BlueCross BlueShield

bhi Blue Health Intelligence

THE HEALTH OF AMERICA® REPORT

AMERICA'S OPIOID EPIDEMIC

AND ITS EFFECT ON THE NATION'S COMMERCIALLY-INSURED POPULATION

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EXECUTIVE SUMMARY

BACKGROUND

The opioid addiction epidemic is one of America's foremost health crises. According to the most recent statistics from the Centers for Disease Control and Prevention (CDC), opioids (including prescription opioids and heroin) kill more than 33,000 people annually, which is more than any year on record and more than at the peak of the human immunodeficiency virus (HIV) epidemic.[1] Opioid abuse/overdose is considered a leading cause of shortened life expectancy in the U.S.[2]

The nation's opioid epidemic reflects a complex set of circumstances. The pattern of opioid prescribing—including dose and duration—and the patient's risk factors of age, gender and condition are major determinants of whether a patient becomes dependent.[3] As cases of opioid use disorder skyrocket among the commercially insured, this data shed new light on the specific prescribing practices and use that pose a significant threat to patient health.

THE ANALYSIS

Twenty-one percent of Blue Cross and Blue Shield (BCBS) commercially-insured members filled at least one opioid prescription in 2015. Data also show BCBS members with an opioid use disorder diagnosis spiked 493 percent over a seven year period. The report analyzes medical claims from BCBS commercially-insured members diagnosed with opioid abuse disorder from 2010 through 2016.[4] Specifically, it looks at the degree of prescription opioid use—in terms of the dose and duration of opioid prescriptions—and how this relates to opioid dependence.

[1] Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths — United States, 2010–2015. MMWR Morb Mortal Wkly Rep. ePub: 16 December 2016.

[2] http://www.npr.org/sections/health-shots/2016/12/08/504667607/life-expectancy-in-u-s-drops-for-first-time-in-decades-report-finds.

[3] Dose and duration was calculated from claims data by Axial Healthcare. See Methodology Notes.

[4] Members diagnosed with cancer or who were undergoing palliative or hospice care were excluded from this analysis.

Summary of Key Findings

- Patients who fill high-dosage opioid prescriptions have much higher rates of opioid use disorder than patients who fill low-dose prescriptions across both short and long duration regimens.
- Women age 45 and older have higher rates of opioid use disorder than men. Males younger than 45 have higher rates of opioid use disorder than females. Females fill more opioid prescriptions than males across all age groups.
- Long-duration prescription opioid use and opioid use disorder align geographically, with the highest rates in the South and the Appalachian Region.
- The 65 percent rate of increase in the use of medication-assisted treatments does not match the 493 percent rate of increase in opioid use disorder diagnoses from 2010 through 2016. States that have experienced the greatest growth in the use of medication-assisted treatments are not necessarily the areas most impacted by opioid use disorders. Higher rates of treatment relative to opioid use disorder occur in New England and lower rates occur in the South and parts of the Midwest.
- While opioids are more likely to be prescribed for select acute short term conditions, prescriptions for chronic conditions are twice as likely to extend past 45 days and three times as likely to reach a "high dose" level which, as noted above, leads to higher levels of opioid use disorder.

STUDY FOUND...

