



Effects of NIBRS on Crime Statistics

Effects of NIBRS on Crime Statistics is a study of NIBRS data submissions 1991 through 2011.

Executive Summary

When law enforcement agencies switch from reporting crime data in the UCR Summary Reporting System (SRS) format to the National Incident-Based Reporting System (NIBRS) format, the perception is the agency's crime volume and crime rates increase. However, apparent increases in crime are not necessarily attributable to actual increases in crime. Rather the perception of increase is due to the greater level of reporting specificity in NIBRS data when compared to SRS data.

The perception is based on:

- The SRS reports aggregated monthly crime summations for eight crime categories (for 2013, this increased to 10 offenses).
- The NIBRS reports disaggregated offense, victim, offender, property, and arrestee information for 46 offenses (for 2013, this increased to 49 offenses).
- The SRS employs a hierarchy rule.
- The NIBRS counts up to 10 offenses per incident.

The hierarchy rule in the SRS states when more than one offense occurs within an incident, only the most serious crime contributes to the agency's monthly crime totals. For example, an incident involving murder, robbery, and motor vehicle theft only counts the homicide for the monthly totals, as homicide is the highest offense on the hierarchy.

Analysis of the NIBRS and SRS data sets showed changing to NIBRS from SRS reporting has the following effect due to the removal of the hierarchy rule:

- Rape: No effect.
- Robbery: Increased 0.5 percent.
- Aggravated Assault: Increased 0.6 percent.
- Burglary: Increased 0.8 percent.
- Larceny: Increased 3.1 percent.
- Motor Vehicle Theft: Increased 2.8 percent.

The agencies reporting NIBRS, which increased from 446 in 1991 to 5,154 in 2011, showed only 9.2 percent of reports contained more than one offense per incident. Users of UCR data should be aware when agencies switch from SRS data reporting to NIBRS reporting they will not see apparent increases in agency crime rates. Because of the low number of multiple-offense incidents and the practice of reinstating the hierarchy rule when converting NIBRS data to SRS data prior to publication, the level of crime should appear the same.



Introduction

Since 1930, the FBI has collected crime statistics from law enforcement agencies (LEAs) who voluntarily submit monthly aggregate totals for seven Part I crimes called the Summary Reporting System (SRS). By the late 1970s, the FBI and its partner Uniform Crime Reporting (UCR) LEAs saw the need for a new crime reporting program which not only included a host of expanded crime categories, but which also collected more highly-disaggregated information about crime incidents in general. Working together to develop the blueprint for a new data collection program, the FBI began collecting National Incident-Based Reporting System (NIBRS) data from LEAs in 1991.

Though NIBRS was seen as an improvement over the SRS, as of 2011, only 32 percent of LEAs have changed to the more robust and disaggregated system for reporting crime data. The cost of changing to the NIBRS electronic data submission was, and still is, an expensive transition for LEAs. Additionally and aside from potential costs, some LEA administrators are hesitant because transitioning to NIBRS from the SRS will make it appear to the public that their agency has an unwarranted increase in the level of crime in their jurisdiction. Thus, this document is intended to inform UCR data users about the differences between SRS and NIBRS data formats and reporting capabilities. As such, the apparent increase in crime volume when switching to NIBRS is easily explained due to the elimination of the hierarchy rule in the NIBRS and the relatively low percentage of incidents which involved more than one offense. The hierarchy rule in the SRS requires that LEAs only report the most serious offense occurring in an incident, whereas NIBRS collects up to ten offenses for each incident of crime.

The following analysis aims to evaluate the increase in crime volume reported by LEAs when using the NIBRS data specifications, instead of the SRS. Further, a discourse of why this change occurs and why it will not be apparent in LEA crime trends is discussed. In short, when NIBRS data are converted to the SRS for the purpose of trending, the hierarchy rule is reapplied. In spite of reporting more data, agencies do not experience an increase in crime when changing from SRS to NIBRS reporting specifications.

To achieve the goal of evaluating the change in crime LEAs may experience, this study simply compares the difference in crime volume and computes the percentage difference in crime volume due to the hierarchy rule. The analysis was conducted at the national level and is used as a reasonable estimate of how changing from an SRS reporting agency to a NIBRS reporting agency affects the amount of crime submitted to the FBI UCR Program. NIBRS data for 2011 was used to determine this effect. LEAs reporting at least one Group A offense occurring in 2011 were represented.

History

The eight crimes: murder, rape, robbery, aggravated assault, burglary, motor vehicle theft, larceny, and arson are the nation's premier indicator of the nature of crime in the United States. Two human trafficking offenses will be added to the SRS in 2013.



