



# Medicaid Coverage of Effective Treatment for Opioid Use Disorder

## Trends in State Buprenorphine Prescriptions and Spending since 2011

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Increased receipt of buprenorphine treatment for opioid use disorder (OUD) under Medicaid could improve outcomes for those with OUD in Medicaid expansion states residents for relapse, retention in OUD treatment, involvement in the justice system, health, and mortality. Under the Affordable Care Act (ACA), many 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, many low-income uninsured adults with OUD in nonexpansion states still lack access to affordable treatment. The 129.4 percent increase in buprenorphine prescriptions between 2013 and 2016 and the 41.2 percent increase in buprenorphine prescriptions per enrollee in Medicaid expansion states suggest a large-scale expansion in access to effective treatment. Yet persistent capacity shortages and other barriers to accessing treatment raise the question of whether treatment is meeting demand, even in those states.

As drug overdose deaths, mainly caused by illicit and prescription opioids,<sup>1</sup> rise sharply in the United States, stakeholders are focusing on whether people with opioid use disorder (OUD) can access effective treatment.<sup>2</sup> The age-adjusted death rate from drug overdose nearly tripled (a 2.7-fold increase) between 1999 and 2015, and it shows no sign of slowing down.<sup>3</sup> The problem of OUD extends beyond addiction and death; negative outcomes on employment, health, residential instability, education, child welfare, and criminal justice system involvement cost the United States approximately \$92 billion a year (Murphy and Polsky 2016).

The availability of effective treatment is essential to staunching the growing opioid epidemic. While methadone is an effective treatment for OUD, much of the federal efforts to expand treatment availability have focused on buprenorphine because the regulatory environment makes methadone more difficult to access (e.g., patients receive medication only at clinics that are certified opioid treatment programs, and these are often far from patients). Since the approval of buprenorphine medication for the treatment of opioid use disorder in 2002, it has become a mainstay in treatment for OUD (Volkow et al. 2014).

Often combined with naloxone to deter misuse, buprenorphine reduces the symptoms of opioid withdrawal and craving (SAMHSA 2011) and blocks or reduces the effect of other opioids (Center for Substance Abuse Treatment 2004). It is provided by prescription and can be taken conveniently and privately at home or wherever patients are. The well-documented outcomes of buprenorphine treatment for OUD include decreased mortality (Schwartz et al. 2013), 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).

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 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, many low-income uninsured adults with OUD in the states that have not expanded Medicaid under the ACA still lack access to affordable treatment.

Access to buprenorphine treatment for OUD has also been limited by multiple supply-side barriers. Prescribers of buprenorphine for OUD must receive a special waiver and are limited in the number of patients they can treat with buprenorphine (GAO 2016). Relatively few physicians have obtained such waivers—for example, only 3 percent of primary care physicians in 2012 (Rosenblatt et al. 2015)—leaving almost all states with very large buprenorphine treatment shortages (Jones et al. 2015), and many hard-hit states have buprenorphine treatment waiting lists.<sup>4</sup> The physicians who have waivers to prescribe buprenorphine are treating substantially fewer patients than allowed (Stein et al. 2016).

In addition, a 2013 survey of state Medicaid agencies finds that while every state covered buprenorphine, patients face barriers to obtaining buprenorphine for OUD (Rinaldo and Rinaldo 2013): at least 44 states require prior authorization, 9 require documentation of counseling with a buprenorphine prescription, 11 have lifetime limits (ranging from 12 to 36 months) and 14 have maximum daily limits after six months of use ranging from 8 to 16 milligrams, which may be too low for some individuals.<sup>5</sup> And, some state Medicaid agencies have additional requirements such as

documentation of attempting alternative therapies before trying buprenorphine treatment (i.e., “step therapy”), refill limits, reauthorization, and other rules that make it hard to provide buprenorphine (Rinaldo and Rinaldo 2013).

Two federal changes in 2016 are likely to help expand access to buprenorphine treatment by expanding the number of patients for whom designated providers can prescribe buprenorphine<sup>6</sup> (81 FR 44711, 2016) and letting states allow nurse practitioners and physician assistants to prescribe buprenorphine.<sup>7</sup> In addition, several states have adopted policies aimed at increasing access to effective treatment (including buprenorphine treatment) for OUD, including efforts in New Hampshire, Massachusetts, New York, New Jersey, and Virginia.<sup>8</sup>

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>9</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. We build on these analyses by continuing to track buprenorphine receipt and spending in Medicaid in 2015 and 2016, a period that saw additional expansion of Medicaid<sup>10</sup> and increases in Medicaid enrollment,<sup>11</sup> particularly in states that had expanded Medicaid by January 2014.

