

Analysis of Rochester/Monroe County Gun Violence Reduction Efforts

Working Paper #2017-17

November 3, 2017



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Since July 2014 Criminal Justice agencies in Rochester and Monroe County have participated, with support from the New York State Division of Criminal Justice Services, as partners in a comprehensive effort to reduce gun-related crime. The partner agencies implemented several strategies including Hot Spots Policing, Crime Prevention through Environmental Design (CPTED), Focused Deterrence, Street Outreach, and a project addressing dispute related violence. The group of gun crime reduction strategies together comprise the intervention discussed below.

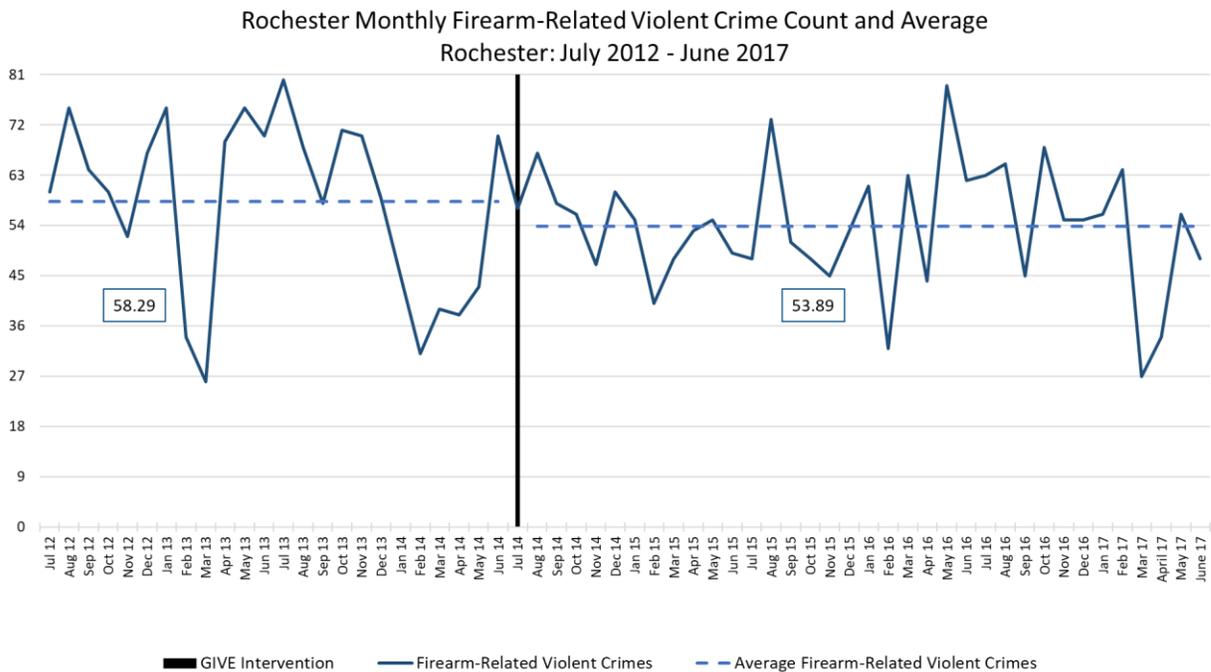
This report examines the results of this gun violence reduction effort known as the local Gun Involved Violence Elimination program. The Center for Public Safety Initiatives (CPSI) at RIT serves as the research partner for the local program and produced this report to share with the partner agencies and the community. The partner agencies include the Rochester Police Department, Monroe County Sheriff's Department, The District Attorney's Office, County Probation, the State Police, and State Parole.

To assess the impact of the program on gun-related crimes, CPSI conducted time-series analyses for four gun-related crime categories: total firearm-related violent crime, shooting incidents involving injury, shooting victims, and individuals killed by gun violence. Firearm related crime includes all Part One crimes (homicide, robbery, aggravated assault, and rape) committed with a firearm.

This type of analysis is frequently used to evaluate intervention programs. It has been used, for example to study the Boston CeaseFire program and the New Orleans' Focused Deterrence initiative. Time-series analysis allows for the review of data over time to identify patterns and trends in outcomes over time.

For this analysis, we examined differences between the monthly average number of gun-related crimes pre- and post-program implementation in Rochester. The Pre-implementation period included 24 months prior to the initiative (July 2012-June 2014) and post-implementation covered 36 months after implemented (July 2014-June 2017). The results are described below. The crime count data are from the official Division of Criminal Justice Services (DCJS) Crime, Arrest, Firearm Activity Report (Greenbook).¹

¹ <http://www.criminaljustice.ny.gov/crimnet/ojsa/greenbook.html>.



