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Arrest Trends

Data Sources and Methodology

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Introduction

Information is needed to understand and advance policing policies and practices—especially those that promote alternatives to arrests. While evidence on policing practices is lacking in many areas, data exist that can begin to answer a number of important questions, such as:

- How many arrests are made annually across the United States, and for what?
- How do arrest trends vary across demographic groups?
- How successful are the police at solving crimes?
- How common are victimizations, and to whom are they reported?
- What gaps exist in policing data and why?

The government invests considerable resources to capture information surrounding many policing practice indicators, including civilian-police interactions, arrests and clearance rates, crime and victimization, and more. However, due to data complexities and the fact that datasets are scattered over many different locations, these key indicators are often inaccessible to those who could benefit from them most: practitioners, policymakers, advocates, researchers, journalists, and philanthropists.

In response to this need, the Vera Institute of Justice (Vera) has developed *Arrest Trends*, which unlocks this important knowledge. *Arrest Trends* helps answer some of the most fundamental questions about American policing, by organizing publicly available datasets into one easy-to-use data platform, where users can explore multiple related and customizable visualizations to deepen their understanding of arrests.ⁱ *Arrest Trends* seeks to lift the narrative around American policing’s overreliance on enforcement and inspire dialogue around creative alternatives at both the local and national levels. This report provides an overview of the data sources and methodological approach that Vera employed to develop *Arrest Trends*.

Background

Several resources exist to aid in the analysis of policing data, including the Bureau of Justice Statistics’s (BJS) [Arrests](#) and [National Crime Victimization Survey](#) (NCVS) calculators; the Federal Bureau of Investigation’s (FBI) [Persons Arrested](#), [Clearances](#), and [Offenses Known to Law Enforcement](#) Tables; and the FBI’s [Crime Data Explorer](#), among others.ⁱⁱ These tools are beneficial in that they are efficient, relatively easy to use, and often customizable. They remain limited, though, in the following ways:

- tools are held in different locations, so users looking for comprehensive information on arrests must consult multiple resources;
- few tools offer drill-down features that allow for analysis at the national, regional, state, county, and agency levels;
- outputs are numbers-heavy and are often presented without written explanations or clear visualizations, making it difficult for users to interpret the findings;
- tools currently offer no means for comparing arrest trends across agencies or locations;
- agencies that report partial data are excluded from the majority of tools, affecting the data’s utility, accuracy, and completeness; and
- rate calculations (such as clearance rates, arrest rates, arrest rates for specific demographic groups) based on resident populations are largely absent from available tools.

One centralized and highly interactive tool—through which users can explore and understand comprehensive arrest trends at both the national and local levels—can work to address these limitations. Vera created *Arrest Trends* to meet this need.

Data Sources and Methodology

To construct *Arrest Trends*, Vera researchers located, cleaned, restructured, merged, and aggregated the following eight major data series:

- Uniform Crime Report (UCR) Arrests by Age, Sex, and Race;ⁱⁱⁱ
- UCR County-Level Detailed Arrest and Offense Data;^{iv}
- Arrest Data Analysis Tool National Estimates;^v
- U.S. Census Populations with Bridged Race Categories;^{vi}
- UCR Offenses Known and Clearances by Arrest;^{vii}
- National Crime Victimization Survey (NCVS) Victimization Analysis Tool;^{viii}
- Federal Bureau of Investigations (FBI) Offenses Known to Law Enforcement; and^{ix}
- Law Enforcement Agency Identifiers Crosswalk.^x

These data series were used to populate interactive visualizations of the following five policing practice indicators: (1) arrests, (2) arrest demographics, (3) clearance rates, (4) victimizations, and (5) reported data. These indicators were selected for inclusion in Phase I of *Arrest Trends* because they help explain the extent, disparity, effectiveness, and transparency of U.S. policing arrest practices. The following sections describe how data for each of these indicators were prepared, and what information users can expect to find available within the tool itself.

Arrests

Police enforcement takes many forms including citations, summonses, warrants, and arrests. While national-level data do not yet exist for the majority of these indicators, detailed arrest data are collected and made publicly available through the FBI's UCR program. The UCR is most widely known for providing a national picture of crime; however, it is a large and complex data series that also contains all of the arrest data voluntarily reported by each of the country's 18,000-plus police agencies. By exploring visualizations related to this policing indicator in *Arrest Trends*, users can learn more about how arrest trends vary by offense type, time, and place.^{xi}

Arrest Trends' reported arrest data come from the "UCR Arrests by Age, Sex, and Race" data series, which covers years 1980 to 2016.^{xii} Each individual police agency across the United States may submit their arrest data to the FBI to be included in this series. Agencies that report these data must specify the arrestee's gender, age range, and offense type. (For a complete list and definitions of FBI-recognized offense types, see Appendix A.) Vera researchers restructured the data to:

- standardize formatting across years;
- identify true zeros (i.e., instances when zero arrests were made) versus missing values (i.e., when relevant data was not reported for inclusion in the data series);
- determine how much (i.e., how many months out of the year) of an agency's data was reported;
- aggregate into larger crime categories (i.e., total, violent, property, Part I, Part II arrests; see Appendix A for definitions);
- redefine age ranges, to increase their usability and to comport with criminological literature;^{xiii}
- compute arrest rate variables;^{xiv} and
- aggregate datasets up to larger geographic levels (i.e., county, state, region, nation).