We use quarterly state Medicaid drug utilization files going back to the first quarter of 2011 to assess the volume of and spending on buprenorphine prescriptions. We include data up through the third quarter of 2016, the most recent information available. (See below for a description of methods.) Following Wen and colleagues’ research, we identify prescription counts and Medicaid spending for the buprenorphine prescription medications approved to treat OUD. 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). In addition, we compute per capita buprenorphine prescriptions using counts of Medicaid enrollees derived from the American Community Survey.

## Findings

Medicaid-covered buprenorphine prescriptions increased dramatically in expansion states beginning in the first quarter of 2014 with increases observed up through the second quarter of 2016, then an apparent decrease of 7.2 percent reported in the third quarter of 2016 (figure 1). It is unclear whether the observed decrease reflects data reporting delays and may be revised in the future or reflects a change in the trend. We will report any changes in the future.

Between the fourth quarter of 2013 (before the major coverage provisions of the ACA were implemented in January 2014), and the third quarter of 2016, the number of buprenorphine prescriptions funded by Medicaid increased from 296,860 to 681,097 in states that expanded Medicaid, a 129.4 percent increase. Over the same period, buprenorphine prescriptions increased from 93,601 to

121,016, or by 29.3 percent, in states that did not expand Medicaid. Buprenorphine prescriptions generally grew more slowly in the late-expansion states in 2014 relative to expansion states but began to rise somewhat in the second and later quarters of 2015. (Trends are similar for the late-expansion states when the last three expanders—Alaska, Montana, and Louisiana—are excluded.) Between the first quarter of 2015 and the third quarter of 2016, buprenorphine prescriptions increased 75.1 percent in late-expansion states, compared with 10.6 percent in nonexpansion states. Medicaid-covered buprenorphine spending showed similar growth patterns (figure 2).

FIGURE 1

**Total Buprenorphine Prescriptions for OUD by State Expansion Status**

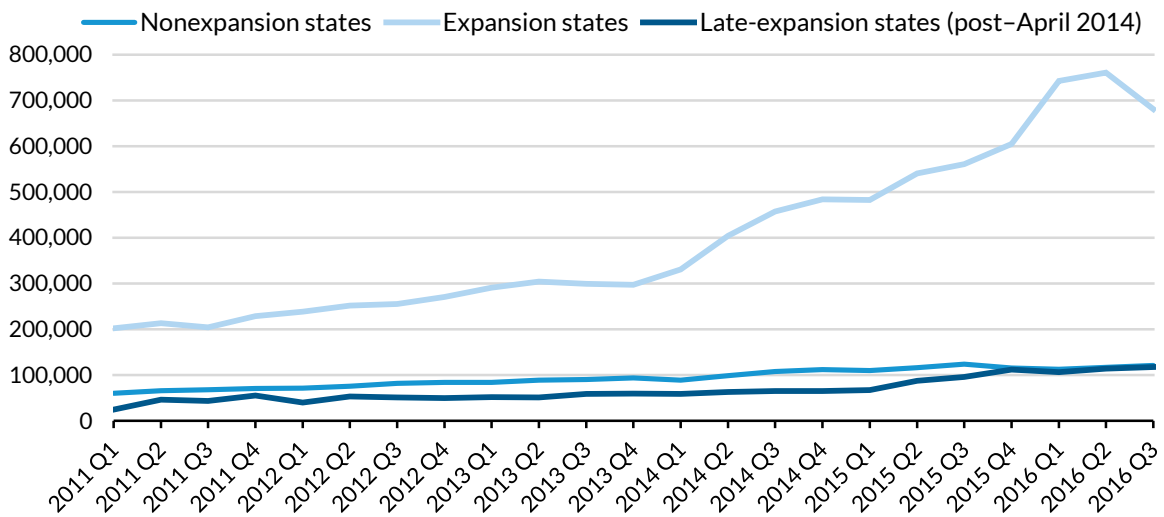
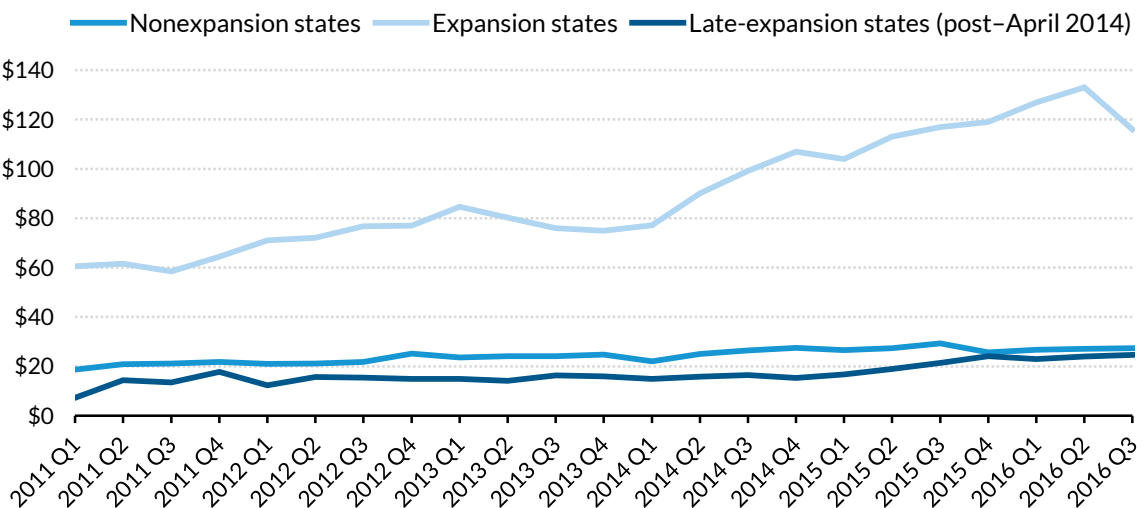


