



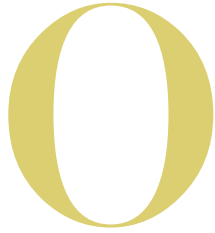
Targeting an Epidemic: Opioid Prescribing Patterns by County in New York State

DECEMBER 2017



Improving the state of New York's health

Background



Opioioid abuse is a public health crisis for the nation and New York State. In 2015, the number of deaths across New York State resulting from prescription opioids was nearly twice as many as in 2009 (1,408 compared to 735).^{1,2} Prescription opioids factored into approximately half of all drug-related deaths in 2015 (2,771) and about two-thirds of all opioid related deaths (2,185).¹

The epidemic is fueled by both lawful and illegally obtained opioids. Nearly 9 million opioid prescriptions were dispensed in New York State in 2015.² Between 2011 and 2014, approximately 145,000 New Yorkers annually abused or were dependent on opioids. This is the second-highest number of state residents next to California (216,000).³

In this data snapshot, we look at opioid prescribing trends by county in New York State from 2010 to 2015, using publically available data from the Centers for Disease Control and Prevention (CDC). Most research on the opioid epidemic has focused on state-level data, which masks important differences between smaller geographic areas.

New York State is taking numerous steps to combat the opioid crisis. Understanding geographic variation within the State is essential to targeting these interventions appropriately.

¹ New York State Department of Health, "All overdose deaths involving opioids, rate per 100,000 population," <https://www.health.ny.gov/statistics/opioid/data/d2.htm>, accessed September 2017.

² New York State Department of Health, "Opioid-related Data in New York State," <https://www.health.ny.gov/statistics/opioid/>, accessed September 2017.

³ National Survey on Drug Use and Health (NSDUH) special data request. (personal communication September 14, 2017)

Data and Methods

- County estimates of opioid prescription trends were developed by the CDC.
- The source data is from the QuintilesIMS Transactional Data Warehouse, which provides estimates of opioid prescriptions dispensed in the United States based on a sample of approximately 59,000 pharmacies, representing 88% of prescriptions in the United States.
- Years of data for county estimates include 2010–2015. The CDC also analyzed national data from 2006–2015.
- Opioid prescribing was measured in morphine milligram equivalents (MMEs). Each opioid medication is converted to a morphine-equivalent dose in order to take into account the potency of the different opioids prescribed.
- One limitation of the analysis is that it does not cover all opioid use, only legal dispensing through pharmacies.
- More information on the source data and national trends based on CDC analyses is available at:

Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report*, 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>

Key Findings

- Opioid prescribing patterns vary widely across New York State.
- There is a 400% difference in opioid prescribing per capita between the New York State counties with the highest (Sullivan) and lowest (Kings) rates.
- Counties with higher opioid prescribing tend to cluster in the Western and Hudson Valley Regions.
- Trends in prescribing between 2010 and 2015 go in both directions, depending on county. MMEs prescribed per capita increased by more than 10% from 2010 to 2015 for more than one-quarter (17) of New York State counties, and decreased by more than 10% in more than one-third (23).
- New York State counties with increases in opioid prescribing since 2010 tend to be in the Central and Northern regions.
- Compared to counties with lower opioid prescribing rates, those with higher rates tend to have smaller and older populations, a smaller proportion of racial and ethnic minority residents, and higher rates of hospital utilization.

More than 400% difference in Per-Capita Opioid Prescribing from Top (Sullivan) to Bottom (Kings) County

