

FIRST REPORT OF THE EXPERT PANEL ON FIREARMS DATA INFRASTRUCTURE

The State of Firearms Data in 2019

JANUARY 2020

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Table of Contents

| | |
|---|------------|
| Executive Summary | 1 |
| The State of Firearms Data in 2019 | 3 |
| Overview of Existing Firearms Data | 5 |
| Limitations | 6 |
| Charting a Course towards a Blueprint for a Firearms Data Infrastructure..... | 7 |
| Elements of a Knowledge Data Infrastructure..... | 7 |
| Elements of a Policy Data Infrastructure | 9 |
| The Second Convening – Promising Practices, Programs, and Policies in Data Infrastructure..... | 11 |
| The Expert Panel on Firearms Data Infrastructure | 11 |
| Appendix A – Data Catalog | A-1 |
| Appendix B – Expert Panel Biographies | B-1 |

Executive Summary

Any reasoned debate on firearms in the United States, particularly one that seeks to protect 2nd Amendment rights while taking seriously the role of firearms in America's disproportionate violence, must begin with a shared set of facts. At present, the firearms data infrastructure in the United States is too limited to provide that foundation. In partnership with Arnold Ventures, NORC at the University of Chicago is hosting a series of convenings with an expert panel of 14 members with diverse professional experiences and subject matter expertise in data, research, and policy. The goal of this panel is to produce practical guidance for a rigorous, objective, and sustainable firearms data architecture for use by local, state, and federal policymakers and their constituents.

The first expert panel convening was held in October 2019, and this report is the first product of these deliberations. This paper serves two purposes. First, it presents a review of current firearms data systems, datasets, and survey data. Second, it describes the ongoing deliberations of the expert panel on the review of data and on the development of a roadmap through the two remaining convenings, to culminate in a blueprint for a U.S. firearm data infrastructure.

The main finding of this report is that, while there are numerous data sources describing particular elements of the relationship between firearms and accidental harm, suicides, and criminal violence, the current firearms data environment is disordered and highly segmented.

- Firearms data—particularly the movement of firearms from first purchase to a criminal actor—are highly restricted by laws, regulations, and real-world politics. These data are rarely linked to, or linkable to, data on social and ecological determinants of health and welfare.
- Public health data describe the outcomes of firearms use in terms of morbidity and mortality from accidents, suicides, and violent crime. While these data can and are linked to a richer set of (mainly social) determinants data, they are only loosely linked to criminal justice data.
- Criminal justice data are mainly limited to criminal justice system process data that describe the criminal consequences of illegal firearms use, including arrests, charges, and sentences. These data are mainly aggregated and of limited operational and research use.
- In summary, existing data are mainly useful only for narrow studies to inform national policy and for use in local operational decision-making.
- Existing survey data cross these public health/criminal justice boundaries. However, beyond broad public opinion and narrow surveys of a specific population, the existing survey research is very limited.

A more robust data infrastructure would provide substantial benefits to local, state, and national policymakers and practitioners. In particular, results from transparent and objective research on programs and policies intended to prevent firearms injury, suicide, and criminal violence could be harmonized with

local data to facilitate contextually appropriate implementation in new geographies. And an enhanced data infrastructure would provide early warning about emerging trends in firearms misuse, facilitating the development and implementation of local measures equivalent to an inoculation.

As a critical first step in advancing a more effective and efficient firearms data architecture, this document describes the key findings from the first expert panel meeting and includes a matrix describing the attributes and limitations of existing data.

The State of Firearms Data in 2019

The current gap in high-quality, transparent, and objective firearms data and the limited infrastructure to support data design, collection, integration, analysis, and dissemination is a substantial roadblock to the development of a comprehensive feedback mechanism to inform policymaking intended to reduce and prevent firearms violence and misuse.

The United States is unique among peer nations in the incidence and prevalence of violence in general, and firearms violence in particular. The lack of research on the causes and correlates of firearms violence in America is well established. Without a broadly accepted set of facts to anchor a public dialogue, the civic discourse is one of extremes and caricatures and inevitably dormant policymaking. At the same time, the crime decline of the last generation—which was not distributed equally across communities, cities, and regions—has slowed, stalled, or even reversed in many parts of the country. With no broad and promising policy mechanisms emerging to spur future reductions, the result is an equilibrium level of firearms violence that far exceeds reason and few emerging population-level interventions.

On October 15, 2019, NORC gathered 10 research and practitioner experts in public health, medicine, criminal justice, and data infrastructure in Bethesda, MD, for the first convening of the Expert Panel on Firearms Data Infrastructure. The purpose of this initial

convening was to investigate existing firearms data infrastructure, to determine where that data infrastructure can and cannot answer critical policy and research questions, and to begin to create a roadmap for the development of a data infrastructure that would fill those gaps. While much has been made of the limitations of the existing data systems and collection, development of a better system first requires a clear-eyed understanding of the purpose of existing systems and how those data are currently collected and used.



This paper is the first of three products that will be generated from the Expert Panel on Firearms Data Infrastructure. Commissioned by Arnold Ventures and staffed at NORC at the University of Chicago, the expert panel will convene for three meetings in October 2019 and Winter and Spring 2020. The panel organization and composition generally replicates the standard National Research Council model for expert panels and includes subject matter scholars and policymakers who are both thought leaders and consumers of data and research and who can act as champions at the local, state, and federal levels. This diversity of perspectives will also be prioritized in the selection of witnesses to present expert testimony to the panel. The three products from the expert panel include:

- ***The State of Firearms Data in 2019.*** An assessment of the state of firearms data collection and infrastructure in key substantive domains (criminal justice, health, and public health), including both administrative and survey data as well as compilations and systems of data integration. The paper will consider the extant data within the framework of the six essential components of data infrastructure.
- ***Promising Practices, Programs, and Policies in Data Infrastructure.*** The paper will explore topics in technical and methodological advances in infrastructure development and architecture, mechanisms for sustainability of data infrastructure, implementation science of data systems adoption, and case studies in sustainable systems science.
- ***Creating a Firearms Data Infrastructure to Serve 21st Century Policymaking.*** The final paper, the “blueprint,” will synthesize and distill the work of the expert panel, including expert testimony, panel formulations, and staff research into actionable recommendations. By leveraging existing projects, policies, and innovative methods and models for the next generation of firearms data infrastructure, the Blueprint will create a set of recommendations for next steps for the development of firearms data infrastructure, including a prioritized list of future projects.

In taking on this project, there is a need for a balanced understanding of the approaches to data developed by academia and practice and how they are shaped by policymaking around a highly politicized policy issue. For the most part, the role of the federal government in the development and marketing of firearms-related data systems and datasets has been quite limited. Two congressional acts have in particular restricted federal involvement in firearms data infrastructure construction, expansion, and maintenance. An amendment to the 1996 Omnibus spending bill (widely known as the Dickey Amendment) required that “none of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention (CDC) may be used to advocate or promote gun control.” An amendment to the 2003 federal spending bill (widely known as the Tiahrt Amendment) similarly restricted the Bureau of Alcohol, Tobacco, Firearms and Explosives from sharing firearms trace data. Together these restrictions are widely acknowledged as having led to a diminished federal role in firearms infrastructure development, as compared to a broader general trend toward more integrated and open access data throughout the federal government. Shortly before this document was published, in December, 2019, Congress appropriated \$25 million for firearms violence research, perhaps signaling the start of a change in federal strategy.

