RIT | College of Liberal Arts
Center for Public Safety Initiatives

Knife Homicides: Trends in Rochester, NY

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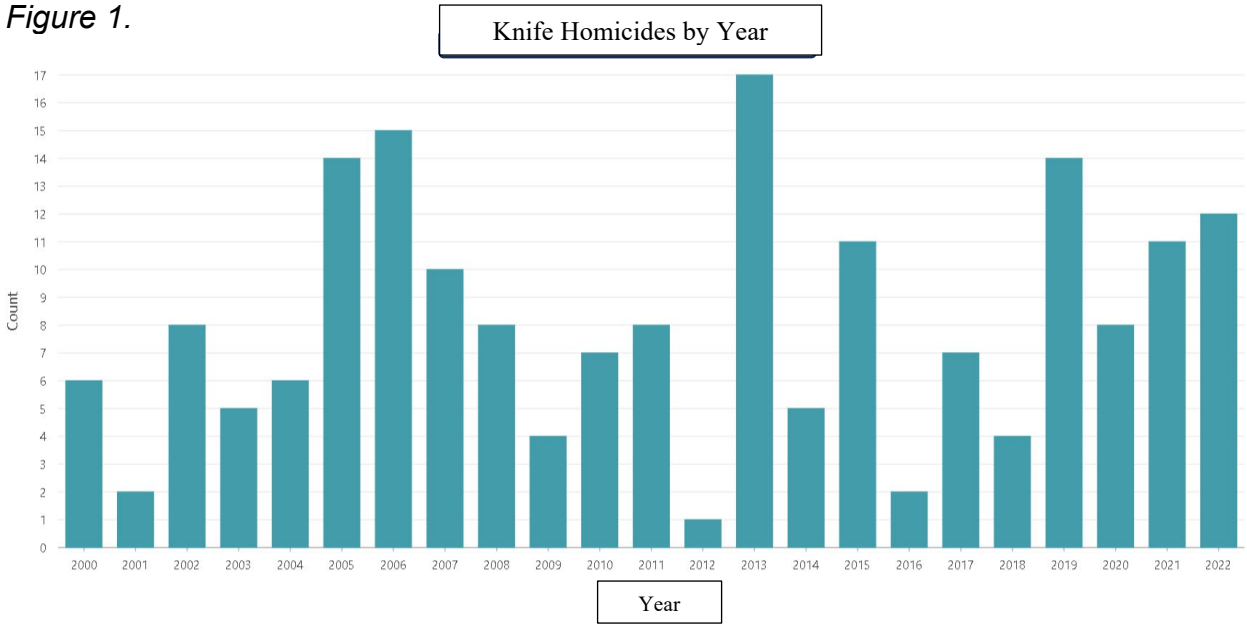
Introduction

This report examines the knife homicides that have occurred in Rochester from 2000 to 2023. This report highlights different trends that are occurring with knife homicides, including differences in location, case status, and the time the act was committed. A spatiotemporal analysis was conducted in order to understand the changes in homicides that are occurring over time. Spatiotemporal comparisons are crucial to understanding lethal violence at a city level. In order to gather data on Rochester homicides, the researchers utilized the Rochester Police Department's Open Data Portal (RPD Open Data Portal, n.d.). The research team utilized ArcGIS to visualize all the points of homicide data (RPD Open Data Portal, 2000-2022). This paper specifically focuses on homicides by knife because knives are one of the top five killing instruments in the United States. Understanding homicides committed with knives makes it possible to develop weapon-specific violence reduction interventions.

Knife Homicides, 2000–2022

Figure 1 shows the number of knife homicides that have occurred in Rochester every year since the year 2000. The top five years with the most knife homicides recorded in Rochester were 2005 (14), 2006 (15), 2013 (17), 2019 (14), and 2022 (12). More knife-related homicides have been recorded in the first two years of this decade than in the first two years of any previous decade. Rochester’s lowest number of recorded knife homicides occurred in 2012, with a total of one homicide. The data does not have a negative or positive correlation, meaning that the number of knife-wielding homicides in Rochester fluctuates every year.

