NIBRS Data Quality and Lessons Learned

Kimberly Martin, PhD
Statistician, Bureau of Justice Statistics
Webinar presentation for the Justice Research Statistics Association (JRSA)
January 11, 2022
At the beginning of 2021, the FBI retired the Summary Reporting System (SRS) of the UCR Program. Crime data submitted by local law enforcement agencies can no longer be provided as aggregate counts on the limited number of SRS offenses.

As of January 1, 2021, crime data submitted to the UCR program must be contributed to the National Incident-Based Reporting System (NIBRS)
BJS, in partnership with the FBI, established the National Crime Statistics Exchange (NCS-X) to serve two primary purposes, in support of the NIBRS transition:

1. Support state UCR programs and a scientifically selected sample of agencies transition to NIBRS reporting
2. Develop methodologies and procedures by which representative national, regional, and state level crime estimates can be produced.
Webinar Agenda

1. NIBRS coverage status
2. Using NIBRS data at the state level
3. Standardizing a structure for displaying NIBRS data
   a. Establishing hierarchies for certain measures
   b. Options for unit of analysis
4. Tools from BJS that support NIBRS analysis and use of the data
About the Speakers

Kimberly Martin (Tuesday, 1/11/22)
- BJS Statistician in the Law Enforcement Incident-Based Statistics Unit
- Manages the NIBRS analytics portfolio and data modernization efforts under the NCS-X Initiative at BJS
- Approximately 20 years experience conducting research and data collection in the field of criminal justice

Marcus Berzofsky (Thursday, 1/13/22)
- Senior Statistician at RTI International
- PI on the NCS-X NIBRS Estimation Project
- Over 20 years experience working with implementing and analyzing surveys and related studies
Housekeeping Items

**Schedule**: Webinar is 90 minutes long, with multiple breaks for questions and answers.

**Questions**: Please enter questions into the chat; we will take periodic breaks to ask for questions to facilitate discussion.
NIBRS Coverage Status
Expansion of NIBRS Coverage: 2018 to 2020

2018 NIBRS Coverage:
(43% with about 8,000 reporting LEAs)

2020 NIBRS Coverage
(57% with over 10,600 reporting LEAs)

Note: There are around 18,600 law enforcement agencies (LEAs) reporting to the UCR programs, either to NIBRS or SRS.
What value does NIBRS add to our understanding of victimization?

**Community and geography:** Does the nature of victimization, and victim characteristics, vary across communities and states? Concentration of crime in relatively few places is masked by national data.

**Linking Census and public health data** to LE jurisdictions can provide crucial insights into trends.

**Equity and patterns in justice system outputs:** Patterns in police clearance and arrest for specific incidents. How do these clearance/arrest patterns vary by offense, victim and offender characteristics, and specific jurisdictions?

**Variety in offense and victim types:** A wider array of victimization types/offenses captured in NIBRS data, including mass shootings, kidnapping, and human trafficking, and federal offenses.

**Non-person victims of crimes** include financial institutions, governments, places of worship, and commercial establishments.
How are crime incident data recorded by law enforcement?

**Reported crime incident**

Source of incident information – community or officer?

Incident founded? Report taken?

**Data recorded in LE system**

- Initial incident information
- Follow-up investigation findings
- TBD at time of incident
  - Arrest and clearance information
  - Other changes – add’l offenses, injury status, weapon information

Bureau of Justice Statistics
How are crime incident data reported to NIBRS?

Local Law Enforcement – state police, sheriff departments, municipal and county agencies, tribal agencies

State Uniform Crime Reporting (UCR) Program

FBI UCR Program
Using NIBRS Data at the State Level
Crucial questions:

How do/should we measure crime rates at the state level using NIBRS?

• Which offenses get grouped together?
• What do we use for population when calculating rates?
• Is there a standardized display we should adopt when presenting IBR statistics?
Multiple Offense Incidents Provide Clues....

Figure 1. Percentage of incidents involving multiple offenses, by agency population served, 2016

- All agencies: 11.6%
- Fewer than 100,000: 12.1%
- 100,000 to 199,999: 11.7%
- 200,000 or more: 10.2%
Multiple Offense Incidents Provide Clues….

