

Concurrent Naloxone Dispensing Among Individuals with High-Risk Opioid Prescriptions, USA, 2015–2019



J Gen Intern Med 36(10):3254–6

DOI: 10.1007/s11606-021-06662-3

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In 2019, 49,860 drug overdose deaths in the USA involved opioids.¹ Naloxone can reverse the effects of an opioid overdose. While the *CDC Guideline for Prescribing Opioids for Chronic Pain* recommends that clinicians consider prescribing naloxone when factors that increase risk for opioid overdose are present, such as higher opioid dosages and the use of both opioid and benzodiazepines,² the extent of concurrent naloxone dispensing among this population is unknown. Previous research, limited to Medicare beneficiaries, indicated that very few patients received concurrent naloxone prescriptions.³ Similarly, naloxone prescriptions dispensed from retail pharmacies remain low.⁴ We examine concurrent naloxone dispensing among individuals with high-risk opioid prescriptions in the USA from 2015 to 2019.

METHODS

We use 2015 to 2019 IQVIA LRx data, representing new and refill prescriptions dispensed from 50,400 retail pharmacies (approximately 92% of all retail prescriptions) in the USA. Concurrent dispensing was defined as naloxone dispensed within 7 days of an opioid prescription (before or after) at least once annually.³ We examined concurrent naloxone dispensing among two groups at increased risk for opioid overdose: those receiving high-dose opioid prescriptions (≥ 50 morphine milligram equivalents (MME) per day) and those dispensed both an opioid and benzodiazepine prescription within 7 days. MME was calculated using published ratios.⁵ Concurrent naloxone dispensing was examined by patient age, sex and opioid prescription history (filling a prescription in the prior 365 days), payer, and U.S. Census region and urban/rural status based on prescriber location. Opioid-containing cough and cold formulations and buprenorphine products for opioid use disorder were excluded. All analyses were performed in Stata version 14.2. This study was exempt from human-subject regulations and institutional review board approval.

Received June 29, 2020

Accepted February 14, 2021

Published online March 9, 2021

RESULTS

The percentage of individuals with a high-dose opioid prescription and a concurrent naloxone prescription increased from 0.03% (5261 of 15.7 million patients) in 2015 to 2.76% (199,279 of 7.2 million patients) in 2019 (Fig. 1a). The percent of individuals with both an opioid and benzodiazepine prescription and a concurrent naloxone prescription increased from 0.01% (852 of 7.3 million patients) in 2015 to 0.82% (37,137 of 4.5 million patients) in 2019 (Fig. 1b).

The percentage of individuals receiving a high-dose opioid prescription with a concurrent naloxone prescription varied by age from 0.57% among those aged 15–24 years to 3.65% among those age 55–64 years (Table 1). Similar patterns, but lower levels, were observed among individuals with opioid and benzodiazepine prescriptions. Concurrent naloxone dispensing was highest in the Midwest and lowest in the West. Concurrent naloxone dispensing was lowest among uninsured and commercially insured individuals, those without an opioid prescription in the past 365 days, and those in rural counties.

DISCUSSION

Despite increases from 2015 to 2019, concurrent naloxone dispensing among patients at increased risk of opioid overdose remains low. In 2019, only 2.76% of individuals dispensed a high-dose opioid prescription and 0.82% of those with both an opioid and benzodiazepine prescription received a concurrent naloxone prescription.

Increases in concurrent naloxone dispensing during the study period may be due to the release of the *CDC Guideline for Prescribing Opioids for Chronic Pain* and recent laws requiring clinicians to co-prescribe naloxone when overdose risk factors are present.^{2, 6} Continued increase in concurrent naloxone dispensing is an important tool to reduce opioid overdose mortality. Given low levels of clinician knowledge and self-efficacy concerning counseling patients on overdose and naloxone,⁷ efforts such as academic detailing, virtual mentoring, and electronic health record alerts can further educate and prompt clinicians about naloxone prescribing.^{2, 8} Prioritizing these interventions among populations with the lowest concurrent naloxone dispensing (younger, uninsured and commercially insured, and patients in rural areas) may be particularly useful in expanding naloxone availability. These strategies may be most effective when implemented as part of