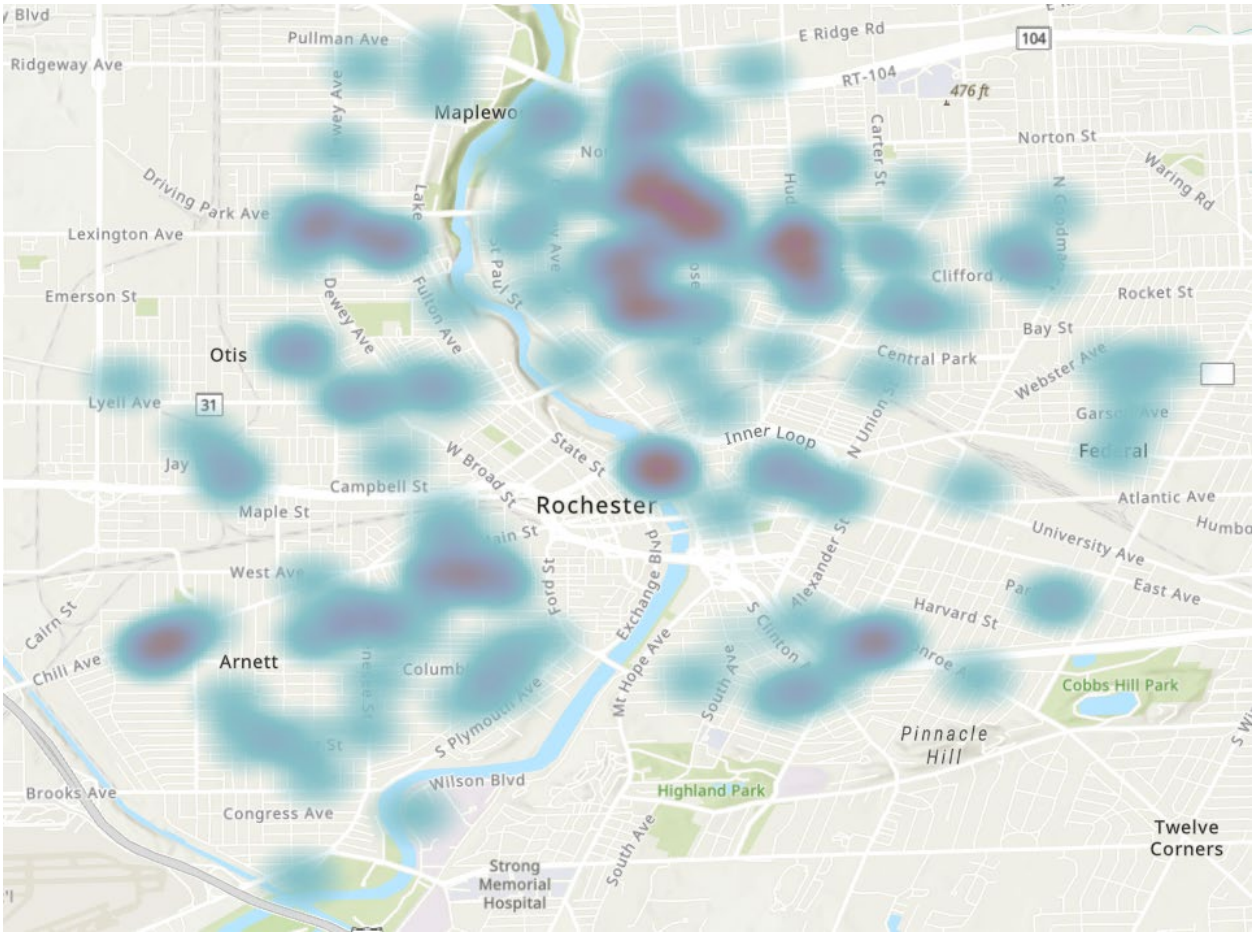
Figure 1.



