RESEARCH LETTER

Trends in Out-of-Pocket Costs for and Characteristics of Pharmacy-Dispensed Naloxone by Payer Type

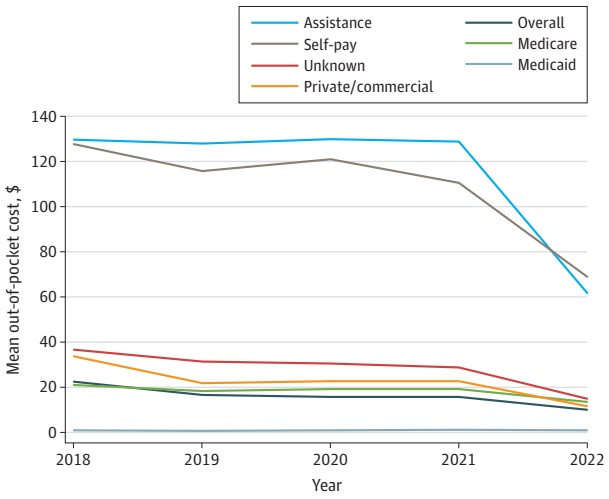
In 2021, 80 411 drug overdose deaths in the US involved opioids.[1] Naloxone and other opioid overdose reversal agents are life-saving medications that can reverse the effects of an opioid overdose. Naloxone dispensing remains low,[2] and potential barriers include patient cost.[3] Little is known about out-of-pocket (OOP) costs and how these costs vary by payer in recent years. This study examined mean yearly OOP cost for naloxone dispensed from retail pharmacies by payer between 2018 and 2022 and by prescription characteristics and payer in 2022.

Supplemental content

Methods | This study used the IQVIA Longitudinal Prescription database, which contains prescriptions from a sample of 48 700 retail pharmacies that dispense 93% of retail pharmacy prescriptions in the US. Naloxone prescriptions dispensed to adults (aged ≥18 years) from 2018 to 2022 were examined. We excluded prescriptions with missing or outlying costs (0.1% of prescriptions). Payer status was categorized as private or commercial, self-pay, Medicaid, Medicare, assistance (discount card, coupon, or voucher), and unknown.[4]

We examined trends in yearly mean OOP cost per prescription overall and by payer using weighted least-squares regressions, with statistical significance set at 2-sided $P < .05$. Mean OOP cost per prescription in 2022 was examined by patient age, generic or name-brand, and route of administration. The OOP costs were the sum individuals paid to pharmacies (including copayments, deductibles, and coinsurance), and adjusted to 2022 dollars using the Consumer Price Index.[4] All analyses were conducted using SAS version 9.4 (SAS Institute).

Figure. Yearly Mean Out-of-Pocket Cost by Payer for Retail Pharmacy-Dispensed Naloxone, 2018-2022



Authors' analysis of IQVIA Longitudinal Prescription database from January 2018 through December 2022. Sample includes naloxone prescriptions dispensed to adults (aged ≥18 years) in the US. The total number of naloxone prescriptions dispensed each year was 507 198 in 2018, 776 270 in 2019, 839 447 in 2020, 1 024 790 in 2021, and 1 457 769 in 2022. The assistance category indicates payment using a discount card (including non-Medicare senior discount cards), a coupon, or a voucher. Medicaid includes Medicaid managed care or fee-for-service Medicaid. Medicare indicates prescriptions paid for by Medicare Part D. Private or commercial included several forms of employer-sponsored health insurance, plans purchased through health insurance exchanges, and those administered by pharmacy benefit managers. Self-pay indicates a prescription was paid for entirely with cash. The unknown category was composed of prescriptions that were missing payer type or had "unspecified third party" or "unknown" for payer type. Naloxone included Evzio (0.4-mg and 2-mg doses), Kloxxado (8-mg doses), LifEMS Naloxone (2-mg doses), Narcan (4-mg doses), Zimhi (5-mg doses), and generic naloxone (0.4-mg, 2-mg, and 4-mg doses).