Because participation in the UCR program is optional, the FBI also generates and releases a data series that provides estimated arrest volumes, known as the "UCR County-Level Detailed Arrest and Offense Data" series.^{xv} While these estimates are imperfect, they help users to avoid undercounting indicators—and thus underestimating the extent of—police enforcement.^{xvi} This data series exists at the county level, covers years 1977 to 2014, and specifies arrestees' offense types but not demographic information.^{xvii} Vera researchers restructured the data to:

- standardize formatting across years;
- create and add aggregated crime categories;
- add arrest rate variables;^{xviii} and
- aggregate datasets up to larger geographic levels (i.e., state and region).^{xix}

National estimated arrest volumes were drawn from another data series— "Arrests Data Analysis Tool National Estimates"—because this series includes breakouts by arrestee offense types and

demographics.^{xx} After downloading the data, Vera researchers restructured it to match the reported arrest dataset's structure, create and add aggregated crime categories, and add arrest rate variables.^{xxi}

Demographics

Beyond understanding the extent of police enforcement, it is also vital to consider the demographic differences—and at times, disparities—in how arrests are applied. By exploring the demographics indicator in *Arrest Trends*, users can learn more about the demographic groups that are most affected by arrests, and how these trends vary by offense type, time, and place.

The “UCR Arrests by Age, Sex, and Race data” series—which features information on reported arrest volumes—also includes information on arrestee demographics from 1980 to 2016. As referenced above, by default all agencies participating in the UCR program must report the gender and age range of arrestees. However, agencies can also choose to report arrestees’ race (and in some years, ethnicity). The race and ethnicity categories available in the UCR are broken down to distinguish between juveniles and adults.^{xxii} As the UCR program does not mandate the reporting of race and ethnicity—and, furthermore, these demographic data are not always collected during an arrest—the numbers may undercount arrest volumes, and/or not be representative of all policing practices. These data have all of the same elements as the reported arrest data series (i.e., same years, geographic levels, and crime types). However, the data does not include reported arrest rates by demographic group, as the UCR reported population data are not parsed out by demographic groups.

Again, due to issues of under- and non-reporting, it is important to consider estimated trends in arrestee demographics as well. To date, only national-level estimates of this sort exist, spanning from 1980 to 2014 as part of the “Arrests Data Analysis Tool National Estimates” series. Preparation of these datasets and the types of information available within them is described above in the “Arrests” section of this report, with the only difference being on the calculation of arrest rates. Estimated national arrest rates for individual demographic groups were calculated by Vera using “U.S. Census Populations with Bridged Race Categories data” to inform the corresponding population sizes.^{xxiii}

Clearance Rates

According to the FBI, crimes are considered cleared by arrest (i.e., “solved”) when: “at least one person is: (a) arrested; (b) charged with the commission of the offense; and (c) turned over to the court for prosecution (whether following arrest, court summons, or police notice). Although no physical arrest is made, a clearance by arrest may also be reported when the individual is a person under 18 years of age and is cited to appear in juvenile court or before other juvenile authorities.”^{xxiv} Clearance rates, then, reflect the volume of crime solved by arrests compared to the total volume of offenses known to the police.

Clearance rates are an important indicator to consider. While enforcement is often intended to solve, prevent, and respond to crimes, the data shows that it may not always be particularly effective in doing so.^{xxv} Solving crimes requires a high degree of police-community collaboration—through reporting crimes and tips, witness participation in investigations, and the like—so clearance rates are also indicative of police-community trust and collaboration. By exploring this indicator in *Arrest Trends*, users can learn more about both the effectiveness of American policing practices and the extent of trust and collaboration. They can also learn how clearance rates vary by offense type, time, and place.

Reported clearance rate data are provided through the “UCR Offenses Known and Clearances by Arrest data” series, which covers years 1964 to 2016.^{xxvi} Each individual police agency across the United States may submit to the FBI data on the volume of offenses known to the agency and the volume then cleared by arrest for inclusion in this series—meaning that in some cases, agencies may also opt to submit partial or no data.

Data are broken down by offense type, and all Part I offenses (except arson) are included in this series (see Appendix A). Vera researchers restructured the data to:

- standardize formatting across years;
- identify true zeros versus missing values;^{xxvii}
- generate an annual volume of clearances and offenses known and then convert into clearance rates;
- determine how much (i.e., how many months out of the year) of an agency’s data were reported;
- aggregate crime categories (i.e., Part I, violent, property arrests; see Appendix A); and
- aggregate datasets up to larger geographic levels (i.e., county, state, region, nation).^{xxviii}

No publicly available data series currently exist providing estimated clearance rates.^{xxix} As such, only reported clearance rates are available in *Arrest Trends* at this time.

Victimizations

Victimizations represent another indicator through which users can explore and understand the effectiveness of police enforcement practices. As referenced above, a primary purpose of the police is to prevent, solve, and respond to crimes. However, police can only address the crimes they are made aware of and, for a variety of reasons—including poor community-police trust and cooperation—many victims choose not to report their experiences to the police.^{xxx} In an effort to understand the full extent of victimization in America, BJS invests significant resources in the National Crime Victimization Survey (NCVS)—a program that surveys nationally representative samples about people’s victimization experiences, including whether they reported any victimization experiences to the police.^{xxxi} Data from the “NCVS Victimization Analysis Tool” are incorporated into *Arrest Trends* so that users can observe trends in victimization reporting—and non-reporting—and how these vary by offense type, time, and place.^{xxxii}

Data exist at both the regional and national levels for years 1993 to 2016, parsed out according to BJS-defined offense types. (For a complete list and definitions of BJS-recognized offenses, see Appendix B.)

Also included within the *Arrest Trends*' victimization indicator are the FBI's official estimates of offenses known to the police, which are made available through the "FBI Offenses Known to Law Enforcement" data series.^{xxxiii} This data series covers the same years and geographic levels as the NCVS data, and contains information on the estimated volume of crime in the United States, based on what is reported to the FBI through the UCR program. While these numbers may not exactly match the NCVS estimates of victimizations reported to the police—due largely to differences in methodological approach, crime classifications, and the UCR's voluntary nature—trends tend to follow roughly similar patterns.^{xxxiv} Drastic differences, however, may highlight disconnect between police and community perceptions of crime and public safety priorities, which can fuel fractured relationships and ineffective policing practices.

