OCTOBER 2015

Aggravated Assault in the City of Pittsburgh

1. INTRODUCTION

This brief presents an analysis of aggravated assault in the City of Pittsburgh from January 2005 through July 2015. It begins with a study of trends in the rate of aggravated assault and an examination of the nature of these crimes, with special attention to methods of assault, crime location and victim demographics. This brief concludes with an examination of the Pittsburgh Bureau of Police's clearance rate statistics and the relationship between clearance rates and crime characteristics, including crime location and weapon used.

Aggravated Assault Defined

An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury...usually accompanied by the use of a weapon or by other means likely to produce death or great bodily harm. Attempted aggravated assault that involves the display of—or threat to use—a gun, knife, or other weapon is included in this crime category because serious personal injury would likely result if the assault were completed.

— *The FBI Uniform Crime Report*

This analysis offers four broad conclusions about aggravated assault in the City of Pittsburgh:

1. Aggravated assault rates have generally declined in the City of Pittsburgh since 2005, but at a slower pace than in comparable cities.
2. Aggravated assault is most prevalent in areas historically beset by violent crime, including the East End, the North Side and the South Side Hilltop.
3. Victims of aggravated assault are disproportionately young, African American and male.
4. Aggravated assault clearance rates are higher than those of comparable cities, but vary depending on the method of assault, location and victim demographics.

2. DATA

2.1. Sources

City of Pittsburgh Bureau of Police Data

The analysis in this report is drawn, largely, from incident data collected by the City of Pittsburgh Bureau of Police and reported under the FBI Uniform Crime Report. These data are available for incidents that occurred from January 2005 through July 2015, and include information about the location, date, time and clearance status of each incident. These data also include victim information, including age, race and gender, for the period January 2009 through July 2015.

Federal Bureau of Investigation, Uniform Crime Report (UCR)

The Federal Bureau of Investigation collects crime data from police agencies nationwide. This brief uses data from the UCR to compare Pittsburgh's aggravated assault rate to those of 13 comparable U.S. cities and to compare the City of Pittsburgh Bureau of Police's clearance rate to the rates of all similarly sized U.S. cities (population of 250,000 — 499,999).

United States Census Bureau

The analysis in this brief incorporates population estimates from the U.S. Census Bureau's 2014 Population Estimates Program to compute the aggravated assault rates of 13 comparable U.S. cities and the City of Pittsburgh.

PGHSNAP, City of Pittsburgh Department of City Planning

The analysis of aggravated assault incident rates by neighborhood incorporates data from the City of Pittsburgh's Department of City Planning data tool, PGHSNAP. PGHSNAP offers population and demographic statistics derived from the 2010 U.S. Census.

Pittsburgh Today

This report uses 13 of the 14 Pittsburgh Today benchmark cities to compare Pittsburgh's aggravated assault rate to those in comparable cities. Pittsburgh Today is a University of Pittsburgh project that has identified a list of 14 U.S. cities that are geographically and demographically similar to the City of Pittsburgh, for use in comparing key indicators. The Pittsburgh Today benchmark cities include: Baltimore, Boston, Charlotte, Cleveland, Cincinnati, Denver, Detroit, Indianapolis, Kansas City, Milwaukee, Minneapolis, Richmond and St. Louis. Indianapolis is omitted from this analysis, due to inconsistencies in data reported to the FBI.

2.2 Period of Study

Much of the analysis in this report is derived from incident records collected from 2005 through 2014, the most recent years for which complete and reliable City of Pittsburgh data are available. A study of clearance rates, for example, would be skewed by the inclusion of recent 2015 records, since there is a lower likelihood of case resolution. However, this report does include 2015 data in analyses of victim demographics, as the 2015 records offer victim descriptions nearly as complete as those of prior years. Victim data are only available for records collected from January 2009 through July 2015.

In comparing across U.S. cities, this report draws on data from the FBI's Uniform Crime Reporting Program, which has released national statistics through 2014. Comparisons of aggravated assault rates or clearance rates, therefore, include comparisons to Pittsburgh's 2014 data.

2.3 Incident-level Analysis

This report uses incidents, rather than victims, as the primary unit of analysis. In the case of aggravated assault, for example, it is possible for a perpetrator to assault multiple victims at a single location. Records of this kind were consolidated for the purposes of this brief, with the exception of victim demographic analysis, which employs victim-level data.

2.4 The Limits of Police Data

In 2014, the National Crime Victimization Survey conducted by the Bureau of Justice Statistics (BJS) estimated that 42 percent of aggravated assaults went unreported.[1] The BJS posits that victims of aggravated assault or witnesses to an assault might choose not to report a crime if they fear reprisal, have a relationship with the perpetrator, or do not believe that the police will be able to provide desired assistance. Since the data used in this report include only those cases reported to the police or observed by an officer, this analysis could be impacted by selection bias. It is important to consider the ways in which differences in reporting may skew our perception of the nature of aggravated assault or the demographic profile of its victims.

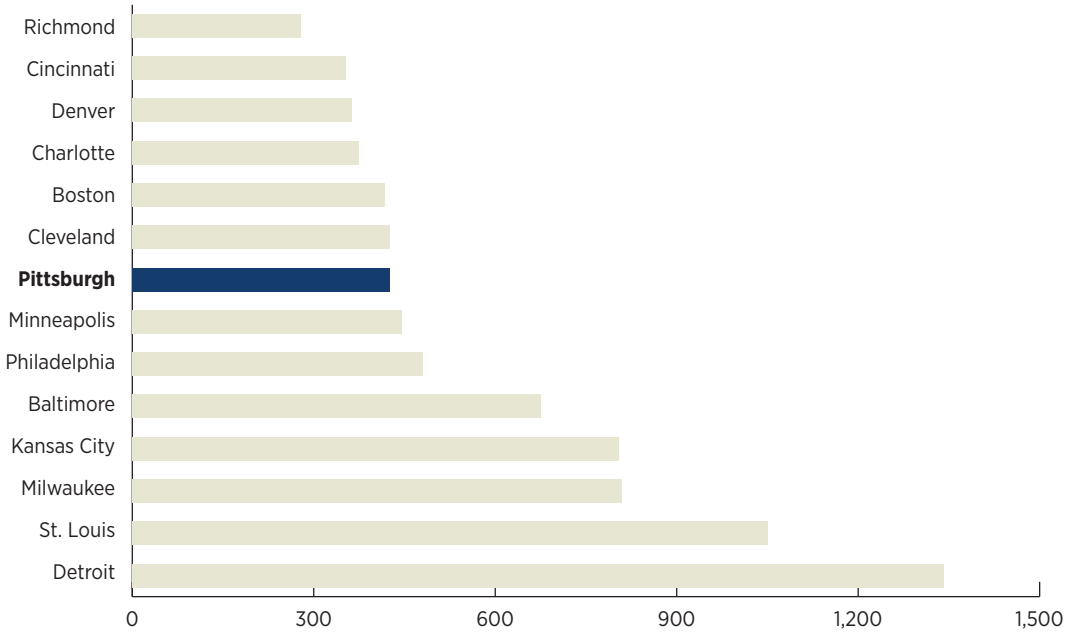
[1] Bureau of Justice Statistics, "Criminal Victimization, 2014," http://www.bjs.gov/content/pub/pdf/cv14.pdf

3. ANALYSIS

3.1 Trends in Aggravated Assault

In 2014, Pittsburgh Police responded to approximately 1,300 incidents of aggravated assault, at a rate of 426 assaults per 100,000 city residents. This rate is similar to the rates of several Pittsburgh Today benchmark cities, particularly Minneapolis, Cleveland and Boston. **Figure 1** compares Pittsburgh's 2014 aggravated assault rate to the rates of these 12 comparison cities. Although six cities have lower rates of aggravated assault, Pittsburgh remains well below the benchmark average of 602, which is inflated by high levels of aggravated assault in Detroit (1,342 per 100,000) and St. Louis (1,051 per 100,000).

