



# Rapid Growth in Medicaid Spending on Medications to Treat Opioid Use Disorder and Overdose

*Lisa Clemans-Cope, Marni Epstein, and Genevieve M. Kenney*

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Spending on Medicaid-covered prescriptions for the treatment of opioid use disorder (OUD) and opioid overdose increased dramatically between 2011 and 2016, most notably after 2014. Between 2011 and 2016, Medicaid spending on OUD treatment prescriptions for buprenorphine, naltrexone, and naloxone increased 136 percent, from \$394.2 million to \$929.9 million. The average annual spending increase over that time was 19 percent nationally, with faster growth in the later years and a 30 percent increase between 2015 and 2016. Most of the money went to buprenorphine, for which spending increased 98 percent between 2011 and 2016, from \$380.9 million to \$753.9 million. But spending on the two other medications grew far more rapidly. Medicaid spending on naltrexone increased 1,072 percent, from \$13.3 million in 2011 to 156.3 million in 2016. Spending on naloxone increased 90,205 percent— from just \$0.02 million in 2011 to \$19.7 million in 2016. States with the highest overdose mortality rates in 2015—including Kentucky, Massachusetts, Ohio, Rhode Island, and West Virginia—have seen particularly fast growth in spending for OUD treatment over this period. These same states could be particularly hard hit by potential reductions in Medicaid spending growth.

[Senate bill H.R. 1628](#) reduces Medicaid spending through spending caps and restrictive growth rates on the caps.<sup>1</sup> The bill sets aside \$2 billion for opioid-related treatment. Whether this level of spending and growth is enough to meet the needs of states and their residents is an open question. In this brief, we examine Medicaid spending on one important treatment: prescription drugs commonly used to treat OUD and opioid overdose.

The availability of effective treatment is essential to staunching the growing opioid epidemic. Three medications are approved by the Food and Drug Administration (FDA) for the treatment of opioid use disorder: buprenorphine, methadone, and naltrexone. For people with OUD, buprenorphine and methadone reduce cravings and other withdrawal symptoms. Naltrexone stops the activity of opioids and blocks the effects of using either opioids or alcohol (SAMHSA 2011). Naloxone, another FDA-approved drug, is a life-saving medication that can stop or reverse the effects of an opioid overdose (Boyer 2012).

These drugs have well-documented benefits. Outcomes of buprenorphine treatment for OUD include decreased mortality (Degenhardt et al. 2009; Schwartz et al. 2013; Sordo et al. 2017), reduced morbidity (Romelsjö et al. 2010) including reduced HIV and hepatitis C infection (Lawrinson et al. 2008; Tsui et al. 2014), increased retention in OUD treatment (Mattick et al. 2014), decreased relapse events (e.g., hospitalizations, emergency department visits) (Clark et al. 2011), and reduced involvement with the justice system (Dunlop et al. 2017). Methadone treatment for OUD is associated with similar strong outcomes, while naltrexone has been effective with highly motivated patients (Schuckit 2016). Naloxone reduces opioid overdose and mortality, for which it is highly effective and safe (Wermeling 2015).

Access to effective treatment for opioid use disorder among low-income adults has been hampered by several factors, including lack of insurance coverage (Wu, Zhu, and Swartz 2016) and the cost of treatment (Mojtabai et al. 2014). Before the Affordable Care Act (ACA), many low-income adults lacked access to affordable health insurance that covered treatment for OUD, and uninsured people with OUD were less likely than those with insurance coverage to get treatment (Wu, Zhu, and Swartz 2016). In addition, the rates of treatment for OUD did not increase in the years before the ACA, even as rates of OUD rose (Saloner and Karthikeyan 2015). With the ACA, thousands of low-income adults with OUD in the 32 states (including DC) that expanded Medicaid gained access to buprenorphine, which is covered in all state Medicaid programs. In contrast, low-income uninsured adults with OUD in the states that have not expanded Medicaid under the ACA are less likely to have gained access to affordable treatment for OUD.