The expert panel, however, was uniform in their agreement that firearms data infrastructure can be developed and improved in a nonpolitical manner. The panel disagreed with the presumption that “doing anything about guns meant subscribing to partisan gun political views.” Rather, the expert panel believes that prevention of firearms injury from accidents, suicide, or criminal injury can be enhanced through better data systems and architecture. In particular, considering the nature of the problem in general and local problems specifically can lead to nonpartisan solutions. The expert panelists cited social norm change informed by data across a host of behaviors, from routine firearms storage to taking possession of a firearm for a friend experiencing a difficult period, as potentially having profound effects.

Thus, a particular goal of the first convening and of this first paper is to develop an assessment of the state of firearms data collection and infrastructure in key substantive domains (criminal justice, health, and public health), including both administrative and survey data as well as compilations and systems of data integration. For practitioners and policymakers, the purpose of this exercise is to determine what data is currently available and what the gaps are—for instance, highlighting missing databases, missing data elements, or missed opportunities to link across data systems.

Appendix A describes a key output of this effort—a description of existing firearms databases. As described below, this data catalog is curated with annotations noting the purpose of the collection, how complete and accessible the data are, and their limitations. The datasets and compilations here are intentionally drawn broadly to encompass both public and government data, including data curated by federal and local governments.

Building on the data that are currently available, the report also describes the essential elements of a comprehensive modern firearms data infrastructure. Beyond the six specific elements of this infrastructure—1) layered and 2) harmonized 3) event-level administrative and 4) survey data that are 5) practically implementable with a 6) strategic and tactical purpose—the design of a firearms data

infrastructure should include an intentional framing of broader strategic objectives. Here, these are framed by a (non-exclusive) choice between systems that are intended to serve practical operational objectives similar to health surveillance data widely used in medicine, or to create a platform for policy research. The intention of the discussion that follows is not to resolve these challenges but to discuss their implications as part of a roadmap to the final expert panel product: *Creating a Firearms Data Infrastructure to Serve 21st Century Policymaking*.

Overview of Existing Firearms Data

The work of the panel, as well as this report, builds on three prior National Academy panels that investigated firearms and violence and a recent report assessing the current state of firearms policy research by the RAND Corporation. The 2005 panel report, *Firearms and Violence: A Critical Review*, focused on synthesizing research evidence and research design, and noted throughout the limits of data to establish causal relationships between firearms and violence. In *Priorities for Research to Reduce the Threat of Firearm-Related Violence*, the 2013 panel reframes the firearms violence debate as a public health problem, and similarly concludes that data are insufficient—particularly data surveillance—to answer causal questions. A 2018 panel produced *Modernizing Crime Statistics: Report 2: New Systems for Measuring Crime* (2018), but offered little guidance on improving firearms data sources to produce more meaningful crime statistics. Also in 2018, RAND issued a report on the *Science of Gun Policy*, to “assess available scientific evidence on the real effects of firearm laws and policies.” Together, these reports lay the foundation for assessing the state of firearms data in 2019.

As these systematic reviews of firearms research have made clear, the quality of the data that underlie scientific inquiry is central to the public’s acceptance of conclusions reached by the research. Any research study on causes and correlates of firearms-related violent crime, population-level studies of prevention and intervention programs in public health or criminal justice, or simple facts about firearms violence to frame a civil dialogue requires a foundation in valid and reliable data. The data must be comparable across states and cities to create a national picture that is meaningful to local jurisdictions. The creation of a productive data infrastructure would create a knowledge ecology where reasoned policy, grounded in scientific principles and empirical evidence, may be viable.

Appendix A is a data catalogue that describes 43 data collections that include at least some firearms-related measures. As a first principle of best practices in data infrastructure, the panel agreed that the datasets and systems with the broadest possible use in operations and policymaking are those intended to at least approximate a population-level collection and attempt a longitudinal data collection. An effective firearms data infrastructure must be widely available and accessible; must be available at the event-level or able to be disaggregated to discrete events, places, or people; must include identifiers that allow linkages across data systems; and must inform policymaking in addition to program evaluation. The columns in **Appendix A** reflect this principle. Following Mueller-Smith (2019), each of the 43 data collections included in the data catalogue were evaluated by the expert panel to determine if the data are reported with:

- Geographically aggregated statistics

- Population-level coverage
- Longitudinal data
- Self-reported values
- Integration with data from other areas of inquiry
- A research access mechanism

Practically, given the restrictions on federal funding for firearms data and research, data compilations have emerged that are generally specific to a single substantive area and that are developed for some purpose other than the particular study of firearms and violence. The expert panel further divided the available data into six substantive domains:

- National crime and justice database
- National public health database
- Population-level survey data
- Federal justice system survey data, Ancillary justice data collections
- Nonprofit and private policy data, Ancillary (covariate) data, Convenience data and surveys
- Integrated data

In general, the crime and justice data including firearms fall into two categories: those collections that measure crime and violence in general and surveillance systems for firearms ownership and use in crime. The national public health data are practically described as surveillance systems for health, morbidity, and mortality. Population-level survey data include surveys that are intended to longitudinally describe social welfare in general or among youth in the United States. Federal survey data and other data compilations broadly include collections about the performance of criminal justice system components and include firearms data as a component of involvement in that system (the prototypical example is a firearms charge as it relates to criminal sentencing). The fifth category is understood to be an “other” category, which tends to be nongovernmental efforts to collect and curate firearms data from open access data. Finally, the integrated data represents an exemplar of the type of data infrastructure sought by the expert panel, and only a single example is available at this time.

Limitations

The limitations of these extant datasets and collections are relatively obvious. There is no single, integrated data collection with key outcome measures of firearms violence and risk, and protective predictors of those outcomes. The datasets are not comprehensive across a range of measures of inclusiveness—they have limits both in scope and content. Scope is limited not only by a lack of representativeness of the population under study in many collections, but also in key measures of geography (street violence is an intensely local phenomenon) and setting/context (to capture domestic and intimate partner violence). In terms of content, the gaps in knowledge are vast—few of the key policy questions posed above can be adequately addressed from existing data to inform evidence-based firearms policymaking.

We note also that there are hundreds of other data collections that are particular to a single or small number of geographies and interventions, or present a cross-section of population-level data. In focusing on the 43 data collections that meet both standards—population-level and longitudinal—we do not intend to diminish the import of other data to knowledge-based policymaking. Rather, we focus on these particular data collections because they have fewer issues of external validity (generalizing to broad populations) and internal validity (threats to validity inherent in smaller collections due to unique attributes of the places and times under study) and thus yield a more comprehensive framework.

Charting a Course towards a Blueprint for a Firearms Data Infrastructure

There was a consensus among expert panel members that the next step in creating a firearms data infrastructure was to clearly articulate the goals of the infrastructure. In the most straightforward terms, the choice is between an infrastructure that strategically overhauls the current data system, or a more iterative proposal building on existing data systems. The expert panel described one set of strategic objectives as focused on goals that are broad, flexible, and aspirational so that questions about policy and practice that are not high priorities today can be explored in the future. However, the data infrastructure must also be practical and implementable—the panel discussed at length the challenges of contemporary systems both in their often poor designs that build in disincentives to their use and in the cultural barriers to reporting data infrastructure across levels of government. The expert panel discussed two potential designs for the data infrastructure:

- **Knowledge data infrastructure.** The data infrastructure can be created to collect a broad set of data whose key attributes are determined independently of the policy questions the data will be used to investigate.
- **Policy data infrastructure.** The data infrastructure can be created to intentionally collect data that includes the dependent variables and key covariates to ask and answer a known set of policy questions.