In preparing these datasets for tool inclusion, Vera researchers reconciled differences in crime classifications across the two data series, primarily by excluding records of homicides and arson offenses from the "FBI Offenses Known to Law Enforcement" series, as NCVS does not collect comparable data. (For complete details on how Vera combined and compared crime types across data series, see Appendix C.) Again, due to methodological differences, direct comparisons across these datasets is not advisable (i.e., users should not attempt to calculate the proportion of all occurring victimizations that are ultimately known to law enforcement, as these figures come from different data sources). Rather, users are encouraged to make note of instances where drastically different trends surface (e.g., NCVS total rape victimizations appear to increase, but FBI rape offenses known to law enforcement appear to decrease), in light of what these differences in community and police perceptions of crime may mean for policing practices and priorities.

Data Reported

The need for accessible and reliable policing data is clear: it informs strategy, policy development, oversight, evidence-based practices, and more. For these reasons, the government invests significant resources into the collection of policing metrics, primarily through the FBI's UCR program. But while these data series can provide a great deal of insight into police arrest trends, the voluntary nature of this program means that these data inherently suffer from non- and under-reporting.

For a variety of reasons—including lack of technology or resources, incompatible offense definitions, and/or fundamental issues with policing data—not all agencies report all of their data to the UCR program, though they may opt to publish their data elsewhere.^{xxxv} This has severe consequences for the accuracy and transparency of policing data across the country, sometimes obscuring the complete picture of enforcement trends. By exploring the "data reported" indicator, *Arrest Trends* users can learn more about the gaps in available policing data, and how these gaps vary by time, place, and data type. The UCR program instructs agencies to report offense and arrest counts based on the month in which they occurred

and the specific offense type. Missing and incomplete data can therefore be detected on the basis of how many months are non-existent within the series. In other words, agencies with 12 months of data reported complete data, agencies with one to 11 months of data reported partial data, and agencies with zero months of data reported no data.^{xxxvi} Further, throughout the tool, data are labeled as “not applicable” when relevant information was not collected by UCR at all in a given year, and “missing” when relevant information was collected by UCR but an agency did not report it.

Arrest data: To determine how many months of arrest data were reported by a given agency in the “UCR Arrests by Age, Sex, and Race” data series, Vera researchers summed the number of unique months present in each annual dataset associated with that agency’s identifier. This approach was complicated by the fact that, on occasion, the datasets include a line of data for a specific month and agency where the offense is categorized as ‘not applicable’—indicating that no counts were actually submitted by the agency for that month. The researchers identified and tallied these instances and then subtracted them from each agency’s total.^{xxxvii} When aggregating data to larger geographic units, Vera researchers calculated the average number of months reported.

Demographics: The same methodology was used to assess completeness of arrest demographics, which are reported through the same data series. Unlike age and gender, however, agencies can report arrest data without specifying an arrestee’s race or ethnicity. This means that, at times, only a portion of these data are made available. As such, Vera researchers created proportion variables, by dividing the volume of arrests for which race (and separately, ethnicity) data were reported by the total volume of arrests reported, as indicators of race and ethnicity data completeness. This process was repeated at each geographic level.

Clearance rates: To determine how many months of clearance-rate data were reported by a given agency in the “UCR Offenses Known and Clearances by Arrest” data series, Vera researchers assessed: (1) whether any data were submitted for a given month, and (2), if not, whether they were included in another months’ records. Again, for the purposes of aggregating to larger geographic levels, Vera researchers calculated the average clearance rate.

Lastly, Vera researchers verified the accuracy of their data completeness calculations by: (1) reviewing codebooks and publications; (2) communicating with representatives from the FBI, BJS, and the Inter-university Consortium for Political and Social Research (ICPSR); and (3) cross-validating results against other publicly available tools.^{xxxviii}

Comparisons

Another feature available within *Arrest Trends* is the ability to compare trends across various locations, times, offense types, demographic groups, and cohorts. Data for these features are drawn primarily from the “Law Enforcement Agency Identifiers Crosswalk” data series. In general, users can opt to add

additional trend lines to visuals, to compare and contrast practices. For example, an agency may be interested in learning how their clearance rates over the past 40 years compare to a similar neighboring agency's, or a state might want to understand the rate at which police are arresting black people compared to white people. Through *Arrest Trends*'s "Compare" function, users can further build out visuals to answer these types of questions.

In particular, the "Compare by Cohort" function is intended to help users explore trends across nearby agencies based on user-selected characteristics, such as population size, agency type, or community type.

Based on UCR-available variables and codebooks,

- population size cohort options include:
 - <10,000,
 - 10,000-24,999,
 - 25,000-99,999, and
 - 100,000+;
- community type cohort options include:
 - metropolitan, and
 - nonmetropolitan; and
- agency type cohort options include:
 - local police department,
 - sheriff's office,
 - state law enforcement agency,
 - special jurisdictions,
 - constable/marshal, and
 - federal.^{xxxix}

Once users select a variable, *Arrest Trends* provides a list of all nearby agencies (i.e., those within the same state as the originally specified agency) which match that characteristic.^{xl} Users can then select the agency or agencies that they would like to compare trends against from that list. So, if someone is using *Arrest Trends* to explore the Los Angeles Police Department's (LAPD) arrest rate from 1980 to 2016, and wants to understand how it compares to other agencies serving similar population sizes, they can use the tool's "Compare by Cohort" feature to generate a list of other agencies within California that serve populations of 100,000 or more residents. From this list, they might then choose to compare LAPD's trends to those of the San Diego and San Jose Police Departments.

Conclusion

Arrest Trends helps to answer some of the most fundamental questions about American policing by organizing publicly available datasets into one easy-to-use data platform, through which users can access

and analyze several decades of policing data that were previously disparately located and difficult to interpret. *Arrest Trends* is a dynamic tool that, in future phases, will continue to expand in scope and recency. Foremost, at its launch, Vera hopes that this tool will further the conversation around police overreliance on arrests and inspire dialogue around creative alternatives.

Data and features will be continually updated and revised. Users are encouraged to contact ArrestTrends@vera.org with any questions, errors, or feedback.

