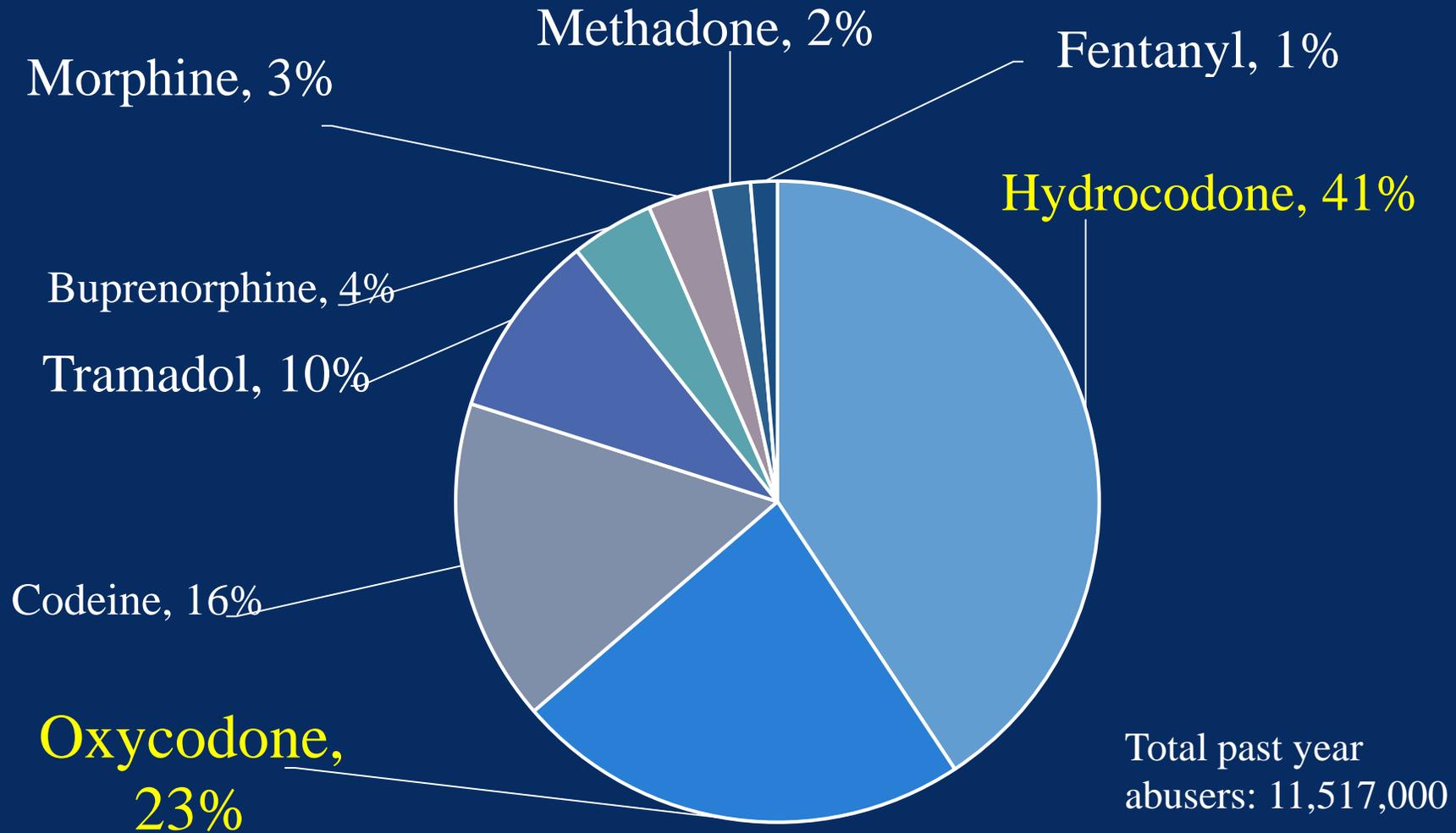
Is Driven By-

**Indiscriminate Prescribing And
Criminal Activity**



Prescription Pain Reliever Misuse

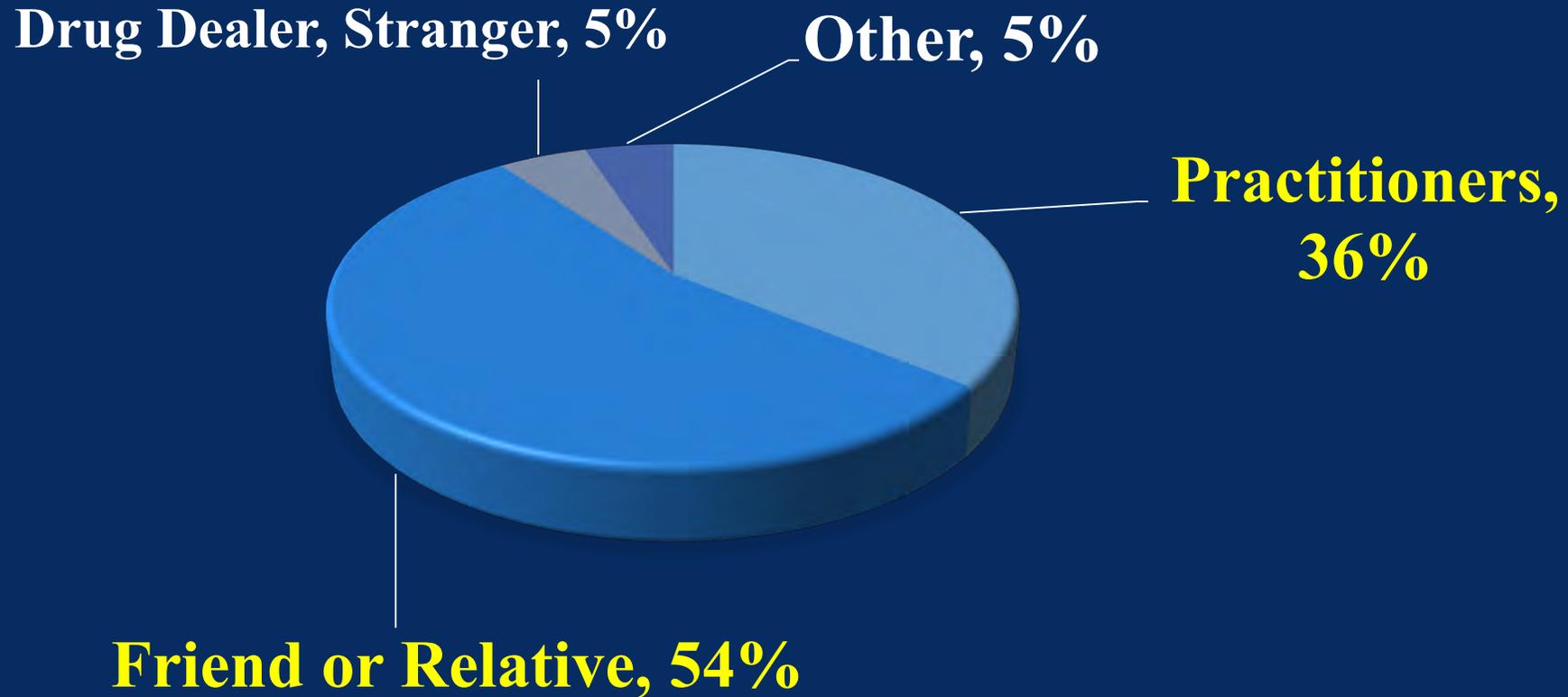
(Age 12 and Older)(2016)



Source: National Survey On Drug Use and Health (2016)



Where Do They Come From?



Source: Department of Health and Human Services



Many Patients Share Prescribed Controlled Substances

University of Pennsylvania Dental School Study:

- ***More than half of the narcotics prescribed for wisdom teeth removal go unused...findings suggest that more than 100 million pills prescribed go unused... leaving the door open for possible misuse or abuse.**

Source: <https://www.pennmedicine.org/news/news-releases/2016/september/100-million-prescription-opioid>
https://www.nlm.nih.gov/medlineplus/news/fullstory_159336.html



Many Patients Share Prescribed Controlled Substances

John Hopkins Study:

- +60% had leftover opioids they hung on for “future use”
- 20% shared their medications
- 8% likely will share w/ friend
- 14% likely will share w/ relative
- >10% securely lock their medication



Many Patients Share Prescribed Controlled Substances

John Hopkins Study:

- The study further explored adult attitudes towards controlled substances and found:
- 73 percent of adults agreed that children can overdose on opioids more easily than adults.