NIBRS was created in order to meet the need for a more detailed crime data collection format. Rather than focus on aggregate totals, NIBRS collects information on incidents of crime within an agency. Further, NIBRS was expanded from the eight SRS offenses to 49 Group A offenses where data about victims, offenders, property, and arrests are collected along with elements for each offense. Arrest-only information is also collected for an additional 10 Group B offenses.¹

NIBRS Segments

- Incident Information
 - Incident Date
 - Incident Hour
 - Exceptional Clearance
 - Exceptional Clearance Date
- Offense Information
 - Offense Codes
 - Attempted vs. Completed
 - Offender Suspected Use (of alcohol, drug, or computers)
 - Location
 - Type and Number of Premises Entered
 - Type of Criminal Activity
 - Weapon/Force Used
 - Bias Motivation
- Property Information
 - Loss Type
 - Property Description
 - Value of Property
 - Date Recovered
 - Number of Motor Vehicles Stolen/Recovered
 - Drug Types and Amounts
- Victim Information
 - Connection to Offenses
 - Type of Victim
 - Age/Sex/Race/Ethnicity/Resident Status of Victim
 - Assault and Homicide Circumstances
 - Injury Types
 - Relationships to Offenders

¹ An eleventh Group B offense, runaways, was dropped in 2009 as it is not technically a criminal offense. Runaway offenses are still collected in UCR databases as agencies may still report runaways, but it is not required and is no longer published in UCR data releases.



- Offender Information
 - Age/Sex/Race/Ethnicity² of Offender
- Arrestee Information
 - Arrest Date
 - Type of Arrest
 - Arrest Offense Code
 - Arrestee Weapons
 - Age/Sex/Race/Ethnicity/Resident Status of Arrestee
 - Disposition of Minors
- Group B Arrest Information
 - Type of Arrest
 - Arrestee Weapons
 - Age/Sex/Race/Ethnicity of Arrestee
 - Disposition of Minors

NIBRS Offenses

Group “A” Offenses – The following offenses are reported in Group “A” Incident Reports. There are 23 Group “A” crime categories made up of 49 offenses (Offense Codes are in parentheses):

Arson (200)

Assault Offenses

Aggravated Assault (13A)

Simple Assault (13B)

Intimidation (13C)

Bribery (510)

Burglary/Breaking and Entering (220)

Counterfeiting/Forgery (250)

Destruction/Damage/Vandalism of Property (290)

Drug/Narcotic Offenses

Drug/Narcotic Violations (35A)

Drug Equipment Violations (35B)

Embezzlement (270)

Extortion/Blackmail (210)

Fraud Offenses

False Pretenses/Swindle/Confidence Game (26A)

Credit Card/Automated Teller Machine Fraud (26B)

Impersonation (26C)

Welfare Fraud (26D)

Wire Fraud (26E)

² Ethnicity added beginning in the 2013 data collection.



Gambling Offenses

- Gambling Offenses Betting/Wagering (39A)
- Operating/Promoting/Assisting Gambling (39B)
- Gambling Equipment Violations (39C)
- Sports Tampering (39D)

Homicide Offenses

- Murder and Nonnegligent Manslaughter (09A)
- Negligent Manslaughter (09B)
- Justifiable Homicide (09C)

Human Trafficking

- Human Trafficking, Commercial Sex Acts (64A)³
- Human Trafficking, Involuntary Servitude (64B)³

Kidnapping/Abduction (100)

Larceny/Theft Offenses

- Pocket-picking (23A)
- Purse-snatching (23B)
- Shoplifting (23C)
- Theft From Building (23D)
- Theft From Coin-Operated Machine or Device (23E)
- Theft From Motor Vehicle (23F)
- Theft of Motor Vehicle Parts or Accessories (23G)
- All Other Larceny (23H)

Motor Vehicle Theft (240)

Pornography/Obscene Material (370)

Prostitution Offenses

- Prostitution Offenses (40A)
- Assisting or Promoting Prostitution (40B)
- Purchasing Prostitution (40C)³

Robbery (120)

Sex Offenses

- Rape (11A)
- Sodomy (11B)
- Sexual Assault With An Object (11C)

Fondling (11D)

Sex Offenses, Nonforcible

- Incest (36A)
- Statutory Rape (36B)

Stolen Property Offenses (Receiving, etc.) (280)

Weapon Law Violations (520)

³ These offenses will be added beginning with the 2013 data collection.