Appendix A: FBI-Recognized Offense Types and Definitions

Part I offenses: These offenses are serious crimes, they occur with regularity in all areas of the country, and they are likely to be reported to police (i.e., aggravated assault, arson, burglary, criminal homicide, larceny, motor vehicle theft, rape, and robbery).^{xli}

Violent offenses: Part I offenses which involve force or threat of force (i.e., aggravated assault, homicide, rape, and robbery).^{xlii}

Aggravated assault: An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm. Simple assaults (i.e., assaults where no weapon was used or no serious injury resulted) are excluded.^{xliii}

Homicide: Includes:

1. Murder and non-negligent manslaughter—the willful (non-negligent) killing of one human being by another. Deaths caused by negligence, attempts to kill, assaults to kill, suicides, and accidental deaths are excluded. UCR classifies justifiable homicides separately and limits the definition to a) the killing of an individual—during the commission of a felony—by a law enforcement officer in the line of duty, or b) the killing of an individual—during the commission of a felony—by a private citizen.
2. Manslaughter by negligence—the killing of another person through gross negligence. Deaths of persons due to their own negligence, accidental deaths not resulting from gross negligence, and traffic fatalities are not included.^{xliv}

Rape: The FBI's definition of rape was revised in 2013.

Revised definition (2013-present): Penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim. Attempts or assaults to commit rape are also included; however, statutory rape and incest are excluded.

Legacy definition (pre-2013): Penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim. Attempts or assaults to commit rape

are also included; however, statutory rape and incest are excluded. The carnal knowledge of a female forcibly and against her will. Rapes by force and attempts or assaults to rape, regardless of the age of the victim, are included. Statutory offenses (no force used—victim under age of consent) are excluded.^{xlv}

Robbery: The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.^{xlvi}

Property offenses: Part I offenses that involve theft or property destruction (i.e., burglary, larceny-theft, motor vehicle theft, and arson).^{xlvii}

Arson: Any willful or malicious burning or attempt to burn, with or without intent to defraud, a dwelling house, public building, motor vehicle or aircraft, personal property of another, etc.^{xlviii}

Burglary: Breaking or entering. The unlawful entry of a structure to commit a felony or a theft. Attempted forcible entry is included.^{xlix}

Larceny: Theft (except motor vehicle theft). The unlawful taking, carrying, leading, or riding away of property from the possession or constructive possession of another. Examples are thefts of bicycles, motor vehicle parts and accessories, shoplifting, pocket-picking, or the stealing of any property or article that is not taken by force and violence or by fraud. Attempted larcenies are included. Embezzlement, confidence games, forgery, check fraud, etc., are excluded.¹

Motor vehicle theft: The theft or attempted theft of a motor vehicle. A motor vehicle is self-propelled and runs on land surface and not on rails. Motorboats, construction equipment, airplanes, and farming equipment are specifically excluded from this category.^{li}

Part II offenses: Offenses classified by the FBI as being less serious, for which only arrest data are collected (e.g., drug abuse violations, disorderly conduct, gambling, etc.).^{lii}

Curfew and loitering: Violations by juveniles (persons under age 18) of local curfew or loitering ordinances.^{liii}

Disorderly conduct: Any behavior that tends to disturb the public peace or decorum, scandalize the community, or shock the public sense of morality.^{liv}

Driving under the influence: Driving or operating a motor vehicle or common carrier while mentally or physically impaired as the result of consuming an alcoholic beverage or using a drug or narcotic.^{lv}

Drug abuse: The violation of laws prohibiting the production, distribution, and/or use of certain controlled substances. The unlawful cultivation, manufacture, distribution, sale, purchase, use, possession, transportation, or importation of any controlled drug or narcotic substance. Arrests for violations of state and local laws, specifically those relating to the unlawful possession, sale, use, growing, manufacturing, and making of narcotic drugs.^{lvi}

Drunkennes: To drink alcoholic beverages to the extent that one's mental faculties and physical coordination are substantially impaired. Driving under the influence is excluded.^{lvii}

Embezzlement: The unlawful misappropriation or misapplication by an individual to his/her own use or purpose of money, property, or some other thing of value entrusted to his/her care, custody, or control.^{lviii}

Forgery and counterfeiting: The altering, copying, or imitating of something, without authority or right, with the intent to deceive or defraud by passing the copy or thing altered or imitated as that which is original or genuine; or the selling, buying, or possession of an altered, copied, or imitated thing with the intent to deceive or defraud. This category includes both attempted and completed crimes.^{lix}

Fraud: The intentional perversion of the truth for the purpose of inducing another person or other entity in reliance upon it to part with something of value or to surrender a legal right. Fraudulent conversion and obtaining of money or property by false pretenses. Confidence games and bad checks, except forgeries and counterfeiting, are included.^{lx}

Gambling: To unlawfully bet or wager money or something else of value; assist, promote, or operate a game of chance for money or some other stake; possess or transmit wagering information; manufacture, sell, purchase, possess, or transport gambling

equipment, devices, or goods; or tamper with the outcome of a sporting event or contest to gain a gambling advantage.^{lxi}

Liquor laws: The violation of state or local laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, or use of alcoholic beverages, not including driving under the influence and drunkenness. Federal violations are excluded.^{lxii}

Offenses against the family and children: Unlawful nonviolent acts by a family member (or legal guardian) that threaten the physical, mental, or economic well-being or morals of another family member and that are not classifiable as other offenses, such as assault or sex offenses. This category includes both attempted and completed crimes.^{lxiii}

Other non-traffic offenses: All violations of state or local laws not specifically identified as Part I or Part II offenses, except traffic violations.^{lxiv}

Prostitution: The unlawful promotion of or participation in sexual activities for profit, including attempts to solicit customers or transport persons for prostitution purposes; to own, manage, or operate a dwelling or other establishment for the purpose of providing a place where prostitution is performed; or to otherwise assist or promote prostitution. Commercialized vice included.^{lxv}

