



Firearm Violence 2015-2020: Rochester, New York

Part II – Changes in Shooting Victims Over Time

Working Paper # 2021 - 05



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Overview

Violent crimes are perceived as the most common type of crime, because they get more attention from the media and law enforcement. However, violent crime makes up only 17% of total crime¹ in Rochester, NY. The seriousness of these incidents is one of the reasons for both the media and this series' focus. In 2020, there was a substantial increase in violent crime both nationally and locally. The violence levels in 2020 are unlike any in the last two decades, both in the City of Rochester and across New York State. This working paper series will look at shooting incidents, shooting victims, all homicides that occurred in 2020, and arrests for illegal weapons possession. This paper is the second of five in this series on local gun violence. Below, an analysis of shooting victims over time will be presented

Shooting Victims 2015-2020 Data Discussion

Shooting victims are victims of firearm-related assaults that were struck with a bullet. The data include fatal and non-fatal shootings. For ease of discussion and to keep this paper brief, they are combined in each chart. In 2020, 82% of the 51 total homicides were firearm related, and will be included in this paper (fatal shooting victims). All 51 homicides will be discussed in the third paper in this series.

The first paper in this series discussed the shooting victims in 2020. One year time-frames can be beneficial for a review, but in order to determine trends and if something out of the ordinary is occurring, it is necessary to look at multiple years. This paper will discuss shooting victims from 2015-2020; year-by-year and averages will be examined. As mentioned above, these longer comparisons can determine the increase or decrease in a certain year compared to the average, and determine if it is 'normal' or outside of the expected +/- 20% range.

The data in Chart 1 include fatal and non-fatal shooting victims from the last six years. The years 2015-2019 all have similar levels and trends in shootings. The range in shootings from 2015 to 2019 by month was between 6 and 27 victims. The orange line indicates the shooting victims in 2020, and just by looking it is clear that 2020 was very different than years past. In 2020, the range in shooting victims by month was 10 to 48. Further, every single month after May 2020 had more shooting victims than the respective month in the previous 5 years. This is an indication that gun violence is elevated from previous years. This will be looked at again later in this paper (Chart 4), showing that these highs are historic for Rochester.

¹ Average of 2016-2020 Part I Crimes; <https://data-rpdny.opendata.arcgis.com/pages/crime>

2015 – 2020 Comparative Data²

Chart 1. Fatal and Non-Fatal Shooting Victims in Rochester, NY³
January 2015 – December 2020; n = 1,235