21% OF BCBS COMMERCIALLY-INSURED MEMBERS FILLED **AT LEAST ONE OPIOID PRESCRIPTION IN 2015**

493% INCREASE OPIOID USE DISORDER DIAGNOSES **FROM 2010 THROUGH 2016**

WOMEN AGE 45 AND OLDER HAVE HIGHER RATES OF OPIOID USE DISORDER THAN MEN

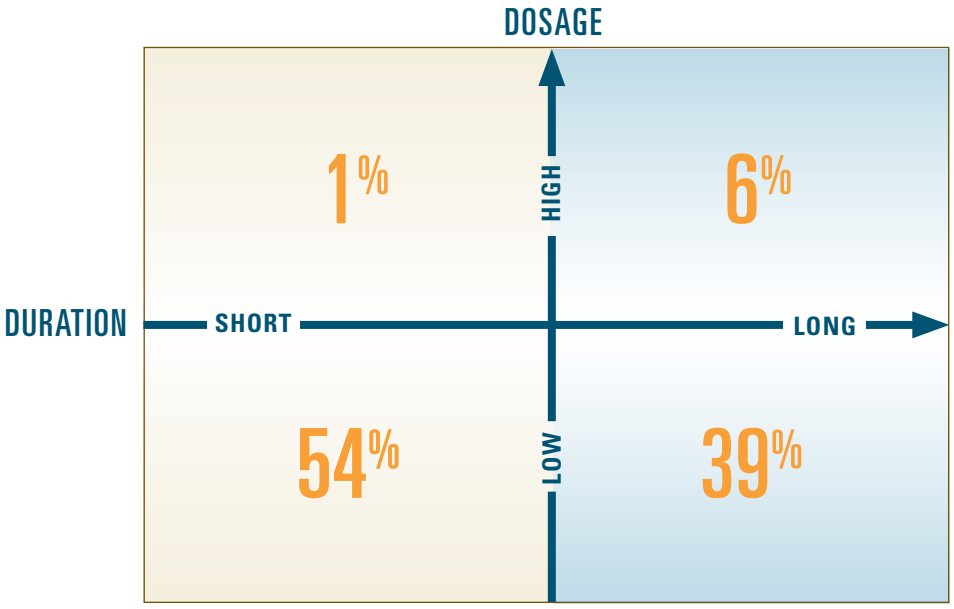
LOWER RATES OF TREATMENT IN **THE SOUTH & PARTS OF THE MIDWEST**

Opioid Prescription Regimens by Dose and Duration

In this report, prescription regimens were categorized on the basis of duration (number of days) and dosage (strength), consistent with CDC convention. For duration, regimens greater than 90 days are considered long duration and those less than 90 days short duration. High dosage is defined in terms of the morphine-equivalent daily dose being more than 100 while low dosage is defined as a morphine-equivalent daily dose of less than 100.

For the 6.3 million unique patients in 2015 in this data set, prescription regimens break out as shown in Exhibit 1.

EXHIBIT 1: PRESCRIPTION OPIOID USE BY DOSE AND DURATION IN 2015



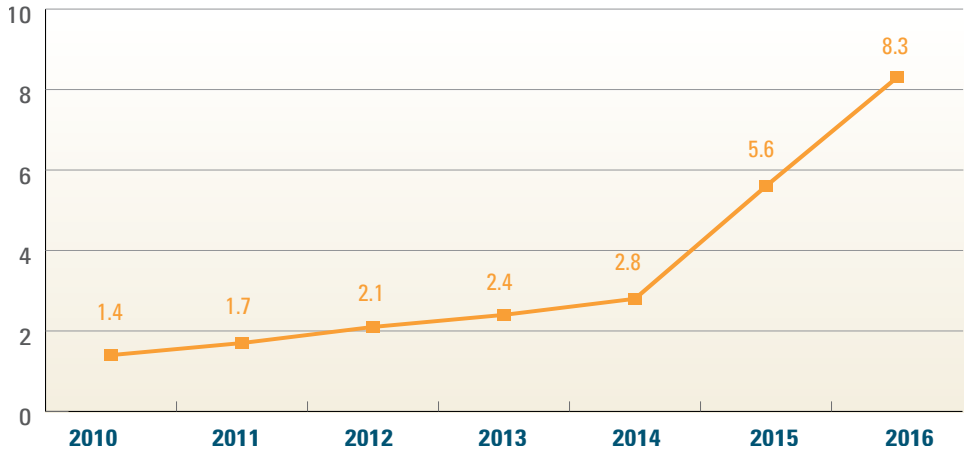
LEGEND:	HIGH DOSAGE: More than 100 MEDD*	SHORT DURATION: Regimens less than 90 days
	LOW DOSAGE: Less than 100 MEDD*	LONG DURATION Regimens more than 90 days

* Morphine-equivalent daily dose

Opioid Use Disorder and Type of Prescription Regimen

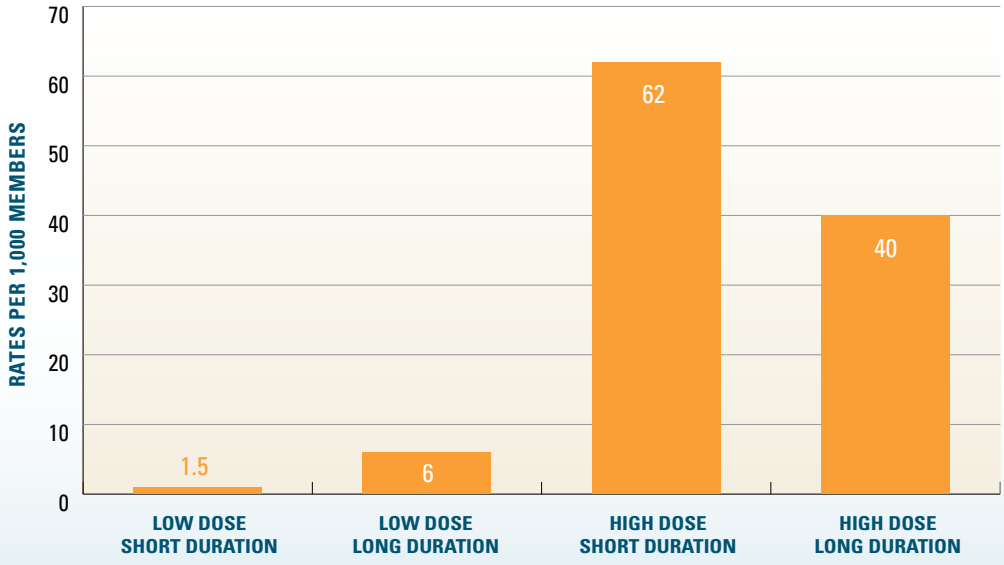
The diagnosis of opioid use disorder increased 493 percent from 2010 to 2016, with a marked increase in diagnoses starting in 2014 (see Exhibit 2). This rise was driven potentially by increased awareness of the disorder. Nearly one percent of commercially-insured BCBS members were diagnosed with opioid use disorder in 2016.