Elements of a Knowledge Data Infrastructure

The objective of a “knowledge” data infrastructure would be to create a structure that captured as many possible facts about firearms use and social and ecological correlates. Similar to the American Community Survey or the General Social Survey, the data collected through a knowledge data infrastructure would not be tied to any particular policy consideration. The data would be analogous to the public health surveillance data used by the CDC to monitor trends in public health and to offer a platform for researchers and practitioners to query in response to changing local conditions. As well, the system would allow local practitioners and policymakers to develop a clear understanding of how their own local context varies or does not vary from studies conducted elsewhere or on different populations.

Thus, the knowledge data infrastructure would provide a platform for policy research and local operations. In that way, again, it is analogous to a public health surveillance system. However, the expert panel expressed strong concern that framing these data as “surveillance” data would potentially create the appearance of a political motive within the data system. On the other hand, there was a consensus within

the panel that such a knowledge data system would potentially have the greatest utility for local practitioners and policymakers responding to crises in injury, suicide, or violent firearms victimization.

The panel recommended that, as a first step to make concrete recommendations in the blueprint for the infrastructure, the attributes that together comprise the essential components of a data infrastructure be clearly articulated. These critical elements of the knowledge data infrastructure components include:

- 1) **Layering firearms data** elements into existing criminal justice and public health administrative systems. Layering data would essentially stitch together datasets and systems that historically had been housed separately. The advantage of layered data, such as layering reported crime data with census data, is that it allows for a richer set of correlates to be evaluated—and to be evaluated as routine elements in understanding policy and practice—than is available today.
- 2) **Harmonization** of firearms data across systems and levels of government. In the simplest form, harmonized data would include data where the definitions for common data elements are consistent. Harmonized data of this sort is relatively common in public health data, but less common in criminal justice data, where, for example, a definition of an assault may vary substantially across local reporting agencies. More ambitiously harmonized data could include data containing a shared identifier to allow data to be merged across systems and levels of government. For local agencies and for policymakers, harmonized data is a powerful tool to understand average effects of a new policy and the guardrails of possible consequences.
- 3) A data architecture with a micro unit of analysis, which may be at the event, person, place, or group level, to **facilitate rigorous research designs**. The expert panel consensus is to recommend that data not be reported in the aggregate, but in the smallest disaggregated unit. The advantage of these data are that substantial information beyond averages can be conveyed to practitioners and policymakers about the effect of new policies, and that covariation between attributes of effected people and places can be more thoroughly examined.
- 4) Development of innovative sampling frames for **survey research**. The consensus made multiple recommendations for additional survey items or survey instruments that could shed critical light on the effectiveness of new and existing policies. For many practical reasons, the panel believes that survey data may be more easily and more quickly obtained than administrative data. While survey data cannot be practically integrated with administrative data except in unusual circumstances, the survey data can identify important causes and correlates of firearms misuse that are unlikely to be observed from administrative data, such as the presence of and change in social norms regarding prevention behaviors.
- 5) **Strategies for organizational design** that will facilitate uptake of these recommendations. As noted above, the expert panel expressed uniform concern that, without close attention to the design of organizations (particularly government agencies) responsible for collecting and sharing data, changes in the data infrastructure will not lead to better data—in particular, creating organizational structures that are responsive to disincentives for accurate and timely reporting of data.

6) **Strategic communication** to data users and stakeholders to facilitate broad engagement. The expert panel highlighted the importance of communicating broadly the goals and objectives of new data collections and data systems. The panel believes that, without clear messaging about the purpose of collecting, analyzing, and maintaining any new data infrastructure, the usefulness of these new processes will be greatly limited.

Essentially, these elements of an effective knowledge data infrastructure are proposals for improved practice. Each element is an integral component of the whole which creates an infrastructure that is scalable. Scalability, which is the integration of data across substantive domains, geographies, and policy issues, is the core advantage of this approach as a learning tool to solve local problems.

Elements of a Policy Data Infrastructure

With respect to the policy data infrastructure, the expert panel described the importance of adding a relatively small number of surveys, survey items, administrative data elements, and mechanisms for data integration as a means to answer important and pressing policy questions. As an example of the types of policy questions that a policy data infrastructure would inform, the expert panel relied on the RAND report on the *Science of Gun Policy*, which is framed around 13 classes of firearms policy, including:

1. Background checks
2. Assault weapons bans / Ban in high-capacity magazines
3. Stand-your-ground laws
4. Mental illness
5. Lost or stolen firearms
6. Licensing and permitting
7. Firearms sales reporting and recording
8. Child access prevention
9. Surrender of weapons
10. Minimum age requirements
11. Concealed carry
12. Waiting periods
13. Gun-free zones

The RAND authors note that these policies were selected chiefly for their viability—among the hundreds of policy reforms under consideration in the United States (including both those that would expand and restrict private firearm ownership and use), these 13 were selected on the grounds that some reforms had been successfully legislated. At present, the expert panel was in full agreement that additional research—informed by at least some data that is currently not available—was necessary to understand the effectiveness of each of these policies. The strength of this reasonable approach is that it provides a roadmap to identify the particular data items that are not available in existing data collections. Thus, this approach simplifies the creation of a blueprint and makes the creation of performance metrics for that blueprint straightforward: Were systems and structures proposed that could collect data necessary to rigorously evaluate each of these key policy reforms?

Careful consideration of the attributes of policy questions with a firm data foundation, and the attributes of policy questions with limited data support, will inform the discussion about data infrastructure objectives. For instance, we hypothesize that a critical attribute of policy questions that are currently answerable will be that data from a single source are sufficient. We also hypothesize that policy questions that require surveillance data as inputs, rather than integrated, cross-sector data as inputs, are more amenable to current investigation. As a rubric, the panel may consider the critical elements of a knowledge infrastructure in determining priority policy questions, such as the examples that follow:

- What do we know about currently available firearms data and data sources? What lessons can be learned from the rollout of extant systems (for instance, the challenges around the National Incident-Based Reporting System implementation and the implications for collecting incident-based data)?
- How can a firearms data infrastructure be designed that is most useful to both those who enter the data and those who use it for policymaking? What can be learned from systems science in technology, engineering, and organizational science that can inform the science of firearms data infrastructure development?
- How can survey data augment and leverage administrative data collection (and vice versa), particularly on firearms attitudes, behaviors, and beliefs?
- How can agencies across government organize, share, and understand data from other sources to facilitate effective policymaking?
- How can community-based organizations use data to improve cultures and norms of behavior to prevent gun violence?
- What are the individual and ecological causes and correlates of firearms violence? How can these be translated into an analogue of social determinants of health?
- What are the effects of local, state, and federal policies and law on gun ownership, transfer, and use? How can data be used for behavioral research to nudge pro-social firearms ownership behavior?
- What other critical research questions for policymaking cannot be answered today?