Group “B” Offenses – The following offenses are reported in Group “B” Arrest Reports. They include all offenses that are not Group “A” offenses. Group “B” offenses are to be reported using the following 10 crime categories:

- Bad Checks (90A)
- Curfew/Loitering/Vagrancy Violations (90B)
- Disorderly Conduct (90C)
- Driving Under the Influence (90D)
- Drunkenness (90E)
- Family Offenses, Nonviolent (90F)
- Liquor Law Violations (90G)
- Peeping Tom (90H)
- Trespass of Real Property (90J)
- All Other Offenses (90Z)

Participation

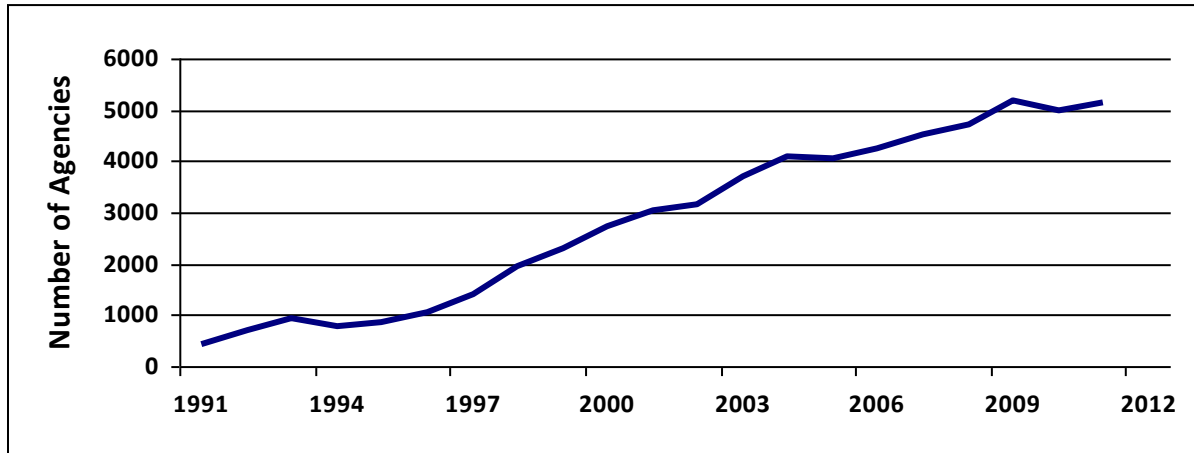
In the first year, 446 law enforcement agencies converted from the SRS and provided 12 months of crime data to the FBI in the new highly-disaggregated NIBRS format. Over twenty years later, more than 5,000 agencies actively participate in the NIBRS data collection (See Table 1 and Figure 1).

Table 1: Number of 12-Months

Year	Agencies	Year	Agencies
1991	446	2002	3,149
1992	692	2003	3,705
1993	947	2004	4,095
1994	770	2005	4,054
1995	853	2006	4,249
1996	1,068	2007	4,517
1997	1,420	2008	4,709
1998	1,951	2009	5,188
1999	2,284	2010	5,004
2000	2,724	2011	5,154
2001	3,022		



Figure 1: NIBRS Agencies Reporting 12-months Complete Data by Year



The Hierarchy Rule

In the SRS, offenses are ranked in terms of severity and only the highest-ranked offense is reported in incidents which have multiple offense types. SRS offenses are reported in the following order:

- I. Murder and Nonnegligent Manslaughter (abbreviated to Murder)
- II. Rape⁴
- III. Robbery
- IV. Aggravated Assault
- V. Burglary
- VI. Larceny
- VII. Motor Vehicle Theft
- VIII. Arson (does not follow the hierarchy rule)
- IX. Human Trafficking, Commercial Sex Acts (does not follow the hierarchy rule)
- X. Human Trafficking, Involuntary Servitude (does not follow the hierarchy rule)

According to the hierarchy rule, murder, human trafficking, and arson are always counted in the SRS, however all six of the other Part I crimes are not always reported in multiple-offense incidents. If, for example, a murder and rape occur within the same incident, only the murder is counted in the SRS. Further, if an aggravated assault occurs in the same incident as a burglary, the burglary is not counted.

There are also a few considerations which are true to both NIBRS and the SRS. For example, aggravated assault is always inherent to robbery, so only a robbery is counted when both occur

⁴ In 2011, the FBI's UCR governance board changed the definition of Rape in the SRS to include male victims, sodomy, and sexual assault with objects. The change was approved by the FBI Director and will be collected starting in 2013. NIBRS already collected information for these sex offense categories. The expanded definition of rape was used in this study.



in the same incident.⁵ Similarly, larceny is not reported with burglary as it is inherent to the crime.⁶ NIBRS, however, would capture both the murder and rape, and the assault with burglary in each respective incident. Up to ten offenses of the 49 offenses reported in NIBRS can be listed in an incident’s offense segments.