Source: <https://www.pennmedicine.org/news/news-releases/2016/september/100-million-prescription-opioid>
https://www.nlm.nih.gov/medlineplus/news/fullstory_159336.html



Many Patients Share Prescribed Controlled Substances

John Hopkins Study:

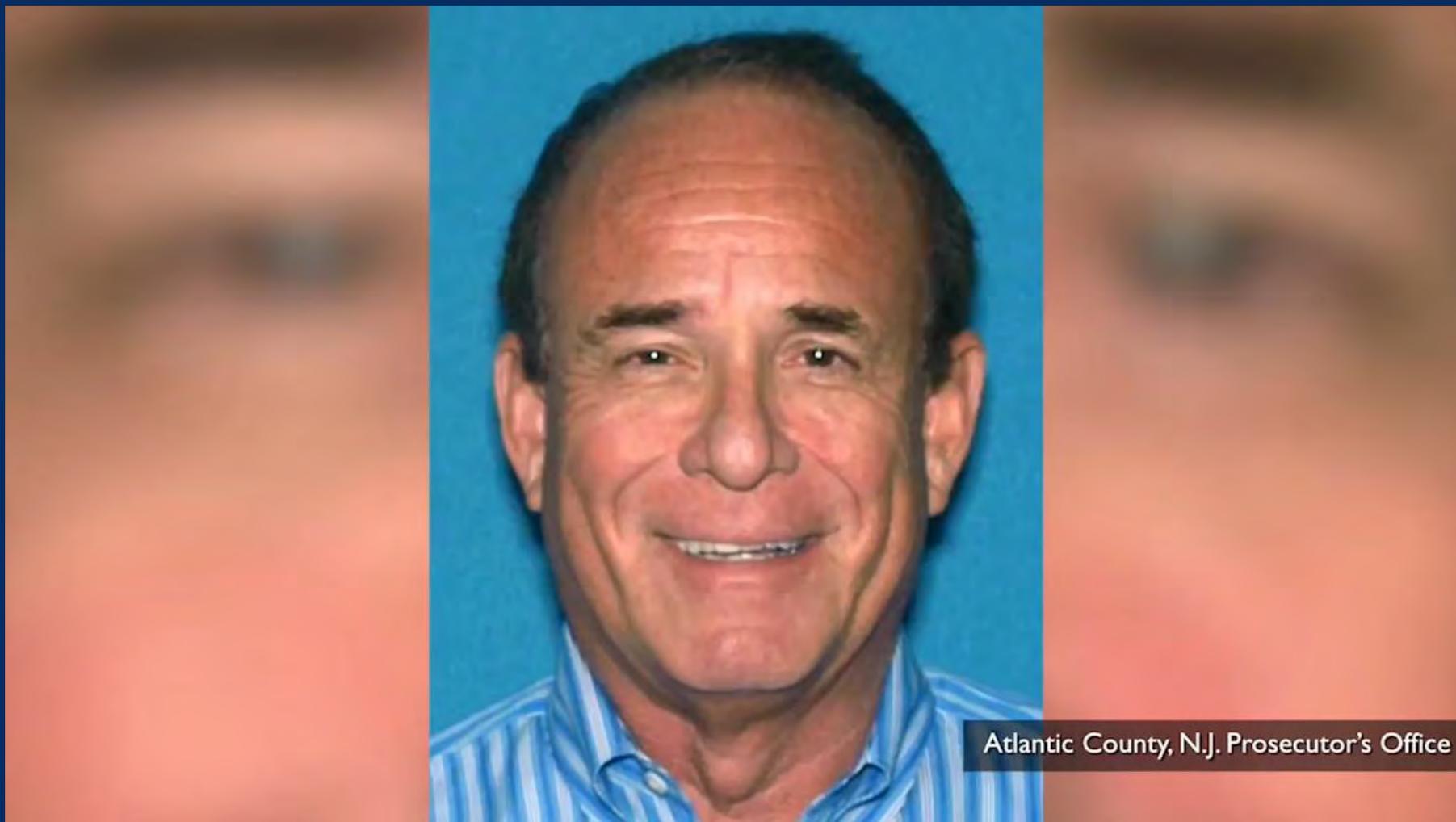
- Yet found that 13% of the respondents “worry” about their children accessing their opioid medications.
- With parents of older children reporting that they were **significantly less** likely to worry about children accessing medications than parents of younger children.

