A Comprehensive Assessment of Deadly Mass Shootings, 1980-2018

National Institute of Justice
Investigator-Initiated Research and Evaluation on Firearms Violence
Final Summary Overview

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Executive Summary

Deadly mass shootings are a pressing concern among Americans. Nevertheless, reliable information on the extent and nature of such incidents is often lacking, which may undermine the effectiveness of any "evidence-based" policy efforts aimed at combating such events. Under NIJ's long-standing program of research related to firearms violence and prevention, and the "knowledge building" area within the program, the purpose of the study was to compile a database to better understand a broad array of deadly mass shootings in America over the past four decades.

Specifically, our database was created to assess features and trends in all deadly mass shootings in America between 1980 and 2018. In these data, mass shootings encompass *all incidents with four or more gunshot fatalities, not including the shooter, within 24 hours.* Existing publicly available databases on deadly mass shootings often focus only on those that occur in public spaces (and that are neither family- nor felony-related). We include public mass shooting incidents, but we also assess all the other deadly mass shootings that occurred over this period (e.g., those that happened in private spaces among family members, and those that occurred in public spaces but were part of another criminal event). Our effort to be more inclusive allows for the examination of not only the characteristics of deadly mass shootings that occur in public, but to also examine how similar (or not) these incidents are to deadly mass shootings that take place in other contexts. In all, our database contains information on 720 incidents that occurred in both public and private spaces between 1980 and 2018. Consistent with prior research, we used open-source data (e.g., media reports, official police and court records) to code each deadly mass shooting incident according to a host of characteristics.

The analyses reveal the following key findings:

- There are no stark increases or decreases in the frequency of deadly mass shooting incidents (overall) between 1980-2018, although they occurred at a somewhat higher consistency in more recent decades.
- Most deadly mass shootings (68.8%) occurred in private residences.
- A large portion of deadly mass shootings were family-related (41.3%), which appear to be increasing in recent years.
- Felony-related mass shootings (33.5%) have somewhat declined over time and were more common in the 1990s, with the most being in 1991.
- Public mass shootings (18.3%) were rarer than family- and felony-related shootings, and they occurred with somewhat greater frequency in recent years.
- The total number of victims killed in deadly mass shootings each year and the average number of victims killed per incident has slightly increased over time.
- The most common weapon used was a handgun (71.8% of incidents); by comparison, an assault weapon was confirmed to be used in only 9.0% of incidents.
- In nearly half of all cases, at least one shooter had a documented history of violence or an arrest record. In a third of all cases, the shooter was documented to have suffered clinical mental health problems prior to the shooting.
- Deadly mass shooting victims ranged widely in age, but in 50.3% of incidents, at least one mass shooting victim killed was under the age of 18; and in 35.6% of incidents, at least one victim killed was under the age of 12.

Given these findings, the report concludes with implications related to future research and policy:

- Open-source data are limited, where data on key characteristics of shooters (e.g., mental health, prior violent behavioral tendencies, history of being abused or victimized) cannot often be reliably gleaned from either media reports or from official records. The prevalence of these factors is likely underestimated, and it is therefore important that users of the data exercise caution when making any generalizations about the relationship between these characteristics and deadly mass shootings.
- There is no strong evidence that deadly mass shootings have become appreciably more or less frequent between 1980 and 2018—at least not when mass shootings are conceptualized broadly to include the full array of incidents that occur in public and private spaces. Deadly mass shootings appear to be a persistent problem that the U.S. has faced—in one form or another—for over four decades.
- In over half of all incidents at least one child was killed, yet only 2.5% of these incidents occurred in schools and 90.9% of these occurred in the home. This indicates that policies intended to protect children from deadly mass shootings should also be inclusive of violence in the home, where 68.8% of all incidents in our data occurred.
- The weapon of choice across the incidents of deadly mass shootings is important. Assault weapons were used in 9.0% of all incidents, and handguns were by far the most common weapons of choice (used in over 70% of incidents). However, the average number of victims killed per incident was higher when an assault weapon was used.
- Finally, of the 720 incidents of deadly mass shootings identified in the data, hundreds do not appear in any existing, publicly available databases. Most of the victims of deadly mass shootings that are excluded from existing research and dialogue are women and children, and individuals killed in high crime communities. Expanding the focus on deadly mass shootings to be more inclusive of incidents that occur in the home or in the context of other crimes may help to generate broader prevention and intervention efforts that can keep more people safe from incidents of mass gun violence, particularly women and children.

Statement of the Problem

Deadly mass shootings have emerged as one of the most prominent social problems in America. And while definitions vary about what constitutes a "mass" shooting incident (Duwe, 2020; Fox & Levin, 2015), such events continue to rise toward the top of U.S. citizens' list of pressing concerns. High casualty events in recent years, such as those that have occurred in Las Vegas, Parkland, Orlando, and El Paso, have understandably shocked and traumatized the nation. And although mass shootings represent less than 1% of all homicides that occur each year, a large majority of American adults (79%) experience stress over mass shootings, and a third say that that fear of these attacks stops them from going to certain places and events (American Psychological Association, 2019). It is also clear there is a public perception that deadly mass shootings are becoming alarmingly more frequent in recent years (Smart & Schell, 2021). It is not uncommon, for example, to see news media headlines stating that mass shootings are "Increasing" and "Pose Most Serious Threat in the U.S." (Keneally, 2018), that "Mass Shootings are Rising" (Ansari & Furst, 2022), that "Mass Shootings in America are Spreading like a Disease" (Thompson, 2017), or that "Mass Shootings…More than Doubled since Columbine" (Woolfolk et al., 2019).

Yet despite these headlines, there may be a disconnect between the reality of these deadly incidents and the public's perceptions of them, particularly with respect to how the frequency of these incidents has changed over time. Indeed, there is evidence that deadly violence—whether occurring in schools, homes, or other public spaces—was higher in the 1990s, when violent crime overall was more common (O'Brien, 2019). In fact, the year 2014 is regarded as likely the safest in modern history (Sharkey, 2018)—a fact that is lost on most of the American public, who consistently report that crime is on the rise, even during periods of substantial declines (McCarthy, 2020). Further contributing to the problem is that there is not one single definition of what a mass shooting is (Schildkraut & Elsass, 2016). Existing databases on mass shootings—those that are *publicly available*, and heavily relied on by the public and the media—use varying definitions and therefore paint very different pictures of the problem.

The Gun Violence Archive (gunviolencearchive.org), for example, tracks mass shootings going back to 2013. In this data source, a mass shooting is defined as "four or more shot and/or killed in a single event (incident), at the same general time and location, not including the shooter." Looking only at those mass shootings coded as having four or more fatalities, in the year 2018, for example, the site lists 26 incidents (although several incidents include shooters in their fatality counts). Alternatively, the database compiled by Mother Jones (motherjones.com) tracks mass shootings back to the year 1982 and uses a more restrictive definition. For the cases between 1982 and 2012, Mother Jones defined a mass shooting as an indiscriminate rampage in public place that resulted in four or more victims being shot and killed by the attacker. Excluded are shootings that stemmed from "more conventionally motivated crimes such as armed robbery or gang violence" and those in which the shooter was not identified. In 2013, Mother Jones lowered the fatality count in their definition of mass shootings from four to three fatal victims. For the year 2018, the Mother Jones data lists 12 mass shootings, and indicates that these incidents have increased over time.

Data compiled by The Violence Project (theviolenceproject.org) provide perhaps the most detailed information on mass shooters and their motives, yet these data, like Mother Jones, focus only on deadly mass shootings occurring in public spaces. Thus, comparing the characteristics of such incidents to deadly mass shootings that happen in families, for instance, is not the purpose of these data. The Violence Project data extend back to 1966, and here, a mass shooting is defined as a "multiple homicide incident in which four or more victims are murdered with firearms—not including the shooter(s)—within one event, and at least some of the murders occurred in a public

location or locations in close geographical proximity (e.g., a workplace, school, restaurant, or other public settings), and the murders are not attributable to any other underlying criminal activity or commonplace circumstance including armed robbery, criminal competition, insurance fraud, argument, or romantic triangle" (Peterson & Densley, 2019, p. 6). As such, the data include primarily premeditated, high-profile attacks that target victims in places like nightclubs, schools, concerts, and stores. Of course, not included are those incidents of mass violence that occur in private places (e.g., those that stem from domestic violence), those incidents that occur in the context of other crimes (e.g., gang activity), or that are borne out of interpersonal disputes. These data show that, in 2018, 9 deadly mass shootings occurred. These data, too, show that mass public shootings are becoming more frequent and deadlier in recent years (Peterson, 2021, p. 10).

Official data sources from the Federal Bureau of Investigation (FBI), such as the Supplemental Homicide Reports (SHR), also do not provide information on full scope of the mass shooting problem. Although the SHR is one of the most comprehensive sources of U.S. homicide data, participation in the program is voluntary. Thus, not all states or jurisdictions participate or contribute information on their homicides each year. The SHR data also have been documented to contain coding errors, including instances where victims are listed multiple times for the same incident, wounded victims are counted as fatal victims, more than one law enforcement agency reports the same homicide, and offenders are miscoded as victims (Duwe, 2020; Smart & Schell, 2021). The FBI also compiles reports on active shooters, but this report, too, only captures a fraction of deadly mass shooting incidents. An active shooter is defined as "an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearm(s) and there is no pattern or method to their selection of victims" (U.S. Department of Homeland Security, 2008, p. 2). These reports show that active shootings increased from 3 incidents in 2000 to 30 in 2018 (FBI, 2021), and 7 of these were deadly mass shootings (where four or more people were shot and killed).

The disparities in counts of deadly mass shooting incidents between these different data sources—largely due to differences in definitional issues—can create confusion regarding the frequency and nature of mass shootings (see Fox & Levin, 2015). Perhaps the biggest concern with these commonly accessed and publicly available data sources—particularly those that span multiple decades—are that they provide information almost exclusively on *public* mass shootings. This can be limiting since research suggests that when mass shootings are defined more broadly—to recognize *any* event in which four or more individuals are fatally shot—more than half have been found to involve the killing of an intimate partner or family member (primarily women and children), and the bulk occur in *private*, rather than public, spaces (Everytown for Gun Safety, 2021; Fridel, 2021; Turanovic & Neville, 2022). Existing datasets, too, tend to exclude mass shootings that stem from conflicts or other crimes, such as robberies, drug-related activities, or gang violence. Such mass shootings disproportionately occur in high crime areas where violence is more common, such as within racially and economically segregated neighborhoods (Barton et al., 2020).

Thus, focusing only on non-felony-related mass shootings carried out in public spaces may be limiting in two important respects. For one, it treats public mass shootings as if they are fundamentally "unique," although these differences are not demonstrated empirically. It is of course possible that such events *are* unique, but comparative data are required to make such a claim (see Fridel, 2021). Second, failing to consider deadly mass shootings that are either family-related or related to other criminal activities ends up excluding from much research and discourse on mass shootings the incidents that predominantly involve women and children as victims and

that occur in disenfranchised neighborhoods. These incidents, too, can be preplanned and involve issues of offender crisis, prior threats, and suicidality, and result in harm and suffering to survivors and their communities (DaViera & Roy, 2020; Holland et al., 2015; Mailloux, 2014).

We are currently lacking publicly available information on the full scope of the deadly mass shooting problem over the past several decades, and this knowledge gap is consequential. Any successful policy—or even a fruitful discussion of what that policy should be—about enhancing public safety in general, or curbing mass gun violence in particular, first requires something important: that those at the policy table have a shared understanding of the full extent and nature of the problem itself. This includes the ability to make meaningful comparisons regarding the characteristics of deadly mass shootings that occur across a full spectrum of social contexts. Such an understanding of the extent and nature of the full deadly mass shooting problem continues to elude us.

Project Purpose

Under NIJ's long-standing program of research related to firearms violence and firearms violence prevention, and the "knowledge building" area within the program, the purpose of the proposed study was to compile a comprehensive database to assess features and trends in all deadly mass shootings in America between 1980 and 2018. In these data, mass shootings encompass *all incidents with four or more gunshot fatalities, not including the shooter, within 24 hours.* Consistent with existing research (Duwe, 2007; Fox et al., 2019; Krouse & Richardson, 2015), we focus exclusively on deadly mass shootings of four or more victims. These are argued to be a severe and consequential form of mass shootings that carry implications for the development of policies to enhance public safety and involve multiple fatalities. Unlike Mother Jones, The Violence Project, or the FBI Active Shooter Reports, these data are not restricted by location, victim-shooter relationship, or shooter motives. Therefore, in addition to acts of public violence, the data include mass shootings that occur in private spaces, those that are motivated by other crimes and interpersonal conflicts, and those that happen between people who know each other, including family members and intimate partners. Also included are incidents where the shooter remains at large. Our decision to be more inclusive of all deadly mass shooting incidents allows us to not only assess the characteristics of those that occur in public, but to also examine how similar (or not) these incidents are when compared to deadly mass shootings that take place in other contexts. A listing of all mass shooting incidents is provided in Appendix A.

Methods

Phase 1: Identification of Mass Shooting Incidents

Searches through Existing Data

To locate deadly mass shooting incidents, we began by consulting existing databases and reports on homicides, gun violence, and mass shootings. These sources are listed in Table 1. Although none of these databases or reports included complete information on all deadly mass shooting incidents dating back to 1980, they provided a starting point. In an effort to be consistent with the definition employed in existing databases—which can allow for meaningful comparisons to existing findings and conclusions—any homicide incident located in these sources that seemingly included four or more fatalities and involved the use of a firearm was added to a preliminary roster of mass shooting incidents.

Every data source included at least a date and location for each incident. To validate whether each incident met our inclusion criteria and definition of a deadly mass shooting, we

located at least two additional sources. Attempts to obtain official records were made for all incidents, but when we could not locate or successfully request these records, we validated incident information through news media reports. This initial validation was important because many databases on mass shootings—especially those that populate in "real time," such as the Gun Violence Archive—drew exclusively from early reports that emerged immediately after the crime, which did not always contain correct or complete information on victim count or weapon types. As noted previously, there were also many errors in the reporting of homicide data within official records, such as the SHR and state homicide reports. Common errors included miscoded or missing weapon types, erroneous victim counts (e.g., victims with non-fatal injuries were included in homicide statistics), duplicate entries for the same incident, and the victim and shooter information being reversed.