EXHIBIT 2: RATE OF OPIOID USE DISORDER (PER 1,000 MEMBERS)



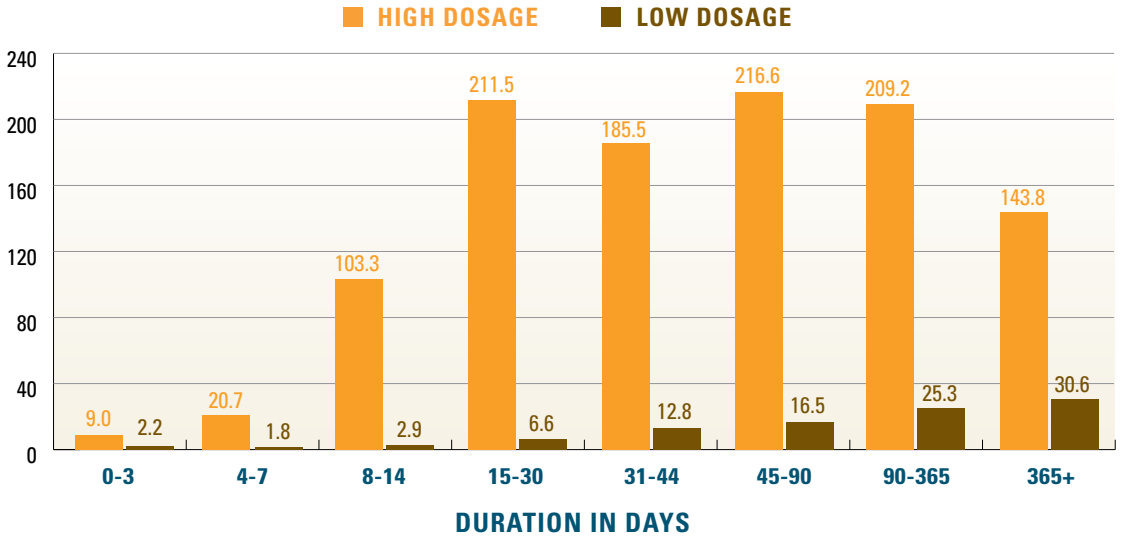
Patients with high-dosage opioid prescriptions have much higher rates of opioid use disorder than patients with low-dose prescriptions—even if they are for short durations (see Exhibit 3). An opioid use disorder diagnosis is more than 40 times as likely in patients who fill high-dose, short-duration regimens than it is for those who fill low-dose, short-duration regimens. An opioid use disorder diagnosis is seven times more likely in patients who fill high-dose, long-duration regimens than it is for those who fill low-dose, long-duration regimens.

EXHIBIT 3: RATE OF MEMBERS DIAGNOSED WITH OPIOID USE DISORDER AND THEIR OPIOID USAGE BY DOSAGE AND DURATION IN 2015 (PER 1,000 MEMBERS)



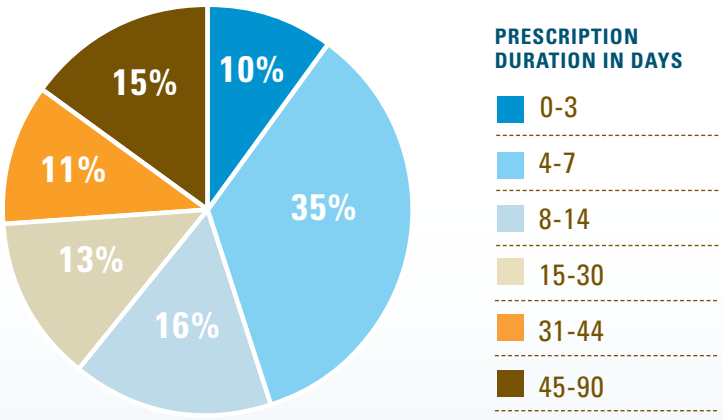
A closer look at prescription dosage and duration reveals patterns in the relationship between rates of opioid use disorder (see Exhibit 4). A preliminary analysis of opioid prescription regimens show that regimens of longer durations and higher dosages are associated with higher rates of opioid use disorder.