Thus, the knowledge data infrastructure focuses on database components, while the policy data infrastructure focuses on database outputs. The expert panel was in agreement that these two approaches are not mutually exclusive. Enhancing the knowledge-based data systems would enhance policy research, while collection of new data to explore existing policy research questions would enhance the knowledge data available to be incorporated into the firearms data infrastructure.

Ultimately, the expert panel will be charged with making a recommendation about the priority of new projects, considering both impact and timing, derived from the panel's deliberations. Regardless of which data infrastructure model is assigned as the primary outcome, the panel will seek to avoid the central limitation of past reforms that have focused singularly on outputs from data systems—statistics, research reports—rather than sustainable improvements in the infrastructure itself. These recommendations will also intentionally consider implementation barriers to infrastructure reform, particularly with respect to systems designs that create value to data collectors as well as end users. The expert panel will continue to explore the implications of these two approaches at the second convening.

The Second Convening – Promising Practices, Programs, and Policies in Data Infrastructure

The second convening of the Expert Panel on Firearms Data Infrastructure is to be held in January 2020 in Bethesda, MD. The overarching goal of this convening is to set a path toward a blueprint for data infrastructure with the blueprint work to be completed at the third convening in April 2020. The panel will focus on the details of the overarching choice between policy and knowledge databases described above. In particular, the panel will focus on developing a priority list for development of the knowledge data infrastructure. To inform this discussion, the panel will hear testimony and receive a demonstration of the Data Enclave, a proprietary data infrastructure that is operational and includes many of the core elements of infrastructure described above. In addition, the panel will deliberate on a proposal to consider three core elements of the proposed policy data infrastructure: instrumentality, accessibility, and accountability. In this construction, instrumentality would focus on the nature of different weapons and their relationship to accidents, suicides, and violent injury. Accessibility refers to the process by which a legally obtained weapon is transferred to the person who is injured by it, having used it in a suicide or as a crime gun. Accountability refers to legal structures to deter misuse and to identify and criminally process criminal firearm offenders. The panel will also hear expert witness testimony from an expert in organizational design for transformational change, to aid the panel in making recommendations for the blueprint that are practically implementable. Finally, the expert panel will hear testimony from a leader in the media who will describe how data on firearms is used by reporters and how those data could be improved for better reporting and enhanced public prevention efforts.

The Expert Panel on Firearms Data Infrastructure

Over one year, the expert panel will meet three times to exchange ideas, review a broad systems science literature, and hear testimony from experts. The panel will focus on the ingredients and processes necessary to catalyze data systems that answer the most fundamental questions on firearms policy: How many guns are in circulation in American society? How are they used and protected? How do they reach criminal actors? What are the causes and correlates of firearms violence? How do laws affect the behavior of those using firearms for legal and illegal actions? The panel will explore data systems designed to answer these questions, systems that include innovations in data architecture, integration of administrative data and survey data, a clear-eyed understanding of how data are collected and used, and how intents and outcomes are communicated. From these deliberations, the panel will produce three documents: *The State of Firearms Data in 2019*; *Promising Practices, Programs, and Policies in Data Infrastructure*; and, *Creating a Firearms Data Infrastructure to Serve 21st Century Policymaking*. The final document will serve as a blueprint for the development and implementation of data projects—and set expectations for project outcomes. **Appendix B** contains the biographies of the 14 members of the Expert Panel on Firearms Data Infrastructure.

Appendix A – Data Catalog

| Database | Description | Firearms-Related Variable(s) | Website | Limitations | Current Data? | Characteristics | | | | | |
|--|---|--|---|--|--|-----------------|---|---|-----|---|---|
| | | | | | | D/A | P | L | O/S | I | R |
| I. National Crime Databases | | | | | | | | | | | |
| FBI Uniform Crime Report (UCR) Summary Reporting System (SRS) | Monthly, aggregated data from 18,000 local, county, state, and federal law enforcement agencies. 43% of LEAs report NIBRS data (see next) to SRS, which is then summarized—the rest submit summaries that cannot be disaggregated. | The number and type of criminal acts (Part I), number and type of persons arrested (Part I and Part II), and number and type of offenses cleared. | https://ucr.fbi.gov/crime-in-the-u-s | Data are aggregated (and cannot be disaggregated). Data cannot be linked across reports. | Yes (continuously since 1960). The FBI reports that NIBRS data will subsume the UCR beginning in 2021. | A-S | x | x | O | | x |
| FBI Supplementary Homicide Report (SHR) | To supplement the aggregate data reporting in the UCR, SHR records additional event-level data from homicides. SHR collects more detailed individual-level data on the victims, suspects, weapons, and precipitating circumstances involved in murders, non-negligent homicides, and negligent manslaughters. | SHR includes data on the type of weapon used in the homicide. Victim and offender age, sex, and race, offender relationship to victim (including justified homicide by private citizen and police). | https://www.ojdp.gov/ojstatbb/ezashr/ . Also: https://www.openicpsr.org/openicpsr/project/100699/version/V8/view;jsessionid=8DAAD29BB666CD A9D95A60BFBE9C3DF5 | Strength of the data system is that it has been in place for decades. Limitations: reporting is not mandatory; counts are typically lower than National Vital Statistics System counts of homicides; data are based on preliminary investigation and not typically updated; counts of legal intervention deaths and unintentional firearm deaths at the hands of another person are undercounted in SHR. Limited to cases where offender is known. | Yes – the FBI reports that NIBRS data will subsume the UCR beginning in 2021. | D-E | x | x | O | | x |
| FBI Uniform Crime Report (UCR) Program National Incident-Based Reporting System (NIBRS) | NIBRS is reported by 43% of U.S. law enforcement agencies on criminal incidents. | NIBRS includes incident-level files on offender, victim, setting, and law enforcement disposition. | https://www.fbi.gov/services/cjis/ucr/nibrs | Law enforcement agency participation in NIBRS is limited with full implementation targeted for 2021. | Yes – but phasing in. | D-E | | x | O | | x |
| FBI Uniform Crime Reporting (UCR) Program Law Enforcement Officers Killed and Assaulted (LEOKA) Program | Reports death and assault of law enforcement officers (LEO) annually. Data collected by the FBI through the UCR data reporting process from local, state, and federal law enforcement agencies. | LEOs Feloniously Killed (weapon information, circumstance/assignment), LEOs Accidentally Killed (circumstance/assignment), LEOs Killed and Assaulted (weapon information), LEOs Assaulted (circumstance/assignment, weapon information), LEOs Assaulted and Injured (circumstance/assignment, weapon information), Number of Officers. | https://www.fbi.gov/services/cjis/ucr/leoka | Officers Assaulted data is being released in fall 2019. Data collected from FBI field offices, city, college and university, county, state, tribal, and federal law enforcement agencies participating in UCR. | Yes | A-S | x | X | O | | x |
| FBI Uniform Crime Reporting (UCR) Program Law Enforcement Hate Crime Statistics | Statistics on crimes resulting from bias (race/ethnicity/ancestry, religion, sexual orientation, disability, gender, gender identity). | Crimes against person and crimes against persons from SRS; incident-level data available from NIBRS compliant respondents. | https://www.fbi.gov/services/cjis/ucr/hate-crime | Most hate data are aggregated (and cannot be disaggregated). Data cannot be linked across reports. | Yes | A-S | x | x | O | | x |
| BJS Firearm Inquiry Statistics (FIST) Program | The FIST program uses information on firearm applications and denials along with the FBI's National Instant Criminal Background Check System (NICS) transaction data to conduct background checks for firearm purchases, transfers, or permits. | Estimated number of firearm applications received and denied from 1994 to 2015 by type of agency, number of checking agencies, etc. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=246 | Large gaps in current state of background check system. | Yes – latest data available from 2015. | A-S | | x | O | x | |
| BJS National Corrections Reporting Program (NCRP) | The NCRP is an annual collection of custody and sentencing and can be used to measure firearms-related sentences. Data collected includes prison admissions, releases, custody populations, parole entries, and discharges where jurisdictions participate. Individual records are used as a source to provide demographic info, convictions, sentence lengths, minimum sentences, credited jail time, types of admission and release, and time served. | Offense type, including weapons charges and enhancements. Sentence length and type. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=268 | The number of states submitting data has varied over time, as has the ability of states to provide each piece of information requested. Questions do not explicitly mention guns. | Yes – latest data available from 2016. | D-P | x | x | O | | x |
| II. National Firearms Databases | | | | | | | | | | | |
| ATF Firearms Trace Data | Following a firearm recovery, law enforcement agencies provide ATF with data on the criminal incident, the firearm, and possessor, and ATF traces prior firearm ownership and transfer. | Firearm data, possessor data, transfers, prior owner, and criminal incident. | https://www.atf.gov/resource-center/firearms-trace-data | Data aggregated for reporting: top calibers recovered, top crimes reported on firearm traces, time-to-crime rates, age of possessors, and top recovery cities. | Only for 2017 year. | A-S | | | O | x | |
| ATF Listing of Federal Firearms Licensees | Lists what type of firearms and other destructive devices are sold at dealership. | Lists all federal firearms licensees. | https://www.atf.gov/firearms/listing-federal-firearms-licensees-ffls-2016 ; https://www.atf.gov/firearms/listing-federal-firearms-licensees | The completeness of the list is not known, and the list does not appear to be available in the aggregate. | Yes – data available from 2014 to 2018. | A-S | | | O | | |