Table 1. Existing Data and Reports

- FBI Supplemental Homicide Reports
- FBI Active Shooter Reports
- Florida Homicide Reports
- Supplemental State Homicide Data (Arkansas, California, Colorado, Nevada, Ohio, Virginia, Kansas)
- Associated Press/USA Today/Northeastern University Mass Killing Database
- The Violence Project Mass Shooter Database
- Mother Jones Mass Shootings Database
- Gun Violence Archive
- Mass Shooting Tracker
- Everytown for Gun Safety
- Mass Shootings in America – Stanford Geospatial Center
- K-12 School Shooting Database – Naval Postgraduate School Center for Homeland Defense and Security
- U.S. Secret Service Mass Attacks in Public Spaces Reports
- Final Report and Findings of the Safe Schools Initiative – U.S. Secret Service and Department of Education
- Washington Post Mass Shooting Data
- Washington Post School Shooting Data
- Mass Murder with Firearms: Incidents and Victims, 1999-2013 – Congressional Research Service
- Large-Capacity Magazines and Causality Counts in Mass Shootings – Data Provided by Gary Kleck
- Mass Shooting Incidents in America – Citizens Crime Commission of New York
- Active Shooter Analysis – New York Police Department
- Mass Violence in America – National Council for Behavioral Health

Incidents were excluded if it was evident that (1) there were less than four fatalities, not including the shooter, (2) less than four homicide victims sustained gunshot wounds, or (3) not all homicide victims were shot within a 24-hour time frame. Victims who were shot and died later (e.g., days, weeks, or months after the shooting, due to complications) were included in the victim count. In cases where pregnant women were shot and killed, unborn children were not included in the victim count.

Open Searches

After searches through existing databases and reports were completed, additional incidents were located through systematic online searches by a team of trained researchers. A list of common terms that appeared in the reporting of mass shooting events was created to guide these open searches, which could vary across decades. As noted in prior research, the term "mass shooting" was not used regularly until recently (Fox & Delateur, 2013; Duwe, 2019). These search terms are listed in Table 2. Systematic searches using various combinations of search terms were carried out

in ProQuest, Access World News, Newspapers.com, and Google. Together, these databases provided access to more than 15,000 news sources from over 200 countries and territories, with a combination of international, national, regional, and local news.

A series of targeted searches were conducted for locations that were underrepresented in the existing data and reports listed in Table 1, including states that did not regularly or consistently participate in the SHR. Researchers systematically went through all of the search terms while limiting results to specific states. Detailed logs were kept of the search terms and search engines used to ensure that consistent and thorough searches were being conducted across all search engines and years of data. The research team met weekly to discuss their efforts and troubleshoot problems. When mass shooting incidents were located, they were added to the preliminary list along with at least two sources of information verifying their eligibility criteria (e.g., reputable news sources, case files, court records).

Table 2. Open Search Terms

• Altercation	• Multiple counts
• Bullet*	• Multiple dead
• Casing*	• Multiple homicide
• Dead	• Multiple murder
• Deadly	• Multiple shot
• Death	• Murder
• Death penalty	• Murder suicide
• Death sentence	• Quadruple homicide
• Domestic	• Quadruple murder
• Dispute	• Rage
• Drive-by	• Rampage
• Drug related	• Retaliation
• Erupted	• Revenge
• Execution	• Rifle
• Family killing	• Serial killer
• Family murder	• Serial murder
• Fatal*	• Shoot
• Gun	• Shooter
• Gunfire	• Shooting
• Guns	• Shot
• Gunman	• Shot dead
• Gunmen	• Shotgun
• Gunned down	• Slain
• Gunshot	• Slay*
• Handgun	• Slaughter
• Heinous	• Spree
• Kill*	• Stand-off
• Life sentence	• Suicide
• Mass murder	• Suspect dead
• Mass shooting	• Tragedy
• Massacre	• Wound*

Phase 2: Information Gathering

Media Reports

After all searches were finalized and a preliminary list of incidents was created, the research team gathered news media reports on each incident using the same search engines

described previously (ProQuest, Access World News, Newspapers.com, and Google). Attempts were made to gather information from all local news sources, and systematic searches were also conducted through the *New York Times, Los Angeles Times*, *Chicago Tribune*, and *Washington Post*. Up to 100 news articles were collected for each incident. For the highest profile and newsworthy incidents, the target number of 100 news articles was exceeded given the volume of available and relevant information. News articles were used as the primary source of information when official records could not be obtained (as described below), and thus it was important to triangulate information across news sources. By collecting up to 100 articles on each incident, we were also able to account for variations in newsworthiness, since not all incidents received extensive media coverage.

Official Records

In addition to news reports, we attempted to obtain court documents (where possible) and law enforcement records for every mass shooting incident. We gathered these reports through the Florida State University Law Library, various legal databases (Casetext, Justia, and FindLaw), and Freedom of Information Act (FOIA) Requests sent directly to law enforcement agencies and to courts. Court records provided the most detailed information on the mass shooting incident, the shooter's motives, and significant events or circumstances that led up to the shooting. For mass shootings where there were no court proceedings involving the shooter—such as in instances where shooters were killed or committed suicide, or the case was unsolved—we attempted to obtain as much information from law enforcement agencies through FOIA requests.

Law enforcement records typically provided basic homicide case details such as initial crime scene reports from responding officers, witness statements, reports from homicide detectives, and statements from forensic investigators. In a few cases, we were provided the entire homicide case file, including crime scene photos, dispatch audio, 911 calls, and autopsy reports. For unsolved shootings, where investigations were still ongoing, many agencies declined our requests for information. Additionally, during the project period, which spanned the COVID-19 pandemic, it often took agencies more than a year to fulfill FOIA requests.

In addition to these documents, we also gathered records related to mass shooters' past criminal history, civil court proceedings, and other legal action in criminal and civil courts. These records included shooters' divorce filings, eviction cases, copies of restraining/protection orders, court appeals, and other lawsuits. These supplemental sources of information were used to verify information gathered from media reports, where possible. Correctional records from prisons and jails (if available) were also used to triangulate information on the demographic characteristics of mass shooters (e.g., race, age).

Phase 3: Coding of Information

After all information was gathered, a detailed coding protocol was developed to record data on each mass shooting incident. To address issues of conflicting reports, an information hierarchy was created. Where possible, official records from courts, and then law enforcement agencies, were used as the primary sources of information for coding. When official records were not available, we used the most recent information found in either leading news sources—especially in higher profile incidents (*Associated Press*, *New York Times*, *Los Angeles Times*, *Washington Post*, *Chicago Tribune*)—or from the local news outlets in the city or town where the shooting occurred. We relied on more recent articles that were further removed from the incident, since the time lag often allowed the media to sort out details and verify information that was not available

in the immediate aftermath of the shooting. A listing of key variables that we coded on each incident is provided in Table 3, and the coding scheme for these variables appears in Appendix B.

Table 3. Key Variables Included in the Data

• Date	• Victims 12 to 17 (#)
• State	• Victims 18 to 24 (#)
• City	• Victims 25 to 29 (#)
• Unsolved	• Victims 30 to 39 (#)
• Victim(s) shot in public	• Victims 40 to 49 (#)
• Victim(s) shot in private residence	• Victims 50 to 59 (#)
• Family victim(s)	• Victims 60+ (#)
• Non-stranger victim(s)	• Victims' relationship to shooter: romantic partner (#)
• Felony-motived	• Victims' relationship to shooter: child (#)
• Hate crime	• Victims' relationship to shooter: other family (#)
• Number of locations	• Victims' relationship to shooter: coworker (#)
• Primary location	• Victims' relationship to shooter: other non-stranger (#)
• Secondary location	• Victims' relationship to shooter: stranger (#)
• Shooters (#)	• Multiple guns used in shooting
• Male shooter(s) (#)	• Handgun used
• Female shooter(s) (#)	• Shotgun used
• White shooter(s) (#)	• Rifle used
• Black shooter(s) (#)	• Assault weapon used
• Hispanic shooter(s) (#)	• Other weapons/means used
• Asian shooter(s) (#)	• Shootings occurred in daylight
• Other nonwhite shooter(s) (#)	• Shooter(s) arrest history
• Immigrant shooter(s)	• Shooter(s) gang involved
• Shooter(s) under 18 (#)	• Shooter(s) history of violence
• Shooter(s) 18 to 24 (#)	• Shooter(s) documented mental illness
• Shooter(s) 25 to 29 (#)	• Shooter(s) served in military
• Shooter(s) 30 to 39 (#)	• Shooter(s) recently lost job
• Shooter(s) 40 to 49 (#)	• Shooter(s) recent financial strain
• Shooter(s) 50 to 59 (#)	• Shooter(s) recent separation or divorce
• Shooter(s) 60+ (#)	• Shooter(s) recent interpersonal conflicts
• Shooter(s) suicide on scene	• Shooter(s) recent other stress
• Shooter(s) suicide off scene	• Shooter(s) history of abuse/victimization
• Shooter(s) killed on scene	•
• Shooter(s) killed off scene	• Mass shooting is part of a spree
• Shooter(s) detained on scene	• Shooting in urban area
• Shooter(s) detained off scene	• Shooting in suburban area
• Shooter(s) outcome unknown	• Shooting in rural area
• Victims shot and killed (#)	• News articles gathered (scale)
• Victim(s) shot and injured (not killed) (#)	• Official records obtained
• Male victims (#)	• Reported in New York Times
• Female victims (#)	• Reported in Los Angeles Times
• Victims pregnant (#)	• Reported in Washington Post
• Victims under 12 (#)	• Reported in Chicago Tribune

The coding scheme was piloted on a subsample of incidents to determine if there were any issues or ambiguities in the coding protocol. Minor adjustments were made to the coding protocol and clarifications were discussed. Following the pilot, interrater reliability was assessed among all ten initial members of the coding team using a random sample of 5 mass shooting incidents (interrater reliability = .995). Weekly meetings were held among coders to discuss questions, the

coding of cases, and to provide weekly updates. As cases were completed by coders, they were independently reviewed by two separate members of the research team to check for coding errors and to verify the accuracy of the information entered. When discrepancies in coding arose, they were discussed and collectively among all coders.

Findings

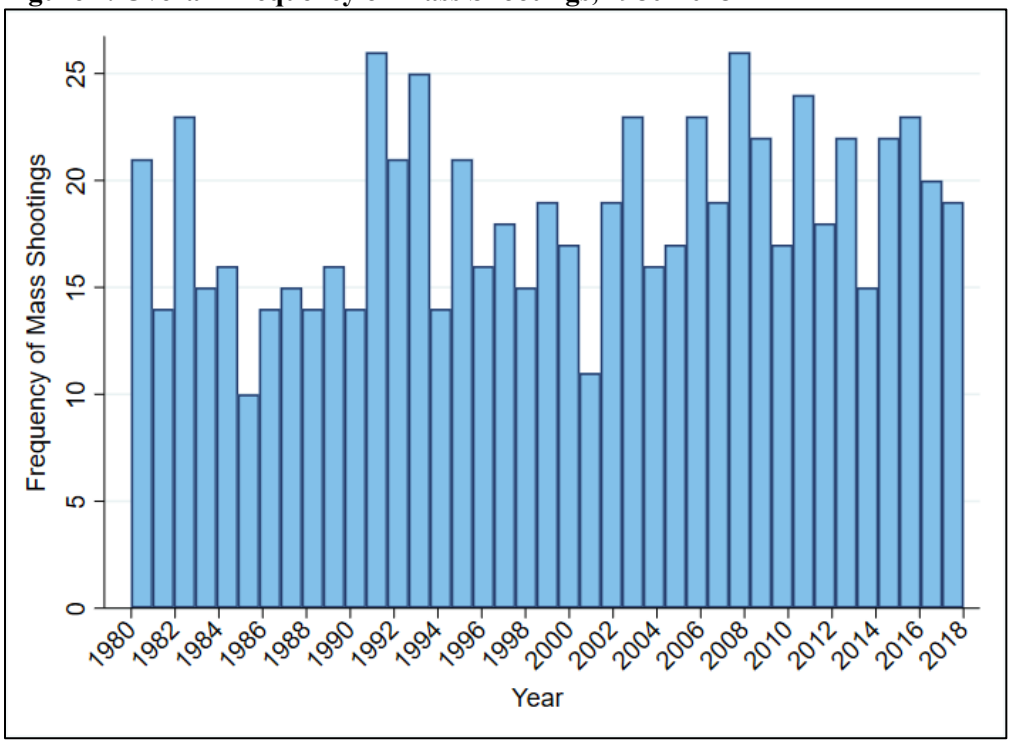
Findings are presented below in terms of trends in (1) overall mass shootings, (2) family-related mass shootings, (3) felony-related mass shootings, and (4) public (non-felony and non-family) mass shootings. Following that, descriptive statistics are presented on the mass shooting incidents.

Trends

Overall Mass Shootings

Between the years of 1980 and 2018, a total of 720 deadly mass shootings were identified. Figure 1 provides information on the frequency of mass shootings each year. As can be seen, there are no stark increases or decreases in the frequency of mass shooting incidents over time, although they occur at a somewhat higher consistency in more recent decades. This pattern is somewhat in contrast with other data sources on public mass shootings that document more dramatic increases in mass shootings in recent years (e.g., Mother Jones, The Violence Project). Therefore, when using a definition that is not confined to non-felony-related incidents that occur in public spaces, it appears that deadly mass shootings are not a new or recent problem. Notably, the years with the highest number of deadly mass shootings are 1982 (23), 1991 (26), 1993 (25), 2003 (23), 2006 (23), 2008 (26), 2011 (24), and 2016 (23), as presented in Table 4.

Figure 1. Overall Frequency of Mass Shootings, 1980-2018



Note: A deadly mass shooting was defined as *any* incident where four or more victims were killed by firearm (not including the shooter) in a 24-hour period. $N = 720$ incidents.