EXHIBIT 4: RATE OF DIAGNOSED OPIOID USE DISORDER BY PRESCRIPTION DOSAGE AND DURATION CATEGORY IN 2015 (PER 1,000 MEMBERS*)



Policy debates on preventing opioid use disorder have focused recently on patterns of short-term opioid use. The breakout of durations less than 90 days (55 percent of total users) is shown in Exhibit 5. Approximately 45 percent of this group had prescriptions of seven or fewer days with the most common duration being four and seven days.

EXHIBIT 5: PERCENT OF MEMBERS WITH PRESCRIPTION DURATION LESS THAN 90 DAYS IN 2015

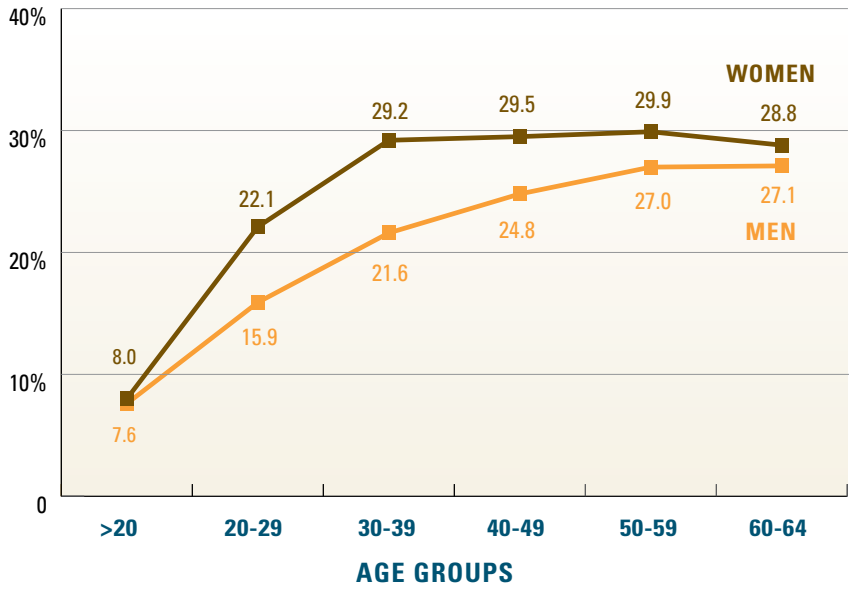


*Rates denote opioid use disorder per 1,000 members within each dose/duration category. The same individual with different prescription regimens can be assigned to multiple categories. Future analysis will look at opioid use disorder rates for members using only their highest dose/duration prescription.

Opioid Use and Gender

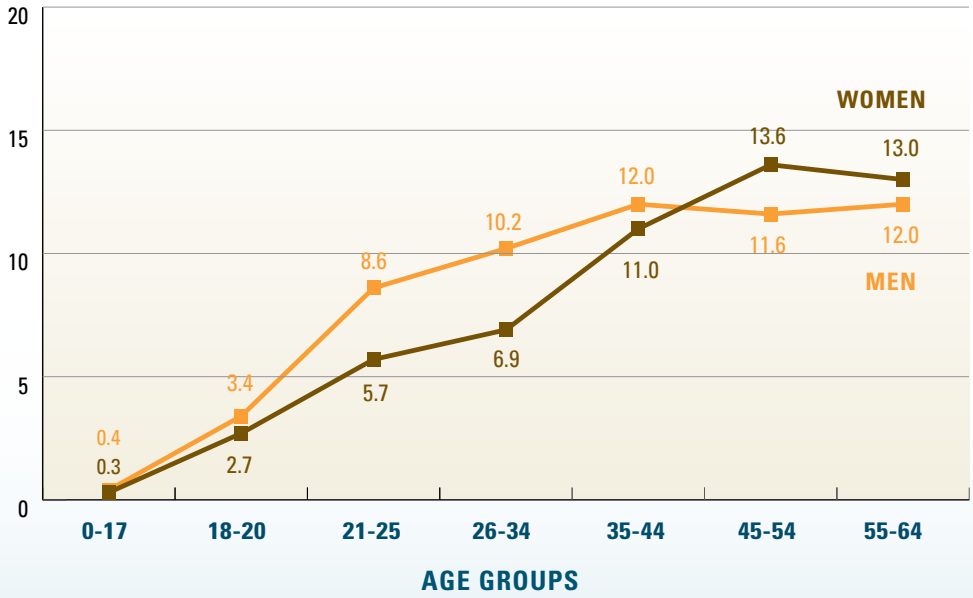
Women have higher rates of prescription opioid use than men (see Exhibit 6).