FIGURE 1: **Aggravated assault rates of comparable US cities, 2014**

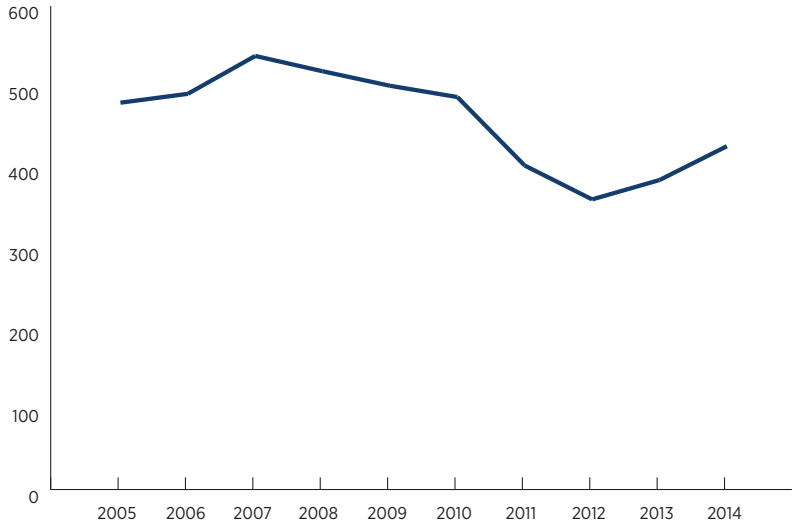


Pittsburgh's 2014 rate of 426 represents a modest increase over the 2013 rate of 410 incidents per 100,000 residents. Nonetheless, aggravated assaults are generally on the decline in Pittsburgh. Between 2005 and 2014, Pittsburgh's aggravated assault rate fell by 11 percent. **Table 1** details the year-over-year percent change in the aggravated assault rate across this ten-year period. Figure 2 plots the aggravated assault rate for the same period, showing gradual decline across the decade, with the greatest reductions occurring between 2007 and 2012.

TABLE 1: **Year-over-year percent change in the rate of aggravated assault in Pittsburgh, 2005 through 2014**

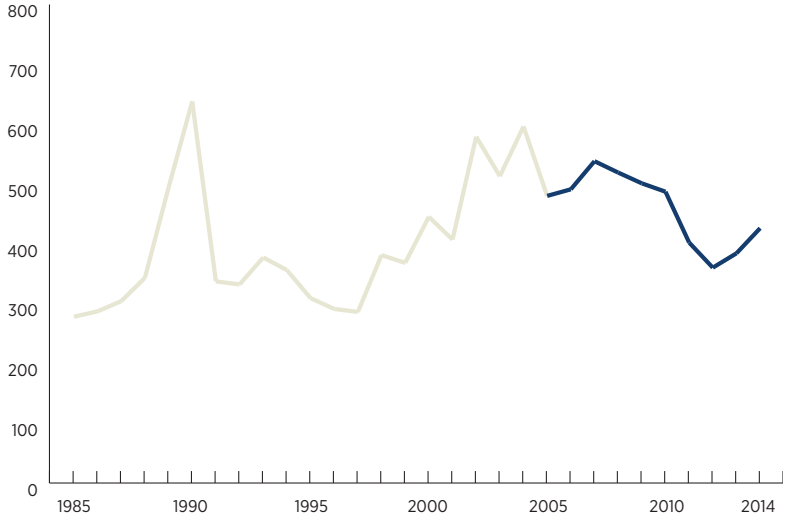
	YEAR-OVER-YEAR PERCENT CHANGE
2005	—
2006	2%
2007	10%
2008	-3%
2009	-4%
2010	-3%
2011	-18%
2012	-10%
2013	6%
2014	11%
Ten-Year	**-11%**

FIGURE 2: **Aggravated assault rate in Pittsburgh, 2005 through 2014**



Although 2005 is the earliest year for which we have comprehensive data, it is useful to place this recent decade in the context of the volatile 1980s and 1990s, a period during which cities nationwide experienced unprecedented rates of violent crime. **Figure 3** plots the City of Pittsburgh's aggravated assault rate from 1985 through 2014 using data supplied by the Pittsburgh Bureau of Police to the FBI's Uniform Crime Reporting program. The most recent decade, highlighted in blue, follows a period of elevated rates, suggesting that recent declines may represent a recovery from the inflated levels of aggravated assault recorded in the 1990s and early 2000s.

FIGURE 3: **Aggravated assault rate in Pittsburgh, 1985 through 2014**



Similar to the trends observed in Pittsburgh, aggravated assault rates have declined for nearly every city in the Pittsburgh Today comparison group since 2005. **Figure 4** plots the median aggravated assault rate of Pittsburgh Today cities across this decade, while **Figure 5** presents the ten-year percent change in the aggravated assault rate of each city. Although Pittsburgh's aggravated assault rate has improved, its rate fell by less than the rates of most comparable cities.

These comparison data suggest that recent declines in Pittsburgh's aggravated assault rate may be attributable to the same forces driving reductions in crime throughout the country. Research offers a number of explanations for this national trend, including the increased use of CompStat by police departments, growth in the size of police forces, changes in the age composition of the population, and a decline in the use of alcohol.[2]

[2] Oliver Roeder, Lauren-Brooke Eisen, and Julia Bowling, "What Caused the Crime Decline?" February 12, 2015, https://www.brennancenter.org/sites/default/files/publications/What_Caused_The_Crime_Decline.pdf

FIGURE 4: Trends in Pittsburgh's aggravated assault rate compared to a composite of comparable cities, 2005 through 2014