Knife Homicide Heat Map

Figure 2 shows a heat map analysis of knife homicides that occurred in Rochester. A radius of 20 miles was chosen for each incident where someone was killed with a knife. Areas where more knife homicides occurred are indicated by darker colors on the map. Hence, the North Clinton corridor recorded the highest number of knife-based homicides. Other areas of Rochester, such as the corner of Dewey Avenue and Lexington Avenue, the corner of Lyell Avenue and Dewey Avenue, the intersection of South Clinton and Interstate-490, and the Chili Avenue corridor, also indicated high levels of fatal stabbings. Additionally, the areas between State Street and St. Paul Street and the Inner Loop and West Main Street also reported significant knife homicides.

Figure 2.



(RPD Open Data Portal, 2000-2022)
https://rpdny.maps.arcgis.com/apps/webappviewer/index.html?id=99dc1d4b45f440a4982d6f2679325430

Knife Homicide by Police Jurisdiction, 2000–2022

Figure 3 shows the overall number of knife homicides that have collectively occurred in Rochester between 2000 and 2022 based on their police jurisdiction. The City of Rochester is split into five different police sections: Central (Central Park), Clinton (North Clinton), Genesee (Genesee Street), Goodman (Goodman Street), and Lake (Lake Avenue). Throughout these five sections, 257 homicides by knife occurred between the years 2000 and 2022. The Southeast District of Rochester, parts of the Central and Goodman police jurisdictions, faced the least number of homicides by knife (20 and 33, respectively). The

Northeast District of Rochester (Clinton and parts of the Goodman jurisdiction), on the other hand, faced the highest amount of knife homicides. Additionally, the Northwest and Southwest districts of Rochester also recorded high numbers of homicides as indicated by the Clinton (106) and Genesee (53) neighborhoods, respectively. The Lake jurisdiction also reported 45 homicides on its population-dense side as opposed to its industrial side.

Figure 3.