Table 4. Total Mass Shootings by Year, 1980-2018

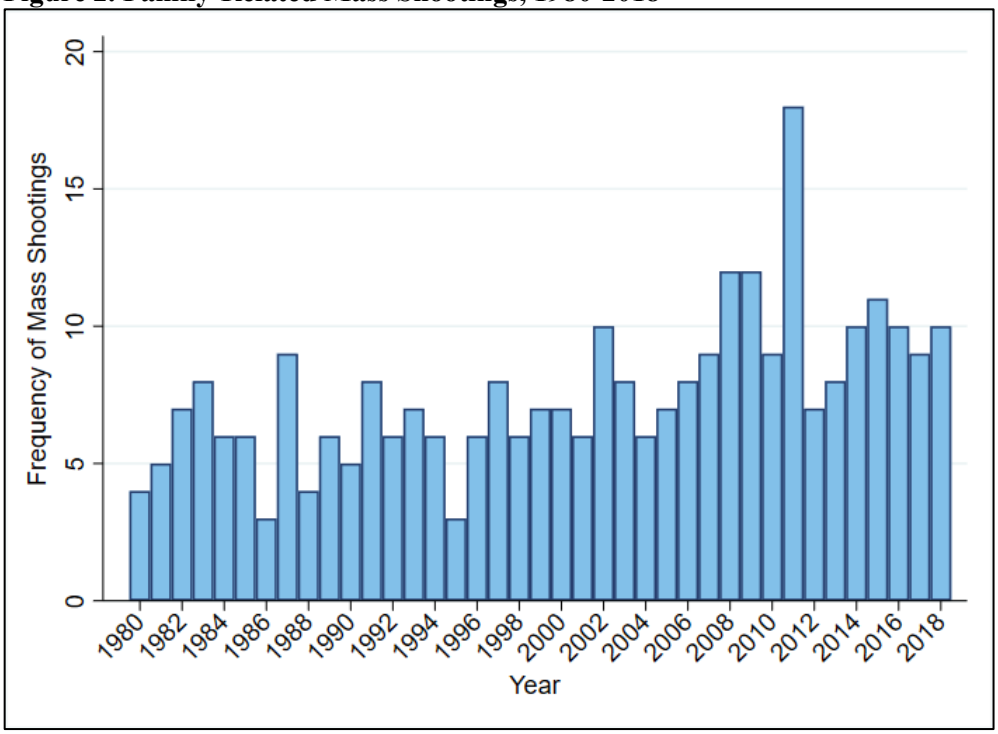
Year	N	Year	N	Year	N
1980	21	1993	25	2006	23
1981	14	1994	14	2007	19
1982	23	1995	21	2008	26
1983	15	1996	16	2009	22
1984	16	1997	18	2010	17
1985	10	1998	15	2011	24
1986	14	1999	19	2012	18
1987	15	2000	17	2013	22
1988	14	2001	11	2014	15
1989	16	2002	19	2015	22
1990	14	2003	23	2016	23
1991	26	2004	16	2017	20
1992	21	2005	17	2018	19

N = 720 incidents.

Family-Related Mass Shootings

A large portion of deadly mass shootings were *family-related* (*n* = 297, 41.3%). Incidents were classified as family-related if the shooter(s) killed one or more family members or intimate partners. This was not a mutually exclusive designation. Annual frequencies of family-related mass shootings can be seen in Figure 2. Based on these raw counts, family-related mass shootings appear to be increasing in recent years, with the largest number occurring in 2011 (18), as noted in Table 5.

Figure 2. Family-Related Mass Shootings, 1980-2018



Note: Family-related incidents are those where the shooter(s) killed one or more family members or intimate partners. *N* = 297 incidents.

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Table 5. Family-Related Mass Shootings by Year, 1980-2018

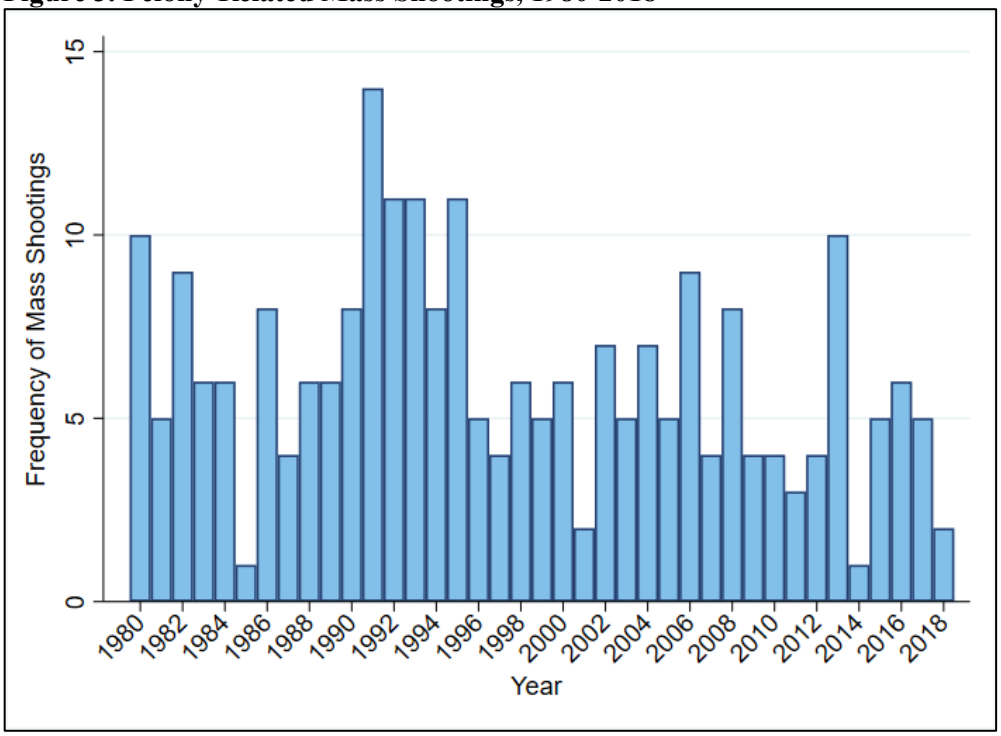
Year	N	Year	N	Year	N
1980	4	1993	7	2006	8
1981	5	1994	6	2007	9
1982	7	1995	3	2008	12
1983	8	1996	6	2009	12
1984	6	1997	8	2010	9
1985	6	1998	6	2011	18
1986	3	1999	7	2012	7
1987	9	2000	7	2013	8
1988	4	2001	6	2014	10
1989	6	2002	10	2015	11
1990	5	2003	8	2016	10
1991	8	2004	6	2017	9
1992	6	2005	7	2018	10

Note: Family-related incidents are those where the shooter(s) killed one or more family members or intimate partners. $N = 297$ incidents.

Felony-Related Mass Shootings

Felony-related mass shootings ($n = 241$, 33.5%) were carried out in the context of another crime, including robbery, gang, and drug activities. This categorization was not mutually exclusive, meaning that incidents could be classified as both family-related and felony-related (e.g., if a shooter robbed and killed his family members). Yearly counts of felony-related mass shootings are shown in Figure 3. These incidents have somewhat declined over time and were more common in the 1990s, with the most being in 1991(14) (see Table 6).

Figure 3. Felony-Related Mass Shootings, 1980-2018



Note: Felony-related incidents are those that were carried out in the context of another crime, including robbery, gang, and drug activities. $N = 241$ incidents.

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Table 6. Felony-Related Mass Shootings by Year, 1980-2018

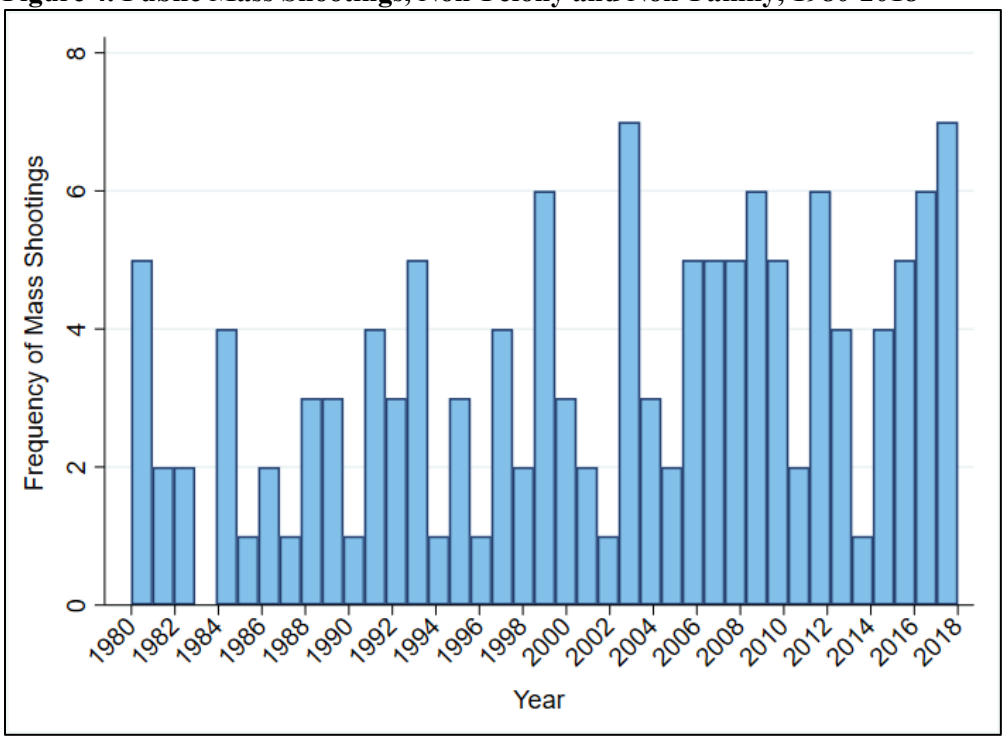
Year	N	Year	N	Year	N
1980	10	1993	11	2006	9
1981	5	1994	8	2007	4
1982	9	1995	11	2008	8
1983	6	1996	5	2009	4
1984	6	1997	4	2010	4
1985	1	1998	6	2011	3
1986	8	1999	5	2012	4
1987	4	2000	6	2013	10
1988	6	2001	2	2014	1
1989	6	2002	7	2015	5
1990	8	2003	5	2016	6
1991	14	2004	7	2017	5
1992	11	2005	5	2018	2

Note: Felony-related incidents are those that were carried out in the context of another crime, including robbery, gang, and drug activities. $N = 241$ incidents.

Public Mass Shootings

Annual counts of *public mass shootings* are presented in Figure 4. These are incidents in which at least one victim was killed in a public place, the shootings were not felony-related, and none of the victims killed were family members or intimate partners of the shooter ($n = 132$, 18.3%).

Figure 4. Public Mass Shootings, Non-Felony and Non-Family, 1980-2018



Note: These are incidents in which (1) one or more victims were killed in a public place, (2) the shootings were not felony-related, and (3) none of the victims killed were family members or intimate partners of the shooter. $N = 132$ incidents.

Public mass shootings were rarer than family- and felony-related shootings and, consistent with the results from other data sources that focus exclusively on public mass shootings, they occurred with greater frequency in recent decades. The years with the most public mass shootings were 1999 (6), 2003 (7), 2009 (6), 2012 (6), 2017 (6), and 2018 (7) (see Table 7).

Table 7. Public Mass Shootings by Year (No Family, Non-Felony), 1980-2018

Year	N	Year	N	Year	N
1980	5	1993	5	2006	5
1981	2	1994	1	2007	5
1982	2	1995	3	2008	5
1983	0	1996	1	2009	6
1984	4	1997	4	2010	5
1985	1	1998	2	2011	2
1986	2	1999	6	2012	6
1987	1	2000	3	2013	4
1988	3	2001	2	2014	1
1989	3	2002	1	2015	4
1990	1	2003	7	2016	5
1991	4	2004	3	2017	6
1992	3	2005	2	2018	7

Note: These are incidents in which (1) one or more victims were killed in a public place, (2) the shootings were not felony-related, and (3) none of the victims killed were family members or intimate partners of the shooter. *N* = 132 incidents.

Features of Mass Shootings

Incident Characteristics

As shown in Table 8, deadly mass shootings occurred in all 50 U.S. States and Washington D.C. during the study period (1980-2018), with the exception of Rhode Island. California, Texas, and Florida—the largest states—had the highest number of deadly mass shootings. When adjusting for the average state population size between 1980-2018, however, the states with the highest deadly mass shooting rates were Alaska (5.5 per 1 million), North Dakota (5.2 per 1 million) and Wyoming (5.2 per 1 million).

Table 8. Mass Shootings by State, Raw Totals, 1980-2018

State	N	State	N	State	N
Alabama	13	Louisiana	16	Ohio	24
Alaska	4	Maine	2	Oklahoma	11
Arizona	20	Maryland	14	Oregon	6
Arkansas	6	Massachusetts	7	Pennsylvania	23
California	92	Michigan	24	South Carolina	13
Colorado	10	Minnesota	4	South Dakota	1
Connecticut	8	Mississippi	10	Tennessee	13
Delaware	1	Missouri	21	Texas	73
Florida	48	Montana	2	Utah	2
Georgia	20	Nebraska	3	Vermont	2
Hawaii	1	Nevada	6	Virginia	20
Idaho	4	New Hampshire	2	Washington	19
Illinois	31	New Jersey	10	Washington, D.C.	3
Indiana	20	New Mexico	8	West Virginia	7
Iowa	7	New York	36	Wisconsin	10
Kansas	10	North Carolina	17	Wyoming	3
Kentucky	9	North Dakota	4		

N = 720 incidents.

