



Special Report from the CDC

Variation among states in prescribing of opioid pain relievers and benzodiazepines – United States, 2012

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ABSTRACT

Introduction: Overprescribing of opioid pain relievers (OPR) can result in multiple adverse health outcomes, including fatal overdoses. Interstate variation in rates of prescribing OPR and other prescription drugs prone to abuse, such as benzodiazepines, might indicate areas where prescribing patterns need further evaluation. **Methods:** CDC analyzed a commercial database (IMS Health) to assess the potential for improved prescribing of OPR and other drugs. CDC calculated state rates and measures of variation for OPR, long-acting/extended-release (LA/ER) OPR, high-dose OPR, and benzodiazepines. **Results:** In 2012, prescribers wrote 82.5 OPR and 37.6 benzodiazepine prescriptions per 100 persons in the United States. State rates varied 2.7-fold for OPR and 3.7-fold for benzodiazepines. For both OPR and benzodiazepines, rates were higher in the South census region, and three Southern states were two or more standard deviations above the mean. Rates for LA/ER and high-dose OPR were highest in the Northeast. Rates varied 22-fold for one type of OPR, oxycodone. **Conclusions:** Factors accounting for the regional variation are unknown. Such wide variations are unlikely to be attributable to underlying differences in the health status of the population. High rates indicate the need to identify prescribing practices that might not appropriately balance pain relief and patient safety. **Implications for Public Health:** State policy makers might reduce the harms associated with the abuse of prescription drugs by implementing changes that will make the prescribing of these drugs more cautious and more consistent with clinical recommendations.

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1. Introduction

People in the United States consume opioid pain relievers (OPR) at a greater rate than any other nation. They consume twice as much per capita as the second ranking nation, Canada (International Narcotics Control Board, 2010). Overprescribing of opioid pain relievers can result in multiple adverse health outcomes, including fatal overdoses (Ballantyne, 2012). Opioid pain relievers were involved in 16,917 overdose deaths in 2011; in 31% of these deaths, benzodiazepine sedatives were also cited as contributing causes (CDC WONDER, unpublished data, 2014). High rates of prescribing these controlled substances are important determinants of rates of fatal overdose and drug abuse (Cicero, Surratt, Inciardi, & Munoz, 2007; Paulozzi & Ryan, 2006). Overall state prescribing rates of OPR widely vary (McDonald, Carlson, & Izrael, 2012). Variations in prescribing rates for higher-risk opioid prescriptions (e.g., those for long-acting or extended-release [LA/ER] formulations) or those for high daily dosage have not been examined. LA/ER OPR are more prone to abuse, and high-dose formulations are more likely to result in overdoses, so they deserve special attention. Benzodiazepines are commonly prescribed in combination with OPR, even though this combination increases the risk for overdose (Jones, Mogali, & Comer, 2012). Interstate variation in prescribing rates for benzodiazepines has not been measured.

Information on local prescribing rates can alert authorities to atypical use and can prompt action. Such authorities include state and local health departments, law enforcement agencies, health-care systems, and licensure boards. States have the authority to track prescribing and dispensing and regulate medical practice within their borders. They can influence the rate of prescribing of controlled prescription drugs by various measures. These include passing regulations related to the use of state prescription drug monitoring programs and the operation of pain clinics.

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2. Methods

Data on prescribing in 2012 come from IMS Health's National Prescription Audit (NPA). NPA provides estimates of the numbers of prescriptions dispensed in each state based on a sample of approximately 57,000 pharmacies, which dispense nearly 80% of the retail prescriptions in the United States. Prescriptions, including refills, dispensed at retail pharmacies and paid for by commercial insurance, Medicaid, Medicare, or cash were included.*

Table 1
Prescribing rates per 100 persons, by state and drug type — IMS Health, United States, 2012.