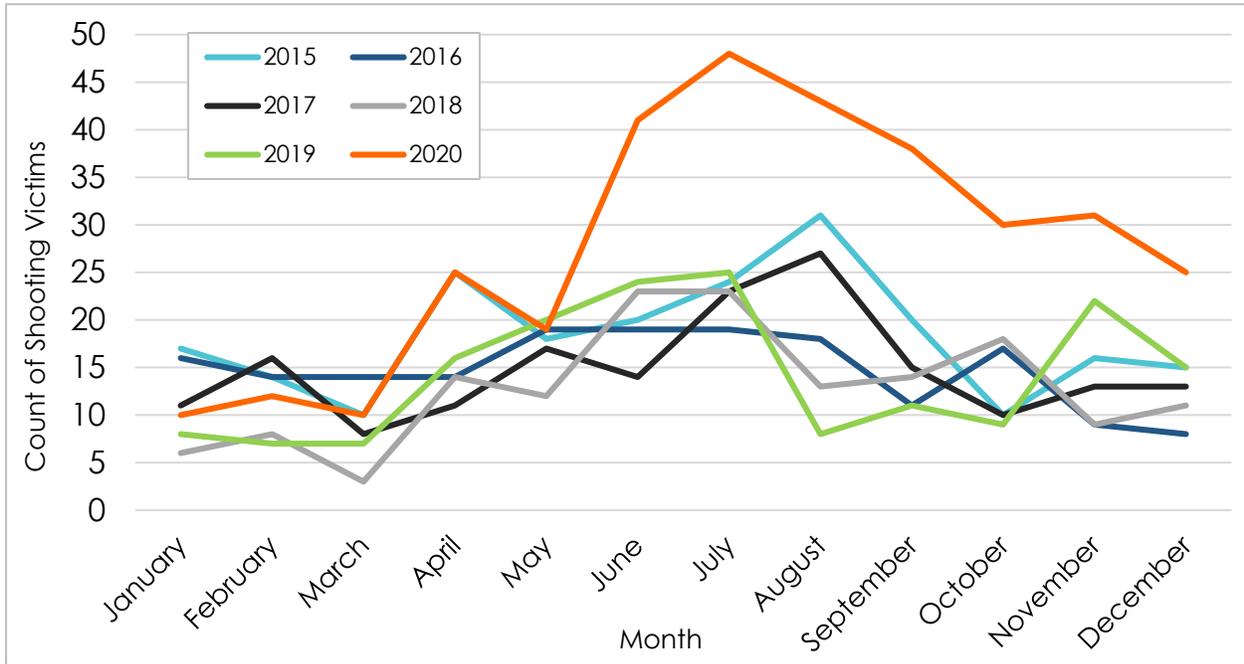
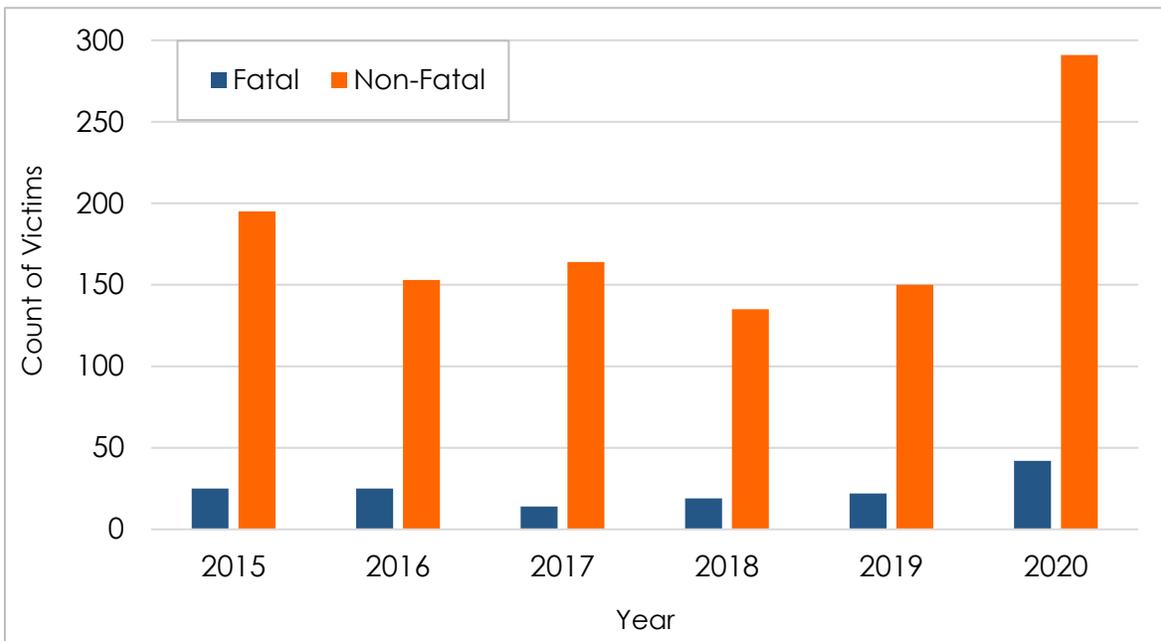


Chart 2. Breakdown of Fatal and Non-Fatal Shootings
January 2015 – December 2020; n = 1,235



² The datasets below include incidents from January 1, 2015 through December 31, 2020.

³ <https://data-rpdny.opendata.arcgis.com/datasets/rochester-ny-shooting-victims>

Chart 2 shows the number of fatal versus non-fatal victims over the last six years, by year. As seen below, 2020 did have the highest count of both fatal and non-fatal shooting victims, and 2015 was the second highest over the last six years but had about 33% fewer non-fatal victims and 41% fewer fatal victims than 2020.