Table 9. Descriptive Statistics of Mass Shooting Incidents, 1980-2018: Incident Characteristics

Incident Characteristic	Mean (SD) or %	Range
Family-related	41.3%	0-1
Felony-related	33.5%	0-1
Other non-stranger(s)	26.7%	0-1
Public (non-family, non-felony)	18.3%	0-1
Public (non-felony, strangers only)	11.0%	0-1
Primary location		
Private residence	65.3%	0-1
Street or sidewalk	5.4%	0-1
Bar/nightclub	4.3%	0-1
Store/shopping mall	3.9%	0-1
Restaurant	3.3%	0-1
Office building	2.9%	0-1
School	2.2%	0-1
Park/field/beach/lake/campsite	1.9%	0-1
Place of worship	1.7%	0-1
Government building	1.7%	0-1
Industrial site	1.3%	0-1
Parking lot/garage	1.1%	0-1
Other location	5.0%	0-1
Number of locations	1.2 (0.6)	1-6
One location	86.1%	0-1
Two locations	9.4%	0-1
Three or more locations	4.4%	0-1
Type of firearm(s)		
Handgun(s)	71.8%	0-1
Rifle(s)	20.4%	0-1
Shotgun(s)	15.1%	0-1
Assault weapon(s)	9.0%	0-1
Unknown	7.1%	0-1
Multiple firearms	28.8%	0-1
Other weapons/means used	13.1%	0-1
Mass shooting is part of a larger spree	9.2%	0-1
Hate/bias motivated	3.1%	0-1
Shooting(s) in daylight	44.4%	0-1
Shooting(s) in suburban area	40.2%	0-1
Shooting(s) in urban area	30.6%	0-1
Shooting(s) in rural area	30.3%	0-1
Case is unsolved	9.3%	0-1

$N = 720$ incidents.

Table 9 provides descriptive statistics on various features of deadly mass shooting incidents. As noted above, a large portion of mass shootings were family-related (41.3%) and/or felony-related (33.5%), and a smaller portion were public mass shootings that did not involve any family victims or additional felony motives (18.3%). Additionally, over a quarter of incidents (26.7%) targeted other non-strangers (e.g., individuals who were friends, neighbors, classmates, co-workers, or other acquaintances of the shooter). Only 11% of incidents were public mass shootings that exclusively targeted strangers and were not felony-related. Notably, the incidents that tend to dominate most of the discourse on mass shootings—attacks that occur in public spaces—make up a smaller portion of all deadly mass shooting incidents.

In terms of location characteristics, most shootings occurred in private residences (65.3%), and a much smaller portion occurred on the street (5.4%), in bars or nightclubs (4.3%), stores or shopping malls (3.9%), restaurants (3.3%), office buildings (2.9%), schools (2.2%), or other

locations. Primary location characteristics were coded using categorizations provided by the National Incident Based Reporting System (NIBRS) (see Appendix C).[1] In most mass shooting incidents (86.1%), victims were shot and killed at one location (i.e., at the same address) within a 24-hour period. The mean number of locations per mass shooting incident was 1.2.

Mass shooters used an array of deadly firearms. The most common was a handgun, which was used in 71.8% of incidents. Rifles were used in 20.4% of incidents, and shotguns were used in 15.1% of incidents. An assault weapon was confirmed to be used in only 9.0% of incidents. On average, the number of victims shot and killed in mass shootings where a handgun was used is 5.0, and in incidents where an assault weapon was used, the average number of victims shot and killed is 8.0. In 28.8% of mass shootings, multiple firearms were used. Additional weapons/means were used to kill or harm victims in 13.1% of cases. Most often this involved stabbings and setting fires (i.e., victims were shot and stabbed, or shot and burned). In a small portion of incidents (7.1%), reliable information was missing on the firearm(s) used in the mass shooting. Incidents with missing firearm information were typically open investigations where authorities did not fulfill our requests to obtain investigative reports or ballistic information.

In a small portion of incidents (9.2%), the shooter carried out the mass shooting as part of a larger killing spree, where there were additional victims murdered outside of the 24-hour window. Additionally, a small number of mass shootings were determined to be hate crimes (3.1%) which we defined using criteria provided by the FBI. Specifically, the FBI's definition of a hate crime is: "a criminal offense against a person or property motivated in whole or in part by an offender's bias against a race, religion, disability, sexual orientation, ethnicity, gender, or gender identity" (see ucr.fbi.gov). The data also show that nearly half of all incidents occurred in daylight (44.4%)—between 6 am and 8 pm—and in 40.2% of mass shootings, at least one victim was shot and killed in a suburban area. Rural mass shootings (30.3%) were no more or less prevalent than those that occurred in urban areas (30.6%).

Lastly, a total of 67 incidents (9.3%) were designated as unsolved, meaning that the shooter was unknown at the time of data collection. In 52 (77.6%) of these unsolved incidents, gang or drug activity was suspected. Such cases did not receive much media coverage, and several victims of these shootings were described as homeless or involved with drug use or illicit activities. Such incidents did not often involve the kinds of "ideal victims" that garner a great deal of public sympathy, media attention, or additional investigative resources (Christie, 1986). These cases were those in which it was most difficult to find or gather reliable information.

Some unsolved cases were higher profile incidents in which the shooter was never identified. One such case is a mass shooting that occurred at a Lane Bryant clothing outlet in Tinley Park, Illinois on February 2, 2008, where five women were killed (Gallardo, 2022). Another case is the Las Cruces bowling alley massacre that occurred on February 10, 1990, where seven people were shot, including four children, and four people died on the scene (Esparza, 2022). In other unsolved incidents, suspects were apprehended, but they were later deemed innocent or wrongly convicted. One such case is the Tardy Furniture Store shooting that occurred on July 16, 1996, in Winona, Mississippi. The suspected shooter, Curtis Flowers, was tried six times and spent more than 23 years in prison before the charges against him were dropped (Bogel-Burroughs, 2021).

[1] In instances where mass shootings spanned multiple locations, the primary location was coded as the place where the most victims were killed. In cases where equal numbers of victims were killed in multiple locations, the first location was chosen as the primary location. NIBRS location codes are provided in Appendix B. Location categories were collapsed into fewer groupings in Table 9.

Basic information on victims and incident descriptions could be obtained for nearly all shootings, but most shooter characteristics are missing in the unsolved cases.

Table 10. Descriptive Statistics of Mass Shooting Incidents, 1980-2018: Shooter Characteristics

Incident Characteristic	Mean (SD) or %	Range
Number of shooters	1.2 (0.6)	1-6
1 shooter	77.2%	0-1
2 shooters	11.0%	0-1
3 or more shooters	4.3%	0-1
Unknown	7.5%	0-1
Shooter sex		
Male shooter(s)	90.1%	0-1
Female shooter(s)	3.3%	0-1
Unknown	7.6%	0-1
Age of shooter(s)		
Under 18	5.6%	0-1
18-24	25.1%	0-1
25-29	18.8%	0-1
30-39	26.0%	0-1
40-49	17.4%	0-1
50-59	5.3%	0-1
60 and over	1.9%	0-1
Unknown	9.3%	0-1
Race of shooter(s)		
White	45.7%	0-1
Black	28.8%	0-1
Latino	11.8%	0-1
Asian	3.9%	0-1
Other race	3.5%	0-1
Unknown	8.2%	0-1
Immigrant shooter(s)	10.4%	0-1
Shooter(s) committed suicide	29.9%	0-1
On scene	22.4%	0-1
Off scene	7.6%	0-1
Shooter(s) detained	56.1%	0-1
On scene	9.7%	0-1
Off scene	47.1%	0-1
Shooter(s) killed	6.4%	0-1
On scene	3.1%	0-1
Off scene	3.3%	0-1
Shooter(s) underwent recent stress or crisis	69.7%	0-1
Lost job	8.5%	0-1
Financial strain	12.2%	0-1
Breakup, separation, or divorce	19.6%	0-1
Interpersonal conflict	42.5%	0-1
Other acute stress	29.9%	0-1
Unknown	9.3%	0-1
Shooter(s) documented risk factors		
History of violent behavior	45.8%	0-1
Prior arrest	44.6%	0-1
Mental health problems	33.5%	0-1
Gang involvement	9.4%	0-1
History of victimization/maltreatment	9.0%	0-1
Unknown	9.3%	0-1
Shooter voiced motives, plans, or intentions to kill	16.5%	0-1

N = 720 incidents.

Shooter Characteristics

Table 10 provides descriptive statistics on characteristics of shooters. Most mass shootings were carried out by a lone shooter (77.2% of all incidents; 84.4% of incidents with known shooters), and nearly all shooters were male (90.1% of all incidents; 97.6% of incidents with known shooters). Mass shooters were predominantly between the ages of 18 to 39, and nearly half of all incidents (45.7%) involved a white shooter. In a smaller portion of incidents, at least one shooter was Black (28.8%), Latino (11.8%), or Asian (3.9%). Of all incidents, 10.4% were carried out by one or more immigrant shooters.

In 29.9% of cases, it was confirmed that at least one shooter committed suicide—either on scene (22.4%) or off scene (7.6%). Shooters were detained (i.e., arrested or incarcerated) in over half of all incidents (56.1%), and shooters were more likely to be apprehended off scene (47.1%) than on scene (9.7%). In a small portion of cases (6.34%), shooters were killed either on or off scene, primarily by law enforcement officers.

Additionally, as Table 10 shows, most mass shooters (69.7%) were documented to have undergone recent stress or crisis. These stressors, which were not mutually exclusive, were tied to job loss (8.5%), financial strain (12.2%), a breakup, separation, or divorce (19.6%), recent interpersonal conflict (42.5%), or some other form of acute stress (29.9%). These "other" stressors included, for example, being evicted, undergoing a custody battle, being arrested, being served an order of protection, being named in a lawsuit, getting reprimanded at work, suffering health problems, or experiencing the death of a family member or friend.

In nearly half of all cases, at least one shooter had a documented history of violence (45.8%) or an arrest record (44.6%). In a third of all cases (33.5%), the shooter was documented to have suffered mental health problems (as diagnosed by a medical professional; or as evidenced by prescription medications, hospitalizations, mental health treatment, suicide plans, and suicide attempts). In a smaller portion of incidents, shooters were documented to be gang involved (9.4%) or to have suffered maltreatment, abuse, or victimization previously in life (9.0%). It is important to note that information on shooters' histories of being abused or maltreated was gathered primarily through official records, and thus this statistic is likely underreported given the "dark figure of crime" that is present within administrative data on victimization and maltreatment (Gilbert et al., 2009; Gottfredson & Hindelang, 1981).

Victim Characteristics

Table 11 presents descriptive information on victims shot and killed in mass shooting incidents. Overall, the mean number of victims killed per mass shooting incident was 5.0, ranging from 4 to 60. The deadliest mass shooting occurred at the Route 91 Harvest Music Festival in Las Vegas on October 1, 2017. On average, 2.2 female victims, 2.8 male victims, and 1.2 children (youth under the age of 18) were killed per incident. In total, 95.4% of incidents involved at least one male victim killed, 85.3% involved at least one female victim killed, and 50.3% involved at least one child victim killed. In 4.2% of incidents, one or more of the women killed were pregnant.[2]

Deadly mass shooting victims ranged widely in age, but a large share of incidents involved at least one victim killed aged 18-24 (44.0%), 30-39 (52.5%), or 40-49 (44.4%). In 34.6% of incidents, at least one mass shooting victim killed was under the age of 12. As discussed previously, in a substantial portion of incidents, shooters targeted known victims. These included shooters' former or current intimate partners (26.7%), biological or stepchildren (20.7%), other

[2] Unborn children were not included in the victim count.

family members (24.0%), co-workers (6.5%), and other non-strangers (39.6%). In a just over a quarter of all incidents, one or more victims was a stranger unknown to the shooter (26.5%).

Lastly, in 36.3% of incidents, additional victims were shot and injured, but they were not homicide victims. Thus, they were not included in the overall victim counts. The average number of victims shot and injured per incident was 2.1 (range 0-411). The mass shooting incident where the most victims were shot and injured (not killed) was again at the Route 91 Harvest Music Festival in Las Vegas in October, 2017.

Table 11. Descriptive Statistics of Mass Shooting Incidents, 1980-2018: Victim Characteristics

Incident Characteristic	Mean (SD) or %	Range
Number of victims shot and killed	5.0 (3.5)	4-60
Females	2.2 (2.3)	0-38
Males	2.8 (2.3)	0-42
Children	1.2 (1.7)	0-20
Female victim(s)	85.3%	0-1
Male victim(s)	95.4%	0-1
Child victim(s)	50.3%	0-1
Victim(s) pregnant	4.2%	0-1
Age of victim(s)		
Under 12	34.6%	0-1
12-17	28.6%	0-1
18-24	44.0%	0-1
25-29	35.8%	0-1
30-39	52.5%	0-1
40-49	44.4%	0-1
50-59	28.3%	0-1
60 and over	22.9%	0-1
Victim-shooter relationship		
Victim(s) romantic partner	26.7%	0-1
Victim(s) biological or stepchildren	20.7%	0-1
Victim(s) other family	24.0%	0-1
Victim(s) coworker	6.5%	0-1
Victim(s) other non-stranger	39.6%	0-1
Victim(s) stranger	26.5%	0-1
Unknown	9.3%	0-1
Additional victim(s) shot and injured (not killed)	36.3%	0-1
1 shot and injured	15.8%	0-1
2 shot and injured	6.1%	0-1
3 shot and injured	3.5%	0-1
4 shot and injured	3.6%	0-1
5 or more shot and injured	7.2%	0-1

N = 720 incidents.

Given that two of the deadliest mass shootings have occurred in recent years—in Las Vegas (where 60 people were killed in 2017), and at Pulse nightclub in Orlando (where 49 people were killed in 2016)—trends in the number of victims killed in mass shootings were also examined in Figures 5 and 6. As seen in Figure 5, the total number of victims killed in mass shootings each year has slightly increased over time. The years with the highest numbers of victims killed are 1991 (138), 2016 (153), and 2017 (168).

As Figure 6 shows, the average number of victims killed per mass shooting incident has also increased in recent years. Specifically, the years with the largest averages of victims killed per incident are 1984 (6.0), 2007 (6.1), 2012 (6.3), 2016 (6.7), and 2017 (8.4).