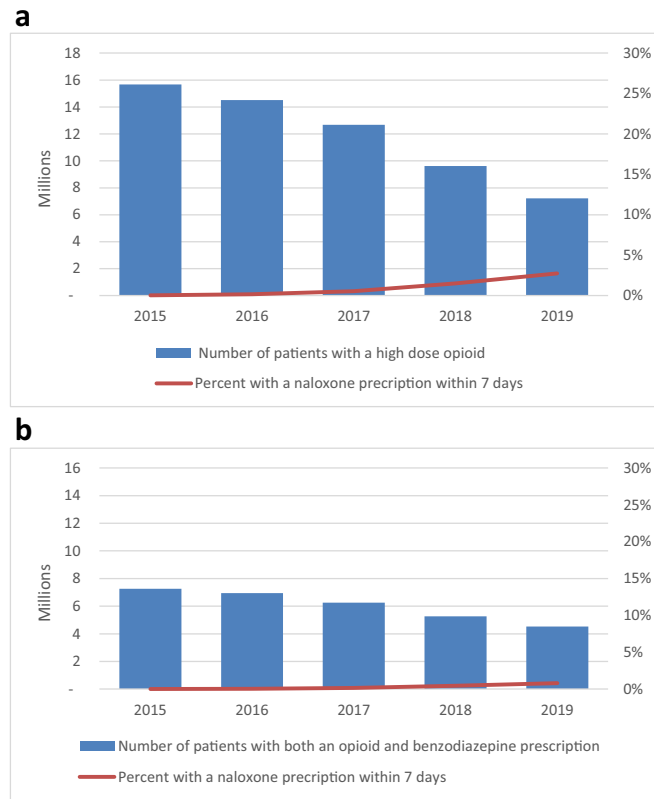


Figure 1 Percent of patients at an increased risk of overdose receiving a concurrently dispensed naloxone prescription within 7 days, USA, 2015–2019. **a** High-dose opioid (high-dose opioid prescriptions defined as ≥ 50 morphine milligram equivalents (MME) per day). **b** Both an opioid and benzodiazepine prescription (dispensed both an opioid and benzodiazepine prescription within 7 days). Concurrent naloxone dispensing was defined as naloxone dispensed within 7 days of an opioid prescription (before or after) at least once annually.

Table 1 Percent of Patients with an Opioid Prescription That Received a Concurrently Dispensed Naloxone Prescription, USA, 2019

	N	High-dose opioid*		N	Both an opioid and benzodiazepine prescription†	
		Within 7 days	Within 365 days		Within 7 days	Within 365 days
Overall	7,223,957	2.76%	3.58%	4,524,727	0.82%	1.27%
Age (years)						
0–14	25,091	1.19%	1.47%	22,273	0.68%	0.81%
15–24	370,029	0.57%	0.71%	134,876	0.36%	0.48%
25–34	661,554	1.39%	1.79%	306,477	0.60%	0.90%
35–44	942,529	2.47%	3.15%	570,328	0.81%	1.22%
45–54	1,269,015	3.28%	4.20%	798,530	0.99%	1.50%
55–64	1,790,413	3.65%	4.74%	1,127,434	1.03%	1.61%
65+	2,165,326	2.65%	3.51%	1,564,816	0.67%	1.07%
Sex						
Male	3,218,211	2.78%	3.57%	1,538,106	0.81%	1.25%
Female	4,005,746	2.74%	3.59%	2,986,628	0.83%	1.28%
Opioid prescription payer						
Self-pay	605,322	1.41%	1.97%	331,226	0.42%	0.64%
Medicaid	719,178	4.38%	5.67%	479,350	1.39%	2.12%
Medicare	1,896,385	4.51%	5.95%	1,478,539	1.08%	1.72%
Commercial	4,495,169	1.70%	2.23%	2,547,401	0.52%	0.79%
U.S. Census Region						
Northeast	1,014,199	2.21%	2.90%	641,045	0.64%	1.00%
West	1,507,668	1.81%	2.43%	971,991	0.58%	0.92%
South	3,188,254	2.37%	3.09%	2,140,159	0.65%	1.01%
Midwest	1,634,469	4.56%	5.90%	847,427	1.59%	2.44%
Urban/rural‡						
Metropolitan	6,547,022	2.77%	3.60%	3,985,600	0.83%	1.28%

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Table 1. (continued)

	N	High-dose opioid*		N	Both an opioid and benzodiazepine prescription†	
		Within 7 days	Within 365 days		Within 7 days	Within 365 days
Micropolitan	584,305	2.28%	3.10%	418,925	0.64%	1.02%
Noncore	239,939	2.13%	2.92%	232,040	0.60%	0.96%
Opioid prescription history						
New	2,805,975	0.44%	0.60%	1,374,755	0.25%	0.31%
Continuing	4,901,188	3.83%	4.99%	3,402,229	0.99%	1.57%

Concurrent naloxone dispensing was defined as naloxone dispensed within 7 days of an opioid prescription (before or after) at least once annually. Chi-square tests indicated that all differences were statistically significant at $p < 0.05$

*High-dose opioid prescriptions defined as ≥ 50 morphine milligram equivalents (MME) per day

†Dispensed both an opioid and benzodiazepine prescription within 7 days

‡2013 NCHS Urban-Rural Classification Scheme was used for the creation of the county type variables (https://www.cdc.gov/nchs/data_access/urban_rural.htm)

§New patients are those without an opioid prescription in the past 365 days. Continuing patients are those with at least one opioid prescription in the past 365 days

comprehensive efforts to address the opioid overdose epidemic.

Limitations include lack of data on prescriptions dispensed outside of retail pharmacies (i.e., hospital-affiliated pharmacies and federal facilities). Naloxone prescriptions would not be captured if individuals received naloxone from other sources, or if prescriptions were written but not filled. Lastly, we are unable to determine if the same clinician prescribed both the opioid and the naloxone prescription.

Concurrent naloxone dispensing remains low in the USA. Increased concurrent naloxone dispensing among individuals with high-risk opioid prescriptions provides an opportunity to save lives.

Gery P. Guy, PhD, MPH¹
 Andrea E. Strahan, PhD, MPP¹
 Tamara Haegerich, PhD¹
 Jan L. Losby, PhD, MSW¹
 Kathleen Ragan, MSPH¹
 Mary E. Evans, MD¹
 Christopher M. Jones, PharmD, DrPH²

¹Division of Overdose Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

²National Center for Injury Prevention and Control, CDC, Atlanta, USA

Corresponding Author: Gery P. Guy, Jr, PhD, MPH; Division of Overdose Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA (e-mail: irm2@cdc.gov).

Declarations:

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Conflict of Interest: The authors declare that they do not have a conflict of interest.

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