Table 2. Number and percentage of incidents with single and multiple offenses, by agency population served, NIBRS, 2016

<table>
<thead>
<tr>
<th>Number of Offenses in the Incident</th>
<th>Agency Population Served (No. of Agencies)</th>
<th>All Agencies (5,674)</th>
<th>&lt;100,000 (5,534)</th>
<th>100,000–199,999 (89)</th>
<th>≥200,000 (51)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Total incidents</td>
<td>5,207,481</td>
<td>100.0</td>
<td>3,109,283</td>
<td>100.0</td>
<td>761,858</td>
</tr>
<tr>
<td>1 offense</td>
<td>4,605,479</td>
<td>88.4</td>
<td>2,732,763</td>
<td>87.9</td>
<td>672,711</td>
</tr>
<tr>
<td>2 offenses</td>
<td>537,858</td>
<td>10.3</td>
<td>335,347</td>
<td>10.8</td>
<td>79,055</td>
</tr>
<tr>
<td>3 or more offenses</td>
<td>64,144</td>
<td>1.3</td>
<td>41,173</td>
<td>1.3</td>
<td>10,092</td>
</tr>
</tbody>
</table>

Note: Analysis of 5,674 city, county, university/college, and state general purpose law enforcement agencies. Excludes special purpose agencies, other state agencies, and tribal agencies.

Multiple Offense Incidents Provide Clues….

Table 3. Percentage of single- and multiple-offense incidents, by type of co-occurring offense and agency population served, 2016

<table>
<thead>
<tr>
<th>Incident Type</th>
<th>Agency Population Served</th>
<th>All Agencies</th>
<th>&lt;100,000</th>
<th>100,000-199,999</th>
<th>≥200,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Single-Offense Incidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Part 1 offense</td>
<td></td>
<td>51.1</td>
<td>48.8</td>
<td>53.5</td>
<td>54.8</td>
</tr>
<tr>
<td>Single non-Part 1 offense</td>
<td></td>
<td>49.0</td>
<td>51.2</td>
<td>46.5</td>
<td>45.2</td>
</tr>
<tr>
<td>Multiple-Offense Incidents</td>
<td></td>
<td>11.6</td>
<td>12.1</td>
<td>11.7</td>
<td>10.2</td>
</tr>
<tr>
<td>Multiple Part 1 offenses only</td>
<td></td>
<td>1.1</td>
<td>1.1</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Single Part 1 offense + at least 1 non-Part 1 offense</td>
<td></td>
<td>5.1</td>
<td>4.8</td>
<td>5.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Multiple non-Part 1 offenses only</td>
<td></td>
<td>5.1</td>
<td>5.9</td>
<td>4.6</td>
<td>3.7</td>
</tr>
<tr>
<td>Multiple Part 1 offenses and at least one non-Part 1 offense</td>
<td></td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Number of Incidents</td>
<td></td>
<td>5,207,481</td>
<td>3,109,283</td>
<td>761,858</td>
<td>1,336,340</td>
</tr>
</tbody>
</table>

Source: Bureau of Justice Statistics
Standardizing a Structure for Displaying NIBRS Data
Examples from BJS reports and recent analyses using NIBRS raise key questions that require discussion:

- How should we create a hierarchy for violent crime?

- What are options and best practices for establishing a standard structure for displaying NIBRS data?

- When publishing statistics on rape and sexual assault, which of the 4 sex offenses measured in NIBRS do we include?
  - Implications for child victims of sexual assault if fondling is removed.

- Firearm-involved violent victimization: Can we capture gun-involved violence that may represent mass shootings?

- How should we calculate robbery rates when there are individual as well as financial institutions and commercial establishment victim types in NIBRS?
How NIBRS enhances our understanding of specific criminal phenomenon

- Demo of 2019 NIBRS report: Child sexual assault victimization patterns across U.S. states as recorded by law enforcement.

- Report URL: [Sexual Assaults Recorded by Law Enforcement, 2019 | Bureau of Justice Statistics (ojp.gov)](https://ojp.gov)

- State by state statistics, visualizations, csv downloads
Interactive statistical report: What can NIBRS tell us about sexual assault?

SPECIAL REPORT

NATIONAL INCIDENT-BASED REPORTING SYSTEM

Sexual Assaults Recorded by Law Enforcement, 2015

This report presents statistics on sexual assault victimizations that were reported to NIBRS in 2015 by law enforcement agencies in 15 states. The National Incident-Based Reporting System (NIBRS) captures detailed information on four types of violent sexual assaults recorded by law enforcement: rape, sodomy, sexual assault with an object, and fondling. This report contains interactive charts that compare the demographic characteristics of sexual assaults to victims of other serious violent crimes, estimates of sexual victimization rates by victim demographic characteristics, and statistics on police clearance and arrest outcomes for sexual assaults. Data for this report were submitted by state and local law enforcement agencies from 15 states certified by the FBI to report all of their 2015 crime data to NIBRS. Those 15 NIBRS-certified states are highlighted in the map below.
In 2019 in Tennessee—

- 12% of all violent victimizations involved a sexual assault; the percentage was higher for female (10%) than for male (2%) victims of violence.
- There were 78.9 sexual assault victimizations per 100,000 persons; the rate was 4 times higher for juveniles (195.6) than for adults (45.6).
- The average age of sexual assault victims was 15 years for males and 21 years for females.
- 88% of sexual assault victimizations were committed by someone the victim knew.

