



NCS-X and NIBRS – Data Strategies for the Future of Crime Reporting

SEARCH Symposium
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National Crime Statistics Exchange (NCS-X) and NIBRS

Goal – improve national statistics on reported crime by developing national estimates based on detailed crime incident data

- Take a sample-based approach to increasing the number of agencies reporting data to FBI's National Incident-Based Reporting System (NIBRS)
- Provide funding and technical assistance to state UCR programs and local law enforcement agencies to facilitate the NIBRS transition
- Support industry efforts to assist customer agencies in implementing NIBRS and state-specific variations of incident-based reporting
- Generate national estimates of reported crime data based on NIBRS

NCS-X NIBRS Estimation Project (NNEP)

- NNEP is the culmination of the NCS-X recruitment efforts and implementation support
- BJS, in collaboration with the FBI, will establish a process to create national-level crime estimates following the January 2021 NIBRS transition deadline
- NNEP is designing the methodology needed to:
 - Evaluate data quality
 - Impute for missing data (as necessary)
 - Produce national estimates

NCS-X Estimation Project Objectives

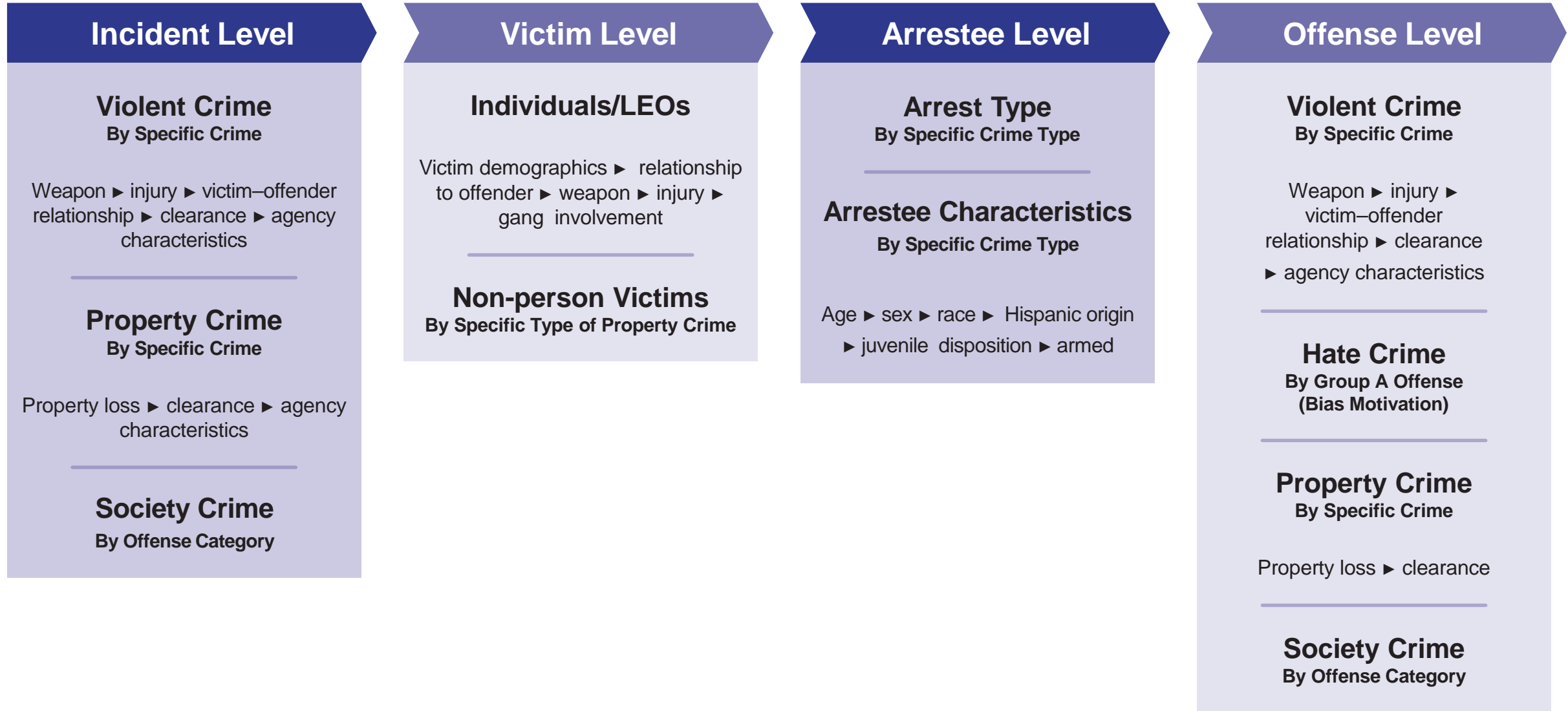
Primary Objectives

- Determine set of key NIBRS indicators for which accurate and reliable estimates can be produced
- Use the NCS-X sample to produce national estimates based on NIBRS data
- Develop population-served estimates which can be split by key demographic characteristics such as age, sex, and race