Runaway: Limited to juveniles taken into protective custody under the provisions of local statutes.^{lxvi}

Simple assault: Assaults and attempted assaults where no weapon was used or no serious or aggravated injury resulted to the victim. Stalking, intimidation, coercion, and hazing are included.^{lxvii}

Sex offense: Offenses against chastity, common decency, morals, and the like. Incest, indecent exposure, and statutory rape are included. This category includes both attempted and completed crimes. Forcible rape, prostitution, and commercialized vice are excluded.^{lxviii}

Stolen property: Buying, receiving, possessing, selling, concealing, or transporting any property with the knowledge that it has been unlawfully taken, as by burglary,

embezzlement, fraud, larceny, robbery, etc. This category includes both attempted and completed crimes.^{lxix}

Suspicion: Arrested for no specific offense and released without formal charges being placed.^{lxx}

Vagrancy: The violation of a court order, regulation, ordinance, or law requiring the withdrawal of persons from the streets or other specified areas; prohibiting persons from remaining in an area or place in an idle or aimless manner; or prohibiting persons from going from place to place without visible means of support.^{lxxi}

Vandalism: To willfully or maliciously destroy, injure, disfigure, or deface any public or private property, real or personal, without the consent of the owner or person having custody or control by cutting, tearing, breaking, marking, painting, drawing, covering with filth, or any other such means as may be specified by local law. This category includes both attempted and completed crimes.^{lxxii}

Weapons: The violation of laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, concealment, or use of firearms, cutting instruments, explosives, incendiary devices, or other deadly weapons. This category includes both attempted and completed crimes.^{lxxiii}

Appendix B: BJS-Recognized Offense Types and Definitions

Personal victimizations: Rape, sexual assault, personal robbery, assault, purse snatching, and pocket picking. This category includes both attempted and completed crimes.^{lxxiv}

Serious violent victimizations: Rape, sexual assault, personal robbery, or aggravated assault. This category includes both attempted and completed crimes. It does not include purse snatching and pocket picking. Murder is not measured by the National Crime Victimization Survey because of an inability to question the victim.^{lxxv}

Rape / sexual assault:

- *Rape:* Forced sexual intercourse including both psychological coercion and physical force. Forced sexual intercourse means vaginal, anal, or oral penetration by the offender(s). This category also includes incidents where the penetration is from a foreign object, such as a bottle. Includes attempted rape, male and female victims, and both heterosexual and same sex rape. Attempted rape includes verbal threats of rape.
- *Sexual Assault:* A wide range of victimizations, separate from rape or attempted rape. These crimes include attacks or attempted attacks generally involving unwanted sexual contact between victim and offender. Sexual assaults may or may not involve force and include such things as grabbing or fondling. Sexual assault also includes verbal threats.^{lxxvi}

Robbery: Completed or attempted theft, directly from a person, of property or cash by force or threat of force, with or without a weapon, and with or without injury.^{lxxvii}

Aggravated assault: An attack or attempted attack with a weapon, regardless of whether an injury occurred, and an attack without a weapon when serious injury results.^{lxxviii}

Personal theft / larceny: Purse snatching/pocket picking. Theft or attempted theft of property or cash directly from the victim by stealth, without force or threat of force.^{lxxix}

Household victimizations: Household victimization includes all property victimization (i.e., burglary, motor vehicle theft, and theft; both attempted and completed crimes).^{lxxx}

Household burglary: Unlawful or forcible entry or attempted entry of a residence. This crime usually, but not always, involves theft. The illegal entry may be by force (e.g., breaking a window or slashing a screen) or may be without force (e.g., entering through an unlocked door or an open window). As long as the person entering has no legal right to be present in the structure, a burglary has occurred. Furthermore, the structure need not be the house itself for a burglary to take place; illegal entry of a garage, shed, or any other structure on the premises also constitutes household burglary. If breaking and entering occurs in a hotel or vacation residence, it is classified as a burglary for the household whose member or members were staying there at the time the entry occurred.^{lxxxi}

Motor vehicle theft: Stealing or unauthorized taking of a motor vehicle, including attempted thefts.^{lxxxii}

Theft: Completed or attempted theft of property or cash without personal contact. Incidents involving theft of property from within the sample household are classified as theft if the offender has a legal right to be in the house (e.g., a maid, delivery person, or guest). If the offender has no legal right to be in the house, the incident is classified as a burglary.^{lxxxiii}

Appendix C: FBI and BJS Offense Type Comparisons

Arrest Trends Offense Type	FBI-Recognized Offense Type	BJS-Recognized Offense Type
Part I crimes (excluding homicide and arson)	<ul style="list-style-type: none"> • Aggravated assault • Burglary • Larceny • Motor vehicle theft • Rape • Robbery 	<ul style="list-style-type: none"> • Serious violent victimizations • Personal theft/ larceny • Household victimizations
Violent crimes (excluding homicide)	<ul style="list-style-type: none"> • Aggravated assault • Rape • Robbery 	<ul style="list-style-type: none"> • Serious violent victimizations
Aggravated assault	<ul style="list-style-type: none"> • Aggravated assault 	<ul style="list-style-type: none"> • Aggravated assault
Rape	<ul style="list-style-type: none"> • Rape 	<ul style="list-style-type: none"> • Rape/ sexual assault
Robbery	<ul style="list-style-type: none"> • Robbery 	<ul style="list-style-type: none"> • Robbery
Property Crimes (excluding arson)	<ul style="list-style-type: none"> • Burglary • Larceny • Motor vehicle theft 	<ul style="list-style-type: none"> • Personal theft/ larceny • Household victimizations
Burglary	<ul style="list-style-type: none"> • Burglary 	<ul style="list-style-type: none"> • Household burglary
Larceny	<ul style="list-style-type: none"> • Larceny 	<ul style="list-style-type: none"> • Personal theft/ larceny • Household theft
Motor vehicle theft	<ul style="list-style-type: none"> • Motor vehicle theft 	<ul style="list-style-type: none"> • Motor vehicle theft