Though the number of shooting victims increased drastically in 2020 from previous years, the table below shows the percentage of fatal shooting victims across the years. It is important to note that there was not a large increase in the *proportion* of fatal shooting victims in 2020 when compared to years prior. As seen in Chart 3 below, over the last six years, the proportion of shootings that were fatal ranged from about 8% to 14% of total shooting victims. While the total number of shooting victims in 2020 was much higher than the five years prior, the percent of those shootings that were fatal was right in the middle of this range. The highest percent of fatal shooting victims was in 2016.

Chart 3. Proportion of Fatalities in Shooting Victims
2015 – 2020
n = 1,235

Year	Percent of Shootings that were Fatal
2015	11.36%
2016	14.04%
2017	7.87%
2018	12.34%
2019	12.79%
2020	12.35%

The spike in violence in 2020 began around March (see Chart 1), which is the same time that the COVID-19 pandemic brought everything to a halt in Monroe County. While it is difficult to determine what may be the specific causes for such increases, we can hypothesize that the COVID-19 pandemic had some impact on the violence in 2020; the stress of the pandemic, plus the closing of many stores, restaurants, and job losses increased frustration in many.

“Increased levels of strain within communities increase the likelihood of residents experiencing negative emotions, such as frustration and anger. The increased levels of negative emotion within these communities then increases the likelihood of persons within those neighborhoods mistreating or getting into fights with one another. Hence, increased levels of strain produce a “charged” environment conducive to crime, particularly violent crime” (Warner & Fowler, 2003, p. 512).

The pandemic and lockdown limitations, coupled with interpersonal problems that may arise, the [increase in guns](#) in circulation, and poor structural conditions exacerbated by the pandemic, can create the perfect storm for violence to occur. We can hypothesize that the COVID-19 pandemic did have an impact on crime and violence in 2020, but future research will look deeper into this, and other potential factors.

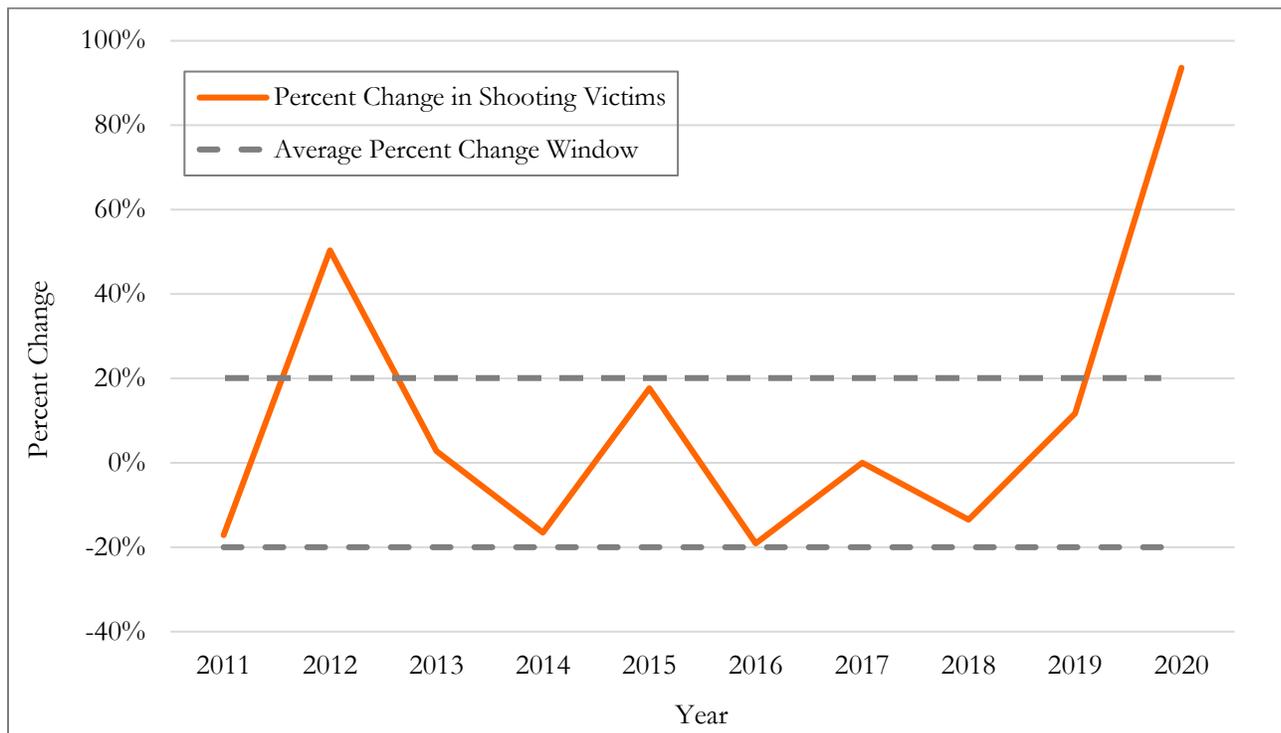
Additionally, the monthly totals for violence are some of the highest since 2000. Seven of the eleven months in 2020 fall into this category. The table below shows the highest and lowest number of shooting victims by month and year. The year 2020 had the most months with the highest number of shooting victims compared to any other year.