Source: <https://www.pennmedicine.org/news/news-releases/2016/september/100-million-prescription-opioid>
https://www.nlm.nih.gov/medlineplus/news/fullstory_159336.html



Violence





Atlantic County, N.J. Prosecutor's Office



Violence Associated With Opiates

Communities undergo:

- **Drug related crimes**
 - a. **Robberies**
 - b. **Burglaries/break ins**
 - c. **Drug thefts**

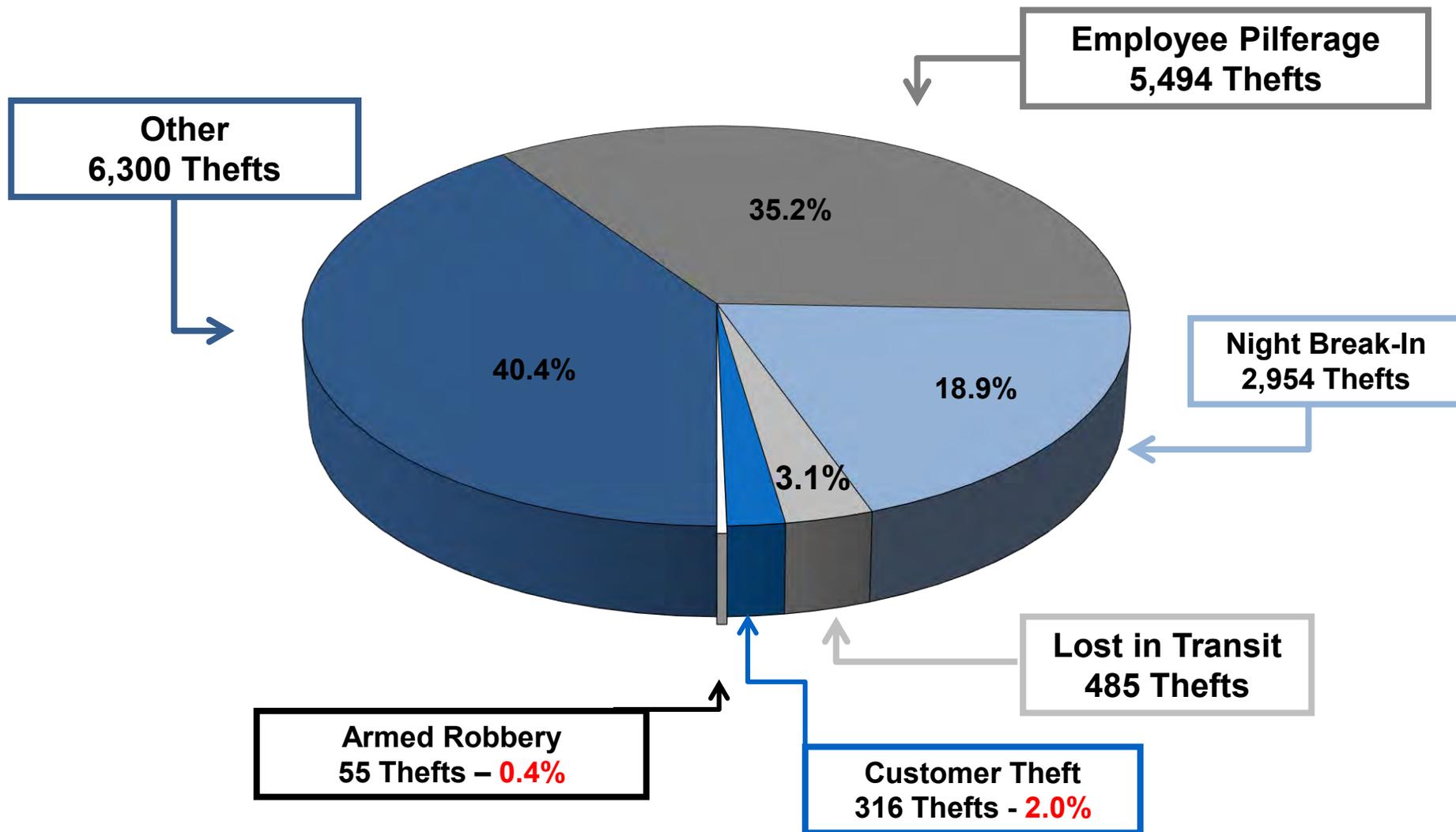
- **Abuse and neglect of children**

- **Domestic violence in the home**

- **Increase of arrests**

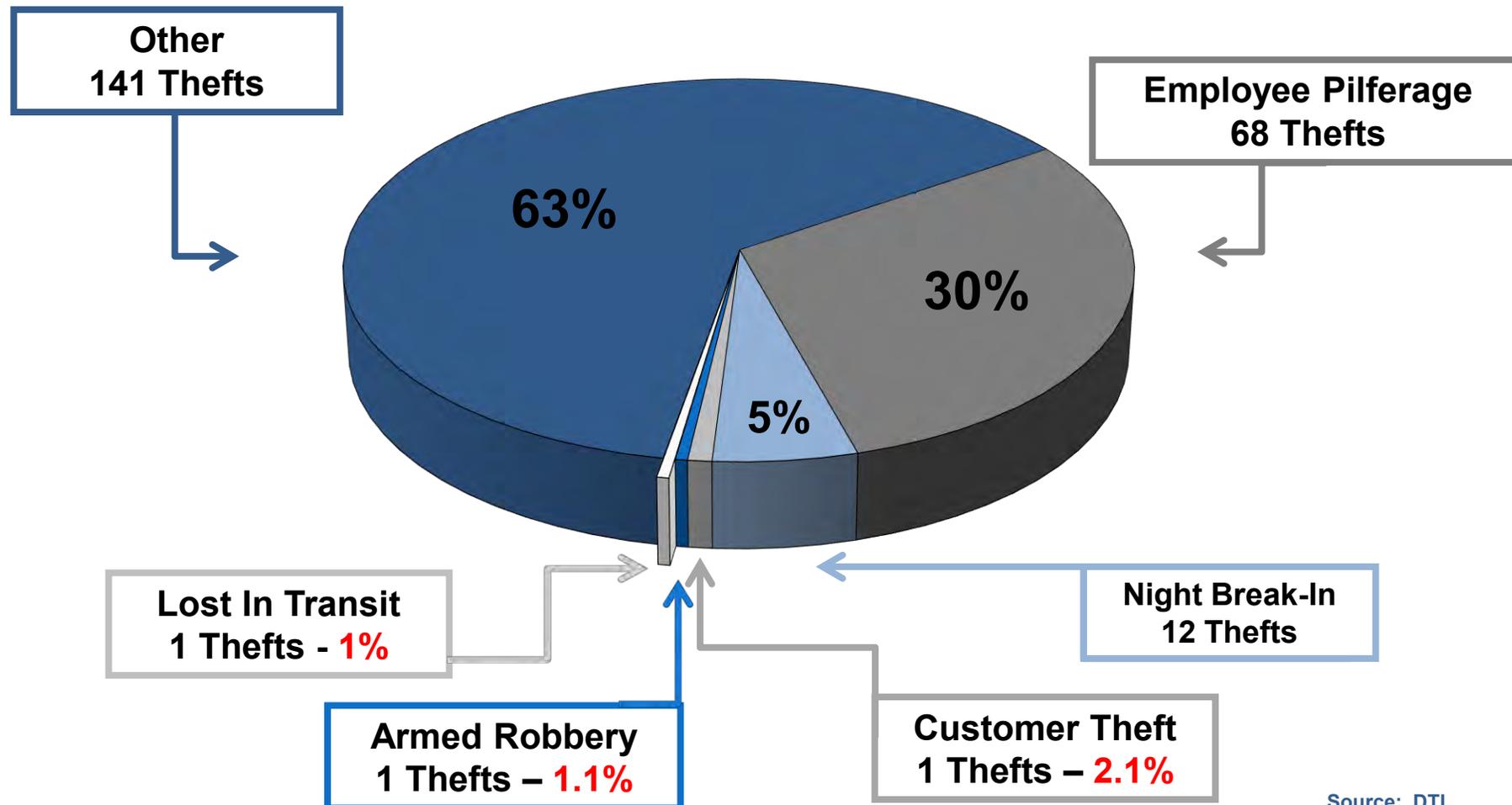
Nationwide Practitioner Thefts

January 1, 2009 – December 31, 2018



Ohio Practitioner Thefts

January 1, 2009 – December 31, 2018





CDC Guidelines

Prescribing Opioids for Chronic Pain

Clinical Reminders:

