

**Overdose Data in Monroe County, NY
Working Paper December, 2018**

Working Paper #2019 – 05



Jennifer Schmitz
Research Assistant

Liam Fanning
Research Assistant

Janelle Duda-Banwar, Ph.D.
Senior Research Associate, Center for Public Safety Initiatives
jmdgcj@rit.edu

Irshad Altheimer, Ph.D
Director, Center for Public Safety Initiatives
Rochester Institute of Technology
585-475-6299
ixagcj@rit.edu

John Klofas, Ph.D.
Center for Public Safety Initiatives
Rochester Institute of Technology
585-475-2432
jmkgcj@rit.edu

Introduction

This paper presents the analysis of opioid overdose data in Monroe County in 2018. The focus of this analysis is examining how many unique individuals overdosed during the year. Along with this information, we are also focused on identifying overall trends in overdoses. This includes demographic and temporal trends, along with trends in fatalities and Narcan use. We will also compare information about overdoses in Monroe County and Rochester to see if there are any unique patterns that emerge in the City of Rochester or Monroe County. A comparison between Monroe County without Rochester data, and Rochester-only data will also be done, as over half of the overdoses in Monroe County were in the City of Rochester.

The data presented include only opioid overdoses that are made known to law enforcement. We know, based on interviews and review of the relevant literature, that many more opioid overdoses go undetected by law enforcement. For this reason, we understand these numbers to be a conservative underestimate of the total number of opioid overdoses that occurred throughout Monroe County in 2018.

To note, in 2017 the Monroe Crime Analysis Center reported 753 opioid overdoses across Monroe County, and 145 of them were fatal. The Monroe County Medical Examiner updated the fatality count to 220, after finishing their investigations for 2017. The number of opioid overdoses may seem low compared to the 1,133 overdoses in 2018, and this may be partially due to the fact that formal data collection was not in place until September 2017.

Methodology

The data were provided from the Monroe Crime Analysis Center's (MCAC) Opioid Overdose database, compiled by a crime analyst. The first step in this analysis was assigning a unique identifier to each individual. Each individual was given a five-digit identifier starting

Overdose Data in Monroe County, NY

with 00001. Individuals with the same name and date of birth were considered the same person and given the same unique identifier. If there were any slight differences between the names of two overdose victims, but the date of birth and demographic information were the same, they were identified as the same individual.

After the unique identifiers were added, overdose data including age, day of the week, and month were analyzed to identify possible trends in Monroe County. Narcan administration and fatality rates are also presented. Rochester-specific data was then analyzed separate from Monroe County data. These cases were determined by extracting the overdoses that Rochester Police Department responded to.