Chart 4. Monthly Lows and Highs of Fatal and Non-Fatal Shooting Victims
January 2000 – December 2020, n = 3,541

Month	Low	Average	High
January	n = 6 (2000, 2001, 2018, 2019)	n = 13	n = 17 (2012)
February	n = 3 (2011)	n = 9	n = 16 (2017)
March	n = 3 (2000, 2011)	n = 11	n = 18 (2008)
April	n = 3 (2000)	n = 15	n = 21 (2020)
May	n = 7 (2004)	n = 17	n = 28 (2005)
June	n = 5 (2009)	n = 21	n = 36 (2020)
July	n = 7 (2001)	n = 23	n = 44 (2020)
August	n = 5 (2019)	n = 22	n = 39 (2020)
September	n = 6 (2010)	n = 18	n = 32 (2020)
October	n = 8 (2017)	n = 17	n = 26 (2020)
November	n = 6 (2014)	n = 15	n = 26 (2020)
December	n = 4 (2007)	n = 14	n = 26 (2020)

As mentioned above, the normal range for local fluctuations in shooting victims year-over-year is between -20% and +20%. This +/- 20% range is reflected by the dotted lines in Chart 5 below, along with the percent change in shooting victims from year to year between 2011 and 2020. Based on expected fluctuations, the years that stand out are 2012 and 2020. Both of these years had over 20% increases, indicating that the violence that occurred was out of the “normal” range. The percent change in 2012 was about 50% from 2011, but the change in 2020 was over 90% from 2019.

Chart 5. Percent Change in Fatal and Non-Fatal Shooting Victims, Rochester, NY
2011 – 2020, n = 2,011



Conclusions

Implications for Response

How do we move forward after a year as violent as 2020? One option is to focus on a two-pronged approach to violence: enforcement of gun offenders; and services and assistance for the victims and their families. However, shooting victims and perpetrators are not always this easily divided. A shooter in October may have been a victim in June. This does not mean that services still cannot be offered in an effort to directly prevent retaliation.

Regarding enforcement and prevention, focusing on retaliatory incidents can impact violence; RPD currently identifies disputes, but the responses, and tracking of such responses, have been challenging. Disputes can vary by reason (i.e., what is causing the problem), and the type of people who are involved (e.g., neighbors, family members, etc.), requiring unique responses for each dispute. However, intervening in these types of incidents can prevent smaller and sometimes trivial issues from escalating into violence and retaliation back and forth. Research has been conducted⁴ on retaliatory disputes and how to respond, and will be used in future planning and discussion on violence reduction.

In addition to law enforcement interventions, community-based responses to violence should be supported. Fully funding these alternatives would allow for community members to intervene in disputes through already established relationships. All interventions should ensure that both group and individual-level responses are fair, driven by data and evidence, and ensure safety during the COVID-19 pandemic.

Future Research

Upcoming papers on this topic will explore strategies to sustain violence reduction efforts during this uptick in violence. Future research will explore the causal factors for the increases in violence in 2020; the increases shown in the charts above are outside of both ‘expected’ crime levels and rates of fluctuations from year to year.

References

Warner, B. D. & Fowler, K. S. (2003). Strain and violence: Testing a general strain theory model of community violence. *Journal of Criminal Justice*, 31, 511 – 521.

⁴ https://popcenter.asu.edu/sites/default/files/2020-spi_spotlight_series-retaliatoryviolentdisputes_final.pdf