- **Opioids are not first-line or routine therapy for chronic pain.**
- **Establish and measure goals for pain and function.**
- **Discuss benefits, risks and availability of non opioid therapies with patients.**

Source: CDC Morbidity & Mortality Weekly Report CDC
Guideline for Prescribing Opioids for Chronic Pain —
United States, 2016, March 15, 2016
www.cdc.gov/drugoverdose/prescribing/guideline.html



CDC Guidelines

Prescribing Opioids for Chronic Pain

Clinical Reminders:

- **Use immediate-release opioids when starting.**
- **Start low and go slow.**
- **When opioids are needed for acute pain, prescribe no more than needed.**



CDC Guidelines

Prescribing Opioids for Chronic Pain

Clinical Reminders:

- **Do not prescribe ER/LA opioids for acute pain.**
- **Follow-up and re-evaluate risk of harm; reduce dose or taper and discontinue if needed.**
- **Evaluate risk factors for opioid-related harms.**



CDC Guidelines

Prescribing Opioids for Chronic Pain

Clinical Reminders:

- **Check PDMP for higher dosages and prescriptions from other providers.**
- **Use urine drug testing to identify prescribed substances and undisclosed use.**
- **Avoid concurrent benzodiazepine and opioid prescribing.**
- **Arrange treatment for opioid use disorder if needed.**



Survey of Long-Term Painkiller Users

- Majority say their doctor talked about possibility of addiction or dependence – **61% say there was no discussion about plan to get them off.**
- Majority say they used the drugs to relieve pain. Other major reasons for taking them:
 - 20% - ‘for fun or get high’
 - 14% - “to deal with day-to-day stress”
 - 10% - “to relax or relieve tension”



Survey of Long-Term Painkiller Users

- **Other Findings:**
 - **34% admit being dependent or addicted.**
 - **17% have taken painkillers that were not specifically prescribed for them.**
 - **14% have given their painkillers to a family member or friend.**
 - **20% know or suspect someone was using, taking or selling their painkillers.**



Post Questions

- 1. Which country, per million population, has the largest amount of drug induced deaths ages 15-64?**
 - A. Sweden**
 - B. Germany**
 - C. United States**
 - D. Russia**
 - E. China**



Post Questions

- 2. Where does Ohio rate in the United States in the amount of hydrocodone dispensed?**
- A. 29th**
 - B. 37th**
 - C. 15th**
 - D. 1st**



Post Questions

- 3. What percentage of the world's hydrocodone production does the United States consume?**
- A. Less than 10%**
 - B. 34%**
 - C. 50%**
 - D. More than 80%**



Post Questions

- 4. What is the most misused prescription controlled substance pain reliever in the United States?**
- A. Oxycodone**
 - B. Morphine**
 - C. Hydrocodone**
 - D. Codeine**