Table 2 shows the number of NIBRS offenses that are removed from crime counts when the data are converted to the SRS. As murder is on the top of the hierarchy, there is no reduction in the number of murder offenses when converting from NIBRS to the SRS. However, there were 4 rape victims involved in incidents where murder was also involved. Similarly, for 4,599 NIBRS burglaries, there was a murder, a rape, a robbery, or an aggravated assault which happened in the same incident. The 4 rapes and 4,599 burglaries would not be counted in the UCR SRS data collection due to conditions established by the hierarchy rule.

Nationally, there is a minimal percentage increase (less than 0.01%) in crime volume for rape when LEAs move from the SRS to NIBRS. Robbery increased by little more than one-half of one percent (0.5%), aggravated assault increased by 0.6 percent, and burglary increased by 0.8 percent, larceny increased by 3.1 percent, and motor vehicle theft increased by 2.8 percent.

Table 2: Percent Increases in Crime Volume by Removing the Hierarchy Rule

	Incidents	Offenses	Reduction to Hierarchy	Percent Increase
Murder⁷	3,320	3,544	0	-
Rape^{7, 8}	27,405	28,240	-4	0.0
Robbery	72,949	72,949	-384	0.5
Aggravated Assault⁷	163,943	199,033	-1,224	0.6
Burglary⁹	585,192	585,192	-4,599	0.8
Larceny¹⁰	1,688,227	1,688,227	-52,847	3.1
Motor Vehicle Theft	163,251	163,251	-4,632	2.8
Totals	2,704,287	2,740,436	-63,690	2.3

⁵ The exception in NIBRS would be if there were multiple victims in an incident and some were not robbed, but all were victims of aggravated assault.

⁶ Again, the exception in NIBRS would be if offenders committed larceny offenses outside of a structure after committing burglary offenses within the same incident.

⁷ The number of offenses differs from the number of incidents for murder, rape, and aggravated assault because these Crimes Against Persons offense categories count one offense for each victim in the incident. Robbery, burglary, and motor vehicle theft are considered Crimes Against Property and count only one offense per incident.

⁸ See Footnote 4 in “[The Hierarchy Rule](#)” section.

⁹ The “hotel rule” and number of premises entered were not considered for burglary offense totals.

¹⁰ NIBRS allows for the reporting of eight different types of larceny offenses per offense. Incidents with more than one larceny offense type reported were aggregated to only count one larceny per offense to simulate how this would be reported in the SRS.



The concern of many LEA officials is the inclusion of these crimes, particularly property crimes, will appear to the public as an increase in crime when switching from SRS reporting to NIBRS reporting. In reality, the apparent increase is simply due to the difference between how crimes are counted in NIBRS versus the SRS and application of the hierarchy rule. Further, none of the increases amount to a change greater than 3.1 percent.

Interpretation

Any increases in crime volume due to the ability to report multiple offenses in NIBRS are eliminated when trending. For trends, NIBRS data are converted to SRS data and the hierarchy rule is again applied, which reduces crime counts in multiple-offense incidents to what would have been reported if the agency was only reporting according to SRS specifications. When the FBI UCR Program starts trending NIBRS data, comparisons to pre-NIBRS data submissions would not be included in trends.

Reporting NIBRS data does not drastically increase crime within jurisdictions, even though there is a slight but visible effect on crime rates. As shown in Table 3, approximately one in ten (9.2%) of NIBRS incidents have multiple offenses, and only 1.4 percent of NIBRS incidents have multiple offenses affected by the hierarchy rule.

Table 3: Number of Offenses Per Incident, NIBRS 2011

Offenses	Frequency	Percent	Valid Percent	Cumulative Percent
1	4,430,610	89.9	89.9	89.9
2	452,487	9.2	9.2	99.1
3	39,490	.8	.8	99.9
4	3,698	.1	.1	100.0
5	476	.0	.0	100.0
6	62	.0	.0	100.0
7	5	.0	.0	100.0
8	1	.0	.0	100.0
Total	4,926,829	100.0	100.0	

The elimination of the hierarchy rule has been discussed in UCR governance meetings and during the CJIS Advisory Process (i.e., a process representing law enforcement executives, academic, and data analyst stakeholders in the UCR Program who have biannual meetings to discuss or make recommendations for change in the UCR).

Lastly, LEA officials can use this study to demonstrate how changing from SRS reporting to NIBRS reporting might affect their local crime counts. It is anticipated that incident-based data collections will have more robust and accurate crime counts over traditional tally based systems



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like the SRS. Any reports LEAs generate can show how the elimination of the hierarchy rule has affected the agency's data by trending and comparing data prior to the LEA's conversion to the NIBRS.