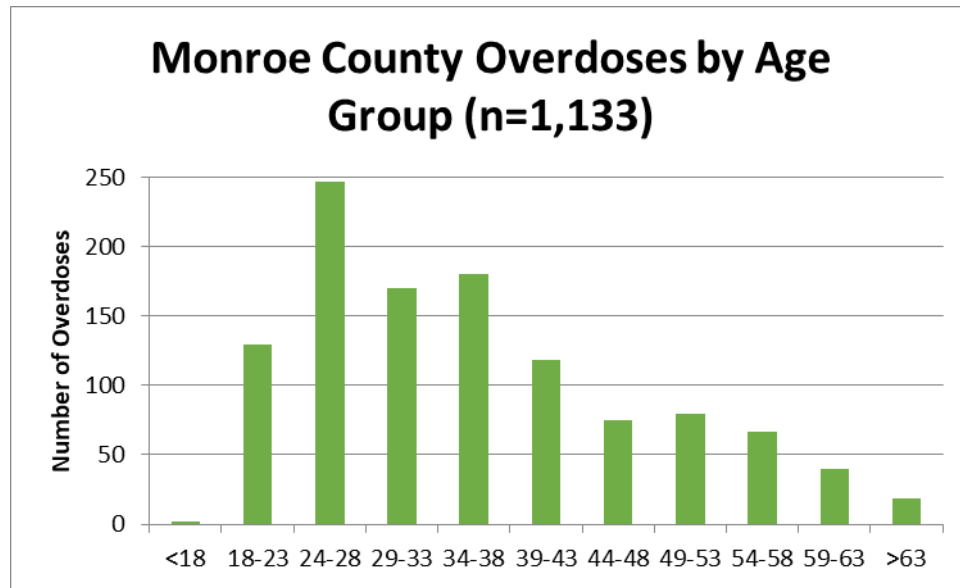
Monroe County Findings

The dataset used in analysis included all overdoses occurring within Monroe County in the year 2018. During this period there were a total of 1,133 overdoses. There were 910 unique individuals that overdosed in Monroe County during 2018. Of these overdose victims, 28% were female and 72% were male. The race of the overdose victims was overwhelming white (77%) followed by Latino (13%) and black (9%), with very few listed as “other.”

The age¹ breakdown of overdose victims is concentrated around the ages 24 to 38 (see Figure 1). The age range with the highest number of overdoses was 24-28 with 247 overdoses (22%). The average age of overdose victims was 36 years of age. The median (mid-point) age for overdose victims was 34 years of age while the mode (most frequently occurring) was 28 years of age (58 overdose victims).

¹ Age variables were calculated with n = 1,133, because individuals' birthdays may have occurred, and changed their age between multiple overdoses

Figure 1. Monroe County Overdoses by Age Range, January 1st – December 31st, 2018



Overall, 15% of the overdoses in the county were fatal (n = 166 overdoses). Of the fatal overdoses, 32% of individuals had overdosed at least once in the past, according to the MCAC database. Of the 910 unique individuals, 769 people (84%) overdosed once, 99 people (11%) overdosed twice, 27 people (3%) overdosed three times, 9 people (1%) overdosed four times, and 4 people overdosed five times. There was one individual who overdosed seven times.

A monthly analysis revealed that there was slight variation in overdoses between months. Over the year, there is an increase in overdoses in the spring/summer months (May – July) coupled with lower amounts of overdoses in November and December (see Figure 2). There is, however, a spike in overdoses in October that goes against this general trend. An analysis of overdoses by weekday indicates a fairly consistent distribution over each day, however Monday serves as an exception to this trend with over 200 overdoses (see Figure 3).