FIGURE 2

**Total Medicaid Spending on Buprenorphine Prescriptions for OUD by State Expansion Status**

Millions of dollars

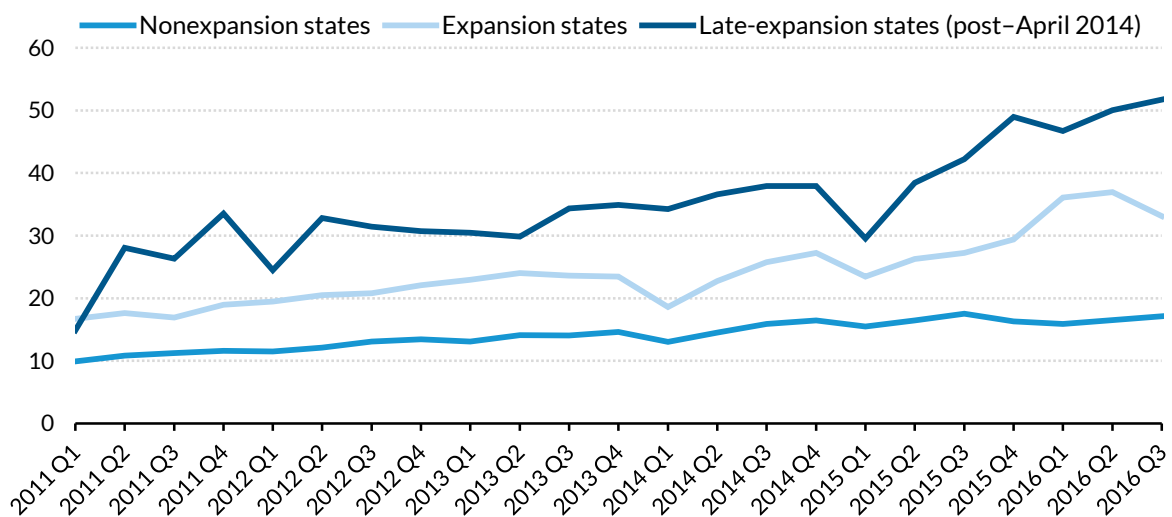


Some of the increase in Medicaid-covered buprenorphine prescriptions under the ACA is likely for prescriptions that would have been covered by another payment arrangement. However, the volume of buprenorphine prescriptions (for pain management and for OUD) across all payers has increased every year since 2012, from 8.2 million prescriptions in 2012 to 12.5 million in 2016 (IMS Institute for Healthcare Informatics 2016). This trend suggests that only a portion of the increase in Medicaid-covered buprenorphine prescriptions was the result of substitution from other payers.