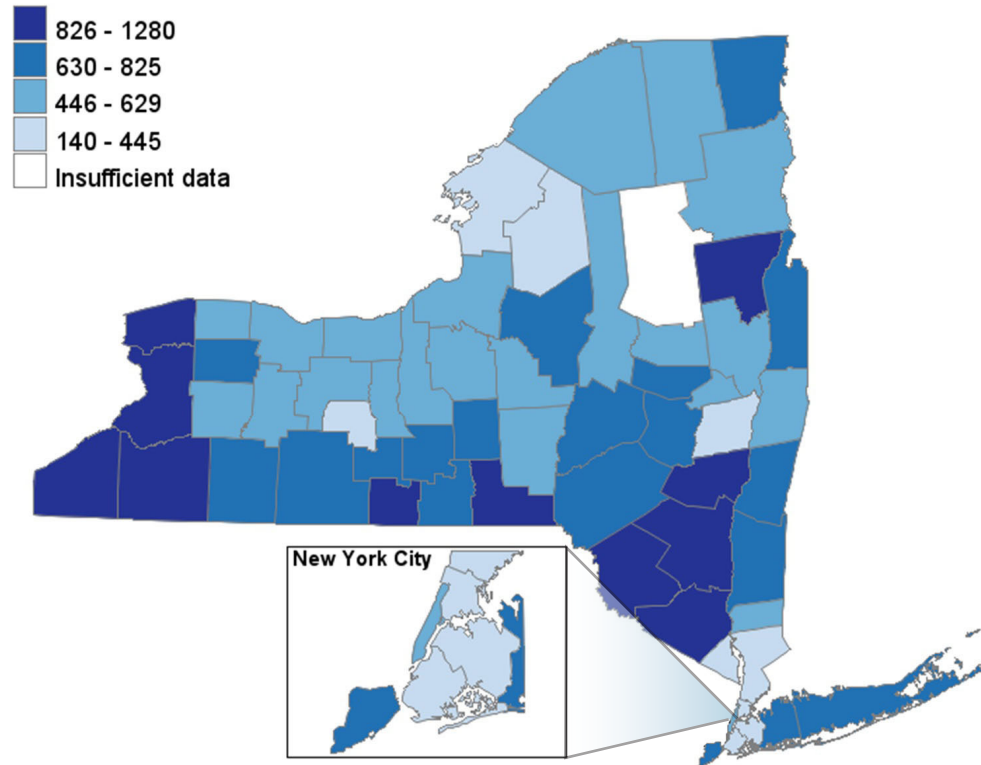
10 New York State Counties with Highest Per-Capita Opioid Prescribing		10 New York State Counties with Lowest Per-Capita Opioid Prescribing	
County	MMEs per capita	County	MMEs per capita
Sullivan	1182.4	Chenango	447.8
Chemung	1165.1	Albany	439.9
Warren	1005.3	Rockland	434.8
Niagara	999.9	Yates	418.9
Chautauqua	940.4	Jefferson	409.4
Ulster	931.7	Bronx	389.4
Greene	909.4	Lewis	366.6
Erie	885.3	Westchester	364.2
Cattaraugus	871.8	Queens	297.7
Broome	862.2	Kings	271.5

MME = Morphine Milligram Equivalents

SOURCE: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>.

Counties with Highest Opioid Prescribing Cluster in Western and Hudson Valley Regions of New York State