Characteristic Key

D/A-Disaggregated (Event- or Person-level)/Aggregated statistics (State or Local); P-Population-level coverage (x); L-Longitudinal or repeated measures (x); O/S-Official data or Self-report data; I-Integrated with non-crime data; R-Research access mechanism to underlying data **Appendix A** | Page A-2

| Database | Description | Firearms-Related Variable(s) | Website | Limitations | Current Data? | Characteristics | | | | | |
|---|--|--|---|---|--|-----------------|---|---|-----|---|---|
| | | | | | | D/A | P | L | O/S | I | R |
| ATF Annual Firearms Manufacturers and Export Report | Number of guns manufactured and exported by type of firearm. | Lists guns manufactured and exported by established by year. | https://www.atf.gov/resource-center/data-statistics | The completeness of the list is not known, and the list does not appear to be available in the aggregate. | Yes – from now to 2007 with one year delay per Trade Secrets Act. | A | | | O | | |
| ATF Firearms Commerce Report in the United States | Firearms manufactured, exported, and imported, by country, etc. | Lists various statistics related to gun statistic—comes in annual report format. | https://www.atf.gov/file/130436/download | Encapsulates other data sources—aggregated. | Yes – from 1986 to 2016. | A | | x | O | | |
| Federal Firearms Licensee Statistics Theft/Loss Reports | Firearms stolen and lost by year. | Lists guns stolen and lost by year. | https://www.atf.gov/file/133371/download | Comes in PowerPoint format-based on data provided by stats. | Yes – from 2011 to 2018. | A-S | | | O | | |
| National Firearms Act (NFA) National Firearms Registration and Transfer Record (NFRTR) | Number of NFA firearms processed from applications captured in NFRTR by fiscal year. | Lists firearm applications by year. | https://www.atf.gov/resource-center/data-statistics | Not all firearms are registered in the United States; can't track illegal guns. | Yes – from 2005 to 2018. | A | | | O | | |
| III. National Public Health Databases | | | | | | | | | | | |
| CDC National Center for Health Statistics (NCHS) National Vital Statistics System | Provides individual-level data on births, deaths, marriages, divorces, and fetal deaths. The mortality data is the underlying data used in the WISQARS and WONDER online data query interfaces. | Leading causes of death between 2017-2017 and total deaths. Features suicides and firearm deaths by total numbers and by rate (per 100,000 people). | https://www.cdc.gov/nchs/nvss/index.htm | Reliable source of data for suicides and homicides; not a good source for unintentional or legal intervention firearm deaths. Use NVDRS for those. | Yes – data releases usually lag by 2 years. | D/A-P | x | | O | x | x |
| CDC Web-based Injury Statistics Query and Report System (WISQARS) | Online database that uses multiple sources for fatal and nonfatal injury, violent death, and cost of injury data and leading causes of death. | Firearm related deaths and ED-treated non-fatal injuries. Website enables user to get counts and rates of mortality data by state, region, age group, race, and ethnicity and compare with other sources of injury, such as motor vehicle traffic, overdose, etc. | https://www.cdc.gov/injury/wisqars/index.html | Mortality data on unintentional firearm deaths and legal intervention deaths is inaccurate in many states. Use NVDRS instead for counts of these deaths. Broad CIs around estimates of nonfatal statistics because these are based on a sample of emergency departments. WISQARS Nonfatal does not allow assignment of intent to "Unknown." | Yes – data releases usually lag by 2 years. | A-L | x | | O | x | x |
| CDC WONDER (National Center for Health Statistics) | Online data query interface for access to a number of NCHS data systems. Choose "Detailed Mortality" or "Compressed Mortality" for the underlying data. Selecting "Multiple Cause of Death Data" gives access to contributing cause of death information, but it is difficult to use and interpret without advanced knowledge of the ICD system. | CDC WONDER is like WISQARS but gives users access to more detailed mortality data and greater flexibility in outputting data not only by year, state, and demographics, but also by intent, mechanism, county, and urban/rural status. Unlike WISQARS, WONDER also gives user access to mortality data for non-injury causes of death. | https://wonder.cdc.gov/ | Mortality data on unintentional firearm deaths and legal intervention deaths is inaccurate in many states. Use NVDRS instead for counts of these deaths. When selecting death type, click the radio button for "Injury Mechanism and Intent" rather than "ICD-10 Codes" unless you are very familiar with ICD codes. | Yes – data usually lags by 2 years. | A-L | x | | O | | |
| CDC National Violent Death Reporting System (NVDRS) | The NVDRS is a state-based reporting system that merges data from police reports, coroner/medical examiner reports, death certificates, and sometimes other sources into one anonymous database. Access to the individual-level data is available through a Researcher Access Data request to the CDC. Aggregate data is also available via WISQARS website. NVDRS data are not collected in all 50 states, Puerto Rico, and DC. | NVDRS is incident-based and provides information about all suicides, homicides, legal intervention deaths, unintentional firearm injury deaths, and injury deaths of unknown intent. Data includes type of weapon (including specific firearm type, caliber/gauge, make, model, whether stolen), wound information (number of bullets, wound locations), detailed precipitating circumstance info, mental health/substance abuse info (pretty good for suicides, not so good for homicides), specific type of location of incident, suspect information, whether suspect attempted/completed suicide, victim/suspect relationship, victim post-mortem tox testing results. | https://www.cdc.gov/violenceprevention/datasources/nvdrs/index.html | Data quality is constrained by the quality of the underlying data sources. There is heterogeneity across LEAs, coroners, and MEs in what they include in their death investigation reports. The data access interface for aggregate data available on WISQARS is not so great; researchers are advised to request the individual-level data from CDC instead. | Depends on data. In 2018, NVDRS was expanded to include data collection from all 50 states, Puerto Rico, and DC. | A-S | X | | O | x | x |
| K-12 School Shooting Database, FEMA, Homeland Security | Systematically records every K-12 school shooting, regardless of circumstance, injuries, or deaths, including brandishing. | Aggregates data from U.S. Secret Service, FBI, and Department of Education; media or advocacy groups including Washington Post, CNN, Gun Violence Archive, Everytown for Gun Safety, Education Weekly, and Mother Jones; and websites or blogs including Columbine Angels, Wikipedia, schoolshootingdatabase.com, and schoolshootingtracker.com. | https://www.chds.us/ssdb/resources/uploads/2018/10/Intro-and-Methodology-K-12-SSDB.pdf | Essentially crowd-sourced. | Yes | D/A-E | | | | | x |