Endnotes

- ⁱ For more on *Arrest Trends'* purpose, instructions, and capabilities, see S. Rebecca Neusteter and Megan J. O'Toole, *Every Three Seconds: Unlocking Police Data on Arrests* (New York, NY: Vera Institute of Justice, 2019), www.vera.org/publications/arrest-trends-every-three-seconds.
- ⁱⁱ Bureau of Justice Statistics, *NCVS Victimization Analysis Tool* (Washington, DC: Office of Justice Programs, 2018); Federal Bureau of Investigation, "2016 Crime in the United States: Clearances." <https://perma.cc/3MZZ-SEFA>; Federal Bureau of Investigation, "2016 Crime in the United States: Offenses Known to Law Enforcement." <https://perma.cc/5RZK-YFR6>; Federal Bureau of Investigation, "2016 Crime in the United States: Persons Arrested." <https://perma.cc/Y4LY-UU3W>; Federal Bureau of Investigation, "Crime Data Explorer." <https://perma.cc/7QF8-5YZR>; and Howard N. Snyder, Alexia D. Cooper, and Joseph Mulako-Wangota, *Arrest Data Analysis Tool* (Washington, DC: Office of Justice Programs, 2018), <https://perma.cc/AL6L-N4TL>.
- ⁱⁱⁱ United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data [United States]: Arrests by Age, Sex, and Race, 1980-2016* (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1980-2016). <https://perma.cc/ZW92-HLYJ>.
- ^{iv} United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data: County-Level Detailed Arrest and Offense Data [United States]* (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1977-2014). <https://perma.cc/6YZL-XD7M>.
- ^v Criminal Justice Information Services Division, *Estimated Number of Arrests, Table 18, Crime in the United States 2015-2016*. (Washington, DC: FBI). <https://perma.cc/J9P7-DHC8>; and Snyder et al., *Arrests Data Analysis Tool: National Estimates 1980-2016*. 2018.
- ^{vi} Centers for Disease Control and Prevention, *July 1, 1990-July 1, 1999 Bridged-Race Intercensal Population Estimates*, (Atlanta, GA: National Vital Statistics System), <https://perma.cc/PVC9-DG5M>; Centers for Disease Control and Prevention, *Vintage 2016 Bridged-Race Postcensal Population Estimates*, (Atlanta, GA: National Vital Statistics System), <https://perma.cc/4698-RQ8W>; and Woods and Poole Economics, *1969-1989 NCI SEER* Stat Population Estimates*. (Ossining, NY: National Cancer Institute).
- ^{vii} United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data [United States]: Offenses Known and Clearances by Arrest* (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1980-2016). <https://perma.cc/D2EW-GJC7>.
- ^{viii} Bureau of Justice Statistics. "National Crime Victimization Survey (NCVS) Victimization Analysis Tool (NVAT)." <https://perma.cc/E36Q-UYG3>.
- ^{ix} Criminal Justice Information Services Division, *Estimated Number of Arrests, Table 18, Crime in the United States 2015-2016*, <https://perma.cc/X3U3-NTZ8>; and Criminal Justice Information Services Division, *Estimated Number of Arrests, Table 19, Number and Rate of Arrests by Region*, (Washington, DC: FBI, 2015-2016). <https://perma.cc/GHN5-DKHJ>.
- ^x UCR data are difficult to merge and combine across years, as minor grammatical and spelling changes in variables from one year to the next can hinder successful matchings. This crosswalk dataset was used to circumvent some of these challenges. Unique agency identifiers (known as ORIs) exist in all UCR tables; the crosswalk is a consistent source from which detailed information (e.g., agency name, location, type, etc.) was pulled for the purpose of merging data. Separately, rarely occurring errors present in these publicly available datasets (for example, an agency mistyping "1,000 arrests" in their UCR report when "100" were actually made, or a true instance of missing data being misclassified as "0 arrests") may also be present in this tool. See United States Department of Justice, Bureau of Justice Statistics, *Law Enforcement Agency Identifiers Crosswalk United States [United States]*, (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2012). <https://perma.cc/TP6Q-RH2P>.

^{xi} For all data featured in *Arrest Trends*, users should avoid drawing conclusions based on changes observed over one year (or generally short timeframes), as these may be indicative of naturally occurring fluctuations and/or methodological changes. Rather, users should draw inferences from changes that occur over longer timespans. For more information, see Bureau of Justice Statistics, “Data Collection: National Crime Victimization Survey (NCVS): Methodology.” <https://perma.cc/724R-5NZK>; Bruce Fredrick, *Measuring Public Safety: Responsibly Interpreting Statistics on Violent Crime* (New York, NY: Vera Institute of Justice, 2017); and Snyder et al., *Arrests Data Analysis Tool Methodology*, 2018.

^{xii} United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data [United States]: Arrests by Age, Sex, and Race*, <https://perma.cc/ZW92-HLYJ>.

^{xiii} Age ranges were set to: 0-9 years old, 10-12, 13-15, 16-17, 18-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65+.

^{xiv} All *Arrest Trends* arrest rates are calculated as number of arrests per 100,000 residents. Reported arrest rates were calculated using UCR-reported populations, which incorporates only the populations of those agencies that reported at least partial data. These figures are helpful in comparing relative trends across geographic units, and over time in instances where population sizes have changed. However, arrest rates should be interpreted with caution, as not all people are residents of the place where they were arrested and virtually no arrests are made of youth under age 13, which may skew rates in places with particularly young populations.

^{xv} United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data: County-Level Detailed Arrest and Offense Data [United States]*, <https://perma.cc/KCM5-LUX9>.