Total Violent Gun Crime

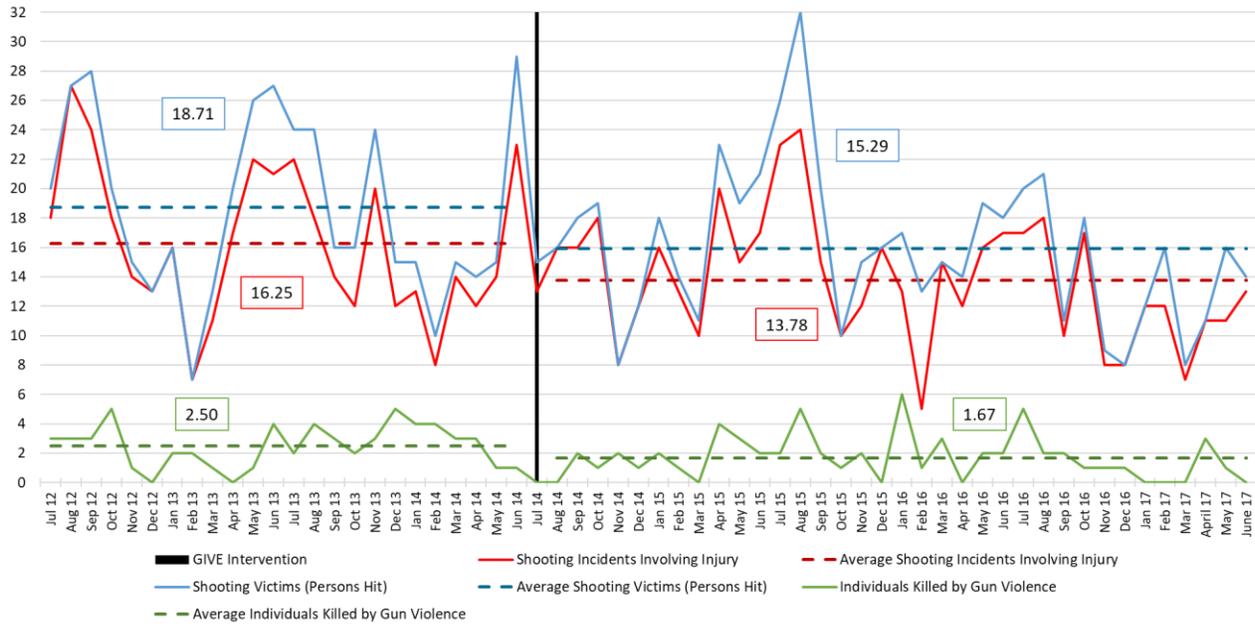
The vertical line in the chart above identifies when the initiative was implemented. The data before the vertical line are the pre-intervention data, here the number of violent gun crimes, with a flat, dashed line representing the mean number of monthly violent gun crimes two years prior to the program. The data after the intervention line represent the number of monthly violent gun crimes after implementation and the flat, dashed line represents the mean number of monthly violent gun crimes 36 months post-intervention.

With regard to overall violent gun crime, the monthly average for gun crimes in the 24 months prior to implementation was 58.29. In the 36 months after implementation the monthly average for gun crimes was 53.89. That is a reduction of 4.4 gun crimes per month or a total reduction of 52.8 gun crimes per year, or a decrease in total gun crimes of 7.5%.

This chart also illustrates the seasonal nature of gun crime. Notice the peaks of violence occurring in the warmer summer months, both pre- and post-implementation, and the lows occurring during colder winter months. This seasonality has implications for intervention.

The following chart provides the same information as above but for each of the selected individual crimes including the number of shooting incidents, the number of shooting victims and the number of individuals killed by gun violence.

Rochester Monthly Shooting-Related Crime Count and Average
 Rochester: July 2012 - June 2017



Shooting Incidents Involving Injury

With regard to shooting incidents, the monthly average in the 24 months prior to implementation was 16.25. In the 36 months after implementation the monthly average for shooting incidents was 13.78. That is a statistically significant² reduction of 2.47 shooting incidents per month or a total reduction of 29.64 shooting incidents per year or a decrease in shooting incidents of 15.2%.

Shooting Victims

With regard to shooting victims, the monthly average in the 24 months prior to implementation was 18.71. In the 36 months after implementation the monthly average for shooting victims was 15.92. That is a reduction of 2.79 shooting victims per month or a total reduction of 33.48 shooting victims per year or a decrease in shooting victims of 14.9%.

Individuals Killed by Gun Violence

With regard to individuals killed by gun violence, the monthly average in the 24 months prior to implementation was 2.50. In the 36 months after implementation the monthly average for individuals killed by gun violence was 1.67. That is a statistically significant reduction of .83 individuals killed by gun violence per month or a total reduction of 9.96 individuals killed by gun violence per year or a decrease in individuals killed by gun violence of 33.2%.

² p < .05

Conclusion

In summary, these results show strong and consistent declines in all assessed categories of gun violence. Although it is not possible to link the changes to any individual strategy, the time series analyses show that these changes are tied to the implementation of the group of gun crime reduction strategies in Rochester.

It is also worth noting that these positive results also have significant economic impact. The RAND Corporation has developed a cost of crime calculator³ to help communities understand the financial impact of crime. RAND calculates each homicide to cost \$8,649,216 to the community, including a broad range of costs to victims and their families, employers and government organizations. Based on a reduction of nearly ten homicides for the year, this equates to a cost avoidance of \$86,146,191 in the year after GIVE implementation. RAND calculates each aggravated assault to cost \$87,238 to the community. With 33 fewer shooting victims annually, this equates to \$2,920,728 for the year post-GIVE implementation. The estimated combined homicide and aggravated assault cost avoidance is nearly \$90 million dollars in annual savings.

³ RAND Corporation. (2010). Cost of Crime Calculator. <https://www.rand.org/jie/justice-policy/centers/quality-policing/cost-of-crime.html>