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| Database | Description | Firearms-Related Variable(s) | Website | Limitations | Current Data? | Characteristics | | | | | |
|--|---|--|---|--|---|-----------------|---|---|-----|---|---|
| | | | | | | D/A | P | L | O/S | I | R |
| Firearm Injury Surveillance Study | Derived from the National Electronic Injury Surveillance System (NEISS), the primary data system of the United States Consumer Product Safety Commission (CPSC). The dataset represents all nonfatal firearm-related injuries (i.e., injuries associated with powder-charged guns) and all nonfatal BB and pellet gun-related injuries reported through NEISS from 1993 through 2015. | Data describing initial ED visit with injury diagnosis, firearm type, use of drugs or alcohol, criminal incident, and locale of the incident. Demographic information includes age, sex, and race of the injured person. | https://www.icpsr.umich.edu/icpsrweb/facts/studies/37276 | Data are based on a relatively small sample of hospitals nationwide, so CIs around national estimates are very wide, which limits ability to pick up on true year-to-year variation in rates. | Yes | A | x | | O | x | x |
| Health Care Utilization Project (HCUP), Agency for Healthcare Research and Quality (AHRQ) | Source of data on hospital emergency department visits and inpatient discharges. Data includes both national estimates based on a sample of hospitals and state census of all patients for participating states. | Firearm-related hospital visits can be identified via ICD-9-CM and ICD-10-CM external cause-of-injury codes. Variables available on the data access interface include patient demographics, diagnosis, and disposition. More detailed data also available when purchasing the individual-level data, like median income of patient's zip code of residence, urban/rural status of county of residence, and procedures. | https://www.hcup-us.ahrq.gov/databases.jsp | Because of the larger number of hospitals included in the national sample than in WISQARS Nonfatal, HCUP offers some advantages. Census data from participating states gives full count and is not subject to sampling error but is reliant on quality of ICD coding. ICD guidelines from CMS currently call for coders to default to Accident when intent is not stated. This distorts the firearm data when analyzed by intent. Also, while ICD has separate codes for handguns and long guns, this is often not noted in the record and is coded as unspecified firearm type. | Yes | A | x | | O | | x |
| State-Level Hospital Discharge and ED Databases | States make uniform hospital discharge data available on a census of inpatient discharges; most also make emergency department visit data available. These are generally available via the state health department or via a public-private health data consortium in the state. | Firearm injuries can be identified by ICD-9-CM and ICD-10-CM external cause of injury codes. Other variables include patient demographics, reason for visit, diagnoses, procedures, and disposition. | Varies by state, data can also be accessed via HCUP for participating states. | Data is reliant on quality of ICD coding. ICD guidelines from CMS currently call for coders to default to Accident when intent is not stated. This distorts the firearm data when analyzed by intent. Also, while ICD has separate codes for handguns and long guns, this is often not noted in the record and is coded as unspecified firearm type. | Yes | A | x | | O | | x |
| National Hospital Ambulatory Medical Care Survey (NHAMCS) | Data come from abstractors collecting visit data from a national sample of emergency departments, outpatient departments, and ambulatory surgery locations of non-institutional general and short-stay hospitals. | Firearm injuries can be identified by ICD-9-CM and ICD-10-CM external cause of injury codes. Other variables include patient demographics, reason for visit, diagnoses, procedures, and disposition. | https://www.cdc.gov/nchs/ahcd/about_ahcd.htm Access to public use data files: https://www.cdc.gov/nchs/ahcd/ahcd_questionnaires.htm | Limited to national estimates. | Yes | A | x | | O | | x |
| National Fatality Review Case Reporting System | Official manner and primary cause of death, number of child deaths, firearm deaths, suicides, and homicides. | Provides data on childhood mortality. | https://www.ncfrp.org/ | Data based on reports from states—risk for inconsistencies because it is decentralized. | Yes – data available from 2005 to 2017. | A-S | x | | O | x | |
| IV. Population-Level Survey Data | | | | | | | | | | | |
| Bureau of Justice Statistics (BJS) National Crime Victimization Survey (NCVS) | The NCVS collects data on criminal victimization, including nonfatal personal crimes and household property crimes. | Frequency, characteristics, and consequences of criminal victimization in the United States. People asked if they have been attacked or threatened with guns. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=245 | Based on samples/estimates of 240,000 interviews. | Yes – latest data available in 2017. | P | x | | S | | |
| BJS Police-Public Contact Survey (PPCS) | A supplement to the National Crime Victimization Survey (NCVS). Detailed data on personal characteristics of people who have had contact with police during the year, including those who contacted the police to report a crime or were pulled over in a traffic stop. | People are asked if an officer pointed a gun at them during an interaction. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=251#Questionnaires | Survey does not focus particularly on guns. | Yes – last issued in 2015. | P | x | | S | | x |
| CDC Behavioral Risk Factor Surveillance System (BRFSS) | The BRFSS uses phone surveys to gather data about American health-related risk behaviors by state, including chronic health conditions and use of preventive services. Over 400,000 adult interviews are conducted each year, making it the largest continuous health survey system in the world. | The 2001, 2002, and 2004 BRFSS asked whether there were working firearms at home, whether any were loaded, and whether any were loaded and unlocked. Since 2004, these or similar items have only been asked as “state-added” questions, and there is no central listing of which states asked which firearm items when. | https://www.cdc.gov/brfss/index.html | Started with 15 states when established in 1984. Now has data from all 50 states, DC, and territories. Interviews 400,000 people per year. Questions about guns vary from year to year and are usually limited to less than four. | Yes | P | x | | S | x | |