While we find substantially larger increases in Medicaid-covered buprenorphine prescriptions and spending in expansion states in recent years relative to nonexpansion states, we do not know whether volume is keeping up with the need for treatment among Medicaid enrollees. To inform this question, we assessed trends in Medicaid-covered buprenorphine prescriptions for OUD per 1,000 nonelderly adult Medicaid enrollees, over the same period, as shown in figure 3. We find that the number of buprenorphine prescriptions per 1,000 enrollees was higher in Medicaid expansion states before the eligibility expansion and that it increased more than in states that did not expand Medicaid. The number of buprenorphine prescriptions per 1,000 enrollees in expansion states rose from 23.4 in the fourth quarter of 2013 to 33.1 in the third quarter of 2016, a 41.2 percent increase.<sup>12</sup> In comparison, buprenorphine prescriptions per 1,000 enrollees in nonexpansion states increased from 14.6 to 17.1, or by 17.2 percent, over that period. Buprenorphine prescriptions per 1,000 Medicaid enrollees were higher in the late-expansion states than the other state groups in all quarters examined, and growth still accelerated for these states after the first quarter of 2015. The number of buprenorphine prescriptions per 1,000 enrollees in late-expansion states rose from 34.9 in the fourth quarter of 2013 to 51.7 in the third quarter of 2016, a 48.2 percent increase.<sup>13</sup>

**FIGURE 3**

**Buprenorphine Prescriptions for OUD per 1,000 Medicaid Enrollees by State Expansion Status**



## Discussion

The increased receipt of buprenorphine treatment for OUD under Medicaid creates the potential for people with opioid use disorder in expansion states to decrease their relapses, improve their retention in treatment, decrease their involvement in the justice system, improve their health, and decrease their mortality. The 129.4 percent increase in buprenorphine prescriptions between 2013 and the third quarter of 2016, along with the 41.2 percent increase in buprenorphine prescriptions per enrollee in Medicaid expansion states over the same period, suggests a large-scale expansion in access to effective treatment in those states. Further, the large increases in the volume of buprenorphine prescriptions across all payers in every year since 2012 suggest that the increase in Medicaid-covered buprenorphine prescriptions is not merely the result of substitution from other payers.

Yet the question of whether treatment is meeting demand, even in states with Medicaid expansion, remains. 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. We will continue to study whether and how access to effective OUD treatment is changing in Medicaid and to assess the impacts of expanded treatment on individuals and their families, communities, and Medicaid programs.

## 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 number of prescriptions written, 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.

We compiled a list of all prescription drugs containing buprenorphine that are used to treat OUD. We used the National Drug Code Directory,<sup>14</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>15</sup>

to include relevant drugs that have been discontinued. We used the same inclusion criteria as above for discontinued substances containing buprenorphine.

We used the consumer price index for US medical care developed by the Bureau of Labor Statistics to adjust all dollar amounts to 2016 August dollars.<sup>16</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 McMorrow and colleague (2017).<sup>17</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).

Prescription counts and 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>18</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.

## Limitations

Our study has several limitations. First, there may be inconsistency across states in reporting of the State Drug Utilization Data and there may be an update to the most recent data that could cause an upward adjustment in the most recent data used here, the third quarter of 2016. Second, we cannot distinguish prescriptions written for Medicaid enrollees newly gaining coverage under the expansion from those written for existing enrollees. Third, the per capita estimates might not reflect treatment relative to need, since prevalence of the need for buprenorphine treatment varies across states, as does access to other forms of MAT such as methadone for OUD, which can substitute for buprenorphine OUD treatment. The states that expanded Medicaid may have done so partly because their residents had greater treatment needs; we will explore this possibility in future work. Also, the per capita estimates are derived from aggregate data, not individual-level data, and thus are a rough measure of prescriptions per individual. Fourth, 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). Fifth, these data aggregate prescriptions across all strengths, dosage forms, and routes of administration and thus contain considerable heterogeneity. Sixth, 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

<sup>1</sup> “Drug Overdose Death Data,” Centers for Disease Control and Prevention, last updated December 16, 2016, <https://www.cdc.gov/drugoverdose/data/statedeaths.html>.

<sup>2</sup> The highest increase was for deaths involving fentanyl and other synthetic opioids excluding methadone, with a 13.1-fold increase between 1999 and 2015. But overdose deaths from other drugs have climbed over the period as well—benzodiazepines (7.7-fold increase), heroin (6.6-fold increase), and prescription opioid pain relievers (5.6-fold increase). Overall, the number of overdose deaths in the United States (involving opioid drugs and analgesics, heroin and nonmethadone synthetics, benzodiazepines, and cocaine) increased between 1999 and 2015 from 16,849 deaths to 52,404 deaths (authors’ calculations based on “National Overdose Deaths from Select Prescription and Illicit Drugs,” National Institute on Drug Abuse, [https://www.drugabuse.gov/sites/default/files/overdose\\_data\\_1999-2015.xls](https://www.drugabuse.gov/sites/default/files/overdose_data_1999-2015.xls)).