EXHIBIT 6: PERCENT OF OPIOID PRESCRIPTIONS BY GENDER AND AGE IN 2015



However, younger women have lower rates of opioid use disorder than men. This trend reverses after the age of 45 for women (see Exhibit 7), consistent with the finding that women age 45 and older also have longer prescription durations.

EXHIBIT 7: RATE OF OPIOID USE DISORDER BY AGE AND GENDER IN 2016 (PER 1,000 MEMBERS)



Regional Variation in Opioid Use Disorder

The highest rates of prescription opioid use and long-duration prescription opioid use occur in the South and lower Midwest, consistent with areas with highest rates of opioid use disorder (compare Exhibits 9 and 10).

EXHIBIT 8:
PERCENT OF MEMBERS WHO FILLED AT LEAST ONE OPIOID PRESCRIPTION IN 2015*

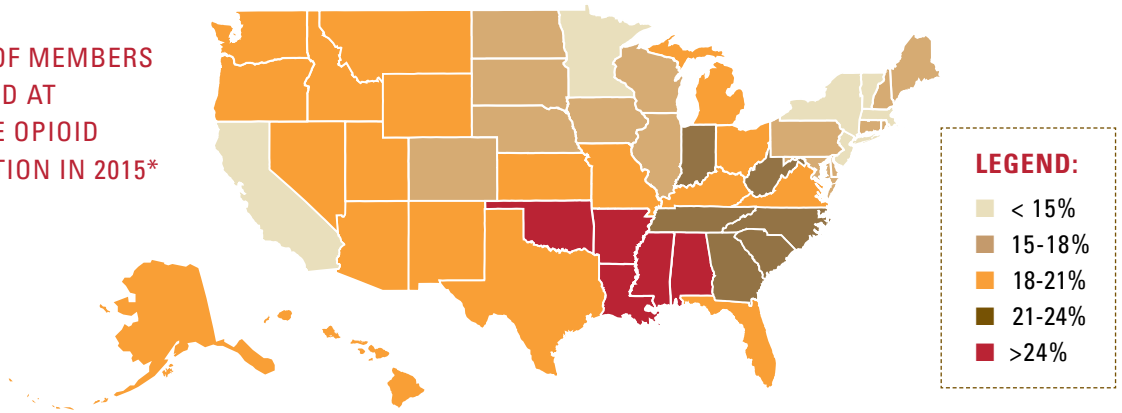


EXHIBIT 9:
PERCENT OF MEMBERS WHO WERE ON A LONG DURATION OPIOID REGIMEN IN 2015*

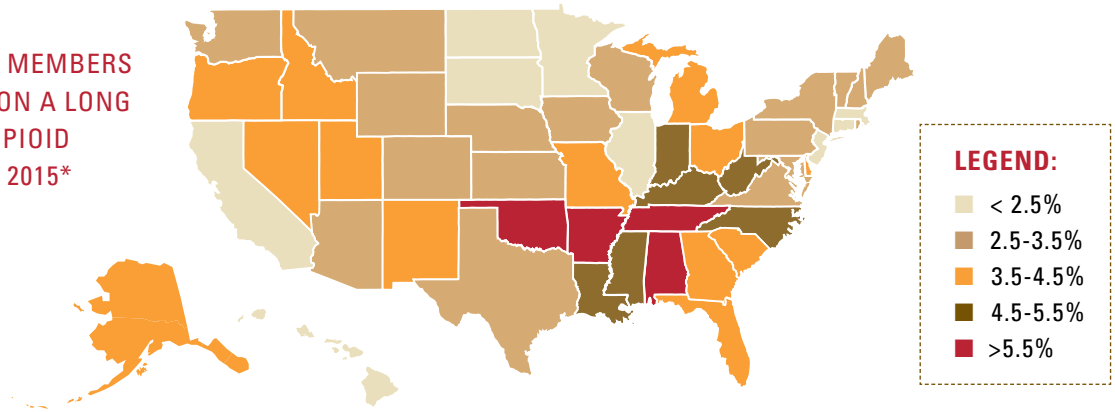
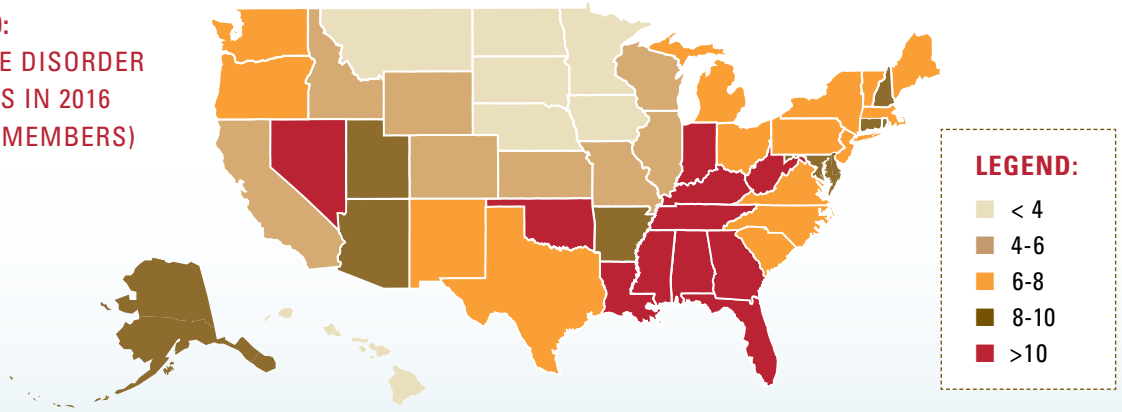