Overdose Data in Monroe County, NY

Figure 2. Monroe County Overdoses by Month, January 1st – December 31st, 2018

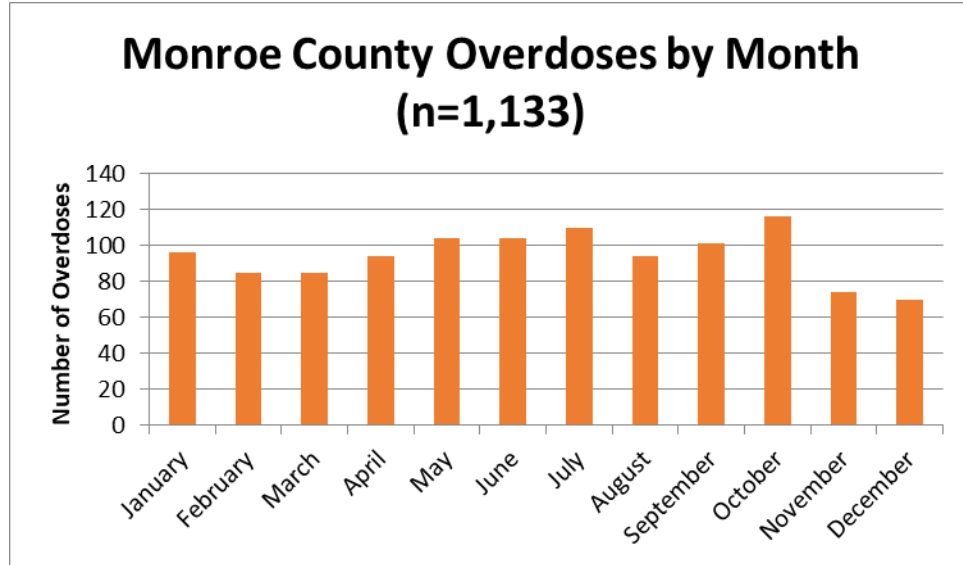
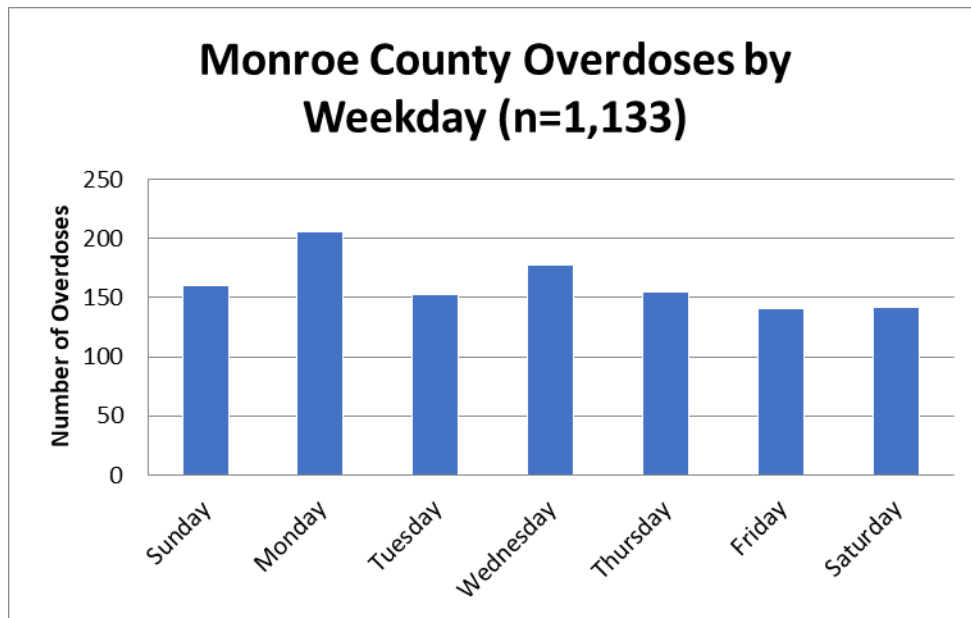


Figure 3. Monroe County Overdoses by Weekday, January 1st – December 31st, 2018

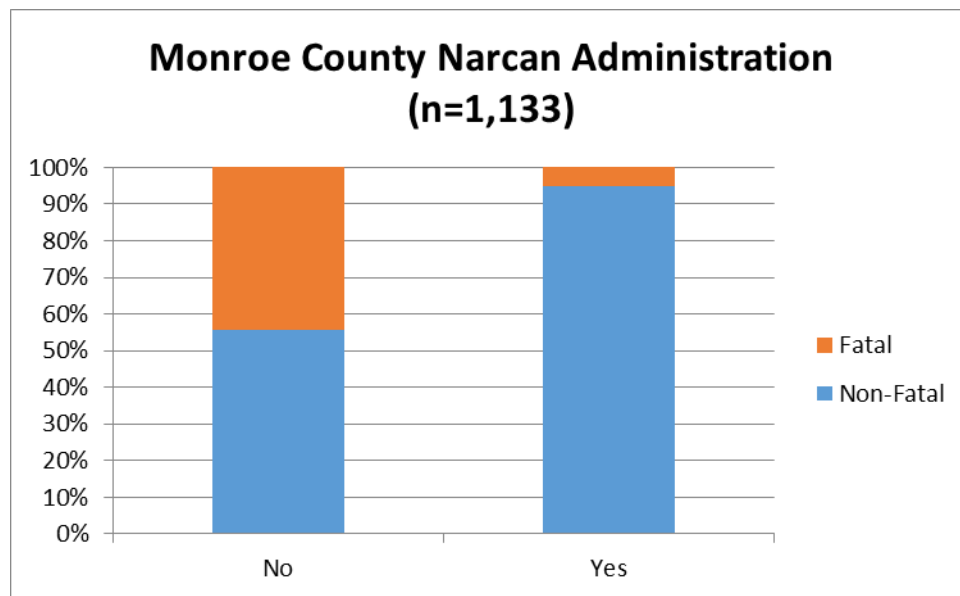


Overall, of the 1,133 overdoses, Narcan was administered in 75% of overdoses. Narcan was used in approximately 84% of non-fatal incidents and was used in 27% of fatal overdoses