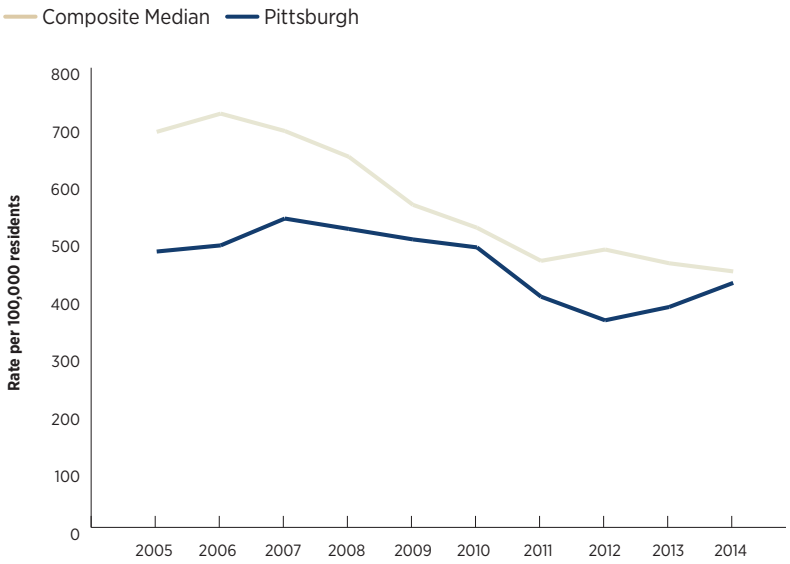
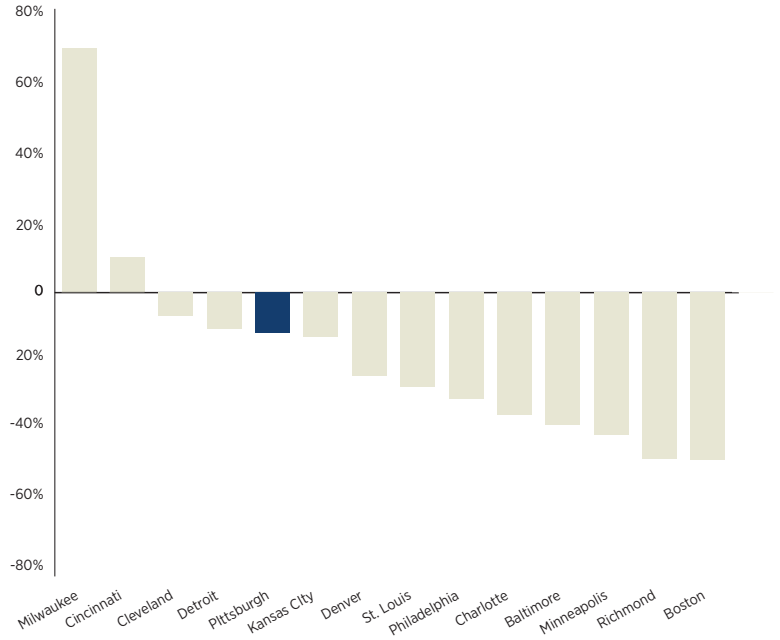


FIGURE 5: **Ten-year percent change in the aggravated assault rates of comparable US cities, 2005 through 2014**



3.2 The Nature of Aggravated Assault

To effectively measure and track crime throughout the city, the Pittsburgh Bureau of Police collects data on the circumstances and methods of each reported crime. Officers who respond to a report of aggravated assault make note of the weapon used, the condition of the victim and any additional circumstances that increase the seriousness of the crime, such as the involvement of a police officer. Figure 6 serves as a snapshot of aggravated assaults throughout the City of Pittsburgh in 2014. It presents a distribution of the weapons most commonly employed in aggravated assaults and the share of assaults assigned special categories.

As illustrated by **Figure 6**, guns were the most common weapon used in aggravated assault in 2014: 21 percent of assaults involved a perpetrator using a gun against a victim, while an additional five percent involved the discharge of a firearm into an occupied structure and five percent were categorized as drive-by shootings.

FIGURE 6: **Percentage of aggravated assaults, by category, 2014**

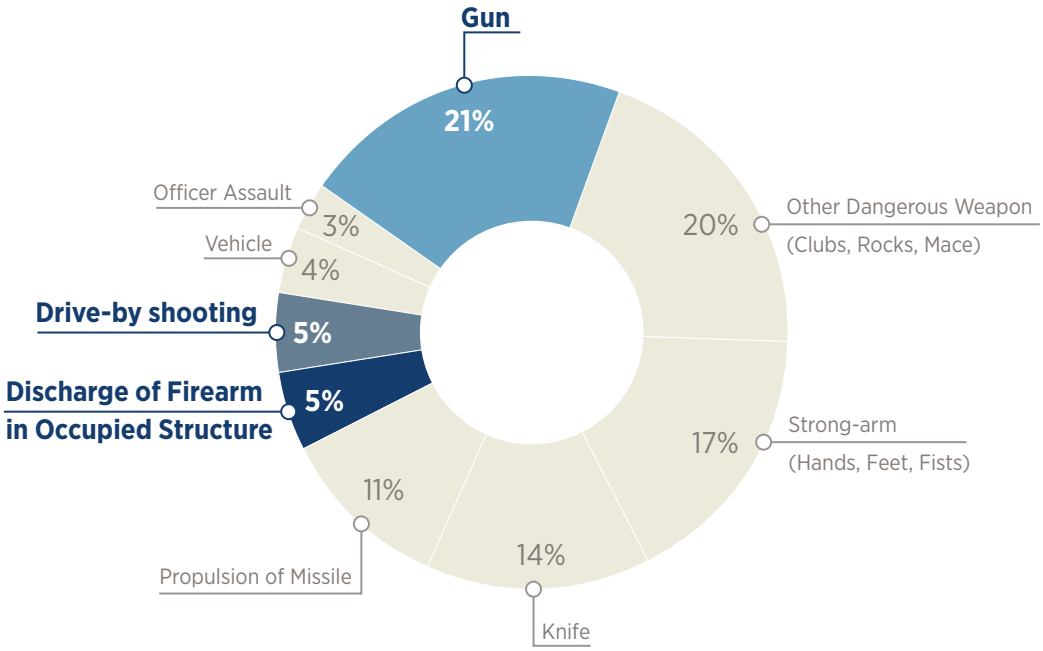
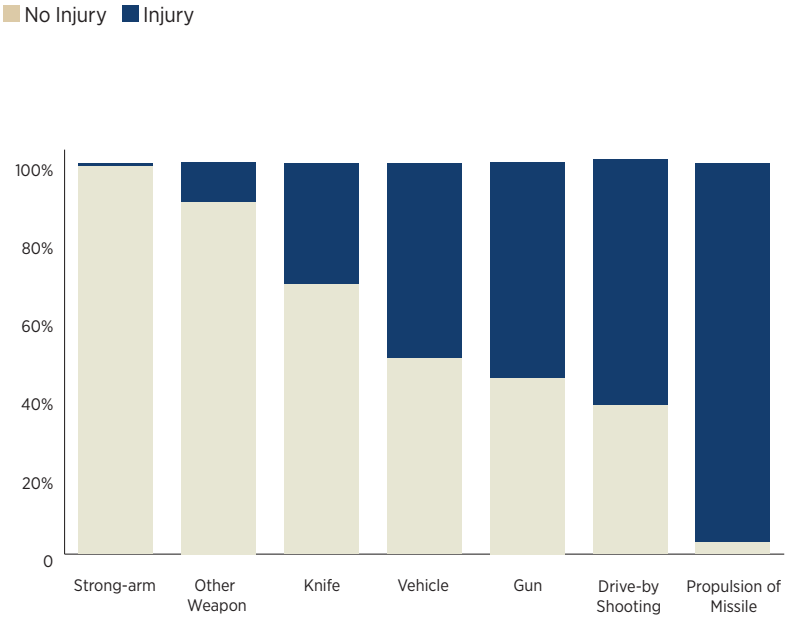


Figure 7 presents the relationship between injury and assault category for the 1,309 aggravated assaults reported in 2014. Injury rates vary considerably by method, ranging from 99 percent for strong-arm assaults to only three percent for missile propulsions. These variations may be attributable to the high threshold for a crime's inclusion in the aggravated assault category as well as differences in the potential for serious injury inherent in the use of each weapon.