In 2019 in Michigan—

- 25% of all violent victimizations involved a sexual assault; the percentage was higher for female (21%) than for male (4%) victims of violence.
- There were 125.1 sexual assault victimizations per 100,000 persons; the rate was 7 times higher for juveniles (371.7) than for adults (56.8).
- The average age of sexual assault victims was 14 years for males and 19 years for females.
- 94% of sexual assault victimizations were committed by someone the victim knew.

Source: BJS analysis of the FBI's NIBRS, 2019
URL: Sexual Assaults Recorded by Law Enforcement, 2019 | Bureau of Justice Statistics (ojp.gov)
Key statistics on sexual assault victimization of young children

North Dakota, NIBRS, 2019

Sexual assault victimizations, by victim age, North Dakota, 2019

Hover over bars for more detail.

<table>
<thead>
<tr>
<th>Victim age</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>87</td>
</tr>
<tr>
<td>5-12</td>
<td>247</td>
</tr>
<tr>
<td>14-17</td>
<td>208</td>
</tr>
<tr>
<td>18-24</td>
<td>178</td>
</tr>
<tr>
<td>25-34</td>
<td>125</td>
</tr>
<tr>
<td>35-64</td>
<td>108</td>
</tr>
<tr>
<td>65 or older</td>
<td>7</td>
</tr>
</tbody>
</table>

Select a view: Victim by-

VICTIM-OFFENDER RELATIONSHIP  OFFENSE TYPE  VICTIM SEX  \(\text{reset}\)

Note: Excludes 4 sexual assault victimizations for which victim age is unknown.

Virginia, NIBRS, 2019

Sexual assault victimizations, by victim age, Virginia, 2019

Hover over bars for more detail.

<table>
<thead>
<tr>
<th>Victim age</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>1,724</td>
</tr>
<tr>
<td>5-12</td>
<td>1,220</td>
</tr>
<tr>
<td>14-17</td>
<td>976</td>
</tr>
<tr>
<td>18-24</td>
<td>687</td>
</tr>
<tr>
<td>25-34</td>
<td>660</td>
</tr>
<tr>
<td>35-64</td>
<td>60</td>
</tr>
<tr>
<td>65 or older</td>
<td>1</td>
</tr>
</tbody>
</table>

Select a view: Victim by-

VICTIM-OFFENDER RELATIONSHIP  OFFENSE TYPE  VICTIM SEX  \(\text{reset}\)

Note: Excludes 76 sexual assault victimizations for which victim age is unknown.
Key findings: Child sexual assault and arrest

Violent crime incidents that were cleared by arrest, cleared by exceptional means, or not cleared, by offense type, Idaho, 2019

Note: See Methodology for descriptions of cleared, cleared by arrest, and exceptional clearance.

Additional tools from BJS that Support Analysis and Use of the NIBRS Data
NIBRS Resources for Law Enforcement and Community Leaders

- Technical assistance products, print reports, and other transition support documents
  - Will NIBRS Reporting Increase Crime Statistics?
  - Talking About NIBRS
  - Press Release – Transitioning to NIBRS
  - Research in Brief: Leveraging NIBRS to Better Understand Sexual Violence

- Interactive statistical report platform
  - Interactive capabilities for users to select criteria and explore data

- Data Dashboard – in production
  - System for users to analyze and visualize data and create and download custom data files

- Other available data resources
• Provides insight to law enforcement and community leaders about the benefits of NIBRS data
• Talking points in support of the advantages of this reporting system

TALKING ABOUT NIBRS
MESSAGING ABOUT CRIME DATA TO STAKEHOLDERS

PROACTIVE COMMUNICATION about crime data can positively influence how your agency’s crime statistics are received by stakeholders. Messaging about your agency’s transition to the National Incident-Based Reporting System (NIBRS) will help elected and appointed officials, the media, and the public understand how NIBRS benefits your community and improves public safety.

TIPS FOR NIBRS MESSAGING:
» Educate personnel and staff on the benefits of NIBRS so agency representatives can highlight the advantages of incident-based reporting (IBR)
BJS Efforts to Develop an Online NIBRS Data Analysis Platform

- NIBRS Data Dashboard – under development
  - Online data analytics platform for users to analyze and visualize data.
  - Built via Tableau and JavaScript
  - Create and download custom NIBRS data files and maps.
  - Access victimization and crime incident rates for specific population groups and places.
  - Access ORI lookup tool to gauge NIBRS coverage within states.
  - Central goal: To provide public health and socioeconomic data for agencies and states in order to provide crucial context of crime.
    - Example: Community Resilience Estimates (census.gov)
NCS-X : NIBRS Data Access & Analysis