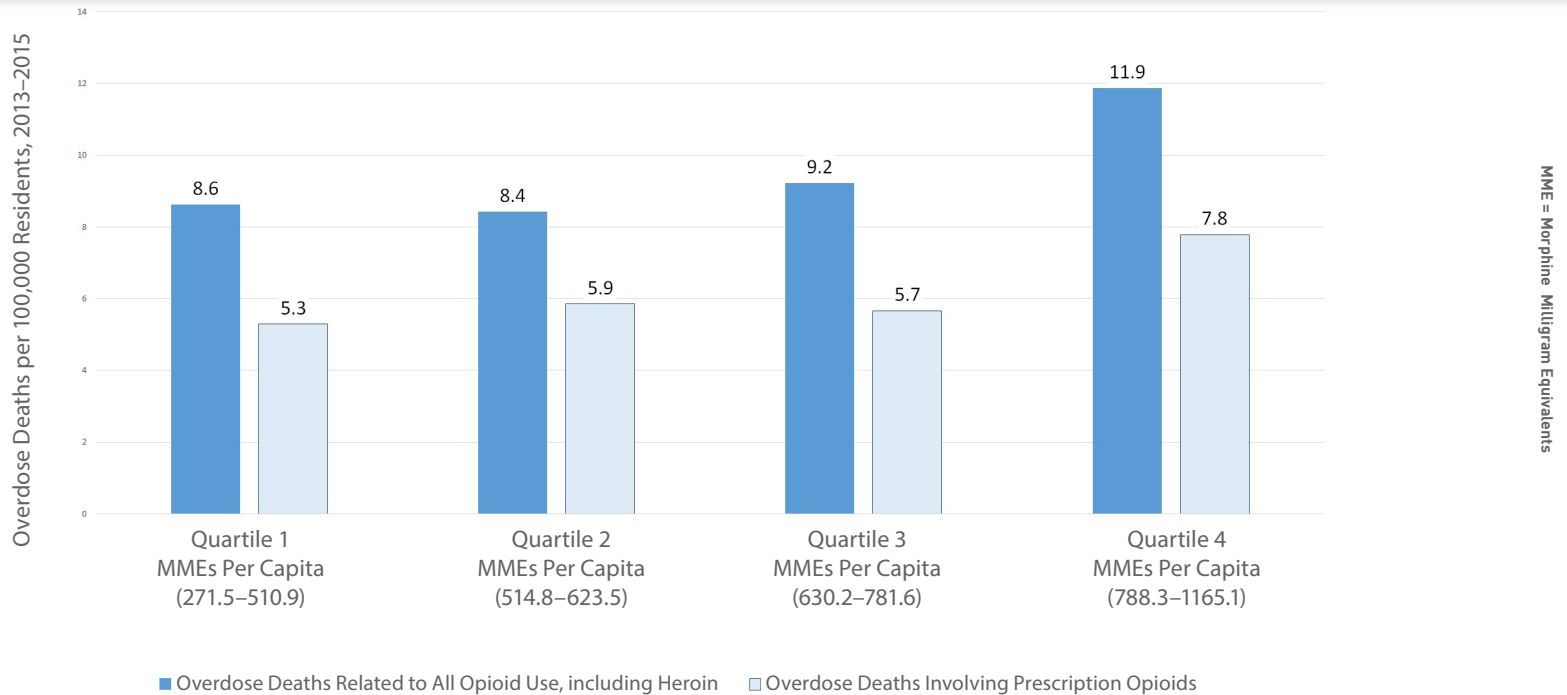
MMEs Prescribed Per Capita, 2015



SOURCE: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>.

Counties with Highest Rates of Opioid Prescribing are Associated with Highest Rates of Opioid-Related Overdose Deaths

Average County Rate of Opioid-Related Overdose Deaths per 100,000 Residents: Counties grouped by Quartile of MMEs Prescribed Per Capita in 2015



NOTE: Crude death rates used.

SOURCE: New York State Department of Health. 2013–2015 Vital Statistics Data as of May 2017, Opioid-related Data in New York State; <https://www.health.ny.gov/statistics/opioid/>; Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>.

Amount of Opioids Prescribed Across Counties Both Increased and Decreased Over Time in New York State and Nationally

Percentage of counties with substantial changes in opioid prescribing
(MMEs Per Capita, 2010–2015)

	Decreased*	Stable*	Increased*
United States	49.6%	27.8%	22.6%
New York State	37.7%	34.4%	27.9%

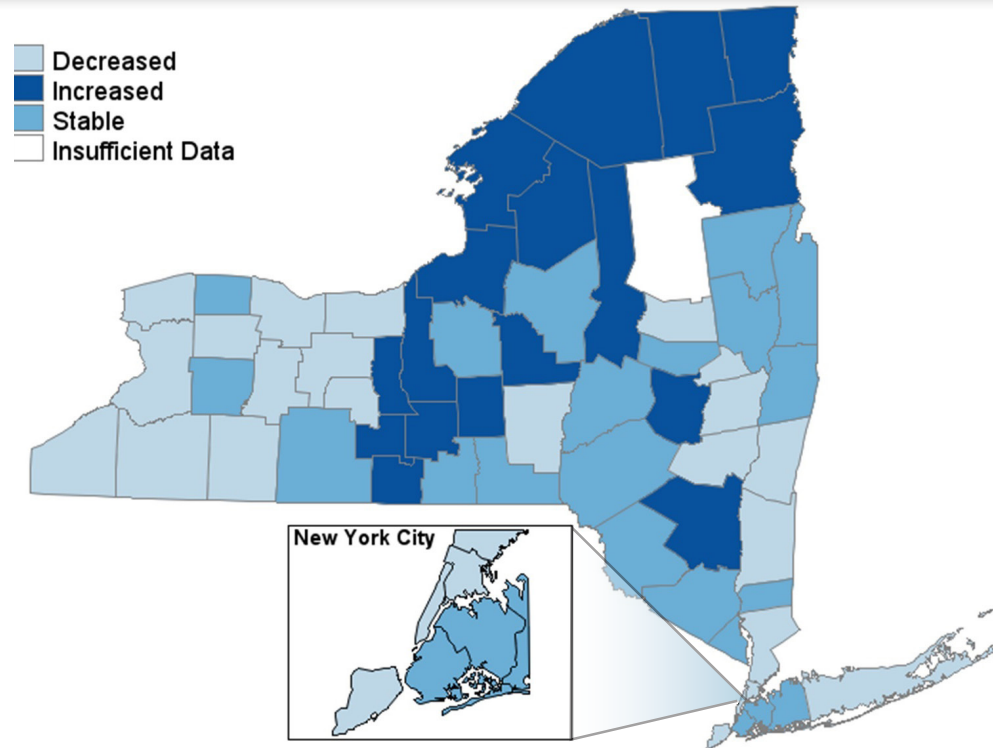
*Among counties with sufficient data, changes of ≥10% were considered to represent an “increase” or “decrease,” whereas changes of <10% were considered “stable.”