FIGURE 7: **Share of aggravated assaults resulting in injury by category or assault, 2014**



For example, we observe that nearly all strong-arm aggravated assaults produced injury because, presumably, those that did not result in "serious bodily harm" would have been categorized as simple assault, a Part II offense and a misdemeanor. By contrast, incidents involving guns, including the special category, "drive-by shooting," have fairly low injury rates because firearms are considered deadly weapons and their use increases the seriousness of the crime, regardless of the severity of a victim's injuries. The final category, propulsion of missile, describes a crime that is well-defined under Pennsylvania's aggravated assault statute. This category pertains to the specific act of throwing rocks, bricks, or metal objects at cars or into roadways. Due to the distinct nature of this crime, missile propulsions are routinely classified as aggravated assaults, despite a low likelihood of injury.

3.3 Where Aggravated Assault Occurs

A study of citywide aggravated assault rates can mask the variations in crime risk that exist across individual communities. Despite modest declines in this citywide rate, select neighborhoods and police zones of the City of Pittsburgh continue to experience persistent high rates of aggravated assault. Figure 8 provides an illustration of these disparities by comparing the rates of aggravated assault in each City of Pittsburgh neighborhood in 2014.

This map draws attention to several residential areas of the city with particularly high rates of aggravated assault, including Homewood, Larimer, the North Side and Knoxville. When examining neighborhood-level rates, we also observe high levels of aggravated assault in areas that typically accommodate non-residents, such as the Central Business District, South Side Flats and the Strip District. Generally, however, adjusting for residential population allows for comparison across neighborhoods and provides a more accurate assessment of the risk posed by aggravated assault to members of each community.

FIGURE 8: **Aggravated assault rate, by neighborhood, 2014**

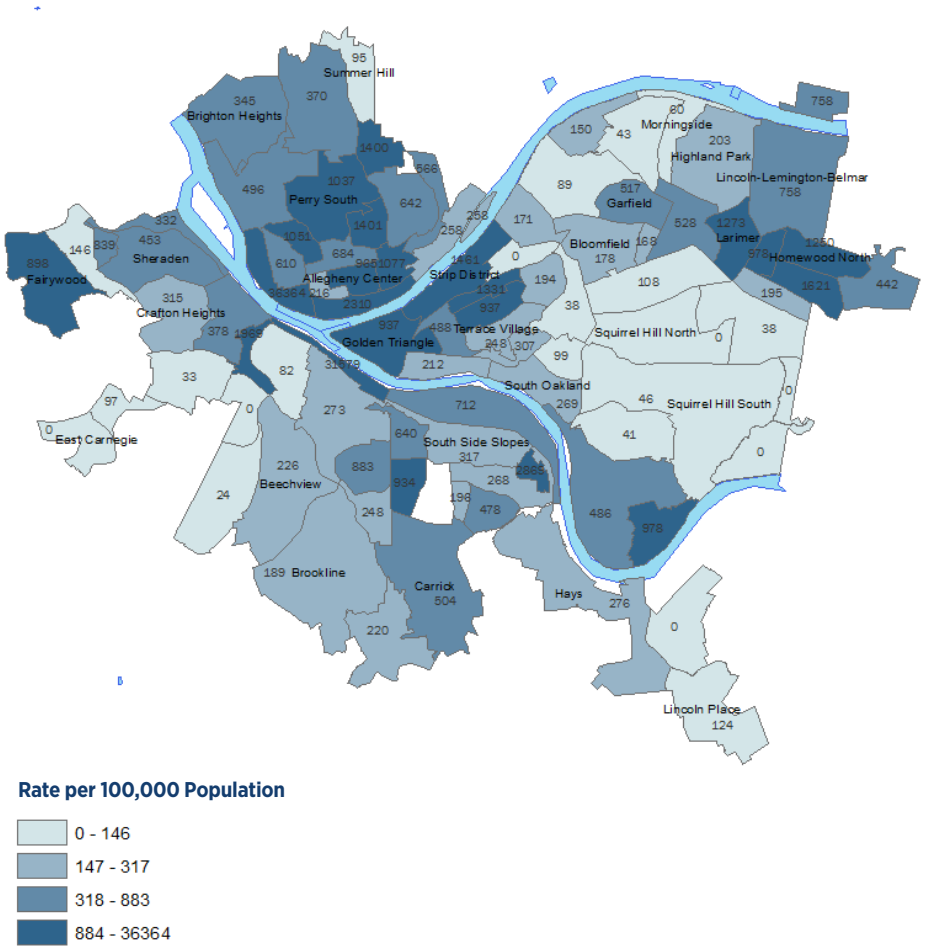


Table 2 lists the 10 City of Pittsburgh neighborhoods with the greatest number of aggravated assaults in 2014 and their corresponding aggravated assault rates. In this table, as in the map of aggravated assault rates, we observe high levels of aggravated assault in neighborhoods within the East End, the North Side and the South Side Hilltop.

TABLE 2: **City of Pittsburgh Neighborhoods with the greatest number of aggravated assaults, 2014**

NEIGHBORHOOD	AGGRAVATED ASSAULTS	AGGRAVATED ASSAULT RATE
Carrick	51	504
South Side Flats	47	712
Perry South	43	1037
Homewood North	41	1250
Homewood South	38	1621
Lincoln Lemington Belmar	37	758
Knoxville	35	934
Central Business District	34	937
East Liberty	31	528
Marshall Shadeland	30	496

Due to variation in neighborhood crime rates, there are accompanying disparities in the number of aggravated assault crimes within multi-neighborhood police zones. **Table 3** lists the number of aggravated assaults, the share of total aggravated assaults, and the aggravated assault rate of each City of Pittsburgh police zone. In 2014, the greatest number of aggravated assaults occurred in Zones 1, 3 and 5, which, together, contained 70 percent of all aggravated assaults. Zone 1, which includes the North Side, had particularly high levels of aggravated assault, recording 263 aggravated assaults at a rate of 642 assaults per 100,000 residents.

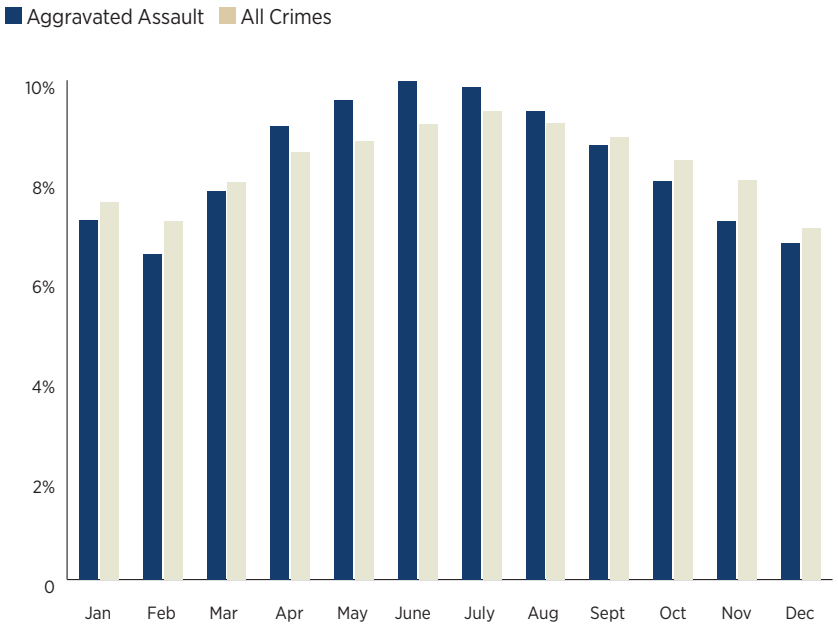
TABLE 3: **Aggravated assaults and aggravated assault rates within each City of Pittsburgh Police Zone, 2014**