Figure 5. Victims Killed in Mass Shootings, 1980-2018

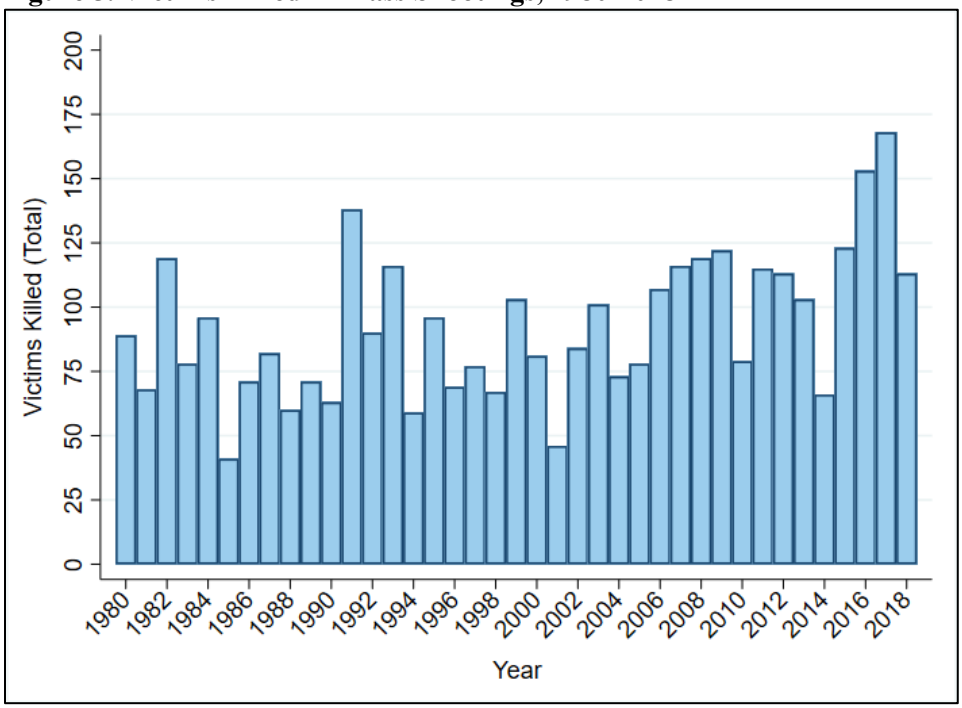
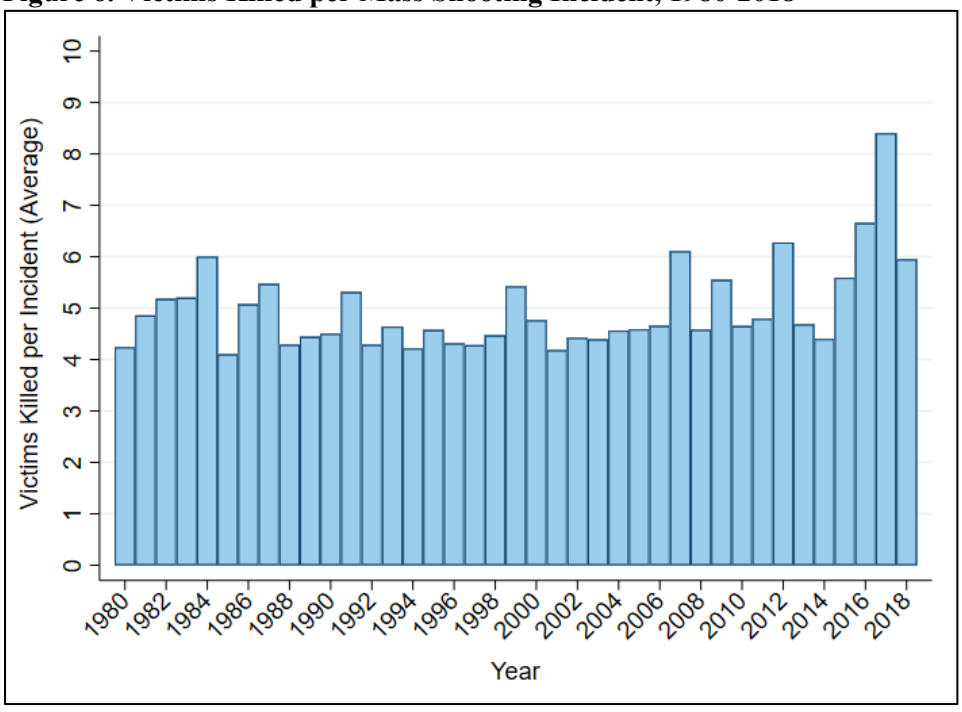


Figure 6. Victims Killed per Mass Shooting Incident, 1980-2018



Media Coverage and Official Records

Table 12 presents descriptive statistics on the open-source information collected for the mass shooting incidents. For over half of all incidents, 100 or more news articles were gathered. In a small portion of incidents (9.6%), less than 25 news articles were found. On average, 78.5

articles were found per incident (range 4-200). Not all mass shootings were covered in leading national news outlets, and only a portion of incidents were reported on in the *New York Times* (37.7%), the *Los Angeles Times* (43.1%), the *Washington Post* (27.1%), and the *Chicago Tribune* (39.6%). Many mass shooting incidents were not covered in national news cycles, but nearly all received multistate news coverage (91.9%). For a large portion of incidents (70.0%), official records were obtained in the form of police reports, court records, or other legal documents, which were used to verify details of each incident.

Table 12. Media Coverage and Official Records of Mass Shooting Incidents, 1980-2018

Incident Characteristic	Mean (SD) or %	Range
News articles gathered	78.5 (31.9)	4-200
Less than 25	9.6%	0-1
25-50	14.9%	0-1
51-70	8.5%	0-1
71-99	16.7%	0-1
100 or more	50.4%	0-1
Reported in *New York Times*	37.7%	0-1
Reported in *Los Angeles Times*	43.1%	0-1
Reported in *Washington Post*	27.1%	0-1
Reported in *Chicago Tribune*	39.7%	0-1
Multistate news coverage	91.9%	0-1
Official records obtained	70.0%	0-1

N = 720 incidents.

Key Takeaways

Given these findings, we conclude with discussion of a number of implications related to future research and to the creation of policies intended to reduce deadly mass shootings.

First, it is important to note the limits of open-source data when it comes to deadly mass shootings. This is not to say that the data we have gathered here are unreliable. Instead, data for particular incident characteristics are often missing or underreported. For example, information on key characteristics, like the mental health of the shooter, recent stressors, prior violent behaviors, or the shooter's history of being abused or maltreated, cannot often be gleaned from either media reports or from official records—the quality of information for which also varies over time (e.g., older shootings typically contain much less in the way of detailed information on abuse, victimization, violence, and mental illness). Mass shootings that were less high profile, such as those that were felony motivated or occurred in high crime neighborhoods (e.g., where violence, drugs, and gang activity were common), were less likely to generate detailed accounts of the shooters' preexisting risks, stressors, or life circumstances. It is therefore important that future research recognize these data limitations, and that individuals interpreting the data exercise caution when making any generalizations about the relationship between mass shootings and factors such as the shooter's mental health, previous victimization/maltreatment, and recent stress or crisis, as these were likely to be underreported in the media and in official records (and thus may be underreported in our data).

Second, when the full range of deadly mass shootings is considered—that is, when we expand our focus beyond the small portion of incidents that occur only in public spaces and that are not felony- or family-related—there is no strong evidence that they have become appreciably more or less frequent between 1980 and 2018. This finding is at odds with the slew of statements that trends (up through 2018) were "alarming" or that increases had been "dramatic." Rather, deadly mass shootings appear to be a persistent problem that the United States has had—in one

form or another—for over four decades. Put simply, deadly mass shootings are not a recent phenomenon, and they do not appear to be going away.

Third, the weapon of choice across the incidents of deadly mass shootings in the data is critically important from a policy standpoint. Assault weapons, for example, garner considerable attention when deadly mass shooting incidents occur. Yet only a small portion of incidents (9.0%) were confirmed to involve the use of such weapons. Instead, handguns were by far the most common weapons of choice (used in 71.8% of incidents). That said, assault weapons were used in mass shootings where there was a greater number of fatalities. The average number of victims shot and killed in incidents where a handgun was used was 5.0, and in incidents where an assault weapon was used, the average number of victims shot and killed was 8.0.

Fourth, over half of all incidents involved the killing of one or more children (i.e., youth under the age of 18), yet only 2.5% of all deadly mass shooting incidents occurred in schools. Of all deadly mass shooting incidents involving at least one child victim (n = 362), over 90% occurred in the home (n = 329) and 2.5% (n = 9) occurred at school. So, while school-based policies to prevent deadly shootings are necessary, policies intended to protect children from deadly mass shootings on a broader scale should also focus on violence in the home.

Finally, of the 720 incidents identified in our data, hundreds do not appear in existing databases on public mass shootings. While limiting the scope of study to deadly mass shootings in public spaces is understandable—especially since such events garner the lion's share of public attention and fear—there is an absence of information on other types of deadly mass shooting incidents in the literature. The conclusions generated about the nature of deadly mass shootings can differ in important ways when a fuller and more diverse picture of deadly mass shootings is provided. Furthermore, most of the victims of deadly mass shootings that are excluded from existing research and dialogue on public mass shootings are women, children, and individuals who live in high crime communities. Our results therefore underscore the potential importance of expanding the focus on mass shootings to include those that are felony-related and occur in private spaces—especially to avoid excluding vulnerable groups of victims from discourse and policies on preventing deadly mass violence.

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References

Ansari, T., & Furst, C. (2022, Feb 4). Mass shootings are rising in the U.S., new study shows. *The Wall Street Journal*. https://www.wsj.com/articles/mass-shootings-are-rising-in-the-u-s-new-study-shows-11644017434

American Psychological Association. (2019). One-third of US adults say fear of mass shootings prevents them from going to certain places or events. https://www.apa.org/news/press/releases/2019/08/fear-mass-shooting.

Barton, C., Charles, J. B., Mascia, J., Brownlee, C. (2020, September 3). Mass shootings are soaring, with Black neighborhoods hit hardest. *The Trace.* https://www.thetrace.org/2020/09/mass-shootings-2020-gun-violence-black-neighborhoods/

Bogel-Burroughs, N. (2021, September 5). After 6 murder trials and nearly 24 years, charges dropped against Curtis Flowers. *New York Times.* https://www.nytimes.com/2020/09/04/us/after-6-murder-trials-and-nearly-24-years-charges-dropped-against-curtis-flowers.html

Christie, N. (1986). The ideal victim. In E. A. Fattah (Ed.), *From crime policy to victim policy* (pp. 17-30). St. Martin's Press.

DaViera, A. L., & Roy, A. L. (2020). Chicago youths' exposure to community violence: Contextualizing spatial dynamics of violence and the relationship with psychological functioning. *American Journal of Community Psychology*, *65*(3-4), 332-342.

Duwe, G. (2020). Patterns and prevalence of lethal mass violence. *Criminology & Public Policy*, *19*(1), 17-35.

Esparza, E. (2022, February 10). Victim recalls horrific shooting on 32nd anniversary of Las Cruces bowling alley massacre. *ABC7*. https://kvia.com/video/2022/02/10/nearing-the-32nd-anniversary-of-las-cruces-bowling-alley-massacre/

Federal Bureau of Investigation. (2021). *Active shooter incidents: 20-year review, 2000-2019*. https://www.fbi.gov/file-repository/active-shooter-incidents-20-year-review-2000-2019-060121.pdf/view

Fox, J. A., & Levin, J. (2015). Mass confusion surrounding mass murder. *The Criminologist*, *40*, 8-11.

Fox, J. A., Levin, J., & Fridel, E. E. (2019). *Extreme killing: Understanding serial and mass murder* (4th ed.). Thousand Oaks: Sage.

Everytown for Gun Safety. (2021). Mass shootings in the United States: 2009-2021. https://everytownresearch.org/maps/mass-shootings-in-america-2009-2019/.

Fridel, E. (2021). A multivariate comparison of family, felony, and public mass murders in the United States. *Journal of Interpersonal Violence, 36*(3-4), 1092-1118.

Gallardo, M. (2022). Lane Bryant murders remain unsolved, but 2 new detectives assigned to case. *ABC7 Chicago*. https://abc7chicago.com/lane-bryant-shooting-murder-murders-tinley-park/11533547/

Gilbert, R., Kemp, A., Thoburn, J., Sidebotham, P., Radford, L., Glaser, D., & MacMillan, H. L. (2009). Recognising and responding to child maltreatment. *The Lancet*, *373*, 167-180.

Gottfredson, M. R., & Hindelang, M. J. (1981). Sociological aspects of criminal victimization. *Annual Review of Sociology*, *7*, 107-128.

Holland, K. M., Brown, S. V., Hall, J. E., & Logan, J. E. (2018). Circumstances preceding homicide-suicides involving child victims: A qualitative analysis. *Journal of Interpersonal Violence*, *33*(3), 379-401.

Keneally, M. (2018, November 8). Mass shootings 'increasing' and pose 'most serious threat' in US, expert says. *ABC News*. https://abcnews.go.com/US/mass-shootings-increasing-pose-threat-us-expert/story?id=59056868

Krouse, W. J., & Richardson, D. J. (2015). *Mass murder with firearms: Incidents and victims, 1999–2013*. Washington: Congressional Research Service.

Mailloux, S. (2014). Fatal families: Why children are killed in familicide occurrences. *Journal of Family Violence*, *29*(8), 921-926.

McCarthy, J. (2020, November 13). Perceptions of increased U.S. crime at highest since 1993. *Gallup Politics*. https://news.gallup.com/poll/323996/perceptions-increased-crime-highest-1993.aspx

O'Brien, R. M. (2019). Homicide arrest rate trends in the United States: The contributions of periods and cohorts (1965–2015). *Journal of Quantitative Criminology*, *35*(2), 211-236.

Peterson, J. (2021). *A multi-level, multi-method investigation of the psycho-social life histories of mass shooters*. Final report prepared for the National Institute of Justice. https://www.ojp.gov/pdffiles1/nij/grants/302101.pdf

Peterson, J., & Densely, J. (2019). *The Violence Project Database of Mass Shootings in the United States, 1966–2019.* https://www.theviolenceproject.org/

Schildkraut, J., & Elsass, H. J. (2016). *Mass shootings: Media, myths, and realities.* Praeger/ABC-CLIO.

Sharkey, P. (2018). *Uneasy peace: The great crime decline, the renewal of city life, and the next war on violence*. W. W. Norton.

Smart, R., & Schell, T. L. (2021). Mass shootings in the United States. In R. Ramchand & J. Saunders (Eds.), *Contemporary issues in gun policy: Essays from the RAND Gun Policy in America Project*. RAND Corporation, RR-A243-2. https://www.rand.org/pubs/research_reports/RRA243-2.html

Thompson, D. (2017, November 6). Mass shootings in America are spreading like a disease. *The Atlantic*. https://www.theatlantic.com/health/archive/2017/11/americas-mass-shooting-epidemic-contagious/545078/

Turanovic, J. J., & Neville, K. N. (2022). Mass shootings involving intimate partners in the United States: Prevalence and patterns. In E. Madfis & A. Lankford (Eds.), *All American massacre: The tragic role of American culture and society in mass shootings*. Temple University Press.