EXHIBIT 10:
OPIOID USE DISORDER DIAGNOSES IN 2016 (PER 1,000 MEMBERS)

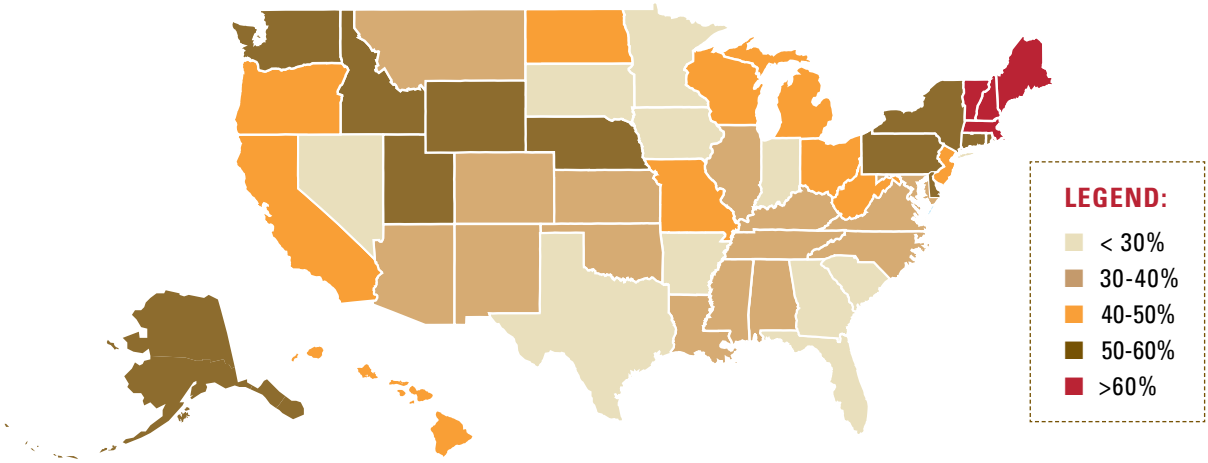


*See appendix for specific state numbers.

Medication-Assisted Treatments Trends

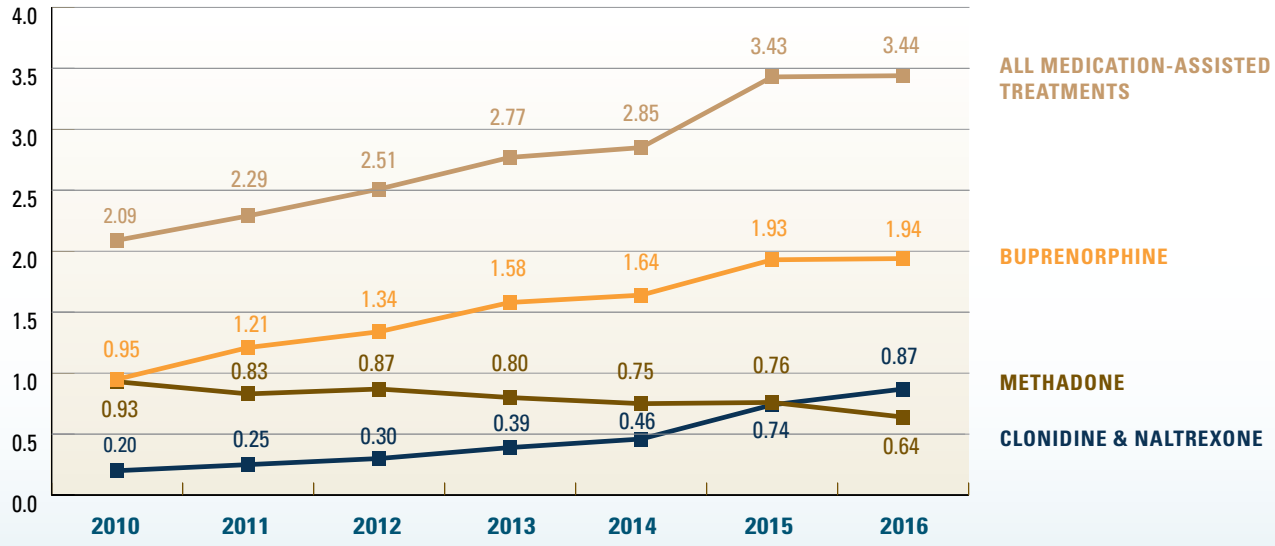
Though critical to treating opioid use disorder, the use of medication-assisted treatments (e.g., methadone) does not always track with rates of opioid use disorder (compare Exhibits 10 and 11). For example, New England leads the nation in use of medication-assisted treatments but it has lower levels of opioid use disorder than other parts of the country.