	AGGRAVATED ASSAULTS	PERCENT OF TOTAL	RATE PER 100,000
Zone 1	263	25%	642
Zone 2	124	12%	493
Zone 3	236	22%	493
Zone 4	90	8%	101
Zone 5	245	23%	487
Zone 6	112	10%	247

3.4 When Aggravated Assault Occurs

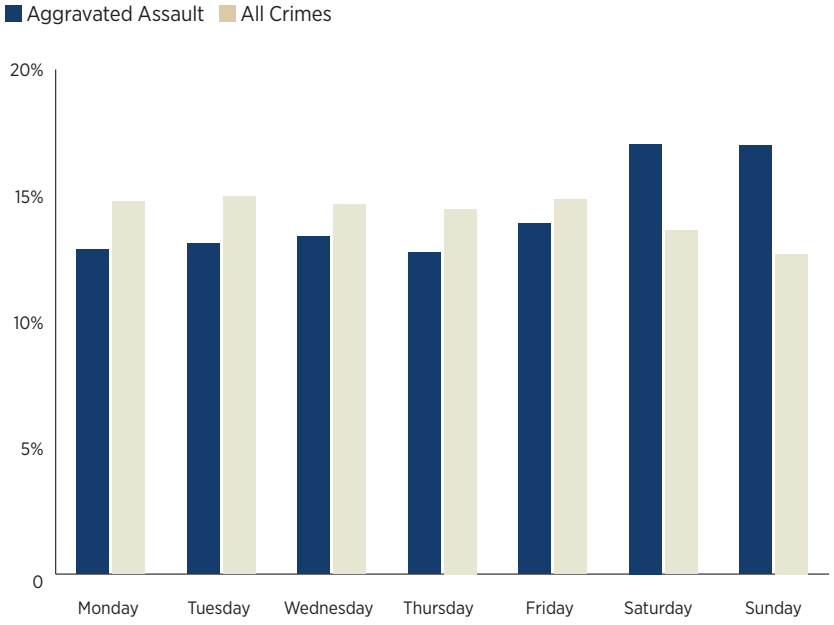
The risk to residents of aggravated assault also varies depending on the month of the year, day of the week, and time of day. **Figure 9** shows the share of aggravated assaults that occurred in each month from 2005 through 2014, and contrasts that distribution with all crimes in the City of Pittsburgh. In the last 10 years, police have documented high rates of aggravated assault in the warmest months, particularly in May, June and July. Although the monthly aggravated assault distribution generally mirrors that of all crimes, aggravated assaults tend to cluster more densely in the summer months.

FIGURE 9: **Percent of aggravated assaults occurring each month of the year, 2005 through 2014**



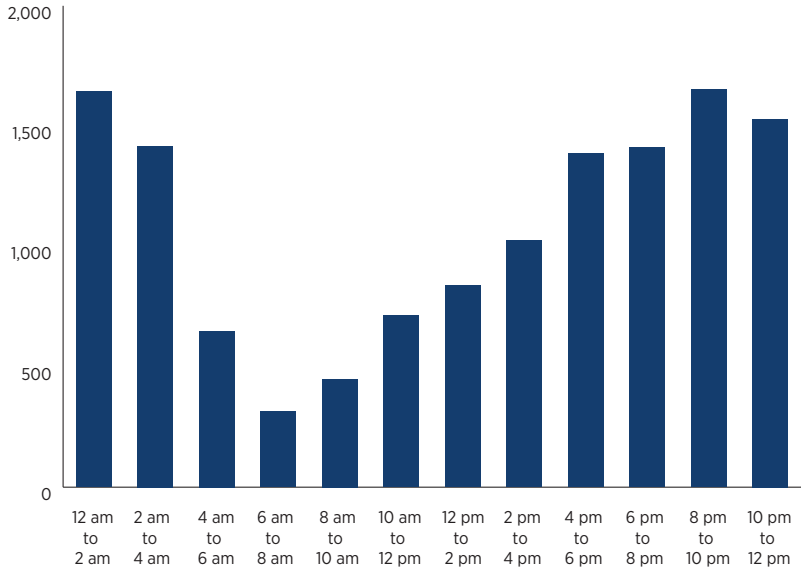
Rates of aggravated assault can also vary across a single week. **Figure 10** shows the share of aggravated assaults that occurred on each day of the week from 2005 through 2015. This distribution is compared to the percentage of all crimes that took place each day throughout this 10-year period. Although crime, in general, tends to be lower on the weekends, aggravated assaults occur most frequently on Saturdays and Sundays.

FIGURE 10: **Percent of aggravated assaults occurring each day of the week, 2005 through 2015**



Aggravated assaults also fluctuate over the course of a day. **Figure 11** shows the distribution of aggravated assault across 12 two-hour time increments, as observed from 2005 through 2015. The data indicate that aggravated assaults occur most frequently in the late evening and at night, but are relatively uncommon in the early morning, particularly between 6:00 am and 8:00 am.

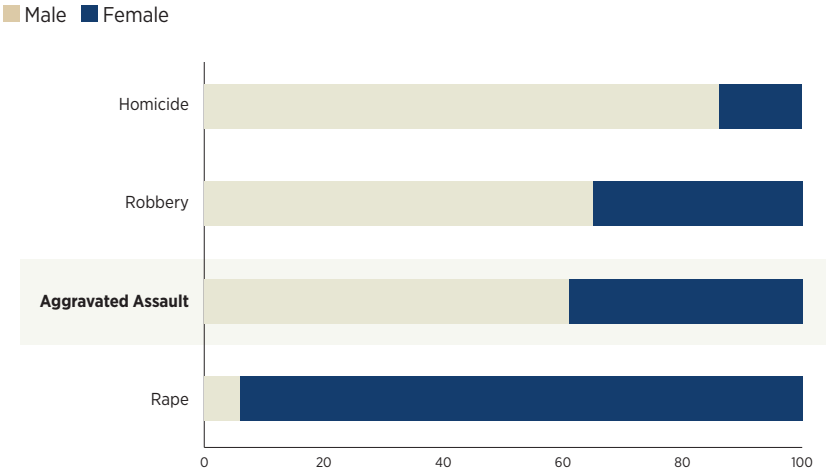
FIGURE 11: **Aggravated assaults by time of day, 2005 through 2015**



3.5 The Victims of Aggravated Assault

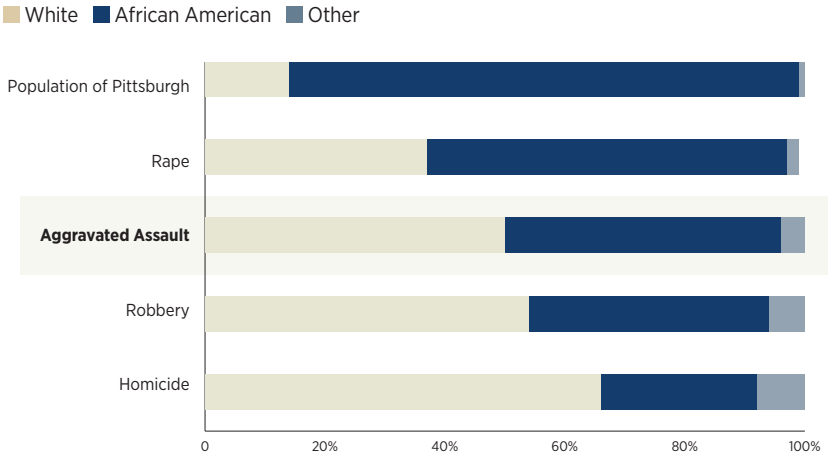
The demographics of victims of aggravated assault differ from those of the general population of Pittsburgh. These victims are more likely than average Pittsburgh resident to be male, African American and younger than 30. **Figure 12** compares the ratios of male-to-female victims across several crime types for the period from 2009 through 2015. Although the discrepancy between rates of male and female victimization is less pronounced for aggravated assault than for other crimes, male residents of Pittsburgh are more likely than female residents to be victims of aggravated assault, with a 2014 victimization rate approximately 1.5 times higher than the rate for female residents. Since 2009, 61 percent of aggravated assault victims have been male compared to 39 percent female.