Woolfolk, J., Saavedra, T., & Salonga, R. (2019). Mass shootings like Dayton, El Paso, Gilroy more than doubled since Columbine. *Mercury News*. https://www.mercurynews.com/2019/08/11/mass-shootings-like-dayton-el-paso-gilroy-more-than-doubled-since-columbine/

Appendices

Appendix A. List of Deadly Mass Shooting Incidents, 1980-2018

Date	State	City
7-Jan-80	Illinois	Chicago
15-Jan-80	Indiana	Evansville
3-Feb-80	Texas	El Paso
26-Mar-80	Florida	Miami
21-Apr-80	New York	Selden
4-May-80	California	Eureka
26-May-80	Illinois	Cahokia
29-May-80	Missouri	Kansas City
22-Jun-80	Texas	Daingerfield
12-Jul-80	California	Lassen Park
13-Jul-80	Texas	Lubbock
20-Jul-80	Pennsylvania	Coraopolis
1-Aug-80	Florida	Holmes Beach
24-Aug-80	California	West Los Angeles
4-Sep-80	Kentucky	Pike County
22-Sep-80	Massachusetts	Boston
26-Sep-80	Ohio	El Dorado
23-Oct-80	Missouri	Des Peres
1-Dec-80	Texas	Dallas
13-Dec-80	Florida	Miami
14-Dec-80	California	Los Angeles
3-Jan-81	Iowa	Delmar
9-Jan-81	New York	Bronx
11-Jan-81	Virginia	Chesterfield
24-Mar-81	California	San Francisco
28-Mar-81	California	Poway
2-May-81	Maryland	Clinton
7-May-81	Oregon	Salem
1-Jun-81	Arizona	Tucson
6-Jul-81	Georgia	Thomson
6-Jul-81	Ohio	Bethel
21-Aug-81	Indiana	Indianapolis
29-Sep-81	South Carolina	Columbia
16-Oct-81	Kentucky	Allen
26-Nov-81	Illinois	Chicago
2-Jan-82	Ohio	Elyria
30-Jan-82	New York	New York
17-Feb-82	Michigan	Farwell
3-Mar-82	California	Siskiyou

13-Mar-82	Michigan	Grand Haven
7-Apr-82	Michigan	Port Huron
18-Apr-82	Connecticut	West Harford
24-Apr-82	Florida	Miami
24-Apr-82	Florida	Perry
3-May-82	Alaska	Anchorage
2-Jul-82	Montana	Thompson Falls
3-Jul-82	Texas	Fort Bend
17-Jul-82	Missouri	Dexter
4-Aug-82	Florida	Miami
9-Aug-82	Texas	Grand Prairie
10-Aug-82	Michigan	Detroit
10-Aug-82	Texas	Fort Worth
20-Aug-82	Florida	Miami
21-Aug-82	Kansas	Wellington
30-Aug-82	Louisiana	Marrero
6-Sep-82	Alaska	Blaine
25-Sep-82	Pennsylvania	Wilkes-Barre
7-Oct-82	New York	Bronx
18-Jan-83	Iowa	Aplington
3-Feb-83	New York	New York
5-Feb-83	Florida	Fort Lauderdale
18-Feb-83	Washington	Seattle
1-Mar-83	Alaska	McCarthy
1-Apr-83	Ohio	Springfield
4-Apr-83	Virginia	Fairfax
16-Jul-83	Illinois	Joliet
19-Jul-83	Louisiana	Jennings
23-Sep-83	Texas	Kilgore
8-Oct-83	Texas	Sherman
11-Oct-83	Texas	College Station
25-Oct-83	Texas	Gilmer
19-Nov-83	Oregon	Portland
20-Dec-83	Wyoming	Gillette
6-Feb-84	Missouri	Desoto
13-Feb-84	Ohio	Madeira
15-Apr-84	New York	New York City
24-Apr-84	Illinois	Chicago
30-Apr-84	California	Los Angeles
17-May-84	Alaska	Manley Hot Springs
29-Jun-84	Texas	Dallas
18-Jul-84	California	San Ysidro
24-Jul-84	Arkansas	Hot Springs

25-Aug-84	Alabama	Etowah
31-Aug-84	California	Los Angeles
15-Sep-84	Maryland	Baltimore
18-Sep-84	Texas	Houston
12-Oct-84	California	Los Angeles
18-Oct-84	Indiana	Evansville
1-Dec-84	North Dakota	Grand Forks
6-Jan-85	California	Santa Barbera
6-Jan-85	Michigan	Grand Rapids
1-Feb-85	Texas	Houston
16-Mar-85	Pennsylvania	South Connellsville
9-Apr-85	Washington DC	Washington DC
17-May-85	Georgia	Paulding
1-Jun-85	California	El Cajon
12-Jun-85	Illinois	Springfield
28-Aug-85	California	Alameda
11-Dec-85	Missouri	Lathrop
6-Mar-86	Texas	El Paso
6-Mar-86	New Hampshire	Lebanon
23-Apr-86	Kentucky	Lexington
30-Apr-86	New York	Bronx
18-May-86	Colorado	Colorado Springs
19-Jul-86	Maryland	Baltimore
20-Aug-86	Oklahoma	Edmond
9-Sep-86	Missouri	Saline County
13-Sep-86	California	Inglewood
6-Oct-86	California	Mendocino
30-Oct-86	New York	Bronx
8-Dec-86	California	Oakland
13-Dec-86	New York	East Chatham
28-Dec-86	California	San Diego
1-Feb-87	Pennsylvania	Mars
5-Feb-87	Michigan	Flint
25-Feb-87	Pennsylvania	Berks
23-Apr-87	Florida	Palm Bay
4-Jul-87	Wisconsin	Athens
10-Jul-87	Washington	Tacoma
30-Aug-87	Massachusetts	Boston
4-Sep-87	Missouri	St. Louis
5-Sep-87	Maryland	Baltimore
15-Sep-87	Virginia	Amhurst
25-Sep-87	Missouri	Elkland
13-Oct-87	Washington	Pasco

13-Dec-87	Oklahoma	Oklahoma City
26-Dec-87	Arkansas	Pope County
30-Dec-87	Iowa	Algona
9-Jan-88	Idaho	Laclede
22-Jan-88	Maryland	Landover
16-Feb-88	California	Sunnyvale
19-Mar-88	Maine	Bangor
3-Apr-88	California	Glen Avon
3-Apr-88	New Mexico	Los Chavez
18-May-88	Pennsylvania	Philadelphia
14-Jun-88	Michigan	Marquette
17-Jul-88	North Carolina	Winston-Salem
28-Aug-88	California	Los Angeles
16-Sep-88	New York	Brooklyn
19-Sep-88	Florida	Pensacola
20-Sep-88	Florida	Pensacola
22-Sep-88	Illinois	Chicago
17-Jan-89	California	Stockton
29-Jan-89	New York	New York
20-Feb-89	Virginia	Shenandoah County
28-Mar-89	Virginia	Norfolk
11-Apr-89	Florida	Tampa
17-Apr-89	Ohio	Lake County
29-Apr-89	Indiana	Michiana
20-May-89	Ohio	Columbus
21-Jun-89	New York	Stamford
19-Jul-89	Kansas	Sterling
27-Aug-89	California	Los Angeles
14-Sep-89	Kentucky	Louisville
7-Nov-89	Maryland	Forestville
15-Nov-89	Texas	Dallas
8-Dec-89	Washington	Spanaway
22-Dec-89	New York	Dryden
2-Feb-90	Mississippi	Clarksdale
10-Feb-90	New Mexico	Las Cruces
11-Feb-90	South Carolina	Due West
7-Mar-90	Ohio	Mayfield Heights
17-Mar-90	Connecticut	Bridgeport
4-Apr-90	Michigan	Detroit
5-Apr-90	New York	Manhattan
14-May-90	Texas	Fort Worth
12-Jun-90	California	Los Angeles
18-Jun-90	Florida	Jacksonville

9-Sep-90	Louisiana	Montgomery
20-Sep-90	New York	Brooklyn
14-Oct-90	Oklahoma	Tulsa
24-Nov-90	Wyoming	Hot Springs
6-Jan-91	Pennsylvania	Fogelsville
12-Jan-91	Massachusetts	Boston
26-Jan-91	New Mexico	Chimayo
14-Mar-91	California	Colton
6-Apr-91	Nevada	Reno
22-Apr-91	Wisconsin	Balsam Lake
13-May-91	New York	Brooklyn
16-Jun-91	Colorado	Denver
10-Aug-91	Arizona	Waddell
2-Sep-91	Ohio	Youngstown
16-Sep-91	New York	Queens
13-Oct-91	New York	Queens
16-Oct-91	Texas	Killeen
1-Nov-91	Iowa	Iowa City
9-Nov-91	Kentucky	Harrodsburg
14-Nov-91	Michigan	Royal Oak
30-Nov-91	New York	Flatbush/Brooklyn
3-Dec-91	Michigan	Detroit
6-Dec-91	Texas	Austin
7-Dec-91	Texas	Dallas
9-Dec-91	Missouri	California
10-Dec-91	California	Los Angeles
16-Dec-91	New York	Bronx
16-Dec-91	Michigan	Detroit
19-Dec-91	Florida	North Port
29-Dec-91	North Carolina	Alexander
27-Jan-92	North Dakota	Burleigh
15-Feb-92	Alabama	Tuscaloosa
15-Mar-92	Arizona	Phoenix
20-Mar-92	Missouri	Sullivan
26-Mar-92	New York	New York
1-May-92	Nevada	Las Vegas
1-May-92	California	Olivehurst
15-Jun-92	California	Inglewood
20-Jun-92	Texas	Houston
17-Jul-92	Texas	Fairmont
21-Jul-92	West Virginia	Fairmont
15-Aug-92	Florida	Miami
17-Aug-92	Oklahoma	Tulsa

29-Aug-92	Arizona	Phoenix
15-Sep-92	Illinois	Chicago
15-Oct-92	New York	Watkins Glen
1-Nov-92	California	San Diego
8-Nov-92	California	Morro Bay
13-Dec-92	Washington	Seattle
19-Dec-92	Wisconsin	Milwaukee
24-Dec-92	Virginia	Prince Edwards
8-Jan-93	Illinois	Palatine
7-Feb-93	California	Helm
14-Feb-93	New York	Bronx
16-Mar-93	California	Fresno
16-May-93	California	Fresno
24-May-93	New Jersey	Teaneck
14-Jun-93	Iowa	Norwalk
1-Jul-93	California	San Francisco
14-Jul-93	Indiana	Waterloo
25-Jul-93	Iowa	Norwalk
30-Jul-93	Connecticut	South Windsor
6-Aug-93	North Carolina	Fayetteville
8-Aug-93	Michigan	Gladwin
8-Aug-93	Illinois	Chicago
23-Aug-93	California	Willits
24-Aug-93	Indiana	Versailles
16-Sep-93	New York	Bronx
4-Oct-93	Arkansas	Pulaski
14-Oct-93	California	El Cajon
29-Oct-93	California	Long Beach
8-Nov-93	Illinois	Chicago
17-Nov-93	Illinois	Edwardsville
2-Dec-93	California	Oxnard
7-Dec-93	New York	Nassau County
14-Dec-93	Colorado	Aurora
30-Jan-94	Florida	Miami
30-Jan-94	Tennessee	Clarksville
24-May-94	Kentucky	Union
4-Jun-94	Oklahoma	Tulsa
20-Jun-94	Washington	Spokane
30-Jun-94	Virginia	Virginia Beach
10-Jul-94	Texas	Houston
22-Jul-94	Virginia	Virginia Beach
23-Jul-94	Louisiana	DeSoto Parish
24-Jul-94	Texas	Kilgore

3-Oct-94	Florida	Panama City
14-Oct-94	Virginia	Richmond
16-Oct-94	Alabama	Birmingham
31-Dec-94	North Carolina	Raeford
1-Jan-95	Virginia	Roanoke
7-Jan-95	New York	Queens
4-Feb-95	Pennsylvania	Philadelphia
19-Feb-95	New York	Staten Island
1-Mar-95	Louisiana	New Orleans
21-Mar-95	New Jersey	Montclair
3-Apr-95	Texas	Corpus Christi
4-Apr-95	Florida	Palatka
12-Apr-95	Maryland	Prince George's County
18-Apr-95	Connecticut	Redding
22-Apr-95	California	El Monte
20-Jun-95	New York	New York
2-Jul-95	Texas	Dallas
18-Jul-95	California	Tulare
19-Jul-95	California	Los Angeles
9-Aug-95	California	San Bernardino
12-Sep-95	Oregon	Scotts Mills
6-Nov-95	Massachusetts	Boston
19-Nov-95	Ohio	Columbus
13-Dec-95	Georgia	Atlanta
19-Dec-95	New York	Bronx
9-Feb-96	Florida	Fort Lauderdale
3-Mar-96	New Mexico	Albuquerque
22-Mar-96	Texas	Stafford
24-Apr-96	Mississippi	Jackson
28-May-96	Louisiana	Poland
11-Jun-96	Idaho	Lincoln
13-Jun-96	Arizona	Tucson
20-Jun-96	Minnesota	Sauk Centre
16-Jul-96	Mississippi	Winona
1-Sep-96	Arizona	Dennehotso
25-Sep-96	Connecticut	Southington
25-Sep-96	Alabama	Huntsville
29-Sep-96	California	Baldwin Park
1-Oct-96	Texas	Pearland
20-Oct-96	Texas	El Paso
17-Nov-96	South Carolina	Laurens
8-Jan-97	Michigan	Benton Harbor
21-Jan-97	Florida	Miami