<sup>3</sup> See “Drug Overdose Deaths in the United States, 1999–2015,” Data Brief 273 (Atlanta: Centers for Disease Control and Prevention, n.d.), data tables, [https://www.cdc.gov/nchs/data/databriefs/db273\\_table.pdf](https://www.cdc.gov/nchs/data/databriefs/db273_table.pdf); and “VSRR—Quarterly provisional estimates for selected indicators of mortality, 2015–Quarter 3, 2016,” 2016 Q1, age-adjusted, <https://data.cdc.gov/NCHS/VSSRR-Quarterly-provisional-estimates-for-selected-/489q-934x#column-menu>.

<sup>4</sup> Christine Vestal, February 11, 2016, “Waiting Lists Grow for Medicine to Fight Opioid Addiction,” *Stateline* (blog), The Pew Charitable Trusts, <http://pew.org/1Q9w1mc>.

<sup>5</sup> Clinical consensus currently supports a 2–24 mg/day maintenance dose range for buprenorphine <https://ascjournal.biomedcentral.com/articles/10.1186/s13722-017-0072-2>.

<sup>6</sup> “Medication Assisted Treatment for Opioid Use Disorders,” 81 FR 44711 § 2016, <https://www.federalregister.gov/documents/2016/07/08/2016-16120/medication-assisted-treatment-for-opioid-use-disorders>.

<sup>7</sup> “Qualify for Nurse Practitioners (NPs) and Physician Assistants (PAs) Waiver,” Substance Abuse and Mental Health Services Administration, last updated February 28, 2017, <https://www.samhsa.gov/medication-assisted-treatment/qualify-nps-pas-waivers>.

<sup>8</sup> See “Treatment Services,” New Hampshire Department of Health and Human Services, accessed May 8, 2017, <https://www.dhhs.nh.gov/dcbcs/bdas/treatment.htm>; Christine Vestal, “Nurses Step In to Boost Treatment for Opioid Addiction,” *Stateline* (blog), The Pew Charitable Trusts, August 31, 2016, <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/08/31/nurses-step-in-to-boost-treatment-for-opioid-addiction>; “Governor Cuomo Signs Legislation to Combat the Heroin and Opioid Crisis,” Office of the Governor, press release, June 22, 2016, <https://www.governor.ny.gov/news/governor-cuomo-signs-legislation-combat-heroin-and-opioid-crisis>; S.B. 3, New Jersey Legislature, 217th (January 30, 2017), [http://www.njleg.state.nj.us/2016/Bills/S0500/3\\_R1.PDF](http://www.njleg.state.nj.us/2016/Bills/S0500/3_R1.PDF); and Virginia Department of Medical Assistance Services (2016).

<sup>9</sup> As noted, these increases in treatment access were constrained by limited physician prescribing capacity.

<sup>10</sup> “Where States Stand on Medicaid Expansion Decisions,” National Academy for State Health Policy, accessed May 2, 2017, <http://www.nashp.org/states-stand-medicaid-expansion-decisions/>.

<sup>11</sup> “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>.

<sup>12</sup> The slight discrepancy between the percentage increase listed and the increase calculated using the numbers of prescriptions is the result of rounding errors.

<sup>13</sup> During the expansion period for these states, between the first quarter of 2015 and the third quarter of 2016, the number of buprenorphine prescriptions per 1,000 enrollees increased from 29.5 to 51.7 in the late expanding states, a 75.1 percent increase.



- <sup>14</sup> “National Drug Code Directory,” US Food and Drug Administration, accessed May 2, 2017, <https://www.fda.gov/drugs/informationondrugs/ucm142438.htm>.
- <sup>15</sup> “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/>
- <sup>16</sup> “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>
- <sup>17</sup> 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-medicare-under-the-affordable-care-act/?currentTimeframe=0&sortModel=%7B%22colld%22:%22Location%22,%22sort%22:%22asc%22%7D>
- <sup>18</sup> “American Community Survey,” US Census Bureau, accessed May 2, 2017, <https://www.census.gov/programs-surveys/acs/>.

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