Overdose Data in Monroe County, NY

(see Figure 5). The lower proportion of Narcan use in fatal overdoses could be because the individual was already deemed deceased when first responders arrive on scene. There were seven non-fatal incidents and one fatal incident where the usage of Narcan was unknown. These eight incidents were not included in the chart below.

Figure 4. Usage of Narcan in Overdoses, January 1st – December 31st, 2018



Rochester Findings

Of the 1,133 overdoses in Monroe County, 729 (64%) occurred in Rochester. Of these 729 overdoses, there were 595 unique overdose victims. Of the 595 victims, 420 were Rochester City residents. Overall there was not much difference between the county data and Rochester data; nearly two-thirds of the 2018 opioid overdoses occurred in Rochester, which drove the trends for the entire county. Monroe County and Rochester had the same gender breakdown: majority male. The fatality rate in Rochester was 12%, slightly lower than that of Monroe

Overdose Data in Monroe County, NY

County (approximately 15%). The use of Narcan in Rochester occurred in 77% of overdoses, which is similar to Narcan administration in the entire county.

The number of overdoses by weekday in Rochester was fairly consistent, however there were a higher number of overdoses on Friday (see Figure 6). Overdoses were higher during the summer months (May – July), with a peak in September (see Figure 7).

Figure 5. Rochester Overdoses by Weekday, January 1st – December 31st, 2018

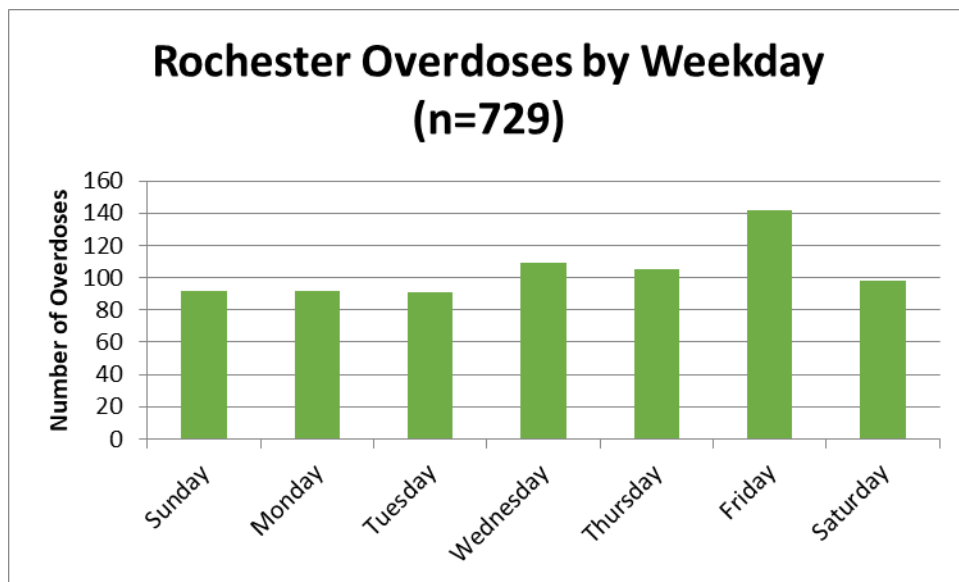
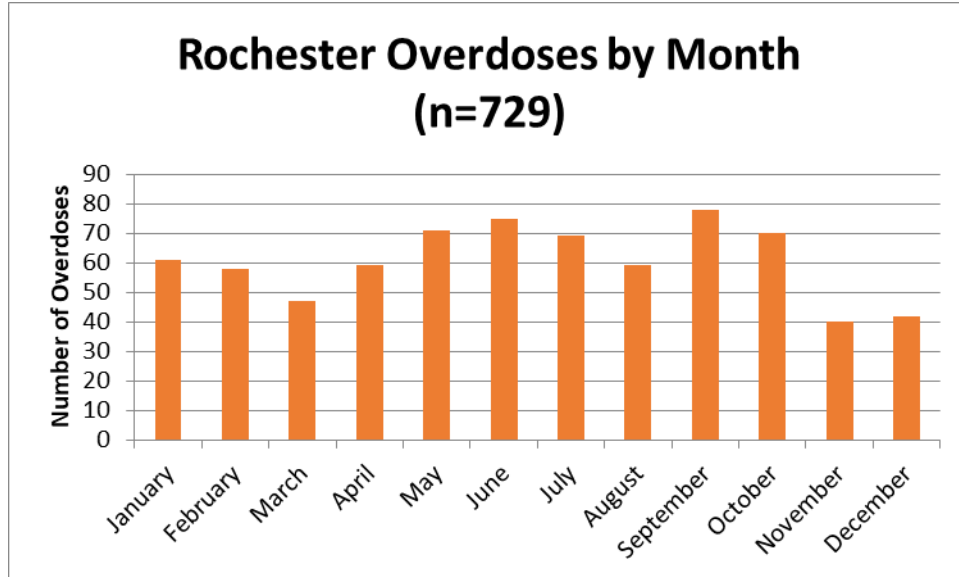