^{xvi} For more on the FBI’s arrest estimation methodology, see: Federal Bureau of Investigations, “Uniform Crime Reporting Statistics: Frequently Asked Questions,” <https://perma.cc/ZF4H-CQWR>; National Archive of Criminal Justice Data, “About the FBI’s Uniform Crime Reporting Program,” <https://perma.cc/UDY9-RAXX>; and Snyder et al., *Arrests Data Analysis Tool Methodology*, 2018. For more on the limitations of these methods, see James P. Lynch and John P. Jarvis, “Missing Data and Imputation in the Uniform Crime Reports and the Effects on National Estimates,” *Journal of Contemporary Criminal Justice* 24, no. 1 (2008): 69-85; and, Michael D. Maltz, and Joseph Targonski. “A Note on the Use of County-Level UCR Data,” *Journal of Quantitative Criminology* 18, no. 3 (2002): 297-318.

^{xvii} Note that arrest estimates are missing for 1993, as this year’s data was not publicly available through ICPSR.

^{xviii} County, state, and region-level estimated arrest rates were calculated using UCR-specified populations, for all agencies in that geographic unit, regardless of whether or not they reported any arrest data.

^{xix} Some law enforcement agencies that report to UCR have jurisdiction over entire states. As such, the FBI inflates their county estimates to include those agencies, for aggregation purposes. To interpret county level estimates accurately, then, Vera researchers subtracted these inflation values (provided in an FBI sub-data series) from the data presented at just that geographic level.

^{xx} Criminal Justice Information Services Division, *Estimated Number of Arrests, Table 18, Crime in the United States 2015-2016*, (Washington, DC: FBI), <https://perma.cc/U2ZN-4R9M>; and Snyder et al., *Arrests Data Analysis Tool: National Estimates 1980-2016*, 2018.

^{xxi} National-level estimated arrest rates were also calculated using UCR-specified populations, for all agencies in that geographic unit, regardless of whether or not they reported any arrest data.

^{xxii} Races featured within this data series include white, black, Asian, and Native American, and these are available every year for which there is data (1980 to 2016). Ethnicities featured in this tool include Hispanic and Non-Hispanic, and these are available only from 1980 to 1991. Race and ethnicity data cannot be parsed by gender.

^{xxiii} Centers for Disease Control and Prevention, *July 1, 1990-July 1, 1999 Bridged-Race Intercensal Population Estimates*, <https://perma.cc/V45C-RS5R>; Centers for Disease Control and Prevention, *Vintage 2016 Bridged-Race Postcensal Population Estimates*, <https://perma.cc/6EEX-GYGY>; and Woods and Poole Economics, *1969-1989 NCI SEER* Stat Population Estimates*. Ossining, NY: National Cancer Institute. Estimated arrest rates cannot be calculated for the following demographic group and year range combinations, due to gaps in census population data: Asians, Native Americans, and Hispanics 1980 to 1996.

^{xxiv} As such, clearance rates of 0 percent or 100 percent should be interpreted with caution, as these may indicate data-entry errors, missing data, or the presence of arrest clearances that pertain to offenses known from previous years. Further, the arrest of one person may clear multiple crimes, or multiple arrests may clear one offense known to law enforcement. See Federal Bureau of Investigations, Uniform Crime Reporting, *Crime in the United States*, (Washington, DC: FBI, 2016), <https://perma.cc/S4EZ-D6TE>.

^{xxv} In 2016, for example, only 22 percent of Part I offenses known to law enforcement in the United States were cleared by arrests. This trend has remained largely consistent since at least the 1960s (i.e., as far back as this data series extends).

^{xxvi} United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data [United States]: Offenses Known and Clearances by Arrest*. (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1980-2016), <https://perma.cc/89GU-8Y64>.

^{xxvii} Vera researchers applied the methodologies specified in the UCR codebook to distinguish true zeroes from missing values. However, research suggests that misclassifications (and/or data typos and incorrect submissions) that occur at the time of agency submission may still affect these data. Likewise, clearance rates of 0 percent or 100 percent should be interpreted with caution, as these may indicate data entry errors, missing data, or the presence of arrest clearances that pertain to offenses known from previous years. See Cynthia Lum, Charles Wellford, Thomas Scott, and Heather Vovak, *Identifying Effective Investigative Practices: A National Study Using Trajectory Analysis*, (Fairfax, VA: Center for Evidence-Based Crime Policy, George Mason University, 2016).

^{xxviii} Clearance rates are aggregated up to larger geographic units, through a population size weighted averaging process.

^{xxix} According to UCR codebooks, agencies can opt not to report clearance rate data to the UCR for any given month. However, for those months that they do report, they must provide complete information on all offenses, both known and cleared. Clearance rates should therefore be relatively unaffected by missing data. See United States Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Program Data [United States]: Offenses Known and Clearances by Arrest*, (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1980-2016), <https://perma.cc/E6FS-DHTQ>.

^{xxx} Leana Allen Bouffard and Nicole Leeper Piquero, "Defiance Theory and Life Course Explanations of Persistent Offending," *Crime and Delinquency* 56 no. 227 (2010), 227-252; Mengyan Dai, James Frank, and Ivan Sun, "Procedural Justice During Police-Citizen Encounters: The Effects Of Process-Based Policing On Citizen Compliance And Demeanor," *Journal of Criminal Justice* 39, no. 159 (2011), 159-168; Lorraine Mazerolle, Sarah Bennett, Jacqueline Davis, Elise Sargeant, and Matthew Manning, "Procedural Justice and Police Legitimacy: A Systematic Review of the Research Evidence," *Journal of Experimental Criminology* 9, no. 245 (2013), 245-274; Raymond Paternoster, Robert Brame, Ronet Bachman, and Lawrence Sherman, "Do Fair Procedures Matter? The Effects of Procedural Justice on Spousal Assault," *Law and Society Review* 31, no. 163 (1997), 163-204; Michael D. Reising, Justice Tankebe, and Gorazd Mesko, "Procedural Justice, Police Legitimacy, and Public Cooperation with the Police among Young Slovene Adults," *Journal of Criminal Justice and Security* 14, no. 147 (2012), 147-164; Tom Tyler, *Why People Obey the Law*, (New Jersey: Princeton University Press, 1990); and Tom R. Tyler and Yuen J. Huo. *Trust in the Law: Encouraging Public Cooperation with the Police and Courts* (New York: Russell Sage Foundation, 2002).