6-Mar-97	West Virginia	Wheeling
27-May-97	California	Simi Valley
14-Jul-97	Florida	Miami
26-Jul-97	Indiana	Fort Wayne
8-Aug-97	Texas	San Antonio
19-Aug-97	New Hampshire	Colebrook
15-Sep-97	South Carolina	Aiken
2-Oct-97	Tennessee	Memphis
6-Oct-97	North Carolina	Mangum
26-Oct-97	California	San Marcos
13-Nov-97	Texas	Channelview
30-Nov-97	Tennessee	Shelbyville
3-Dec-97	Florida	Bartow
4-Dec-97	Georgia	Santa Claus
5-Dec-97	New York	Yonkers
18-Dec-97	California	Orange
9-Jan-98	California	Compton
23-Jan-98	Mississippi	Jackson
25-Jan-98	California	Compton
30-Jan-98	Georgia	Walthourville
6-Mar-98	Connecticut	Newington
24-Mar-98	Arkansas	Jonesboro
25-Mar-98	Arkansas	Jefferson
1-Apr-98	Illinois	Mount Vernon
21-May-98	Oregon	Springfield
5-Jul-98	Washington	Tacoma
17-Jul-98	New Mexico	Canoncito
7-Sep-98	Colorado	Aurora
11-Sep-98	Florida	Crestview
18-Oct-98	Mississippi	Foxworth
29-Nov-98	Michigan	Muskegon
7-Feb-99	Arizona	Phoenix
12-Feb-99	Oklahoma	Tulsa
10-Mar-99	Louisiana	Gonzales
28-Mar-99	Texas	Abilene
4-Apr-99	Michigan	Detroit
20-Apr-99	Colorado	Littleton
6-May-99	California	El Monte
3-Jun-99	Nevada	Las Vegas
12-Jul-99	Georgia	Atlanta
29-Jul-99	Georgia	Atlanta
9-Aug-99	California	Rosemead
17-Aug-99	California	Sacramento

27-Aug-99	California	Los Angeles
15-Sep-99	Texas	Fort Worth
30-Sep-99	North Carolina	Haywood
2-Nov-99	Hawaii	Honolulu
4-Dec-99	California	Sacramento
5-Dec-99	Maryland	Baltimore
30-Dec-99	Florida	Tampa
2-Jan-00	Pennsylvania	Reading
14-Feb-00	Missouri	Warrensburg
16-Feb-00	Indiana	Gary
7-Mar-00	Maryland	Baltimore
8-Mar-00	Tennessee	Memphis
20-Mar-00	Texas	Irving
28-Apr-00	Pennsylvania	Pittsburgh
24-May-00	New York	New York
29-Jun-00	Virginia	Richmond
8-Jul-00	California	San Bernadino
4-Sep-00	Ohio	Ava
18-Oct-00	Tennessee	Monterey
7-Dec-00	Kansas	Wichita
14-Dec-00	Kansas	Wichita
23-Dec-00	Washington	Colville
26-Dec-00	Massachusetts	Wakefield
28-Dec-00	Pennsylvania	Philadelphia
9-Jan-01	Texas	Houston
23-Jan-01	Texas	Lufkin
5-Feb-01	Illinois	Melrose Park
1-Apr-01	Colorado	Highlands Ranch
25-Apr-01	Mississippi	Jackson
15-May-01	California	Stockton
23-May-01	Indiana	Gary
3-Jul-01	Colorado	Rifle
14-Jul-01	Vermont	Belvidere
8-Sep-01	California	Sacramento
14-Dec-01	Indiana	Lowell
11-Jan-02	California	San Bruno
15-Jan-02	Pennsylvania	Ardmore
25-Jan-02	Pennsylvania	Delaware Township
4-Feb-02	New Jersey	Camden
21-Feb-02	New Jersey	Toms River
23-Feb-02	Oregon	McMinnville
22-Mar-02	Indiana	South Bend
26-Mar-02	California	Merced

9-Apr-02	New Jersey	Toms River
15-May-02	Alabama	Heflin
6-Jun-02	Tennessee	Bedford
4-Aug-02	Texas	Dallas
27-Aug-02	Alabama	Rutledge
5-Sep-02	Texas	Donna
22-Sep-02	Florida	Lake Worth
26-Sep-02	Nebraska	Norfolk
9-Nov-02	California	Yuba City
10-Dec-02	Arizona	Mesa
21-Dec-02	Michigan	Detroit
3-Jan-03	Illinois	Chicago
5-Jan-03	Texas	Edinburg
10-Feb-03	Texas	Harris County
25-Feb-03	Alabama	Huntsville
3-Apr-03	Virginia	Roanoke
15-May-03	Georgia	Atlanta
20-Jun-03	Texas	Dallas
6-Jul-03	California	Bakersfield
8-Jul-03	Mississippi	Meridian
18-Jul-03	Texas	Clear Lake
7-Aug-03	Colorado	Denver
16-Aug-03	Florida	Moore Haven
20-Aug-03	North Carolina	Gastonia
27-Aug-03	Illinois	Chicago
11-Sep-03	Michigan	Westland
27-Sep-03	Indiana	Gary
24-Oct-03	Idaho	Oldtown
6-Nov-03	South Carolina	Chesnee
13-Nov-03	Illinois	Chicago
6-Dec-03	California	Santa Clara
7-Dec-03	North Carolina	Aventon
16-Dec-03	Alabama	Birmingham
19-Dec-03	North Carolina	Moore County
16-Jan-04	Virginia	Norfolk
17-Jan-04	Indiana	Gary
12-Mar-04	Texas	McKinney
12-Mar-04	California	Fresno
19-Apr-04	Florida	Hardaway
2-May-04	Pennsylvania	Zion Grove
23-May-04	Florida	Orange Park
2-Jul-04	Kansas	Kansas City
2-Sep-04	Texas	Livingston

9-Sep-04	Louisiana	New Orleans
26-Oct-04	Louisiana	New Orleans
8-Nov-04	Georgia	Moultrie
21-Nov-04	Wisconsin	Meteor
25-Nov-04	Missouri	St. Louis
26-Nov-04	New Jersey	Newark
8-Dec-04	Ohio	Columbus
20-Feb-05	Indiana	Loogootee
11-Mar-05	Georgia	Atlanta
12-Mar-05	Wisconsin	Brookfield
21-Mar-05	Minnesota	Red Lake
10-May-05	California	Garner Valley
22-May-05	West Virginia	Huntington
29-May-05	Ohio	Bellefontaine
30-May-05	Oklahoma	Oklahoma City
25-Jun-05	Florida	Naples
22-Aug-05	California	Inglewood
28-Aug-05	Texas	Sash
5-Oct-05	Illinois	Belleville
19-Nov-05	North Carolina	Durham
30-Nov-05	Tennessee	Nashville
13-Dec-05	Massachusetts	Boston
14-Dec-05	New Jersey	Paterson
25-Dec-05	Virginia	Fairfax
30-Jan-06	California	Goleta
21-Feb-06	Arizona	Mesa
15-Mar-06	Michigan	Detroit
19-Mar-06	Georgia	Cumming
25-Mar-06	Washington	Seattle
18-Apr-06	Missouri	St. Louis
16-May-06	Arizona	Phoenix
21-May-06	Louisiana	Baton Rouge
1-Jun-06	Indiana	Indianapolis
17-Jun-06	Louisiana	New Orleans
27-Jun-06	Louisiana	Slidell
4-Jul-06	California	Gustine
28-Jul-06	Louisiana	New Orleans
23-Aug-06	California	Fresno
30-Sep-06	South Carolina	North Charleston
2-Oct-06	Pennsylvania	Nickel Mines
5-Oct-06	Virginia	Gainesboro
13-Oct-06	Florida	Port St. Lucie
14-Oct-06	Iowa	Quincy

14-Oct-06	Kansas	Kansas City
4-Nov-06	Louisiana	New Orleans
17-Nov-06	Missouri	Kansas City
16-Dec-06	Missouri	Kansas City
28-Jan-07	Nebraska	Omaha
29-Jan-07	Ohio	Youngstown
12-Feb-07	Utah	Salt Lake City
10-Apr-07	California	Happy Valley
16-Apr-07	Virginia	Blacksburg
9-Jun-07	Wisconsin	Delavan
14-Jun-07	Illinois	Oswego
22-Jul-07	Pennsylvania	Philadelphia
25-Aug-07	Texas	Jonestown
17-Sep-07	Michigan	Detroit
22-Sep-07	Florida	Miami
7-Oct-07	Wisconsin	Crandon
18-Oct-07	Michigan	Detroit
11-Nov-07	California	Riverside
22-Nov-07	Maryland	Laytonsville
5-Dec-07	Nebraska	Omaha
9-Dec-07	Colorado	Colorado Springs/Arvada
14-Dec-07	Florida	Largo
24-Dec-07	Washington	Seattle
14-Jan-08	Indiana	Indianapolis
1-Feb-08	Maryland	Cockeysville
2-Feb-08	Illinois	Tinley Park
7-Feb-08	Missouri	Kirkwood
7-Feb-08	California	Winnetka
14-Feb-08	Illinois	DeKalb
23-Feb-08	California	Yorba Linda
27-Feb-08	Tennessee	Bristol
2-Mar-08	Tennessee	Memphis
18-Mar-08	California	Santa Maria
24-Mar-08	North Carolina	Charlotte
23-Apr-08	Illinois	Chicago
26-Apr-08	South Carolina	Easley
10-May-08	Texas	Houston
1-Jun-08	Texas	Ingram
25-Jun-08	Kentucky	Henderson
4-Jul-08	Wisconsin	Milwaukee
24-Jul-08	Alabama	Birmingham
1-Sep-08	New Jersey	Camden
2-Sep-08	Washington	Alger

8-Sep-08	New Jersey	Irvington
5-Oct-08	California	Porter Ranch
30-Oct-08	Louisiana	Jefferson
2-Nov-08	California	Long Beach
6-Dec-08	Texas	Alton
24-Dec-08	California	Covina
27-Jan-09	California	Los Angeles
14-Feb-09	New York	Brockport
5-Mar-09	Ohio	Cleveland
10-Mar-09	Alabama	Samson
12-Mar-09	North Carolina	Conover
15-Mar-09	Florida	Miami
21-Mar-09	California	Oakland
29-Mar-09	California	Santa Clara
29-Mar-09	North Carolina	Carthage
3-Apr-09	New York	Binghamton
4-Apr-09	Washington	Graham
6-Apr-09	Alabama	Green Hill
16-Apr-09	Maryland	Middletown
22-Jun-09	Kansas	Kansas City
27-Aug-09	Georgia	Lawrenceville
1-Nov-09	North Carolina	Mount Airy
5-Nov-09	Texas	Fort Hood
9-Nov-09	Oklahoma	Oklahoma City
12-Nov-09	Arkansas	Pearcy
26-Nov-09	Florida	Jupiter
28-Nov-09	Kansas	Lyndon
29-Nov-09	Washington	Parkland
12-Jan-10	Georgia	Kennesaw
17-Jan-10	Texas	Bellville
19-Jan-10	Virginia	Appomattox
25-Mar-10	Louisiana	New Orleans
30-Mar-10	Washington DC	Washington D.C.
3-Apr-10	California	Los Angeles
14-Apr-10	Illinois	Chicago
6-Jun-10	Florida	Hialeah
3-Aug-10	Connecticut	Manchester
6-Aug-10	Maryland	Riverdale
14-Aug-10	New York	Buffalo
28-Aug-10	Arizona	Lake Havasu City
2-Sep-10	Illinois	Chicago
11-Sep-10	Kentucky	Jackson
27-Sep-10	Florida	Rivera Beach

28-Sep-10	Massachusetts	Boston
20-Nov-10	Florida	Tallahassee
8-Jan-11	Arizona	Tucson
29-Jan-11	North Dakota	Minot
11-Feb-11	California	Willowbrook
16-Apr-11	Ohio	Oak Harbor
30-Apr-11	Ohio	West Union
11-May-11	Idaho	Ammon
2-Jun-11	Arizona	Yuma
19-Jun-11	New York	Medford
3-Jul-11	South Carolina	Wagener
7-Jul-11	Wyoming	Wheatland
7-Jul-11	Michigan	Wheatland
23-Jul-11	Texas	Grand Prairie
5-Aug-11	Florida	Ocala
7-Aug-11	Ohio	Copley Township
5-Sep-11	West Virginia	Morgantown
6-Sep-11	Nevada	Carson City
25-Sep-11	Indiana	Laurel
12-Oct-11	California	Seal Beach
14-Oct-11	South Carolina	Liberty
20-Nov-11	North Carolina	Pleasant Garden
30-Nov-11	Texas	Bay City
15-Dec-11	Virginia	Gargatha
16-Dec-11	Illinois	Emington
25-Dec-11	Texas	Grapevine
17-Jan-12	Illinois	Villa Park
29-Jan-12	Alabama	Birmingham
21-Feb-12	Georgia	Norcross
2-Apr-12	California	Oakland
2-May-12	Arizona	Gilbert
15-May-12	Florida	Port St. John
19-May-12	West Virginia	Leivasy
30-May-12	Washington	Seattle
2-Jun-12	Arizona	Tempe
6-Jul-12	Ohio	Newton Falls
20-Jul-12	Colorado	Aurora
5-Aug-12	Wisconsin	Oak Creek
27-Sep-12	Minnesota	Minneapolis
18-Nov-12	North Dakota	New Town
2-Dec-12	California	Northridge
4-Dec-12	Michigan	Detroit
8-Dec-12	California	Tule River Reservation