Figure 6. Rochester Overdoses by Month, January 1st – December 31st, 2018



Another interesting finding in the data was that of the 729 overdoses in Rochester, 198 were not residents of Rochester. There were also 560 residents of Rochester that overdosed in this time period, and 531 of them overdosed in Rochester.

Monroe County Findings, Excluding Rochester

Given the available data it was also possible to compare the data from Monroe County, excluding the data collected from Rochester. Of the 1,133 overdoses in the county, 729 occurred in Rochester. The following charts look at the 404 overdoses that occurred outside of the city limits.

The number of overdoses in Monroe County (without Rochester) doesn't seem to follow similar trends to Monroe County overall (including Rochester). There does appear to be a large drop in September and more variation overall, however this could be a result of the smaller data set (see Figure 8). Looking at the weekday trends, there is some variation and an increase in overdoses during the middle of the week (see Figure 9). This is a stark comparison to Monroe County data and Rochester Data of which is fairly consistent throughout the week.

Overdose Data in Monroe County, NY

Figure 7. Monroe County Overdoses (without Rochester Data) by Month,

January 1st – December 31st, 2018

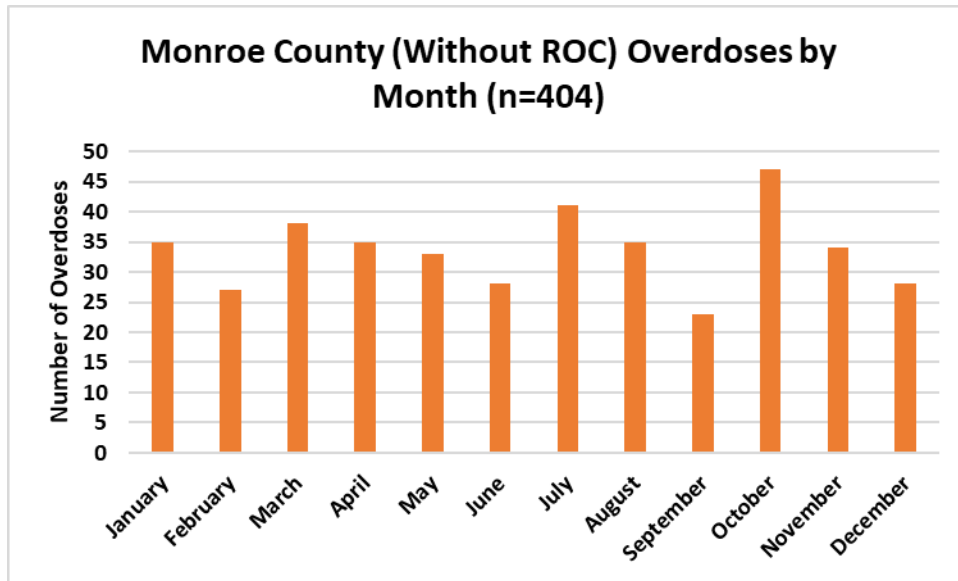
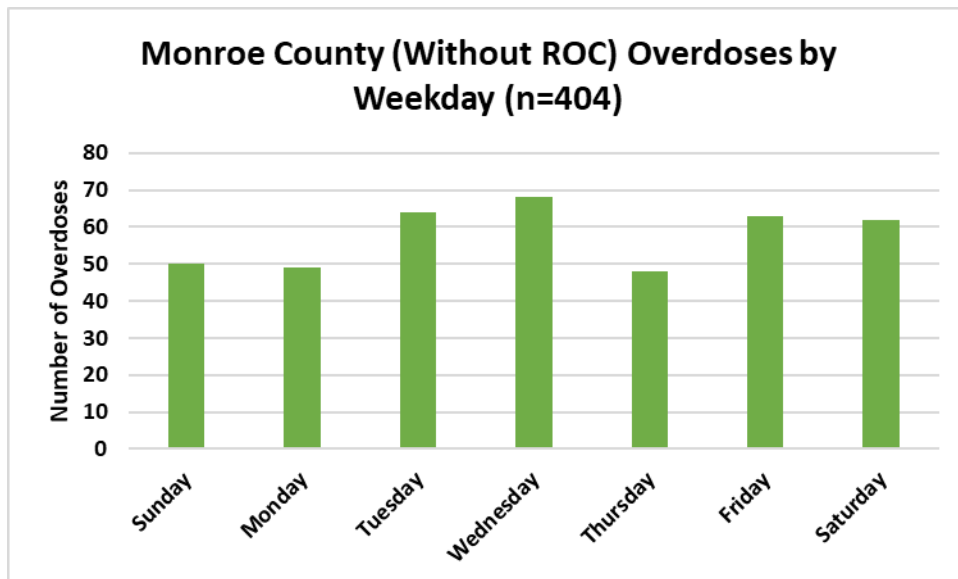


Figure 8. Monroe County Overdoses (without Rochester Data) by Weekday,



Conclusion

One of the most important findings from this analysis was the fact that there were 910 unique individuals that overdosed in Monroe County. This is noteworthy because it shows how many new people are overdosing compared to the same people repeatedly overdosing, which can impact the type of interventions. Analysis also finds that there is