This tool allows users analyze to National Incident Based Reporting System (NIBRS) data. It also provides a convenient way to organize and download NIBRS data based on the selections users make on this website.
Reporting States, 2018
Major Reporting Agencies, 2018

Filter Summary: Data Year (2018), Reporting State (All), Reporting County (All), Reporting MSA (All), Crime Type (All), Offense Category (All), Offense (All), Victim Type (All), Victim Age (All), Victim Race (All), Victim Sex (All), Offender Age (All), Offender Race (All), Offender Sex (All), Relationship Status (All), Population (Cities 250,000 people or over)

Bureau of Justice Statistics, based on data from the Federal Bureau of Investigation, National Incident-Based Reporting System. Data last refresh date: 8/17/2020 3:51:58 PM.
## Incidents, Data Year and Victim Age by Offense Category and Relationship Status

<table>
<thead>
<tr>
<th>Data Year</th>
<th>Victim Age</th>
<th>Age 1-4</th>
<th>Age 5-14</th>
<th>Age 15-17</th>
<th>Age 18-24</th>
<th>Age 25-34</th>
<th>Age 35-64</th>
<th>Age 65 and Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td></td>
<td>65.0</td>
<td>751.0</td>
<td>476.0</td>
<td>482.0</td>
<td>273.0</td>
<td>254.0</td>
<td>21.0</td>
</tr>
<tr>
<td></td>
<td>Intimate</td>
<td>3.0</td>
<td>74.0</td>
<td>44.0</td>
<td>92.0</td>
<td>126.0</td>
<td>125.0</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Family</td>
<td></td>
<td>177.0</td>
<td>175.0</td>
<td>72.0</td>
<td>39.0</td>
<td>36.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other/Unknown</td>
<td></td>
<td>51.0</td>
<td>156.0</td>
<td>138.0</td>
<td>102.0</td>
<td>133.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stranger</td>
<td></td>
<td>207.0</td>
<td>42.0</td>
<td>89.0</td>
<td>63.0</td>
<td>55.0</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>78.0</td>
<td>815.0</td>
<td>475.0</td>
<td>552.0</td>
<td>331.0</td>
<td>282.0</td>
<td>24.0</td>
</tr>
<tr>
<td></td>
<td>Intimate</td>
<td>1.0</td>
<td>83.0</td>
<td>56.0</td>
<td>105.0</td>
<td>121.0</td>
<td>144.0</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>Partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Family</td>
<td></td>
<td>184.0</td>
<td>188.0</td>
<td>75.0</td>
<td>49.0</td>
<td>34.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other/Unknown</td>
<td></td>
<td>35.0</td>
<td>120.0</td>
<td>169.0</td>
<td>114.0</td>
<td>129.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stranger</td>
<td></td>
<td>41.0</td>
<td>27.0</td>
<td>80.0</td>
<td>65.0</td>
<td>60.0</td>
<td></td>
</tr>
</tbody>
</table>

Filter Summary: Data Year (2017 & 2018), Reporting State (Virginia), Reporting County (All), MSA (All), Crime Type (All), Offense Category ( & Sex Offenses), Offense (All), Victim Type (All), Victim Age (Age 1-4, Age 15-17, Age 18-24 and 4 more), Victim Race (All), Victim Sex (All), Offender Age (All), Offender Race (All), Offender Sex (All), Relationship Status (Friend or Acquaintance Relationship, Intimate Partner, Other Family and 2 more)
### Incidents, State and Offense Category by Data Year and Victim Sex

<table>
<thead>
<tr>
<th>State</th>
<th>Offense Category</th>
<th>Female</th>
<th>Male</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montana</td>
<td>Assault Offenses</td>
<td>5,245</td>
<td>4,579</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Sex Offenses</td>
<td>1,172</td>
<td>163</td>
<td>17</td>
</tr>
<tr>
<td>North Dakota</td>
<td>Assault Offenses</td>
<td>4,638</td>
<td>3,734</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Sex Offenses</td>
<td>844</td>
<td>101</td>
<td>4</td>
</tr>
<tr>
<td>Virginia</td>
<td>Assault Offenses</td>
<td>50,778</td>
<td>38,059</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td>Sex Offenses</td>
<td>5,127</td>
<td>785</td>
<td>15</td>
</tr>
</tbody>
</table>

Filter Summary: Data Year (2018), Reporting State (Montana, North Dakota, Virginia), Reporting County (All), MSA (All), Crime Type (All), Offense Category (Assault Offenses & Sex Offenses), Offense (All),Victim Type (All), Victim Age (All), Victim Race (All), Victim Sex (All), Offender Age (All), Offender Race (All), Offender Sex (All), Relationship Status (All)
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