EXHIBIT 11: PERCENT OF MEMBERS WITH OPIOID USE DISORDER WHO RECEIVED MEDICATION-ASSISTED TREATMENT IN 2016



From 2010 to 2016, use of medication-assisted treatments has increased 65 percent overall, reflecting the use of buprenorphine. However, the rate of increase in the use of medication-assisted treatments does not match the rate of increase in opioid use disorder diagnoses displayed in Exhibit 2.

EXHIBIT 12: PREVALENCE OF MEDICATION-ASSISTED TREATMENTS (PER 1,000 MEMBERS)



Pain-Related Conditions and Opioid Prescription Regimens

To better understand the relationship between pain-related health conditions and prescription opioid use, patients with select conditions[5] were examined for prescription duration and dosage (see Exhibit 13). The rate of prescribing is higher for patients with acute conditions than for chronic conditions, but prescription duration is longer for patients with chronic conditions. In addition, patients with chronic conditions have a higher likelihood of receiving a high-dose prescription (which is due in part to a patient's increased insensitivity to opioids).[6] The combination of long-duration, high-dose prescription regimens increases the likelihood of opioid use disorder (see Exhibit 3).

EXHIBIT 13: PRESCRIPTION REGIMEN FOR SELECTED CONDITIONS IN 2015 – SHORT-TERM CONDITIONS VERSUS CHRONIC CONDITIONS

SELECT HIGH PREVALENCE SHORT-TERM CONDITIONS FOR WHICH OPIOIDS OFTEN ARE PRESCRIBED	RATE OF PRESCRIPTIONS FILLED	LESS THAN 45 DAYS	MORE THAN 45 DAYS	PERCENT WHO RECEIVED A HIGH DOSE
Appendicitis	63%	93%	7%	1%
Kidney Stones	46%	82%	18%	2%
Dental Disease and Other Oral Disorders	32%	83%	17%	1%
Gall Bladder Inflammation and Stones	46%	85%	15%	2%

SELECT HIGH PREVALENCE CHRONIC CONDITIONS FOR WHICH OPIOIDS OFTEN ARE PRESCRIBED	RATE OF PRESCRIPTIONS FILLED	LESS THAN 45 DAYS	MORE THAN 45 DAYS	PERCENT WHO RECEIVED A HIGH DOSE
Osteoarthritis, All Spine	22%	46%	54%	6%
Osteoarthritis, Non-Spine	37%	34%	66%	9%
All Vertebral and Other Back Disorders	19%	46%	54%	6%
Other Bone and Joint Disorders	14%	54%	46%	5%

[5] These conditions were selected because they are high volume and highly associated with pain. The list should not be interpreted to mean all acute and chronic conditions have similar prescription patterns.

[6] Volkow, Nora D. and McLellan, A. Thomas. Opioid Abuse in Chronic Pain — Misconceptions and Mitigation Strategies. N Engl J Med 2016.

CONCLUSION

The BCBS Health Index® identifies substance use disorder as the fifth most impactful condition affecting the health of commercially-insured members in the U.S. Addressing the opioid epidemic is one of America's greatest public health challenges. Understanding the trends of prescription opioid use, which is both cause and effect of opioid addiction, helps providers, researchers and policymakers better confront this crisis. It will take a collaborative effort of health providers, insurers, communities and all levels of government working together to develop solutions that effectively meet community needs. For more information about BCBS companies' local efforts to combat the opioid epidemic, visit https://bcbs.com/about-us/capabilities-initiatives/addressing-americas-opioid-addiction.