FIGURE 12: **Ratio of male to female victims of aggravated assault, 2009 through 2015**



African American residents of Pittsburgh are more likely than white residents to be victims of aggravated assault. In 2014, the aggravated assault victimization rate for African American residents was nearly four times higher than the rate for white residents. **Figure 13** presents the ratio of white-to-African American victims of aggravated assault and compares this ratio to other crimes reported from 2009 through 2015. While African Americans comprise just 26 percent of the City of Pittsburgh population, they are victims in 60 percent of aggravated assault cases.

FIGURE 13: **Ratio of White to African American victims of aggravated assault, 2009 through 2015**



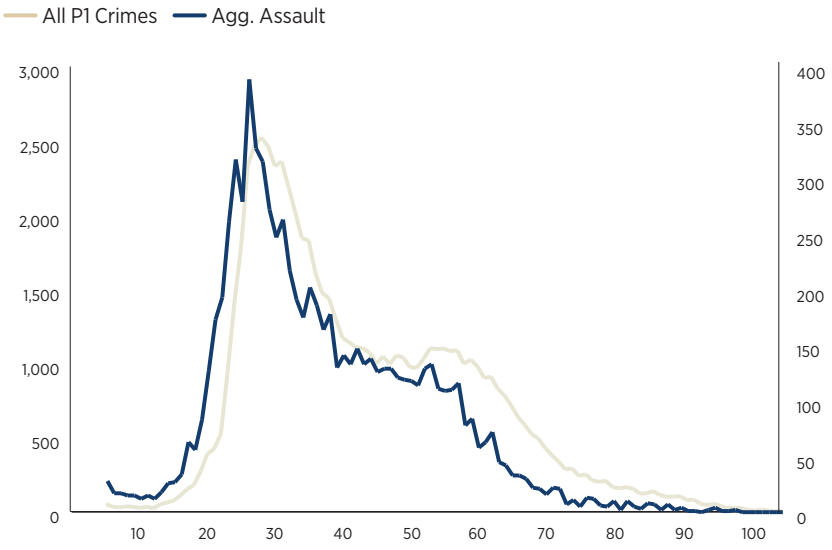
Rates of aggravated assault victimization are also highest for young adults living in Pittsburgh. Although the median age of City of Pittsburgh residents is approximately 33 years, the median age of a victim of aggravated assault is 29.[3] **Table 3** compares the median ages of each Part 1 crime for the period from 2009 through 2015. These data indicate that victims of property crimes tend to be older than victims of violent crimes, including aggravated assault. **Figure 14** plots the ages of aggravated assault victims in comparison to the ages of victims of all Part 1 crimes. Aggravated assault victims tend to be younger and experience the highest rates of aggravated assault victimization in their early 20s.

[3] US Census Bureau, "ACS Demographic and Housing Estimates," 2013, http://factfinder.census.gov/bkmk/table/1.0/en/ACS/13_5YR/DP05/1600000US4261000

TABLE 3: **Median age of Part 1 crime victims, 2009 through 2015**

	MEDIAN AGE OF VICTIM
Aggravated Assault	**29**
Homicide	28
Rape	23
Robbery	28
Part 1 Violent Crimes	28
MV Theft	39
Arson	40
Burglary	39
Theft	35
Part 1 Property Crimes	36
All Part 1 Crimes	**34**

FIGURE 14: **Age distribution of aggravated assault victims, 2009-2015**



3.6 Clearance Rates for Aggravated Assault

Police departments across the country rely on clearance rates as a measure of success. A clearance rate represents the proportion of reported crimes that are investigated and closed. A case is classified as cleared when a perpetrator is arrested and charged or when exceptional circumstances prevent the police and the courts from arresting or prosecuting a known perpetrator. While rising clearance rates can signal increased success in solving crimes, they can also be indicative of falling rates of incident reporting among hard-to-solve crimes, such as theft, or increases in rates of crimes with nearly automatic clearances, such as drug violations, disorderly conduct, or weapon violations.

Key Terms

Cleared by Exceptional Means: The case is closed due to exceptional circumstances that prevent arrest and prosecution. These circumstances can include the death of a suspect, difficulty securing victim cooperation, or challenges with extradition.

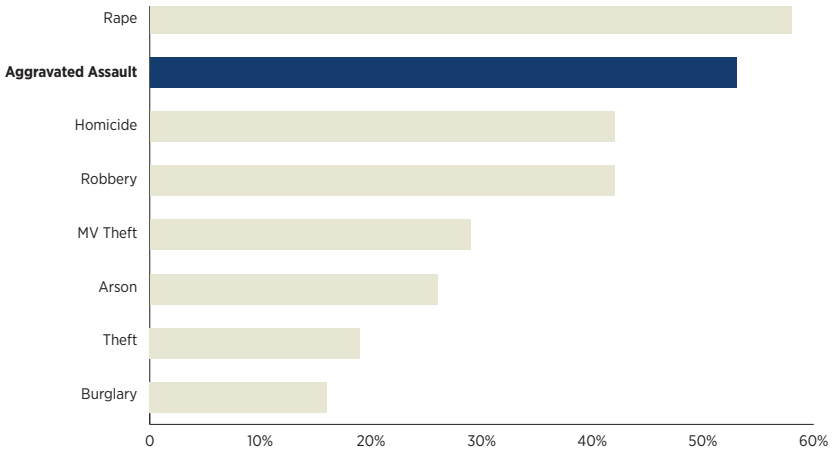
Cleared by arrest: Police have arrested a juvenile or adult in connection with the incident, charged them with the crime and turned the case over to a court.

Pending: The case remains open.

Clearance Rate: The number of cases cleared by arrest or by exceptional means as a percentage of the total number of reported incidents.