Prior research by Wen and colleagues (2017) finds that OUD treatment covered by Medicaid increased more in 2014 in states that expanded Medicaid under the ACA.<sup>2</sup> Subsequent research by Maclean and Saloner (2017) shows a larger increase in Medicaid-reimbursed prescriptions and in Medicaid coverage for treatment in expansion states relative to other states from 2010 and 2015, although no difference in the admissions to specialty treatment facilities. In a recent brief (Clemans-Cope et al. 2017), we found that buprenorphine receipt and spending in Medicaid increased during 2015 and 2016,<sup>3</sup> particularly in states that had expanded Medicaid by January 2014. In this brief, we extend these analyses to the other prescriptions related to OUD treatment.

We use state Medicaid drug utilization files from 2011 to 2016 to assess spending on buprenorphine, naltrexone, and naloxone prescriptions. Because methadone for the treatment of OUD is not reported in the drug utilization files, our total and per capita underreport spending on OUD treatments. We present annual figures and include data through the fourth quarter of 2016, the most recent information available. Following Wen and colleagues' research, we identify Medicaid spending

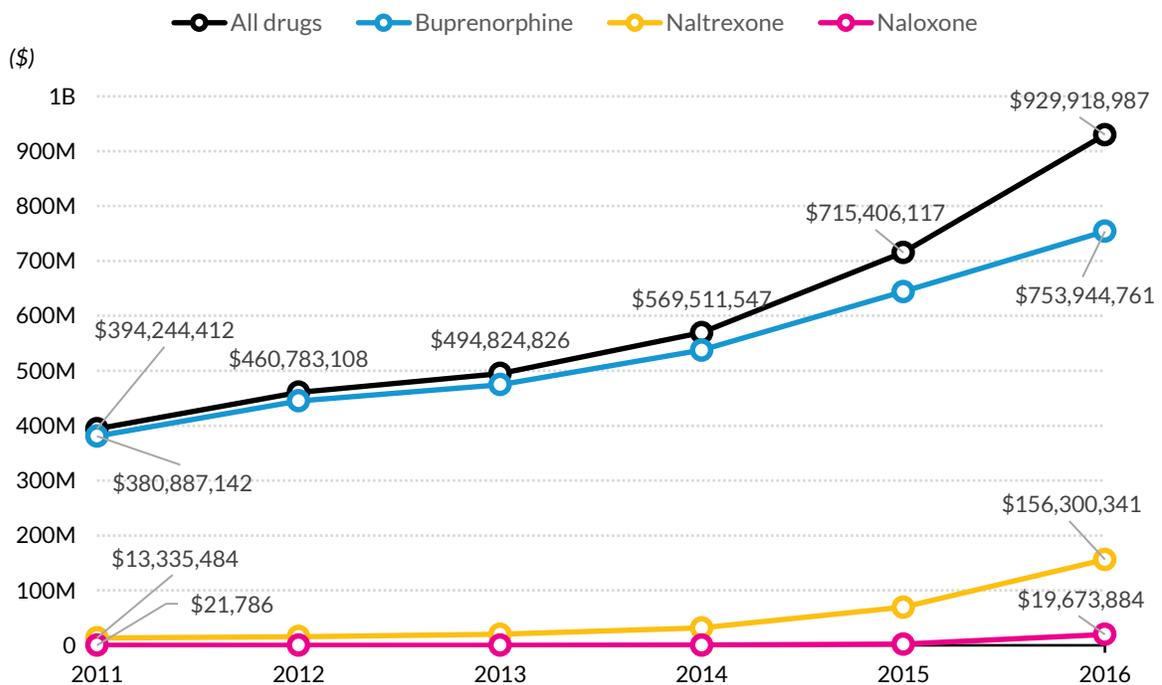
for the buprenorphine prescription medications approved to treat OUD. We also include Medicaid spending on naltrexone prescription medications approved to block the effects of opioids and naloxone prescriptions approved for the treatment of opioid overdose. States are grouped as nonexpansion states (19 states), expansion states (26 states, including DC, that expanded Medicaid on or before April 2014), and late-expansion states (6 states that expanded Medicaid after April 2014). We compute per capita spending on all three types of prescriptions (buprenorphine for OUD, naltrexone, and naloxone) using counts of Medicaid enrollees derived from the American Community Survey. In addition, we compute age-adjusted overdose mortality rates by state using data from the CDC WONDER to further explore states where increases in treatment may be needed.