Results | Overall, the number of dispensed naloxone prescriptions increased 187.42% from 2018 (n = 507 198) to 2022 (n = 1 457 769). The percentage of prescriptions by payer changed from 2018 to 2022: Medicaid (29.62% to 34.08%), Medicare (36.73% to 32.76%), private or commercial (23.13% to 23.91%), unknown (7.50% to 6.87%), assistance (1.16% to 1.70%), and self-pay (1.86% to 0.68%). Overall, mean OOP cost per prescription decreased 55.5% from $22.51 (95% CI, $22.21-$22.81) in 2018 to $10.02 (95% CI, $9.99-$10.06) in 2022 ($P = .03$ for trend). By payer, OOP cost varied and trends over time were not significant: Medicaid had the lowest mean OOP cost across study years: $1.14 (95% CI, $0.98-$1.30) in 2018 and $0.89 (95% CI, $0.87-$0.92) in 2022. Private or commercial mean OOP costs decreased from $33.77 (95% CI, $32.86-$34.69) in 2018 to $11.56 (95% CI, $11.49-$11.62) in 2022. Medicare mean OOP costs decreased from $21.04 (95% CI, $20.62-$21.46) in 2018 to $13.50 (95% CI, $13.43-$13.56) in 2022. Self-pay and assistance had the highest mean OOP costs across study years, consistently above $110 between 2018 and 2021, and decreasing to $68.75 (95% CI, $67.57-$69.93) for self-pay in 2022 and $61.46 (95% CI, $61.05-$61.86) for assistance in 2022 (**Figure**).

Overall mean OOP cost varied by prescription characteristic in 2022: from $9.92 (95% CI, $9.89-$9.96) for generic to $10.57 (95% CI, $10.45-$10.68) for brand-name, from $7.12 (95% CI, $6.84-$7.40) for injectable to $10.05 (95% CI, $10.01-$10.08) for nasal, and from $7.36 (95% CI, $7.33-$7.40) for individuals aged 18 to 64 years to $17.56 (95% CI, $17.48-$17.64) for individuals aged 65 years or older. Among naloxone prescriptions for individuals aged 65 years or older, 71.32% were covered by Medicare, with a mean OOP cost of $18.72 (95% CI, $18.62-$18.82). Mean OOP costs for each prescription characteristic were highest among self-pay and assistance prescriptions (**Table**).

Discussion | The OOP costs for naloxone decreased between 2018 and 2022. Price negotiations, market competition, and shifts

Table. Mean OOP Cost by Prescription Type and Payer, 2022[a]

Characteristic	Primary insurance payer													
	Overall		Private or commercial		Self-pay		Medicaid		Medicare[b]		Assistance		Unknown	
	Mean OOP cost (95% CI), $	No. prescriptions	Mean OOP cost (95% CI), $	No. prescriptions	Mean OOP cost (95% CI), $	No. prescriptions	Mean OOP cost (95% CI), $	No. prescriptions	Mean OOP cost (95% CI), $	No. prescriptions	Mean OOP cost (95% CI), $	No. prescriptions	Mean OOP cost (95% CI), $	No. prescriptions
Overall	10.02 (9.99-10.06)	1 457 769	11.56 (11.49-11.62)	348 551	68.75 (67.57-69.93)	9919	0.89 (0.87-0.92)	496 865	13.50 (13.43-13.56)	477 533	61.46 (61.05-61.86)	24 784	14.86 (14.72-15.00)	100 117
Generic status														
Generic naloxone	9.92 (9.89-9.96)	1 235 731	10.62 (10.55-10.68)	317 378	71.49 (70.18-72.81)	7302	0.73 (0.71-0.75)	379 082	13.12 (13.05-13.19)	418 045	58.22 (57.84-58.59)	23 382	13.81 (13.67-13.95)	90 542
Brand-name naloxone[c]	10.57 (10.45-10.68)	222 038	21.15 (20.80-21.49)	31 173	61.10 (58.55-63.65)	2617	1.42 (1.35-1.48)	117 783	16.15 (15.92-16.38)	59 488	115.50 (113.51-117.50)	1402	24.81 (24.13-25.49)	9575
Route of administration														
Nasal	10.05 (10.01-10.08)	1 445 538	11.57 (11.50-11.64)	345 651	69.65 (68.44-70.86)	9580	0.90 (0.87-0.92)	493 823	13.58 (13.52-13.65)	472 841	61.89 (61.48-62.30)	24 454	14.91 (14.76-15.05)	99 189
Injectable	7.12 (6.84-7.40)	12 231	10.28 (9.73-10.83)	2900	43.40 (38.60-48.20)	339	0.61 (0.45-0.77)	3042	4.73 (4.47-4.99)	4692	29.21 (26.68-31.74)	330	9.58 (8.57-10.59)	928
Patient age, y														
18-64	7.36 (7.33-7.40)	1 077 513	11.82 (11.74-11.90)	271 189	69.06 (67.72-70.40)	7788	0.88 (0.86-0.91)	48 5091	6.63 (6.56-6.70)	206 323	61.93 (61.43-62.43)	17 105	14.84 (14.69-14.99)	90 017
≥65	17.56 (17.48-17.64)	380 256	10.65 (10.53-10.77)	77 362	67.63 (65.12-70.15)	2131	1.31 (1.12-1.50)	11 774	18.72 (18.62-18.82)	271 210	60.40 (59.70-61.11)	7679	15.07 (14.60-15.54)	10 100