^{xxxi} Bureau of Justice Statistics. "Data Collection: National Crime Victimization Survey (NCVS): Methodology." <https://perma.cc/ZF9B-8DFL>.

^{xxxii} Users should note some inconsistencies in the data. Per BJS: "In 2006 and 2016, the NCVS sample was redesigned to reflect changes in the population based on the most recent Decennial Census. The redesign impacted the comparability of 2006 and 2016 estimates to prior years of data. Use caution when comparing 2006 and 2016 estimates to other years." See: Bureau of Justice Statistics, "Data Collection: National Crime Victimization Survey (NCVS): Methodology," <https://perma.cc/KB3M-AJTJ>.

^{xxxiii} Criminal Justice Information Services Division, *Estimated Number of Arrests, Table 18, Crime in the United States 2015-2016*, (Washington, DC: FBI), <https://perma.cc/B5VC-TKMS>; and Criminal Justice Information Services

Division, *Estimated Number of Arrests, Table 19, Number and Rate of Arrests by Region*, <https://perma.cc/59BN-LUDL>.

^{xxxiv} Michael Planty, Lynn Langton, and Cindy Barnett-Ryan, *The Nation's Two Crime Measures* (Washington, DC: Office of Justice Programs, 2014).

^{xxxv} Some agencies make their data publicly available through individual departmental websites or via other means but not through UCR, meaning that their data are transparent, but not included in national records or *Arrest Trends*.

^{xxxvi} Note that “months reported” was calculated and validated using publicly available data, which may not reliably a) indicate when multiple agencies report their data together, or b) specify months in accordance with UCR reporting instructions.

^{xxxvii} For the 2016 data, the step of subtracting months with missing offense codes was skipped to resolve a coding discrepancy that arose from a redesign of the data series.

^{xxxviii} Snyder et al., *Arrest Data Analysis Tool*, 2018; Lynch and Jarvis, "Missing Data and Imputation in the Uniform Crime Reports and the Effects on National Estimates," 2008; Maltz and Targonski, "A Note on the Use of County-Level UCR Data," 2002; and Jo Craven McGinty, "The FBI's Crime Data: What Happens When States Don't Fully Report," *Wall Street Journal*, October 19, 2018, <https://www.wsj.com/articles/the-fbis-crime-data-what-happens-when-states-dont-fully-report-1539946801>. ICPSR is the organization that archives and makes the UCR data publicly available. One such tool that Vera's calculations of data completeness was tested against was BJS's [Agency-Level Counts Arrests Calculator](https://perma.cc/8F6G-C4Y6), <https://perma.cc/8F6G-C4Y6>,

^{xxxix} Population size classifications are determined using the UCR's "U_POPGRP" variable; community types are determined using the "U_POP_GRP" and "FMSA" variables; and agency type is determined using the "AGENCYTYPE" variable. Metropolitan is defined by the FBI as "locales that include a principal city or urbanized area with a population of 50,000+ (i.e., metropolitan statistical areas, MSAs)." and nonmetropolitan is defined as "Locales that consist mostly of unincorporated areas and do not include a principal city or urbanized area with a population of 50,000+ (i.e., nonmetropolitan statistical areas, non-MSAs)." See U.S. Department of Justice, Federal Bureau of Investigation, "Area Definitions," <https://perma.cc/BX9Z-NNMN>.

^{xl} Agency-to-agency comparisons are not restricted by state boundaries, as users can manually add more comparison agencies by name using the "Compare by Location" feature, instead of "Compare by Cohort," if desired.

^{xli} U.S. Department of Justice, Federal Bureau of Investigation, "UCR Offense Definitions." <https://perma.cc/8GNL-SA5X>.

^{xlii} U.S. Department of Justice, Federal Bureau of Investigation, "Violent Crime," <https://perma.cc/L7K9-DGHY>.

^{xliii} U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, "Offense Definitions." <https://perma.cc/4DNP-ESGJ>.

^{xliv} Ibid.

^{xlv} U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, "Rape Addendum," <https://perma.cc/JHM6-UR65>.

^{xlvi} U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, "Offense Definitions," <https://perma.cc/9VMR-S3W2>.

^{xlvii} U.S. Department of Justice, Federal Bureau of Investigation, "About the Uniform Crime Reporting Program," <https://perma.cc/AB88-74TX>.

^{xlviii} U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, "Offense Definitions." <https://perma.cc/HU2U-7QJ8>

^{xlix} Ibid.

^l Ibid.

^{li} Ibid.

^{lii} U.S. Department of Justice, Federal Bureau of Investigation, "Appendix II – Offenses in Uniform Crime Reporting," <https://perma.cc/DYN2-YEYT>.

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- liii U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, “Offense Definitions.” <https://perma.cc/F66L-WJEL>.
- liv Ibid.
- lv Ibid.
- lvi Ibid.
- lvii Ibid.
- lviii Ibid.
- lix Ibid.
- lx Ibid.
- lxi Ibid.
- lxii Ibid.
- lxiii Ibid.
- lxiv Ibid.
- lxv Ibid.
- lxvi Ibid. UCR stopped collecting data on runaway offenses in 2010.
- lxvii Ibid.
- lxviii Ibid.
- lxix Ibid.
- lxx Ibid.
- lxxi Ibid.
- lxxii Ibid.
- lxxiii Ibid.
- lxxiv Bureau of Justice Statistics, “Terms and Definitions: Crime Type,” <https://perma.cc/ZP26-KWY2>.
- lxxv Ibid.
- lxxvi Ibid.
- lxxvii Ibid.
- lxxviii Ibid.
- lxxix Ibid.
- lxxx Ibid.
- lxxxi Ibid.
- lxxxii Ibid.
- lxxxiii Ibid.