## Findings

Medicaid-covered prescriptions for the treatment of OUD increased dramatically between 2011 and 2016, most notably after 2014 (figure 1). Between 2011 and 2016, Medicaid spending on prescriptions for OUD increased from \$394.2 million to \$929.9 million, a 135.9 percent increase. Spending increased 25.6 percent between 2014 and 2015 and 30.0 percent between 2015 and 2016. The average annual increase in spending was 19.0 percent.

FIGURE 1

Medicaid Spending on Buprenorphine, Naltrexone, and Naloxone Prescriptions for OUD



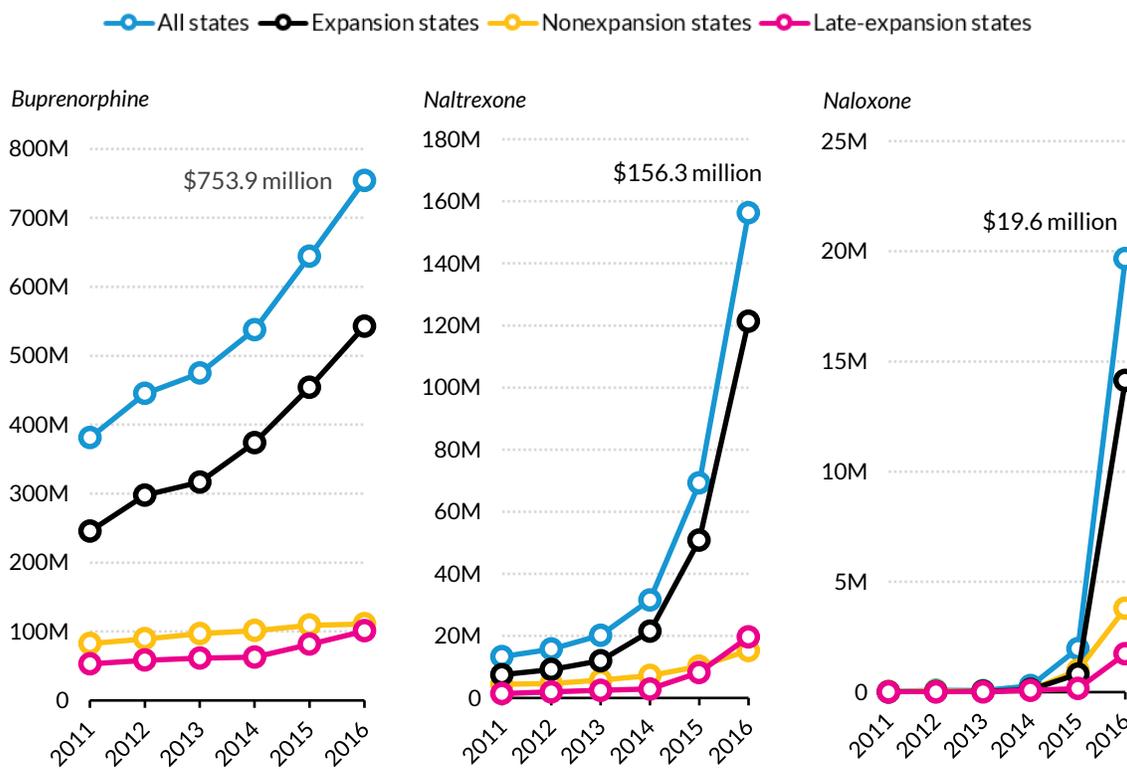
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Source: Urban Institute analysis of State Drug Utilization data from the Centers for Medicare & Medicaid Services.

From 2011 to 2016, most Medicaid spending on OUD prescriptions was for buprenorphine. Spending on buprenorphine grew from \$380.9 million to \$753.9 million, an increase of 97.9 percent over five years (figure 2). But spending on the two other medications grew even faster. Spending on naltrexone increased from \$13.3 million to \$156.3 million, a 1,072.1 percent increase. Spending on naloxone grew from just \$0.02 million (before the introduction of the easy-to-use nasal spray) to \$19.7 million, a massive increase of 90,205.0 percent.