MME = Morphine Milligram Equivalents

SOURCE: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>.

New York State Counties with Increases in Opioid Prescribing since 2010 Clustered in Central and Northern Regions

Change* in MMEs Prescribed Per Capita, 2010-2015



* Among counties with sufficient data, changes of $\geq 10\%$ were considered to represent an increase or decrease, whereas changes of $< 10\%$ were considered stable.

SOURCE: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>.

Compared to Counties with Lower Opioid Prescribing Rates, those with Higher Rates Tend to Have Smaller and Older Populations, as well as a Smaller Proportion of Minorities

Average County-Level Demographic and Socioeconomic Characteristics for Counties with Low, Average, and High Opioid Prescribing Rates: Counties Grouped Based on MMEs Prescribed Per Capita in 2015*

MME Prescribing Rates per Capita	Low	Average	High
Proportion Uninsured	9.4%	6.3%	6.6%
Proportion Enrolled in Medicare	16.4%	19.7%	22.2%
Proportion Enrolled in Medicaid	41.6%	31.1%	33.0%
Age-Adjusted Suicide Rate per 100,000	9.9%	11.5%	12.1%
Proportion with Disability	11.4%	13.1%	14.2%
Proportion with Diabetes	9.5%	8.2%	8.1%
Doctors per 100,000 Residents	265.9	214.6	192.7
Dentists per 100,000 Residents	63.0	51.7	57.7
Primary Care Physicians per 100,000 Residents	67.1	61.8	66.1
Inpatient Surgeries per 1,000 Residents [#]	17.8	24.3	30.5
Outpatient Surgeries per 1,000 Residents [#]	48.9	76.8	97.6
Inpatient Days per 1,000 Residents [#]	1000.9	954.6	883.4
Emergency Department Visits per 1,000 Residents [#]	453.2	467.3	555.8

MME = Morphine Milligram Equivalents

* Low Counties (n = 7) have less than 66% of the average of the counties' opioid prescribing rate (< 433 MMEs per capita). Average Counties (n =44) have 66%–133% of the average prescribing rate (433–859 MMEs per capita). High Counties (n = 10) have above 133% of the average prescribing rate (> 859 MMEs per capita). Hamilton County is excluded from the analysis because of lack of sufficient opioid data.

SOURCE: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>. Proportion with Diabetes: Center for Disease Control and Prevention, "County Data Indicators," <https://www.cdc.gov/diabetes/data/countydata/countydataindicators.html>, accessed October 2017; Suicide Rate: New York State Department of Health, "Suicide Mortality Rate per 100,000," <https://www.health.ny.gov/statistics/chac/mortality/d24.htm>, accessed October 2017; Medicaid Enrollment: United Hospital Fund, "New York Counties By Population, Medicaid Enrollment, and Enrollment Rates (Table)," <http://uhfnyc.org/publications/881193>, accessed October 2017. Health Care Utilization and Supply, Medicare and Uninsured rates, and Proportion with Disability: Area Health Resources File, 2016–2017 Release. U.S. Department of Health and Human Services, Health and Resource Services Administration. July 2017.