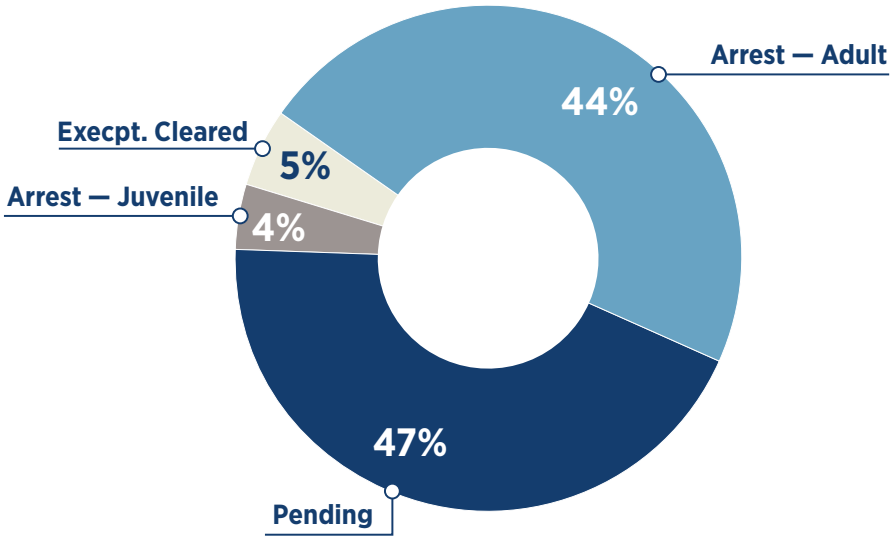
Due to characteristic differences across Part 1 crimes, it is useful to calculate and track clearance rates within a single crime category. In the City of Pittsburgh, aggravated assault tends to have a higher clearance rate than arson or theft, but a lower rate than rape. **Figure 15** illustrates this variation in clearance rate by crime category.

FIGURE 15: **Clearance rate by crime type, 2014**



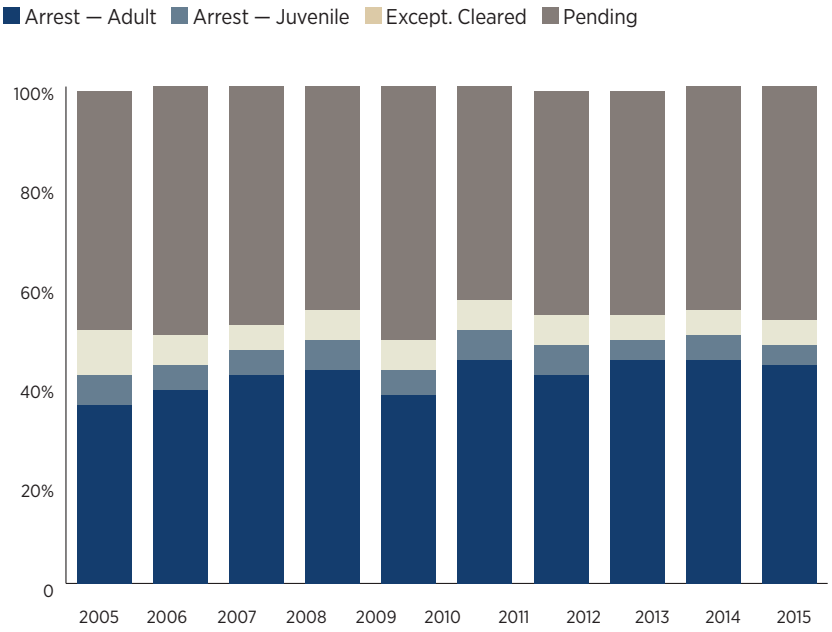
In 2014, Pittsburgh's clearance rate for aggravated assault was 53 percent, meaning that roughly half of the aggravated assaults reported to police culminated in the identification of a suspect. **Figure 16** presents the distribution of all 2014 aggravated assaults by clearance status: adult arrest, juvenile arrest, cleared by exception, or pending. A large share of these aggravated assaults were cleared by the arrest of an adult (44%), while a smaller number were cleared by juvenile arrest (4%) or cleared by exception (5%).

FIGURE 16: **Clearance status of aggravated assault, 2014**



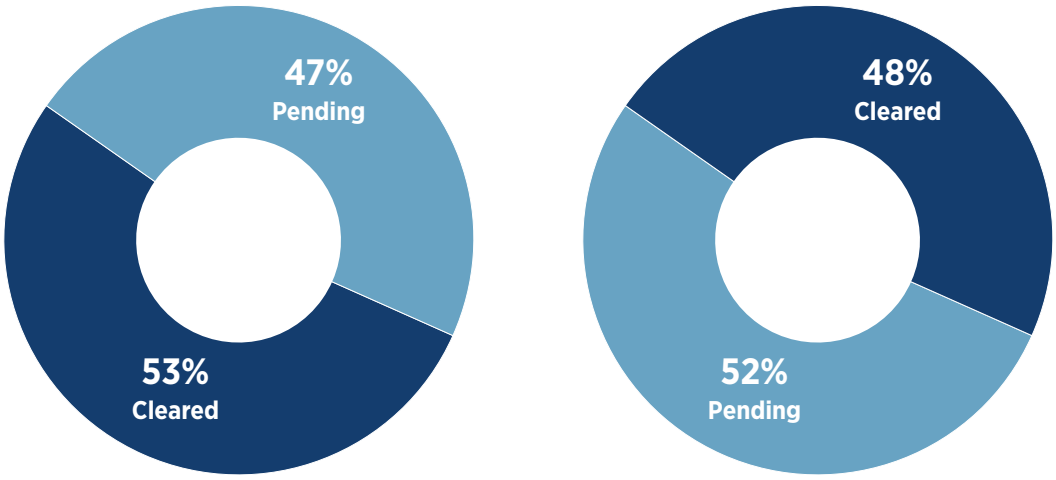
As illustrated in **Figure 17,** the distribution of pending and cleared aggravated assault cases has remained fairly constant over the past ten years. The Bureau's clearance rate has ranged from a maximum of 57 percent in 2010 to a minimum of 49 percent in 2009. Although the aggravated assault rate was relatively high in 2009 and the clearance rate relatively low, the available data reveal no statistical relationship between the number of reported aggravated assaults and the annual clearance rate.

FIGURE 17: **Trends in the clearance status of aggravated assault, 2005 through 2014**



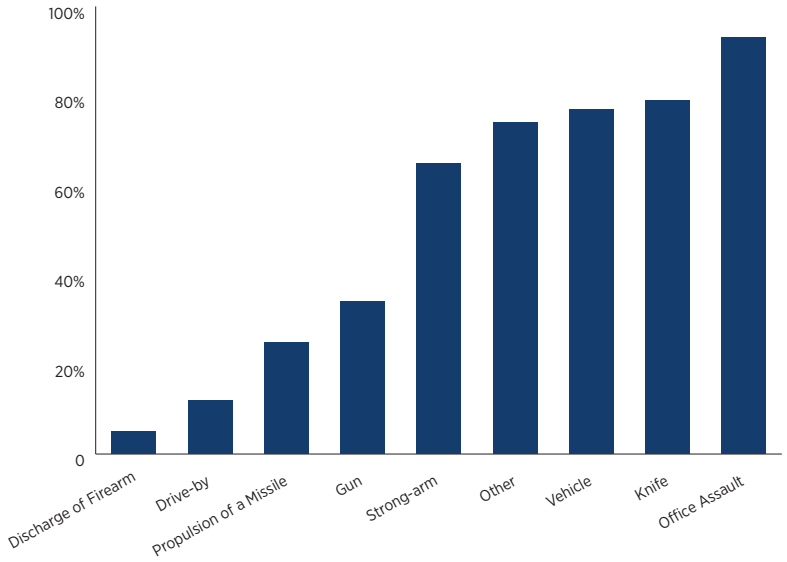
To evaluate Pittsburgh's clearance rate for aggravated assault, it is useful to compare Pittsburgh to similar benchmark cities. Because the FBI does not report clearance rates on the city level, this brief will use the FBI's Group I: population 250,000 to 499,999 subset category for comparison purposes. The FBI generates data for this category by combining crime statistics for all cities with populations of 250,000 to 499,999. As shown in **Figure 18**, Pittsburgh's clearance rate for aggravated assaults in 2014 was six percentage points higher than the rate of these similarly-sized cities.