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| Database | Description | Firearms-Related Variable(s) | Website | Limitations | Current Data? | Characteristics | | | | | |
|---|--|--|---|---|---|-----------------|---|---|-----|---|---|
| | | | | | | D/A | P | L | O/S | I | R |
| NORC General Social Survey (GSS) | The GSS gathers data on contemporary American society in order to monitor and explain trends and constants in attitudes, behaviors, and attributes. The GSS contains a standard core of demographic, behavioral, and attitudinal questions, plus topics of special interest. | Various questions on respondents opinions on firearms, if they own guns, etc. | http://www.gss.norc.org/ | Questions asked to respondents vary by year, and we have different levels of information about peoples' experiences with firearms depending on the year question was asked. | Yes – depending on question asked to respondents. | P | x | x | S | x | x |
| Bureau of Labor Statistics (BLS) National Longitudinal Surveys (NLS) | The NLS collect data over time on labor market activities and significant life events for various groups of women and men. Often these surveys are used by economists, sociologists, and other researchers. | Asks if people have ever carried guns and about respondents' experiences with arrests and incarceration. | https://www.bls.gov/nls/ | Different components of NLS have phased out; most relevant component is National Longitudinal Survey of 1997 (NLSY97). | Yes – depending on sub-survey. It appears the information was released in 2018. | P | x | x | S | x | x |
| Polling Report (Guns) | Curates national opinion survey data from national vendors on firearms policies. | Includes results of any survey question with a firearms focus, reports results from each survey wave when questions are repeated cross-sections. | https://www.pollingreport.com/guns.htm | Does not include downloadable data or links to survey results. | Yes | P | x | | S | | |
| V. Federal Justice System Survey Data/Ancillary Justice Data Collections | | | | | | | | | | | |
| BJS Survey of Prison Inmates (SPI) | SPI is a periodic, cross-sectional survey of the state and sentenced federal prison populations. Prior iterations of SPI were the Survey of Inmates in State and Federal Correctional Facilities. | Percent of all prisoners who had possessed or used a firearm during their offense, and source of firearms. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=488 | Some attrition. Sample of 37,058 prisoners and 24,848 participated. | Yes – survey is new and started in 2016. | | x | | S | | x |
| BJS Census of State and Local Law Enforcement Agencies | Data gathered from state and local law enforcement across the country, including the number of sworn and civilian personnel by state and type of agency, and functions of each agency. | Asks whether the LEA performed background checks, issued purchase/carry permits, or participated in task forces on gangs and firearms trafficking. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=249#Questionnaires | Policy issues may be out of date. | No – last issued in 2008. | A | | | S | | x |
| BJS National Judicial Report Program (NJRP) | Sentencing data collected from a nationally stratified sample of 300 courts. Includes age, race, and gender of offenders; dates of arrest, conviction, and sentencing data; mode of conviction and type of sentence imposed. | Collected sentencing data of person charged with felony, including weapons offenses and enhancements. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=241#Documentation | Not current. | No – last issued in 2006. | | x | | O | | x |
| BJS NICS Act State Record Estimates | Annual collection of data from records available on people prohibited from purchasing or possessing a firearm under the Federal Gun Control Act of 1968. | "The NICS Improvement Amendments Act of 2007 is intended to improve the records utilized by the National Instant Criminal Background Check System (NICS) by providing assistance to states to improve the completeness, automation and transmittal of records to state and federal systems." | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=289#Documentation | Considerable gaps in NICS system. | No – last issued in 2009. | P | x | | O | | |
| BJS Survey of Law Enforcement Gang Units (SLEGU) | Survey (effectively a census) of law enforcement agencies with at least one officer devoted to gangs. Data on gang unit demographics, selection criteria, training, operations, and workload, and summary measures of gang activity. | Asks about gang activity, including financing. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=342 | Guns are not the focus of this survey; may be useful for covariate data. | No – last issued in 2007. | | | | S | | x |
| BJS Survey of Inmates in Local Jails (SILJ) | Nationally representative sample of inmates in local jails. Data on current offenses and detention status, characteristics of victims, criminal histories, family background, gun possession and use, prior drug and alcohol use and treatment, medical and mental health history and treatment, vocational programs and other services provided while in jails, and other personal characteristics. | Includes extensive questioning about the use of firearms in criminal offense. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=274 | Not current. | No – last issued in 2002. | | X | | S | | x |

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| Database | Description | Firearms-Related Variable(s) | Website | Limitations | Current Data? | Characteristics | | | | | |
|---|---|--|---|--|--|-----------------|---|---|-----|---|---|
| | | | | | | D/A | P | L | O/S | I | R |
| BJS Survey of Large Jails | An addendum to the SILJ. A survey (effectively a census) of jail operations and inmate management through large local jails managing 1,000 inmates or more, and data on jail programs and treatment. Data collected includes number of jail admissions, including conviction status, most serious offenses, and screening at intake for mental health disorders, risk of suicide, and drug use. Data also includes questions on the number of inmates participating in counseling and special programs, number of inmates discharged, types of releases, and lengths of stay. | Asks about offenses of inmates, including weapons offenses. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=407 | Guns are not the focus of this survey. | No – last issued in 2004. | | x | | O | | x |
| BJS Survey of State Procedures Related To Firearm Sales | This national survey is produced by the BJS Firearm Inquiry Statistics (FIST) project. Data gathered on state laws, regulations, procedures, and information systems related to sales and transfers of firearms from federal, state, and local agencies, such as law enforcement, statistical analysis centers, and legislative research bureaus. | Reviews prohibitions against purchasing firearms, restoration of rights to purchase firearms, permits, waiting periods, fees, and appeals by state. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=291 | Policy issues may be out of date. | No – last issued in 2004. | | x | | O | x | x |
| BJS National Former Prisoner Survey (NFPS) | Sample of 18,300 parolees, mandated as part of the BJS National Prison Rape Statistics Program that collects data on sexual assault in correctional facilities. | Asks questions about criminal history, including weapons offenses. | https://www.bjs.gov/index.cfm?ty=dcdetail&iid=322#Questionnaires | Focused on sexual assault in prisons as a result of the BJS National Prison Rape Statistics Program. | No – last issued in 2008. | | x | | S | | x |
| VI. Nonprofit and Private Policy Data, Ancillary (Covariate) Data, Convenience Data, and Surveys | | | | | | | | | | | |
| Gun Violence Archive | Online archive of gun violence incidents collected from over 6,500 law enforcement, media, government, and commercial sources daily. | Gun violence deaths by type, mass shootings, children and teens killed and injured, officer involved incidents, defensive use, unintentional shootings, and murder/suicides. | https://www.gunviolencearchive.org/ | Representativeness of the data is unknown. | Yes | | | | | | |
| Giffords Law Center (GLC) | Numerous resources on different policies at the state and federal levels. Presents statistics on needs to address gun violence. | GLC provides extensive, in-depth summaries of federal, state, and local firearm laws and policies. The most comprehensive resource for information on U.S. firearms regulation, GLC supplies the foremost information and analysis on the Second Amendment, as well as detailed statistics, study findings, and polling in support of strong gun regulation. | https://lawcenter.giffords.org/ | Data are presented from other sources. Very much an advocacy tool. | Yes – like EFSGV, Giffords seeks to be relevant. | P-S | x | | | | x |
| Firearm Safety Among Children & Teens (FACTS) Consortium | FACTS curates all firearms-related studies archived at ICPSR. | A comprehensive archive focusing on pediatric-specific firearm injury prevention research. | https://www.icpsr.umich.edu/icpsrweb/content/facts/index.html | | Yes – continually updated. | | | x | | x | x |
| Fragile Families and Child Wellbeing | Questions about peoples' experiences with gun violence (such as have you heard gunshots in neighborhood in last year, if weapons are in reach at home, etc.). | The Fragile Families and Child Wellbeing Study is following a cohort of nearly 5,000 children born in large U.S. cities between 1998 and 2000 (roughly three-quarters of whom were born to unmarried parents). | https://fragilefamilies.princeton.edu/ | Guns are not central focus of study, and study focuses on particular sample. | Yes – data collection for Wave 7 scheduled to begin in 2020. | | | x | S | x | x |
| Stanford Open Policing Project | Contraband found, frisk performed, arrest made, reason for stop, and violation. | The Stanford Open Policing Project is collecting and standardizing data on vehicle and pedestrian stops from law enforcement departments across the country—and making that information freely available. SOPP has already gathered over 200 million records from dozens of state and local police departments across the country. | https://openpolicing.stanford.edu/ | Data only available from select jurisdictions. Does not specifically focus on gun violence. Not all variables are available from every source. | Yes | | x | | O | | x |
| SciLaw Criminal Records Database | Criminal records, including jail time, probation, race, sex, crime type, etc. | Millions of criminal records from multiple states; the subgroup on Criminal Policy Informatics mines patterns of crime and recidivism using the SciLaw Criminal Records Database to help navigate a more effective criminal justice policy. | https://scilaw.org/crime-big-data/ | Data limited to five different jurisdictions in NY, FL, TX, AL, and NM. | Most recent data is from 2012. 2018 data will soon become available from New Mexico. | | | x | O | | x |
| EveryStat for Gun Safety | Gun deaths by state that can be filtered by intent, region, and demographics. | All | https://everytownresearch.org/everystat | Uses CDC data; no nonfatal data. | Yes – though it has only been updated through 2017 so far. | | x | | O | | |