METHODOLOGY NOTES

This is the thirteenth study of the Blue Cross Blue Shield: The Health of America Report series, a collaboration between the Blue Cross Blue Shield Association and Blue Health Intelligence, which uses a market-leading claims database to uncover key trends and insights into healthcare affordability and access to care. In addition, Axial Healthcare, an independent company, provided pharmacy consultancy services to BCBSA for this report.

The report examines the medical and pharmacy claims of more than 30 million BCBS commercially-insured members per year from 2010 to 2016 to measure the number of members with an ICD code-based diagnosis of opioid use disorder and prescriptions for medication-assisted therapy (MAT). All eligible members under age 65 were included. Pharmacy data for prescription opioid use was limited to the year 2015 and 29.2 million members to create a year point-in-time snapshot of prescription opioid use. Members with diagnoses of cancer or services for palliative care and hospice care were excluded.

Dose and duration of opioid regimens were provided by Axial Healthcare. Dose and duration regimens were calculated for each member level based on pharmacy data, which included the potency of the opioid prescribed, the dosage and the number of doses to be taken per day. The total number of unique opioid regimens and the number of unique members who were prescribed and filled an opioid in 2015 were counted by age, gender and state of residence. Rates were computed on a per 1,000-member basis or percentage basis, where noted. Members with diagnosed conditions present in 2015 were measured in aggregate to assess how many members with a certain health condition were given an opioid and the dose and duration the opioid prescribed.

For more information and to read past reports, visit www.bcbs.com/healthofamerica.

HOA OPIOID-0626-517P

Appendix

STATE	EXHIBIT 9 – PERCENT OF MEMBERS WHO FILLED AT LEAST ONE OPIOID PRESCRIPTION IN 2015	EXHIBIT 10 – PERCENT OF MEMBERS WHO WERE ON A LONG DURATION OPIOID REGIMEN IN 2015	EXHIBIT 11 – OPIOID USE DISORDER DIAGNOSES IN 2016 (PER 1,000 MEMBERS)	EXHIBIT 12 – PERCENT OF MEMBERS WITH OPIOID USE DISORDER WHO RECEIVED MEDICATION-ASSISTED TREATMENT IN 2016
AK	19.6%	3.7%	8.8	53%
AL	26.1%	6.5%	16.4	29%
AR	27.9%	5.9%	8.5	23%
AZ	19.3%	3.4%	8.5	32%
CA	14.5%	2.3%	4.4	41%
CO	17.6%	2.8%	5.8	35%
CT	15.9%	2.5%	8.4	55%
DE	17.8%	3.6%	8.7	53%
FL	18.9%	4.2%	11.0	29%
GA	22.4%	4.1%	11.2	24%
HI	19.1%	2.4%	3.4	45%
IA	17.3%	2.8%	3.6	25%
ID	19.9%	3.9%	5.3	56%
IL	15.0%	2.4%	4.3	39%
IN	21.5%	4.8%	11.3	30%
KS	19.0%	3.4%	4.2	38%
KY	20.4%	4.7%	15.2	34%
LA	25.3%	4.9%	11.5	33%
MA	14.0%	2.0%	6.1	84%
MD	17.0%	3.1%	8.8	36%
ME	15.1%	2.8%	6.4	72%
MI	18.6%	4.2%	7.9	40%
MN	13.5%	1.8%	3.5	36%
MO	19.7%	3.8%	4.6	40%
MS	25.7%	4.6%	11.3	31%

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MT	19.0%	2.9%	3.9	39%
NC	23.3%	5.0%	7.7	37%
ND	17.5%	2.5%	3.8	45%
NE	17.8%	2.5%	2.4	56%
NH	17.0%	2.8%	9.1	71%
NJ	14.1%	2.1%	7.4	42%
NM	19.1%	3.6%	7.6	30%
NV	20.0%	4.2%	11.5	22%
NY	13.1%	2.5%	6.5	52%
OH	18.8%	3.8%	7.9	44%
OK	26.4%	6.5%	14.1	31%
OR	18.7%	3.8%	7.4	49%
PA	17.4%	3.5%	6.8	56%
RI	16.9%	3.1%	10.0	56%
SC	23.0%	4.3%	7.9	28%
SD	15.8%	2.4%	3.0	27%
TN	23.9%	5.5%	16.5	32%
TX	18.9%	3.2%	7.7	24%
UT	19.9%	3.7%	9.2	51%
VA	19.8%	3.4%	6.5	37%
VT	14.3%	2.6%	7.2	87%
WA	18.4%	2.9%	6.8	57%
WI	16.1%	2.7%	5.9	41%
WV	21.0%	5.5%	12.5	49%
WY	19.8%	3.5%	5.3	55%
Nation	21.4%	3.8%	8.3	37%