State	Opioid pain relievers	Rank	Long-acting/extended-release opioid pain relievers	Rank	High-dose opioid pain relievers	Rank	Benzodiazepines	Rank
Alabama	142.9	1	12.4	22	6.8	4	61.9	2
Alaska	65.1	46	10.7	31	4.2	26	24.0	50
Arizona	82.4	26	14.5	12	5.5	12	34.3	33
Arkansas	115.8	8	9.6	37	4.1	29	50.8	8
California	57.0	50	5.8	49	3.0	42	25.4	47
Colorado	71.2	40	11.8	24	4.1	31	28.0	44
Connecticut	72.4	38	14.1	13	5.4	13	46.2	11
Delaware	90.8	17	21.7	2	8.8	1	41.5	19
District of Columbia	85.7	23	13.7	17	5.7	10	38.4	24
Florida	72.7	37	11.3	26	6.6	5	46.9	10
Georgia	90.7	18	8.6	43	4.1	30	37.0	27
Hawaii	52.0	51	8.8	42	3.9	36	19.3	51
Idaho	85.6	24	10.3	33	3.9	34	29.1	42
Illinois	67.9	43	5.2	50	2.0	50	34.2	34
Indiana	109.1	9	10.7	30	4.9	20	42.9	17
Iowa	72.8	36	7.3	47	2.2	48	37.3	26
Kansas	93.8	16	10.3	34	4.0	32	38.9	23
Kentucky	128.4	4	11.6	25	5.0	19	57.4	5
Louisiana	118.0	7	7.8	46	3.6	39	51.5	7
Maine	85.1	25	21.8	1	5.6	11	40.7	22
Maryland	74.3	33	16.0	6	5.0	18	29.9	40
Massachusetts	70.8	41	14.9	8	3.5	41	48.8	9
Michigan	107.0	10	9.1	40	4.5	22	45.5	14
Minnesota	61.6	48	10.2	35	2.2	49	24.9	48
Mississippi	120.3	6	7.2	48	2.9	43	46.2	12
Missouri	94.8	14	9.5	38	3.5	40	42.6	18
Montana	82.0	27	14.0	15	4.4	23	33.7	35
Nebraska	79.4	28	7.8	45	2.3	46	35.0	32
Nevada	94.1	15	14.8	10	8.2	3	37.5	25
New Hampshire	71.7	39	19.6	3	6.1	7	41.2	21
New Jersey	62.9	47	11.3	27	5.8	9	36.5	28
New Mexico	73.8	35	12.7	21	3.8	38	31.5	37
New York	59.5	49	9.5	39	4.3	24	27.3	45
North Carolina	96.6	13	13.7	18	4.3	25	45.3	15
North Dakota	74.7	32	10.5	32	2.3	47	31.1	39
Ohio	100.1	12	11.2	28	4.2	27	41.3	20
Oklahoma	127.8	5	12.8	20	6.0	8	44.5	16
Oregon	89.2	20	18.8	4	5.2	16	31.4	38
Pennsylvania	88.2	21	14.9	9	5.4	14	46.1	13
Rhode Island	89.6	19	14.0	14	5.2	17	60.2	4
South Carolina	101.8	11	11.0	29	3.9	33	52.6	6
South Dakota	66.5	45	9.0	41	2.5	45	28.0	43
Tennessee	142.8	2	18.2	5	8.7	2	61.4	3
Texas	74.3	34	4.2	51	1.9	51	29.8	41
Utah	85.8	22	12.1	23	5.3	15	35.9	30
Vermont	67.4	44	13.9	16	4.7	21	35.5	31
Virginia	77.5	29	9.9	36	3.8	37	36.4	29
Washington	77.3	30	14.6	11	4.1	28	27.1	46
West Virginia	137.6	3	15.7	7	6.2	6	71.9	1
Wisconsin	76.1	31	13.1	19	3.9	35	33.4	36
Wyoming	69.6	42	8.0	44	2.7	44	24.1	49
Mean	87.3	–	12.0	–	4.5	–	39.2	–
Standard deviation	22.4	–	3.9	–	1.6	–	11.1	–
Coefficient of variation	0.26	–	0.32	–	0.36	–	0.28	–
Median	82.4	–	11.3	–	4.2	–	37.3	–
25th Percentile	71.7	–	9.5	–	3.7	–	31.1	–
75th Percentile	96.6	–	14.1	–	5.4	–	46.1	–
Interquartile ratio	1.3	–	1.5	–	1.4	–	1.5	–
Ratio of highest to lowest	2.7	–	5.3	–	4.6	–	3.7	–
Northeast	70.8	–	12.6	–	4.8	–	38.2	–
South	93.7	–	10.2	–	4.6	–	43.1	–
Midwest	88.4	–	9.3	–	3.4	–	38.1	–
West	68.0	–	9.6	–	3.9	–	27.9	–
U.S. rate	82.5	–	10.3	–	4.2	–	37.6	–

* Additional information on IMS data available at http://www.imshealth.com/deployedfiles/ims/global/content/insights/researchers/npa_data_brief.pdf.

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