Abbreviation: OOP, out of pocket.

[a] Authors' analysis of IQVIA Longitudinal Prescription database from 2022.

[b] Dual-eligible status was classified in the Medicare category. Among 477 533 naloxone prescriptions dispensed to adults with Medicare in 2022, 9765 (2.04%) were dispensed to individuals with dual-eligible status.

[c] Brand names include Narcan (4-mg doses) (n = 201 684), Evzio (2-mg doses) (n = 1), Zimhi (5-mg doses) (n = 664), and Kloxxado (8-mg doses) (n = 19 689).

in pharmacy benefit designs for insurance-paid prescriptions may have lowered OOP costs. Costs continued to vary by payer, and in 2022 were highest for self-pay and assistance prescriptions. High OOP costs among assistance prescriptions were associated with brand-name naloxone (Narcan). Costs for injectable naloxone were lower than nasal naloxone. Over-the-counter naloxone was approved in 2023, with a higher than the OOP cost for insurance-paid prescriptions but lower than for those without insurance.[5,6]

Higher OOP cost was observed among individuals aged 65 years or older, likely due to higher OOP requirements in Medicare. Higher proportions of Medicare beneficiaries aged less than 65 years receiving Part D low-income subsidies may contribute to lower OOP costs compared with those aged 65 years or older. Individuals aged 65 years or older had the largest relative increase in 2020 to 2021 drug overdose death rates,[1] highlighting the importance of expanding naloxone access among this population.

Study limitations include a lack of data on nonpharmacy-dispensed naloxone and pharmacy benefit designs, and that data were unweighted and not geographically representative as coverage is lower in certain regions. Supporting equitable access to naloxone by reducing OOP costs is an important component of overdose prevention, alongside public health efforts such as community naloxone distribution and harm reduction programs.

Xinyi Jiang, PhD, MS
Andrea E. Strahan, PhD, MPP
Kun Zhang, PhD
Gery P. Guy Jr, PhD, MPH

Author Affiliations: Division of Overdose Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia.

Accepted for Publication: December 9, 2023.

Published Online: January 29, 2024. doi:10.1001/jama.2023.26969

Corresponding Author: Xinyi Jiang, PhD, MS, Division of Overdose Prevention, Centers for Disease Control and Prevention, 4770 Buford Hwy, Atlanta, GA 30341 (qkz4@cdc.gov).

Author Contributions: Dr Jiang had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
Concept and design: All authors.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Jiang.
Critical review of the manuscript for important intellectual content: All authors.
Statistical analysis: Jiang.
Administrative, technical, or material support: Strahan.
Supervision: Strahan, Guy.

Conflict of Interest Disclosures: None reported.

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

Data Sharing Statement: See the Supplement.

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