14-Dec-12	Connecticut	Newtown
7-Jan-13	Oklahoma	Tulsa
19-Jan-13	New Mexico	Albuquerque
13-Mar-13	New York	Mohawk
18-Apr-13	Ohio	Akron
21-Apr-13	Washington	Federal Way
24-Apr-13	Illinois	Manchester
11-May-13	Indiana	Waynesville
7-Jun-13	California	Santa Monica
26-Jul-13	Florida	Hialeah
26-Jul-13	West Virginia	Clarksburg
1-Aug-13	Texas	Dallas
14-Aug-13	Oklahoma	Oklahoma City
12-Sep-13	Tennessee	Crab Orchard
16-Sep-13	Washington DC	Navy Yard
20-Sep-13	Texas	Rice
9-Oct-13	Texas	Paris
26-Oct-13	Arizona	Phoenix
28-Oct-13	Texas	Terrell
29-Oct-13	South Carolina	Bradley
7-Nov-13	Florida	Jacksonville
23-Nov-13	Oklahoma	Tulsa
1-Dec-13	Kansas	Topeka
16-Jan-14	Utah	Spanish Fork
25-Jan-14	Texas	Cypress
20-Feb-14	California	Alturas
20-Feb-14	Indiana	Indianapolis
8-Jun-14	Florida	San Carlos Park
9-Jul-14	Texas	Spring
26-Jul-14	Maine	Saco
3-Aug-14	Virginia	Culpeper
18-Sep-14	Florida	Bell
24-Oct-14	Washington	Marysville
15-Nov-14	Missouri	Springfield
21-Nov-14	Ohio	Cleveland
1-Dec-14	West Virginia	Morgantown
15-Dec-14	Pennsylvania	Lansdale
20-Dec-14	Illinois	Rockford
9-Jan-15	California	San Francisco
31-Jan-15	Georgia	Lagrange
7-Feb-15	Georgia	Douglasville
26-Feb-15	Missouri	Tyrone
24-Mar-15	Indiana	Indianapolis

16-Apr-15	Arizona	Phoenix
12-May-15	Arizona	Tucson
17-May-15	Texas	Waco
7-Jun-15	Montana	Deer Lodge
13-Jun-15	Ohio	Columbus
17-Jun-15	South Carolina	Charleston
15-Jul-15	South Carolina	Holly Hill
16-Jul-15	Tennessee	Chattanooga
22-Jul-15	Georgia	Suwanee
7-Aug-15	Vermont	Barre
8-Aug-15	Texas	Houston
8-Sep-15	Minnesota	Excelsior
17-Sep-15	South Dakota	Platte
1-Oct-15	Oregon	Roseburg
1-Nov-15	South Carolina	Pendleton
14-Nov-15	Texas	Tennessee Colony (Palestine)
2-Dec-15	California	San Bernardino
27-Jan-16	Virginia	Chesapeake
19-Feb-16	Missouri	Edgerton
20-Feb-16	Michigan	Kalamazoo
23-Feb-16	Arizona	Glendale
25-Feb-16	Washington	Belfair
7-Mar-16	Kansas	Kansas City
9-Mar-16	Pennsylvania	Wilkinsburg
22-Apr-16	Georgia	Appling
22-Apr-16	Ohio	Piketon
15-May-16	Georgia	Moultrie
11-Jun-16	New Mexico	Roswell
12-Jun-16	Florida	Orlando
29-Jun-16	Nevada	Las Vegas
7-Jul-16	Texas	Dallas
6-Aug-16	Pennsylvania	Sinking Spring
20-Aug-16	Alabama	Citronelle
8-Sep-16	Texas	Del Valle
23-Sep-16	Washington	Burlington
15-Oct-16	California	Los Angeles
27-Oct-16	Georgia	McDonough
9-Dec-16	Texas	Channelview
17-Dec-16	Illinois	Chicago
24-Dec-16	North Carolina	Wilson
6-Jan-17	Florida	Fort Lauderdale
27-Jan-17	Washington	Seabeck
6-Feb-17	Mississippi	Yazoo City

21-Feb-17	Mississippi	Toomsuba
22-Mar-17	Wisconsin	Rothschild
30-Mar-17	Illinois	Chicago
7-Apr-17	Texas	Houston
27-May-17	Mississippi	Bogue Chitto
5-Jun-17	Florida	Orlando
15-Jun-17	New Mexico	La Madera
21-Aug-17	North Carolina	Enfield
24-Aug-17	Missouri	St. Louis
10-Sep-17	Texas	Plano
15-Sep-17	Illinois	Chicago
1-Oct-17	Nevada	Las Vegas
5-Oct-17	Arizona	Casa Grande
11-Oct-17	Ohio	Pedro
5-Nov-17	Texas	Sutherland Springs
14-Nov-17	California	Rancho Tehama Reserve
31-Dec-17	New Jersey	Long Branch
28-Jan-18	Pennsylvania	Reading
28-Jan-18	Pennsylvania	Melcroft
10-Feb-18	Kentucky	Paintsville
14-Feb-18	Florida	Parkland
26-Feb-18	Michigan	Detroit
22-Apr-18	Tennessee	Antioch
16-May-18	Texas	Ponder
18-May-18	Texas	Santa Fe
10-Jun-18	Florida	Orlando
28-Jun-18	Maryland	Annapolis
9-Jul-18	Delaware	Wilmington
27-Jul-18	Texas	Robstown
12-Sep-18	California	Bakersfield
13-Oct-18	Texas	Taft
15-Oct-18	Tennessee	Columbia
27-Oct-18	Pennsylvania	Pittsburgh
7-Nov-18	California	Thousand Oaks
19-Nov-18	Pennsylvania	Philadelphia
28-Dec-18	Missouri	Saint Charles

Appendix B. Coding Scheme for Key Variables

Variable Name	Type	Description	
date	Date	Date of mass shooting	MM/DD/YYYY
state	Text	State in which mass shooting occurred	
city	Text	City in which mass shooting occurred	
unsolved	Dummy	Case is unsolved	1 = yes, 0 = no *no missing values
public	Dummy	One or more victims confirmed shot in public	1 = yes, 0 = no
private	Dummy	One or more victims confirmed shot in private residence	1 = yes, 0 = no
family	Dummy	One or more victims confirmed family member or intimate partner	1 = yes, 0 = no
non_stranger	Dummy	One or more victims is confirmed known to the shooter	1 = yes, 0 = no
felony	Dummy	Shooting is felony-motivated (e.g., gang, drug, robbery-related)	1 = yes, 0 = no
hate_crime	Dummy	Mass shooting is confirmed hate or bias motivated	1 = yes, 0 = no
number_locations	Count	Number of locations (different addresses) in which shootings happened	Start at 1
location_primary	Nominal	Primary location (lookup attached NIBRS code)	Codes range from 1 to 57

location_secondary	Nominal	Secondary location (lookup attached NIBRS code)	Codes range from 1 to 57
shooter_count	Count	Count of shooters	Start at 1
shooter_male	Count	Count of male shooters	Start at 0
shooter_female	Count	Count of female shooters	Start at 0
shooter_White	Count	Count of white shooters	Start at 0
shooter_Black	Count	Count of Black shooters	Start at 0
shooter_Hispanic	Count	Count of Hispanic/Latino shooters	Start at 0
shooter_Asian	Count	Count of Asian shooters	Start at 0
shooter_othernonwhite	Count	Count of other nonwhite shooters	Start at 0
shooter_immigrant	Dummy	Immigrant shooter	1 = yes, 0 = no
shooter_age_under18	Count	Count of shooters under the age of 18	Start at 0
shooter_age_18to24	Count	Count of shooters 18 to 24	Start at 0
shooter_age_25to29	Count	Count of shooters 25 to 29	Start at 0

shooter_age_30to39	Count	Count of shooters 30 to 39	Start at 0
shooter_age_40to49	Count	Count of shooters 40 to 49	Start at 0
shooter_age_50to59	Count	Count of shooters 50 to 59	Start at 0
shooter_age_60plus	Count	Count of shooters 60 and older	Start at 0
shooter_suicide_onscene	Dummy	Shooter committed suicide on scene	1 = yes, 0 = no
shooter_suicide_offscene	Dummy	Shooter committed suicide off scene	1 = yes, 0 = no
offender_killed_onscene	Dummy	Shooter killed on scene (not by suicide)	1 = yes, 0 = no
offender_killed_offscene	Dummy	Shooter killed off scene (not by suicide or death penalty)	1 = yes, 0 = no
offender_detained_onscene	Dummy	Shooter detained/arrested on scene	1 = yes, 0 = no
offender_detained_offscene	Dummy	Shooter detained/arrested off scene	1 = yes, 0 = no
offender_outcome_unknown	Dummy	Unknown outcome for shooter(s)	1 = yes, 0 = no
victim_count_shotfatal	Count	Count of victims shot and killed	Start at 4 *no missing values

victim_count_shotinjured	Count	Count of victims shot and NOT killed	Start at 0
victims_male	Count	Count of male victims (killed)	Start at 0 *fatally shot only
victims_female	Count	Count of male victims (killed)	Start at 0 *fatally shot only
victims_pregnant	Count	Count of pregnant victims (killed)	Start at 0 *fatally shot only
victims_age_under12	Count	Count of victims under the age of 12 (killed)	Start at 0 *fatally shot only
victims_age_12to17	Count	Count of victims 12 to 17 (killed)	Start at 0 *fatally shot only
victims_age_18to24	Count	Count of victims 18 to 24 (killed)	Start at 0 *fatally shot only
victims_age_25to29	Count	Count of victims 25 to 29 (killed)	Start at 0 *fatally shot only
victims_age_30to39	Count	Count of victims 30 to 39 (killed)	Start at 0 *fatally shot only
victims_age_40to49	Count	Count of victims 40 to 49 (killed)	Start at 0 *fatally shot only
victims_age_50to59	Count	Count of victims 50 to 59 (killed)	Start at 0 *fatally shot only
victims_age_60plus	Count	Count of victims 60 and older (killed)	Start at 0 *fatally shot only
victims_rel_romantic	Count	Count of victims (killed) who were romantic partners of the shooter(s)	Start at 0 *fatally shot only

victims_rel_children	Count	Count of victims (killed) who were children of the shooter(s) or shooter(s) current or former romantic partner	Start at 0 *fatally shot only
victims_rel_otherfamily	Count	Count of victims (killed) who were other family members of the shooter(s)	Start at 0 *fatally shot only
victims_rel_coworkers	Count	Count of victims (killed) who were co-workers	Start at 0 *fatally shot only
victims_rel_othernonstranger	Count	Count of victims (killed) who were other non-strangers	Start at 0 *fatally shot only
victims_rel_strangers	Count	Count of victims (killed) who were strangers	Start at 0 *fatally shot only
guns_multiple	Dummy	Multiple guns used in the mass shooting	Start at 1
guns_handgun	Dummy	One of the guns used in the mass shooting was a handgun	1 = yes, 0 = n0
guns_shotgun	Dummy	One of the guns used in the mass shooting was a shotgun	1 = yes, 0 = n0
guns_rifle	Dummy	One of the guns used in the mass shooting was a rifle	1 = yes, 0 = n0
guns_assaultweapon	Dummy	One of the guns used in the mass shooting was an assault weapon	1 = yes, 0 = n0
other_methods_used	Dummy	Other methods/means (besides firearm) were used to kill OR harm people in the incident	1 = yes, 0 = no
shooting_daylight	Dummy	One or more fatal shootings happened in daylight/daytime (between 6 am and 8 pm)	1 = yes, 0 = no
shooter_priorarrest	Dummy	One or more shooters has a prior arrest record	1 = yes, 0 = no

shooter_gang	Dummy	One or more shooters is gang involved	1 = yes, 0 = no
shooter_violence	Dummy	One or more shooters has a documented history of violence	1 = yes, 0 = no
shooter_mentalhealth	Dummy	One or more shooters has a mental illness as indicated by: professional diagnosis, history of planned or attempted suicide, prescribed psychoactive medication, receipt of professional treatment, or commitment to a mental health treatment facility	1 = yes, 0 = no
shooter_military	Dummy	One or more shooters was in the military	1 = yes, 0 = no
shooter_lostjob	Dummy	One or more shooters was recently fired or laid off prior to the shooting	1 = yes, 0 = no
shooter_financialstrain	Dummy	One or more shooters experienced recent, acute financial strain prior to the shooting	1 = yes, 0 = no
shooter_separation	Dummy	One or more shooters experienced recent divorce, breakup, or separation prior to the shooting	1 = yes, 0 = no
shooter_conflict	Dummy	One or more shooters experienced recent, acute interpersonal conflicts prior to the shooting	1 = yes, 0 = no
shooter_otherstress	Dummy	One or more shooters experienced other kinds of acute strains or stress prior to shooting	1 = yes, 0 = no
shooter_victimabuse	Dummy	One or more shooters is a documented victim of abuse, bullying, or maltreatment	1 = yes, 0 = no
shooting_urban	Dummy	One or more fatal shootings occurred in urban neighborhood	1 = yes, 0 = no
shooting_suburban	Dummy	One or more fatal shootings occurred in suburban neighborhood	1 = yes, 0 = no

shooting_rural	Dummy	One or more fatal shootings occurred in a rural area	1 = yes, 0 = no
news_articles_ord	Ordinal	Number of articles found	1 = less than 25, 2 = 25-50, 3 = 51-70, 4 = 71-99, 5 = 100+
news_NYT	Dummy	Shooting was covered in the New York Times	1 = yes, 0 = no
news_LATimes	Dummy	Shooting was covered in the LA Times	1 = yes, 0 = no
news_WAPost	Dummy	Shooting was covered in the Washington Post	1 = yes, 0 = no
news_ChicagoTrib	Dummy	Shooting was covered in the Chicago Tribune	1 = yes, 0 = no

Appendix C. Location Codes

1	Air/Bus/Train Terminal
2	Financial Institution
3	Bar/Nightclub
4	Church/Synagogue/Temple/Mosque
5	Commercial/Office Building
6	Construction Site
7	Convenience Store
8	Department Store
9	Drug store/Doctor's Office/Hospital
10	Field/Woods
11	Government/Public Building
12	Grocery/Supermarket
13	Highway/Road/Street/Sidewalk
14	Hotel/Motel/Etc.
15	Jail/Prison/Penitentiary/Corrections Facility
16	Lake/Waterway/Beach
17	Liquor Store
18	Parking/Drop lot/Garage
19	Rental Storage Facility
20	Residence/Home
21	Restaurant
23	Service/Gas Station
24	Specialty Store
25	Other/Unknown
37	Abandoned/Condemned Structure
38	Amusement Park
39	Arena/Stadium/Fairgrounds/Coliseum
40	ATM Separate from Bank
41	Auto Dealership New/Used
42	Camp/Campground
44	Daycare Facility
45	Dock/Wharf/Freight/Modal Terminal
46	Farm Facility
47	Gambling Facility/Casino/Racetrack
48	Industrial Site
49	Military Installation
50	Park/Playground
51	Rest Area
52	School-College/University
53	School-Elementary/Secondary
54	Shelter-Mission/Homeless
55	Shopping Mall
56	Tribal Lands
57	Community Center