**FIGURE 2**  
**Medicaid Spending on Buprenorphine, Naltrexone, and Naloxone Prescriptions for OUD, by State Expansion Status**

Millions of dollars



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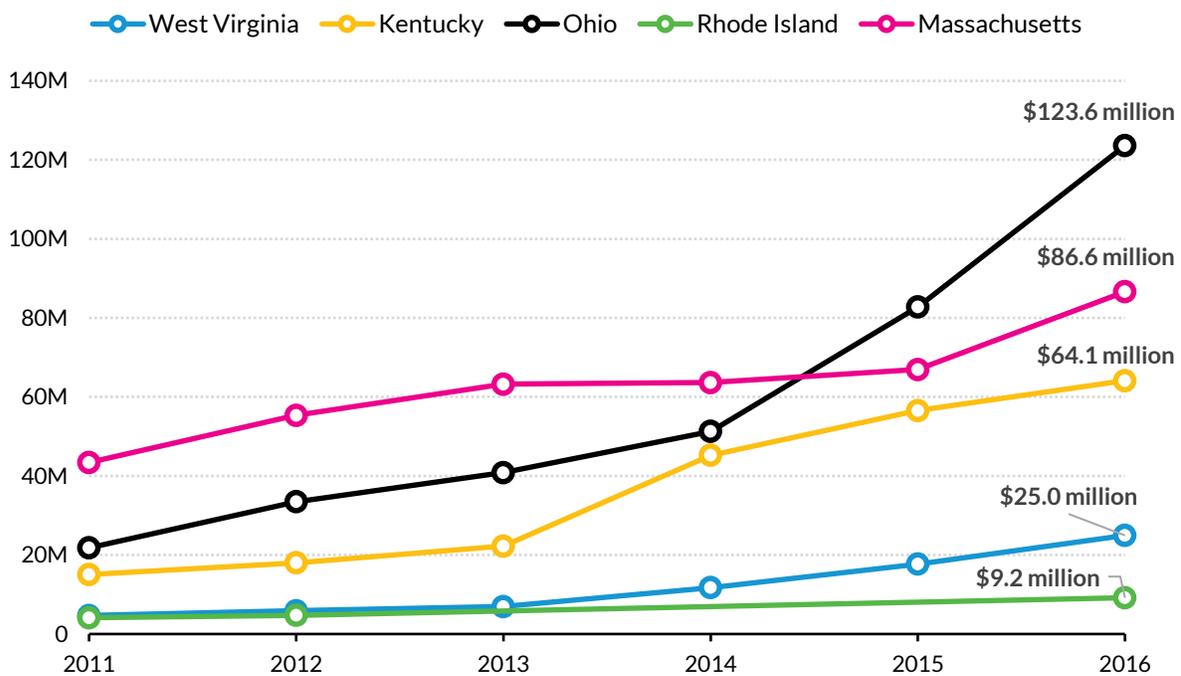
Source: Urban Institute analysis of State Drug Utilization data from the Centers for Medicare & Medicaid Services.

Certain states could be hit harder by reductions in federal Medicaid spending growth because of their fast growth in spending for OUD treatment. Seven states—California, Colorado, Nebraska, Nevada, Ohio, Washington, and West Virginia—increased Medicaid spending on OUD treatment medications by over 400 percent between 2011 and 2016.<sup>4</sup> In Illinois, Montana, and Nevada, Medicaid spending grew 200 percent or more between 2015 and 2016 alone.

Many states with high growth in spending on OUD treatment were Medicaid expansion states with high overdose mortality rates in 2015. Figure 3 shows Medicaid spending between 2011 and 2016 on

buprenorphine for OUD, naltrexone, and naloxone prescriptions for the five expansion states with the highest overdose mortality rates in 2015: West Virginia, Kentucky, Ohio, Rhode Island, and Massachusetts. West Virginia, with a 2015 overdose mortality rate of 43 per 100,000, had \$25.0 million in Medicaid-covered spending on prescriptions for OUD treatment in 2016, an increase of 431 percent from 2011. Kentucky, with an overdose mortality rate of 31 per 100,000, had \$64.0 million in Medicaid-covered spending on these prescriptions in 2016, an increase of 326 percent from 2011. Ohio, with an overdose mortality rate of 31 per 100,000, spent \$123.6 million on these prescriptions in 2016, an increase of 467 percent from 2011. Rhode Island, with an overdose mortality rate of 29 per 100,000, spent \$9.2 million on these prescriptions in 2016, an increase of 123 percent from 2011. Massachusetts, with an overdose mortality rate of 28 per 100,000, spent \$86.6 million on these prescriptions in 2016, an increase of 100 percent from 2011. In the remaining expansion states, the growth rate in Medicaid spending between 2011 and 2016 on medications to treat OUD ranged from 33 percent in Delaware to 1,834 percent in Nevada.