Post Questions

5. What percent of heroin users began their addictions with prescribed pain relievers?

A. 15%

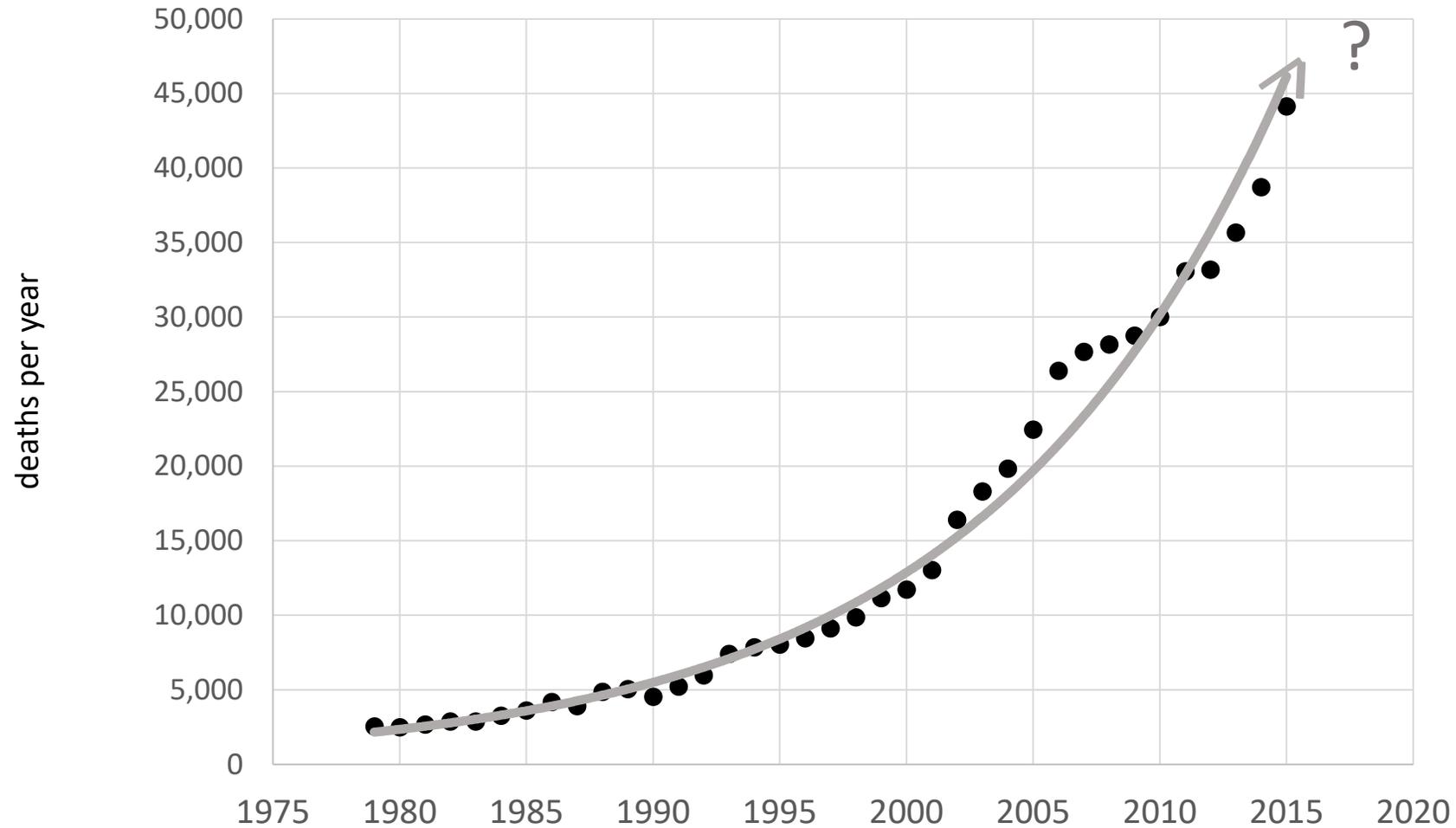
B. 40%

C. 75%

D. 90%

E. 99%

Will the epidemic curve follow this remarkable exponential growth pattern into the future?



RESEARCH ARTICLE

PUBLIC HEALTH

Changing dynamics of the drug overdose epidemic in the United States from 1979 through 2016

Hawre Jalal¹, Jeanine M. Buchanich², Mark S. Roberts¹, Lauren C. Balmert^{2,4}, Kun Zhang⁵, Donald S. Burke^{3*}

Better understanding of the dynamics of the current U.S. overdose epidemic may aid in the development of more effective prevention and control strategies. We analyzed records of 599,255 deaths from 1979 through 2016 from the National Vital Statistics System in which accidental drug poisoning was identified as the main cause of death. By examining all available data on accidental poisoning deaths back to 1979 and showing that the overall 38-year curve is exponential, we provide evidence that the current wave of opioid overdose deaths (due to prescription opioids, heroin, and fentanyl) may just be the latest manifestation of a more fundamental longer-term process. The 38+ year smooth exponential curve of total U.S. annual accidental drug poisoning deaths is a composite of multiple distinctive subepidemics of different drugs (primarily prescription opioids, heroin, methadone, synthetic opioids, cocaine, and methamphetamine), each with its own specific demographic and geographic characteristics.

Conclusions

- The epidemic of overdose deaths in the USA has been growing, inexorably and exponentially, for four decades.
- Paradoxically, this overall long term smooth epidemic curve is a composite of multiple heterogeneous sub-epidemics which differ according location, age, drugs used, gender, race, and urbanicity. The mechanism(s) whereby these sub-epidemics seamlessly merge into a single smooth curve is unknown.
- Without effective new interventions, this overall pattern of predictable exponential growth is likely to continue into the future.
- Data analytics and modeling are valuable tools to understand and forecast the epidemic trajectory, and to guide and evaluate policies.



*Thank-you for your time
and attention !*