FIGURE 18: **The aggravated assault clearance rate in Pittsburgh compared to all cities with population 250,000 to 499,999, 2014.**



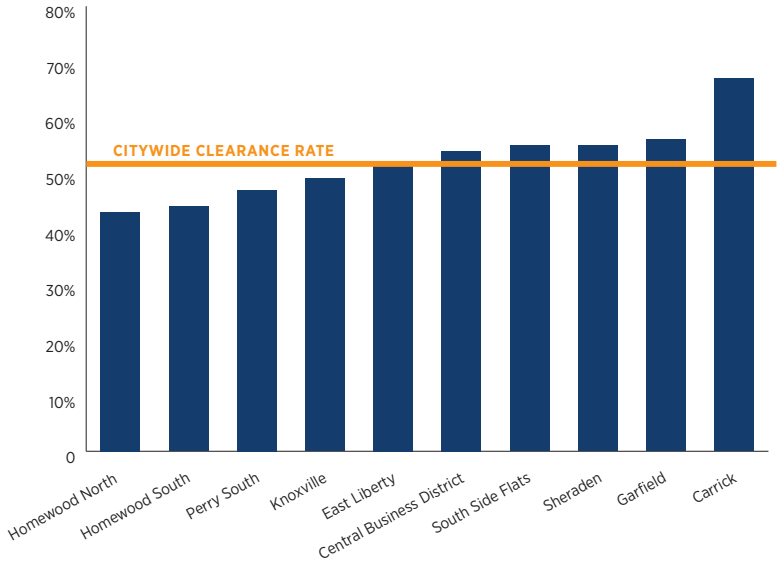
However, Pittsburgh's 53 percent clearance rate does not apply uniformly to all instances of aggravated assault; it can vary depending on the characteristics of an assault or the demographics of a victim. **Figure 19** compares the clearance rates of each category of aggravated assault for all aggravated assaults from 2005 through 2014. As shown, clearance rates for aggravated assault are lowest when the assault involves the discharge of a firearm into an occupied structure (5%), a drive-by shooting (12%), the propulsion of a missile (25%), or the use of a gun (34%). These assaults may be more difficult for police to clear given that they are associated with lower rates of injury (see **Figure 7**) and may not allow for close, visual contact between the perpetrator and the victim or witness. By contrast, aggravated assaults that involve a police officer have the highest clearance rate at 93 percent.

FIGURE 19: **Aggravated assault clearance rate by category of assault, 2005 through 2014**



The clearance rate of an aggravated assault can also vary depending on the location of the crime within the City of Pittsburgh. **Figure 20** presents the aggravated assault clearance rates of the ten Pittsburgh neighborhoods that had the greatest number of total aggravated assaults from 2005 through 2014. These neighborhoods serve as an example of the variation that can exist across Pittsburgh communities. While Carrick has a higher than average clearance rate, despite producing a great number of cases, Homewood North and Homewood South have lower than average rates, with just over 40 percent of aggravated assaults resulting in a clearance.

FIGURE 20: **Aggravated assault clearance rates of neighborhoods with the greatest number of aggravated assaults, 2005 through 2014**



There are modest differences as well in the clearance rate of aggravated assault depending on the demographics of the victim. **Figure 21** compares the aggravated assault clearance rates for female victims to the clearance rates for male victims from 2009 through 2014. While only 49 percent of cases involving a male victim were ultimately cleared by the police, 58 percent of cases with a female victim resulted in a clearance. Likewise, the clearance rate for aggravated assaults perpetrated against white victims was 59 percent while the clearance rate for African American victims was 49 percent. This difference is illustrated in **Figure 22**.

FIGURE 21: Aggravated assault clearance rate by the gender of the victim, 2009 through 2014

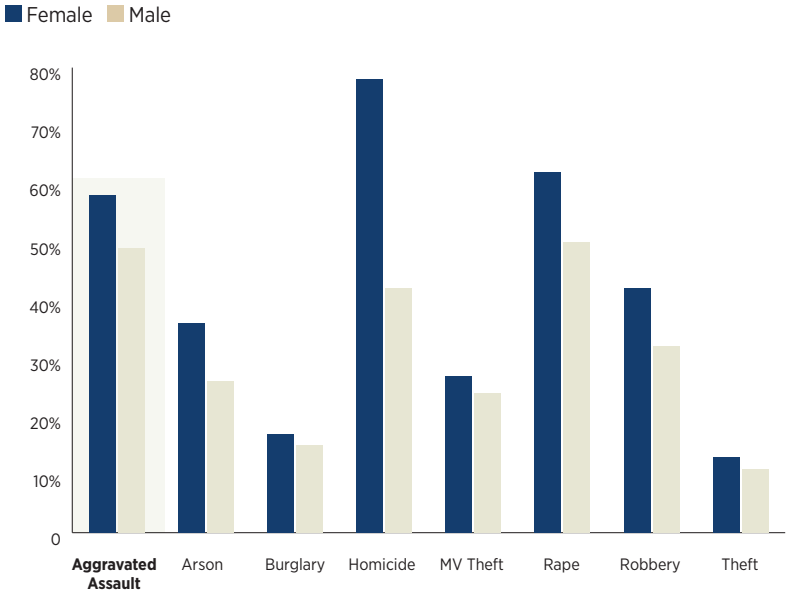
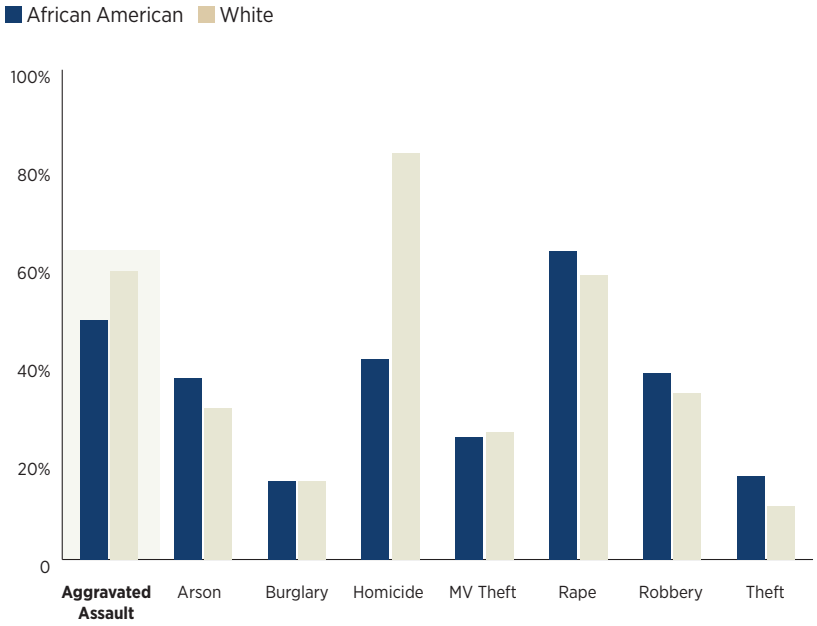



FIGURE 22: Aggravated assault clearance rate by the race of the victim, 2009 through 2014