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| Database | Description | Firearms-Related Variable(s) | Website | Limitations | Current Data? | Characteristics | | | | | |
|---|---|---|---|--|--------------------------------------|-----------------|---|---|-----|---|---|
| | | | | | | D/A | P | L | O/S | I | R |
| The Trace Violent Crimes Data | Data collected on 4.3 million violent crimes from 50+ police and sheriff's departments. | Lists weapon for crime. | https://www.thetrace.org/violent-crime-data/ | Different departments collected and shared data differently. | No – it generally is from 2005-2017. | | | | O | | |
| VII. Integrated Data | | | | | | | | | | | |
| Criminal Justice Administrative Records System (CJARS) | Parole entries, prison entries, probation entries, cases filed, arrests, and citations. | Since its founding in 2016, CJARS has collected tens of millions of records from more than a dozen states. CJARS is currently working to expand its data partnerships to increase geographic, jurisdictional, and criminal justice procedural coverage. CJARS aims to build a database that follows every criminal episode from arrest to final sanction. | https://cjars.isr.umich.edu/ | Data only available from a small selection of states currently. Does not explicitly focus on gun violence. | Yes – project is expanding. | | x | x | O | x | x |

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Appendix B – Expert Panel Biographies

Expert Firearms Data Infrastructure Panelists

Chair



Clarence Wardell, PhD, is currently the Director of City Solutions at Results for America, supporting Bloomberg Philanthropies' What Works Cities Initiative. In his role, he works with mid-size cities across the country to help them use data and evidence to guide their programming and investment decisions. He was most recently a member of the U.S. Digital Service at the White House, where he led strategy and product management across several of the team's projects. There, he also co-led the White House Police Data Initiative, an effort aimed at using open data as a means to increase trust and engagement between law enforcement and the communities they serve.

Panel



Ruth Abaya, PhD, is an attending physician at the Children's Hospital of Philadelphia and Assistant Professor of Pediatrics at the University of Pennsylvania. As a public health scholar, she studies gun violence prevention, particularly firearm access among adolescents. She is a Violence Prevention Initiative Fellow at CHOP and is the newly named Injury Prevention Program Manager for the Philadelphia Department of Public Health.



Catherine Barber, MPA, directs the Means Matter Campaign at the Harvard School of Public Health's Injury Control Research Center (HICRC). She led the effort to design and pilot-test a prototype for the Centers for Disease Control's National Violent Death Reporting System and co-founded the National Center for Suicide Prevention Training (www.ncspt.org). She has co-authored almost two dozen scholarly articles on firearms and public health.



Phil Cook, PhD, is an economist and Professor Emeritus in Public Policy, Economics, and Sociology at Duke University. Dr. Cook has broad expertise applying economic reasoning to firearms, crime policy in general, and other fields of economic inquiry. Dr. Cook is the author of *Gun Violence: The Real Costs* and dozens of peer-reviewed articles on firearms.



Dennis Culhane, PhD, is a Professor and the Dana and Andrew Stone Chair of Social Policy at the University of Pennsylvania where he researches the link between gun possession and assault. He has pioneered development of integrated data systems for states and local governments for policy analysis, particularly around hard to measure populations including the homeless. Dr. Culhane is a co-principal investor at the Actionable Intelligence for Social Policy Initiative and is a fellow at the American Academy of Social Work and Social Welfare.



Rebecca Cunningham, PhD, is a Professor of Emergency Medicine and Interim Vice President for Research at the University of Michigan. Dr. Cunningham's expertise is in ED-based research on substance use, violence, and other negative outcomes, particularly among children, and the development and application of behavioral interventions in the ED setting. She has led large longitudinal studies evaluating interventions, service utilization, and mental health outcomes among youth with assault-related injury, including firearm injury.



Erin Dalton is the Deputy Director for the Office of Analytics, Technology, and Planning at Allegheny County, Pennsylvania. Before working in this role, Ms. Dalton served as an appointee on the Pittsburgh Civilian Police Review Board and the Allegheny County Juvenile Detention Board of Advisors. As a practitioner, Erin has led an initiative in Pittsburgh to create a Data Warehouse that integrates data from child welfare, behavioral health, homelessness and school data and is a pioneer in developing municipal data systems.



Robin Jenkins, PhD, is the Associate Director at the Impact Center at Frank Porter Graham Institute at the University of North Carolina at Chapel Hill. As an implementation scientist, Dr. Jenkins studies how to motivate and engage systems to implement reforms through rigorous implementation processes. Prior to UNC, Dr. Jenkins served on the North Carolina Governor's Crime Commission and was Deputy Director with the Division of Juvenile Justice at the North Carolina Department of Public Safety.



Nola Joyce retired from the Philadelphia Police Department in 2016 as Deputy Commissioner of Organizational Services, Strategy, and Innovation. Throughout her career she led major organizational change efforts using research and analysis to advance public policy and the use of technology to improve program impacts. She is now a private contractor and is also a Partner and Principal Consultant with 21CP Solutions. She is working with police departments, cities, and the federal government helping organizations increase their performance levels through strategic innovation.



Michael Mueller-Smith, PhD, is an Assistant Professor in the Department of Economics at the University of Michigan and a Faculty Associate at the Population Studies Center. Dr. Mueller-Smith leads a data infrastructure project with the Census working with criminal justice microdata and social and economic data. He is the author of the paper, “Inequalities in U.S. Criminal Justice and Economic Outcomes” integrating criminal justice and Census data.



Fatimah Muhammad, MS, is the Executive Director of the Health Alliance for Violence Intervention. HAVI fosters hospital and community collaborations to advance equitable, trauma-informed care and violence intervention and prevention programs. Ms. Muhammad received the 2018 Robert Wood Johnson Culture of Health Leaders Fellowship and served as Deputy Director of Equal Justice USA.



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