not much variability in number of overdoses by month or day of the week, which speaks to the nature of opioid addiction; opioids are highly addictive, and are not typically used as ‘party drugs’. There was a spike in overdoses during the month of September within the city of Rochester that was matched with a low in overdoses in the surrounding areas (Monroe County excluding the city of Rochester). Possible reasons for this divergence may include increased activity by law enforcement that could have occurred outside the city limits. It is also possible that within the city of Rochester there existed, at the time, stronger and more desirable strains of heroin that were not distributed to the surrounding areas. An additional finding was a large difference in the usage of Narcan for fatal and non-fatal incidents. This may be the result of fatal overdose victims being pronounced dead before Narcan could be administered. Monroe County and Rochester did not show a lot of variance in demographic or time trends. This is likely a result of 64% of the overdoses in Monroe County occurring in Rochester, which likely drove the overall county trends.

Further Research

This analysis discussed the general trends in overdoses in both Monroe County and Rochester. After a review of the findings, there is an opportunity for future analysis. Such future analysis could look at people who overdosed more than once and see if there are any demographic trends that stand out. This data can also be compared to similar cities or counties

Overdose Data in Monroe County, NY

around the US to see if there are any similarities in overdoses. An additional paper could examine more overdose data from Monroe County from years prior and compare year by year to determine if there are any trends in overdoses and how these trends may have shifted over time.