**FIGURE 3**  
**Medicaid Spending on Buprenorphine, Naltrexone, and Naloxone Prescriptions for OUD in Expansion States in 2016 with the Five Highest Drug Overdose Mortality Rates in the Previous Year**



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Source: Urban Institute analysis of State Drug Utilization data from the Centers for Medicare & Medicaid Services.

Notes: Rhode Island 2013–15 data are suppressed because of data quality concerns. New Hampshire, which has the second-highest death rate of all states, is not displayed because it is a late-expansion state.

## Discussion

This brief presents new spending data and analysis to give policymakers and the public perspective on the scope of Medicaid spending increases that states could face to address the opioid crisis in the coming years. We show a 135.9 percent increase in Medicaid-covered prescriptions related to OUD between 2011 and 2016, from \$394.2 million to \$929.9 million, suggesting a large, rapid, and ongoing expansion in treatment. Spending increased 30.0 percent increase between 2015 and 2016. These figures underestimate the total spending on OUD prescriptions in Medicaid since they do not include spending on methadone for OUD, a highly effective treatment that was not included in the data we used. Further, Medicaid spending on medications to treat OUD and overdose has increased much more in states that expanded Medicaid, raising the question of whether and how nonexpansion states are financing OUD treatment for low-income people. Even larger increases in Medicaid spending would likely be needed to meet future demand for OUD treatment.

Our analysis considers only the medication component of OUD treatment. The Senate bill sets aside \$2 billion for all opioid-related treatment, and the House bill sets aside \$45 billion, but one estimate projects that the cost of treating OUD and the comorbidities related to OUD, such as hepatitis C and HIV/AIDS, would be approximately \$183 billion over 10 years for people who would lose coverage under the health care reform bills.<sup>5</sup>

Among the states that would be most affected by a reduction in federal Medicaid spending are ones with the highest death rates from overdose in 2015. Thus, decreasing treatment and access to overdose-reversal drugs could further increase death and death rates in the hardest hit states. Data aggregated from state health departments indicate that opioid-related overdose mortality for 2016 rose to between 59,000 and 65,000 deaths, and preliminary data from 2017 show the overdose death rate is continuing to increase.<sup>6</sup>

As death rates rise, research suggests that the current levels of treatment are not meeting demand, even in Medicaid expansion states. Persistent capacity shortages limit access to effective OUD treatment (Jones et al. 2015), and a host of barriers to accessing treatment have not been addressed, such as regulations requiring extensive documentation, refill limitations, and reauthorization rules that make it difficult for providers to prescribe; lack of effective screening and referral to treatment; and coverage limitations. Yet increased spending on buprenorphine treatment for OUD, naltrexone, and naloxone under Medicaid may decrease overdose death, decrease relapse to drug use, improve retention in treatment, decrease involvement in the justice system, and improve health for people with opioid use disorder.

Further limiting access to treatment through large funding decreases could have devastating ramifications for individuals, families, and communities.

## Methods

Data on Medicaid prescriptions and spending are from the State Drug Utilization Data from the Centers for Medicare & Medicaid Services. This dataset is compiled through state reports on usage data for covered outpatient drugs that state Medicaid agencies pay for. The data include quarterly reports on the Medicaid amount reimbursed and the non-Medicaid amount reimbursed for each covered drug prescribed by state. Drugs are identified by National Drug Code numbers. All data with less than 11 counts are suppressed by the Centers for Medicare & Medicaid Services.