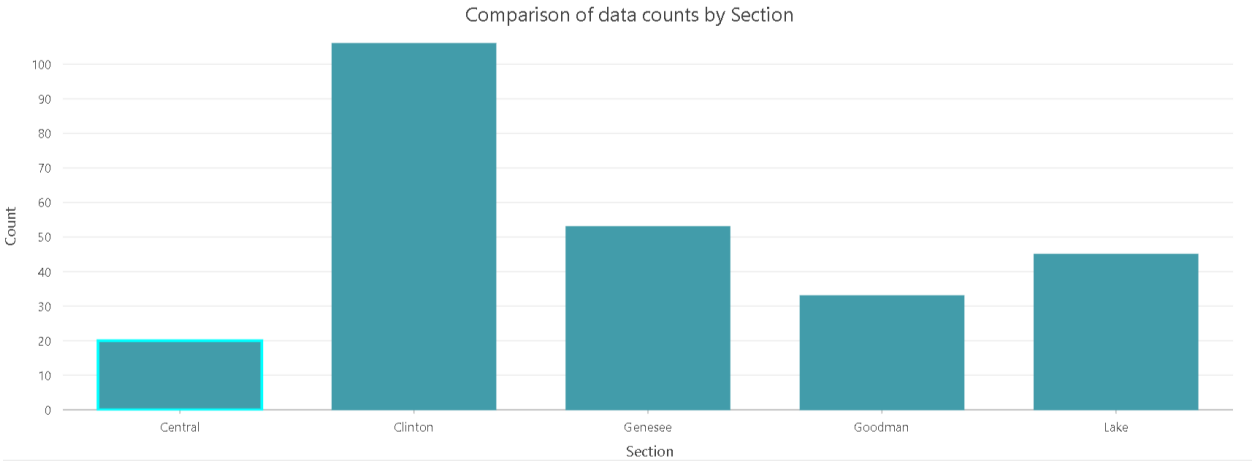
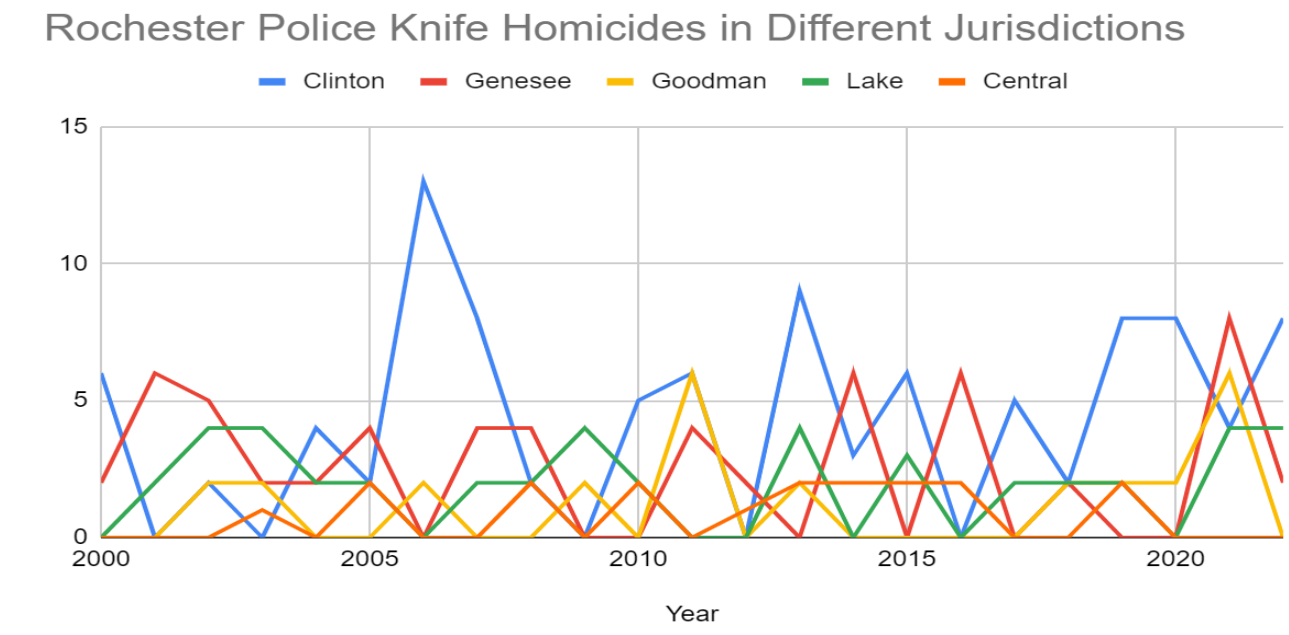
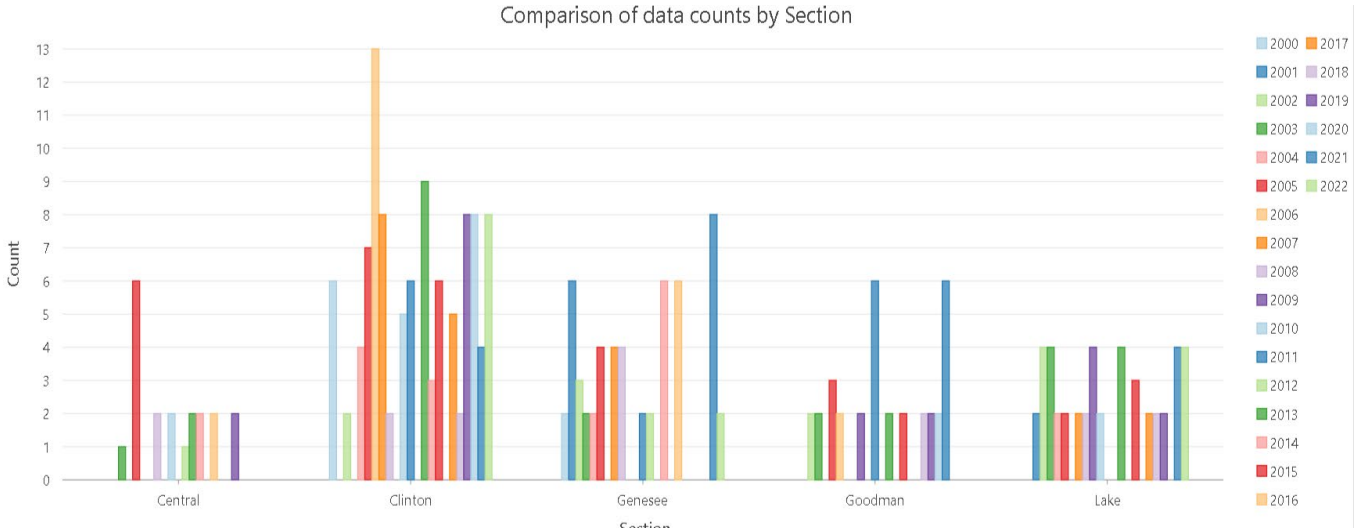