Compared to Counties with Lower Opioid Prescribing Rates, Those with Higher Rates Tend to have Higher Rates of Surgical Procedures and Emergency Department Visits

Average County-level Health Care Characteristics for Counties with Low, Average, and High Opioid Prescribing Rates: Counties Grouped Based on MMEs Prescribed Per Capita in 2015*

MME Prescribing Rates per Capita	Low	Average	High
Average County Population, 2015	1,082,481	232,246	199,490
Proportion that is Non-Hispanic White, 2015	57.0%	84.2%	84.3%
Proportion Non-Hispanic Black, 2015	14.2%	4.9%	5.6%
Proportion Hispanic (Any Race) , 2015	19.7%	6.4%	5.8%
Proportion Under Age 35, 2015	48.7%	44.3%	42.9%
Proportion Age 35-64, 2015	39.1%	41.6%	42.0%
Proportion Age 65 or Older, 2015	12.2%	14.1%	15.1%
Proportion Unemployed	6.0%	5.4%	5.8%
Proportion with income Below Federal Poverty Level	16.9%	13.8%	15.9%

MME = Morphine Milligram Equivalents

*Low Counties (n = 7) have less than 66% of the average of the counties' opioid prescribing rate (< 433 MMEs per capita). Average Counties (n =44) have 66%–133% of the average prescribing rate (433–859 MMEs per capita). High Counties (n = 10) have above 133% of the average prescribing rate (> 859 MMEs per capita). * Five counties have no community hospitals or too little utilization for measurement, and therefore no hospitalization data to report. This includes one county in the high group (Greene), one in the low group (Yates), and three in the average group (Washington, Seneca, and Tioga). These counties were excluded from the averages of the health care utilization statistics. Hamilton County is excluded from all measures because of lack of sufficient opioid data.

SOURCE: Guy GP Jr., Zhang K, Bohm MK, et al. Vital Signs: Changes in Opioid Prescribing in the United States, 2006–2015. *Morbidity and Mortality Weekly Report* 2017;66:697–704. DOI: <http://dx.doi.org/10.15585/mmwr.mm6626a4>. Age Data: U.S. Census Bureau. American Community Survey (K200104: Population by Age). Retrieved from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_SPL_K200104&prodType=table; Race, Workforce, and Income Data: Area Health Resources File, 2016-2017 Release. U.S. Department of Health and Human Services, Health and Resource Services Administration. July 2017.

Recent New York State Initiatives Aimed at Curbing the Opioid Epidemic

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ifferent types of efforts to combat the opioid crisis have been recently initiated in New York State. Several target physician-prescribed opioid medications in an effort to reduce the availability of these drugs. In March 2016, the Electronic Prescribing Mandate went into effect, requiring physicians to send pharmacies prescription information electronically. This was intended to reduce the number of forged, stolen, or misused paper prescriptions, and provide an extra layer of physician accountability. In June of that year, Governor Cuomo signed a prescription-limiting bill, which caps first-time opioid prescriptions at a 7-day supply.¹

In April 2017, following recommendations from a Heroin and Opioid Task Force, the Governor signed a bill investing more than \$200 million largely on prevention, treatment, and recovery programs throughout New York.² The bill includes \$145 million for community-based providers, including residential treatment beds and outpatient services. In addition, \$27 million is included for State-operated addiction treatment centers, \$6 million for Naloxone kits and training, and \$25 million for expanding programs such as family support navigators and 24/7 urgent access centers. This bill more than doubles funding for opioid concerns since 2011. No funding for law enforcement or the criminal justice system was included, aside from Naloxone training for first responders. This is in alignment with the Task Force's recommendation that rehabilitation, rather than criminal charges, should be the State's first priority for addicted individuals.

The New York State Department of Health publishes additional data at the regional level to help monitor the opioid epidemic. Information on overdose deaths, opioid-related emergency department visits, and hospital discharges is available at https://www.health.ny.gov/statistics/opioid/#i_three.

¹ New York State Office of the Governor, "Governor Cuomo Signs Legislation to Combat the Heroin and Opioid Crisis," <https://www.governor.ny.gov/news/governor-cuomo-signs-legislation-combat-heroin-and-opioid-crisis>, accessed October 2017.

² New York State Office of the Governor, "Governor Cuomo Signs Legislation Investing Over \$200 Million to Combat the Heroin and Opioid Epidemic in New York," <https://www.governor.ny.gov/news/governor-cuomo-signs-legislation-investing-over-200-million-combat-heroin-and-opioid-epidemic>, accessed November 2017.