For the buprenorphine estimates, we compiled a list of all prescription drugs containing buprenorphine that are used to treat OUD. We used the National Drug Code Directory,<sup>7</sup> managed by the US Food and Drug Administration, to identify for all substances containing buprenorphine hydrochloride (or buprenorphine hydrochloride and naloxone hydrochloride) in their nonproprietary or substance name. We included the following drugs: Suboxone® sublingual tablets and films, Subutex® sublingual tablets, Bunavail® buccal films, the Probuphine® implant, Zubsolv® sublingual tablets, and the generic equivalents. We excluded the following prescription drugs because they are usually prescribed for pain management: Buprenex® injectable, Butrans® transdermal patches, Belbuca™ buccal films, and the generic equivalents. We also included drugs containing buprenorphine in the proprietary name, active ingredient, or application number based on information from the US Food and Drug Administrations' Orange Book<sup>8</sup> to include relevant drugs that have been discontinued. We used the same inclusion criteria as above for discontinued substances containing buprenorphine.

For the naltrexone estimates, we compiled a list of all prescription drugs containing naltrexone with a primary indication of use to treat alcohol dependence and to block the effects of exogenously administered opioids. Since naltrexone is also FDA-approved for the treatment of alcohol use disorder, some prescriptions may relate to the treatment of alcohol rather than opioid use disorder; there was no way to distinguish. We included Vivitrol® and all generic forms of naltrexone hydrochloride (strength: 50mg/1).

For the naloxone estimates, we compiled a list of all prescription drugs containing naloxone and not buprenorphine. We included Narcan® nasal sprays, Evzio® injections, and naloxone hydrochloride generic injections. Drugs containing naloxone and Pentazocine were excluded since these drugs are used primarily to treat pain.

We used the consumer price index for US medical care developed by the Bureau of Labor Statistics to adjust all dollar amounts to 2016 November dollars.<sup>9</sup> All quarters were adjusted using an adjuster pertaining to the middle month of the quarter.

States were grouped by Medicaid expansion status as either nonexpansion states, expansion states, or late expansion states. Late expansion states are those that expanded Medicaid after April 2014, as defined by McMorro and colleague (2017).<sup>10</sup> Expansion states are Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Hawaii, Illinois, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, North Dakota,

Ohio, Oregon, Rhode Island, Vermont, Washington, and West Virginia. Late-expansion states are New Hampshire (8/15/2014), Pennsylvania (1/1/2015), Indiana (2/1/2015), Alaska (9/1/2015), Montana (1/1/2016), and Louisiana (7/1/2016).

Medicaid dollars spent by states and by expansion status are calculated as totals and per 1,000 Medicaid enrollees. We used edited coverage data (Lynch et al. 2011) from the American Community Survey,<sup>11</sup> administered by the US Census Bureau, to compute nonelderly adult Medicaid enrollment estimates by year. We used 2015 estimates as a proxy for 2016 enrollment since the 2016 American Community Survey is not yet released.

Overdose deaths by state for 2015 are from the Centers for Disease Control and Prevention's National Center for Health Statistics Underlying Cause of Death files, which were accessed through the CDC WONDER Online Database.<sup>12</sup> Deaths are from all drug-induced causes and are not specific to opioid overdose. We calculated age-adjusted death rates per 100,000 people by expansion group and by state using the direct method and the 2000 US Standard Population.<sup>13</sup>

## Limitations

Our study has several limitations. First, as indicated above, the estimates do not include any spending on methadone, one of the most important and long-standing effective treatments for OUD. Second, there may be inconsistency across states in reporting of the State Drug Utilization Data. Third, we cannot distinguish prescriptions written for Medicaid enrollees newly gaining coverage under the expansion from those written for existing enrollees. Fourth, the per capita estimates might not reflect treatment relative to need, since prevalence of the need for OUD treatment varies across states, as does access to methadone for OUD, which can substitute for buprenorphine OUD treatment. Also, the per capita estimates are derived from aggregate data, not individual-level data, and thus are a rough measure of prescriptions per individual.