Figure 4 (containing line graphs converted into bar graphs) shows the number of knife homicides that have occurred in Rochester between 2000 and 2022 by police jurisdiction. The Central jurisdiction recorded a relatively low number of homicides (1-2) annually, though it had a maximum of six homicides in the year 2005. The Clinton section recorded a record number of jurisdictional homicides in 2006 (13), while most of the annual reported knife-related homicides in the dataset were recorded as five knife-related homicides or more (for 12 years running). The Genesee jurisdiction recorded high homicide rates in 2001 (6), 2014 (6), 2016 (6), and 2021 (8), with the other years having two or three homicide occurrences. Knife-related homicides in the Clinton and Genesee jurisdictions fluctuated the most, on average, in comparison to the other jurisdictions. The Goodman jurisdiction recorded low

homicide rates, except for the years 2011 and 2021. The Lake jurisdiction was the most stable, with the majority of reported knife-homicides being between two and four annually. From this data alone, it is hard to determine if the number of knife-related homicides in each district is rising or falling.

Figure 4.





Conclusion

To better determine how police resources should be distributed, attention should be given to understanding different homicide trends. This study explored the beginning of a spatiotemporal analysis of knife-homicides (see Appendix *Table 1* below). Knife-homicide rates fluctuate frequently, and public safety should be cognizant of this fact, given the limited level of resources that are available to be deployed. The Clinton and Genesee districts should be given the most attention by police staff due to their higher knife-homicide rates, with Lake and Goodman being secondary priorities due to their more moderate knife-homicide rates. It is important to note that the dataset for knife-homicides in Rochester is extremely small in comparison to other larger cities and megacities. Data was only collected for the 22 years between 2000 and 2022; with data collection spanning even more years, better visualizations can be developed. Further research could explore spatiotemporal distributions of other kinds of homicides in Rochester. Continued research could also focus on the specific changes in the locations of knife-homicides by tracking changes in heat map distributions.

Appendix

Table 1. Homicides in Rochester by Knife

Year	Clinton	Genesee	Goodman	Lake	Central	Total
2000	6	2				8
2001		6		2		8
2002	2	5	2	4		13
2003		2	2	4	1	9
2004	4	2		2		8
2005	2	4		2	2	10
2006	13		2			15
2007	8	4		2		14
2008	2	4		2	2	10
2009			2	4		6
2010	5			2	2	9
2011	6	4	6			16
2012		2			1	3
2013	9		2	4	2	17
2014	3	6			2	11
2015	6			3	2	11
2016		6			2	8
2017	5			2		7
2018	2	2	2	2		8
2019	8		2	2	2	14
2020	8		2			10
2021	4	8	6	4		22
2022	8	2		4		14
Total	106	53	33	45	20	257

References

RPD Open Data Portal. (2000-2022). *Rochester, NY Homicides*. Rochester Police Department. Rochester, NY. https://data-rpdny.opendata.arcgis.com/pages/homicide-victims

RPD Open Data Portal. (n.d.). *Search Data and Apps*. Rochester Police Department. Rochester, NY. https://data-rpdny.opendata.arcgis.com/

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The Center for Public Safety Initiatives (CPSI) is a multi-disciplinary research center that examines strategies to reduce crime and enhance the administration of justice. It provides program evaluation, data analytics, and project management services to area law enforcement, community non-profits, and other criminal justice professionals, and it contributes to general knowledge generation of the nature and causes of crime and violence. Its educational goals include training graduate and undergraduate students in strategic planning, program evaluation, and policy analysis.

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