Fifth, increases in buprenorphine prescriptions in Medicaid may have been offset somewhat by decreases in buprenorphine prescriptions among other payers and the uninsured; however, as noted above, the total volume of buprenorphine prescriptions across all payment types increased every year from 2012 to 2016 (IMS Institute for Healthcare Informatics 2016). Sixth, these data aggregate prescriptions across all strengths, dosage forms, and routes of administration and thus contain considerable heterogeneity. Seventh, the estimates from survey data of nonelderly adult Medicaid enrollment by year do not accurately match the quarterly Medicaid caseloads represented by the prescription data.

## Notes

1. See Matthew Buettgens, "Senate health bill would lower the Medicaid per capita cap rate, causing greater state budget shortfalls," *Urban Wire* (blog), Urban Institute, June 21, 2017, <http://www.urban.org/urban-wire/senate-health-bill-would-lower-medicaid-capita-cap-rate-causing-greater-state-budget-shortfalls>.
2. As noted in Clemans-Cope et al. (2017), these increases in treatment access were constrained by limited physician prescribing capacity.
3. "Table 1A: Medicaid and CHIP: November and December 2016 Monthly Enrollment Updated February 2017," <https://www.medicaid.gov/medicaid/program-information/downloads/updated-december-2016-enrollment-data.pdf>.
4. State-by-state data on total Medicaid spending can be downloaded from [www.urban.org](http://www.urban.org).
5. Richard G. Frank, "Ending Medicaid expansion will leave people struggling with addiction without care," *The Hill*, June 20, 2017, <http://thehill.com/blogs/pundits-blog/healthcare/338579-ending-medicaid-expansion-will-leave-people-struggling-with>.
6. Josh Katz, "Drug Deaths in America Are Rising Faster Than Ever," *The Upshot*, New York Times, June 5, 2017, <https://www.nytimes.com/interactive/2017/06/05/upshot/opioid-epidemic-drug-overdose-deaths-are-rising-faster-than-ever.html>.
7. "National Drug Code Directory," US Food and Drug Administration, accessed May 2, 2017, <https://www.fda.gov/drugs/informationondrugs/ucm142438.htm>.
8. "Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations," US Food and Drug Administration, accessed May 2, 2017, <https://www.accessdata.fda.gov/scripts/cder/ob/>
9. "Measuring Price Change for Medical Care in the CPI," Bureau of Labor Statistics, accessed May 2, 2017, <https://www.bls.gov/cpi/cpifact4.htm>; "Top Picks: CPI-All Urban Consumers (Current Series)," Bureau of Labor Statistics, accessed May 2, 2017, <https://data.bls.gov/cgi-bin/surveymost?cu>.
10. The Kaiser Family Foundation tracks state action on the Medicaid expansion; see "Status of State Action on the Medicaid Expansion Decision, accessed May 2, 2017, <http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>.
11. "American Community Survey," US Census Bureau, accessed May 2, 2017, <https://www.census.gov/programs-surveys/acs/>.
12. Centers for Disease Control and Prevention, National Center for Health Statistics. "Underlying Cause of Death 1999-2015" on CDC WONDER Online Database, released December, 2016. Data are from the Multiple Cause of Death Files, 1999-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Apr 26, 2017 1:27:27 PM.
13. The 2000 US Standard Population is the most recently published US Standard Population. Population weights are from Klein and Schoenborn (2001).

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## About the Authors

**Lisa Clemans-Cope** is a senior researcher and health economist in the Health Policy Center at the Urban Institute. Her areas of expertise include substance use disorder treatment, health spending, access to and use of health care, private insurance, Medicaid and CHIP programs, dual eligibles, health reform legislation and regulation, and health-related survey and administrative data. She has led qualitative and quantitative research projects examining the impacts of policies aimed at improving diagnosis and treatment of individuals with substance use disorders. Clemans-Cope holds a BA in economics from Princeton University and a doctorate in health economics from the Johns Hopkins Bloomberg School of Public Health.

**Marni Epstein** is a research assistant in the Health Policy Center. Her current works focuses on treatment of substance use disorder under Medicaid and quantitative analysis of Medicaid administrative claims data. She received a BA from Johns Hopkins University.

**Genevieve M. Kenney** is a senior fellow and codirector of the Health Policy Center at the Urban Institute. She has been conducting policy research for more than 25 years and is a nationally renowned expert on Medicaid, the Children's Health Insurance Program, and broader health insurance coverage and health issues facing low-income children and families.

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