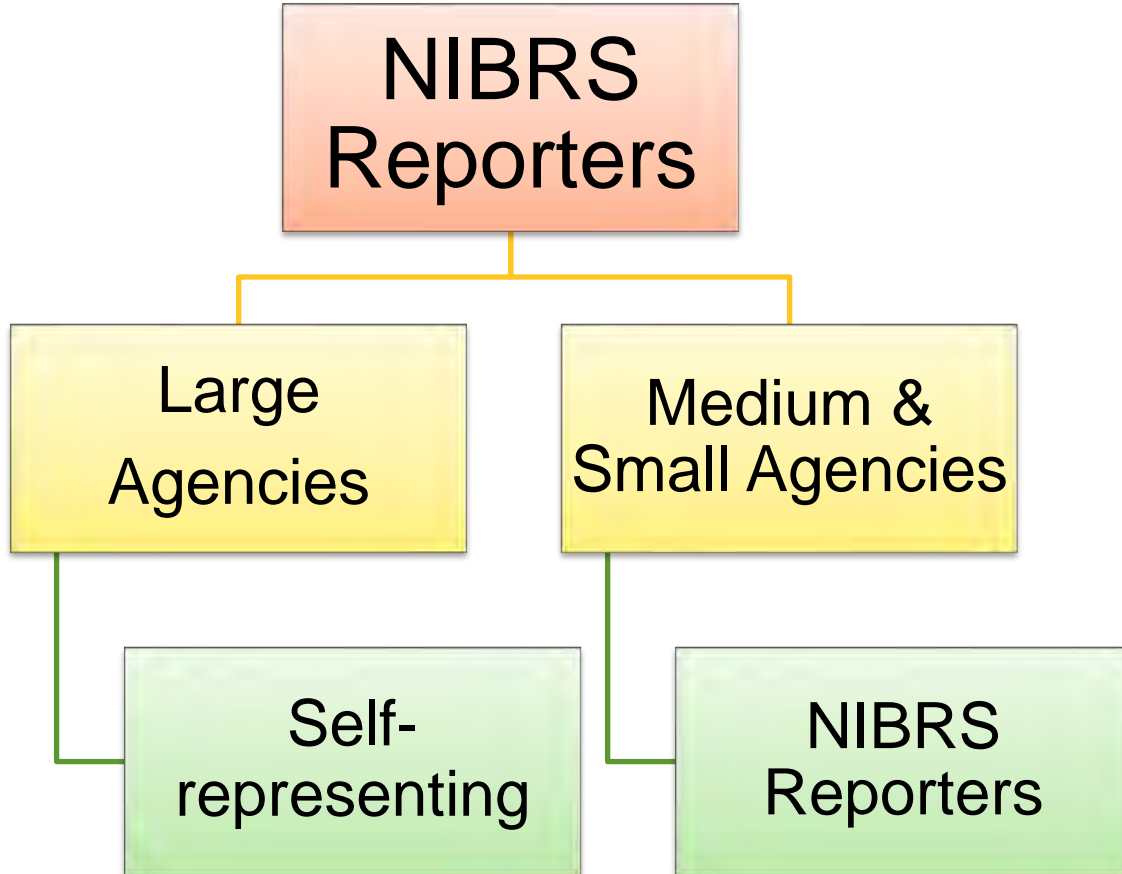
Secondary Objectives

- Use NCS-X sample to produce subnational estimates (prioritizing state-level estimates)
- Develop population-served estimates for agencies traditionally classified as zero-population agencies (when possible and appropriate)

National Indicators – Prioritization Roadmap



Weighting by State



- Weighting by state if coverage ratio exceeds 80%
- For remaining states, produce top-down weights
- Over time, will achieve a 50-state design which will allow for simultaneous estimates at the national and state levels

Data Quality Review/Adjustment

Missing Values

- True missing
- NIBRS business rules programmed
- Cases are missing when business rules indicate there should be a value

Unknown Values

- Unknown values can be a valid response
- However, sometimes are used in rates which are not realistic or plausible
- Or, unknown can be an undesirable response option for estimation

Partial Reporters

- Situation where an agency reports incidents for more than 0 but less than 12 months
- Administrative data can identify the months where no reported incidents were provided by an agency

Outliers

- Situation where an agency underreports the number of incidents in a month
- Statistical methods identify months where the number of incidents are underreported

Summary of Future Steps for Imputation



Partial Reporters

- identify months with missing crimes
- estimate the number of missing crimes for a particular month/LEA
- use hot deck or cold deck methods to impute missing crimes



Missing Items

- select useful predictors in imputing the key imputed items
- perform multilevel multiple imputation



Validate Imputation Results

- review the distribution of individual imputed variable
- review the weighted estimates of key indicators
- compare the weighted estimates with external data



Assessment for Upcoming Years

- monitor the frequencies of partial reporting and missing items during the transition time period
- assess the impact of imputation on final estimates

Schedule of Key Upcoming Milestones

Estimated Timeframe	Key Milestone
Fall 2020	Produce final set of estimation methodology protocols for producing national estimates
Winter 2021	Finalize data quality methodology associated with producing national estimates
Spring-Fall 2021	Initial version of estimation prototype developed (based on data through 2020)
Winter 2021	Finalize the estimation methodology for producing state-level estimates (for state estimation where feasible)
Spring 2022	Finalize the data quality methodology associated with producing state-level estimates
Spring/Summer 2022	Evaluate and address any quality issues specific to actual 2021 data submissions from newly transitioned agencies
Summer/Fall 2022	Finalize revisions to the estimation prototype and produce reports and estimates for key indicators (based on 2021 submission data)

Analytic Dissemination Plan

- Technical assistance products, print reports, and other transition support documents
 - [Multiple Offense Incidents in the National Incident-Based Reporting System](#) – providing information about the effect of removing the Hierarchy Rule on crime statistics
 - [Will NIBRS Reporting Increase Crime Statistics?](#)
 - Talking About NIBRS
 - Press Release – Transitioning to NIBRS
 - [Research in Brief: Leveraging NIBRS to Better Understand Sexual Violence](#)
- Estimation methodology technical reports
 - Data quality analysis – Key indicators
 - Population estimation procedures
- Interactive statistical report platform
 - Interactive capabilities for users to select criteria and explore data
- NCS-X Data Dashboard – under development
 - System for users to analyze and visualize data and create and download custom data files



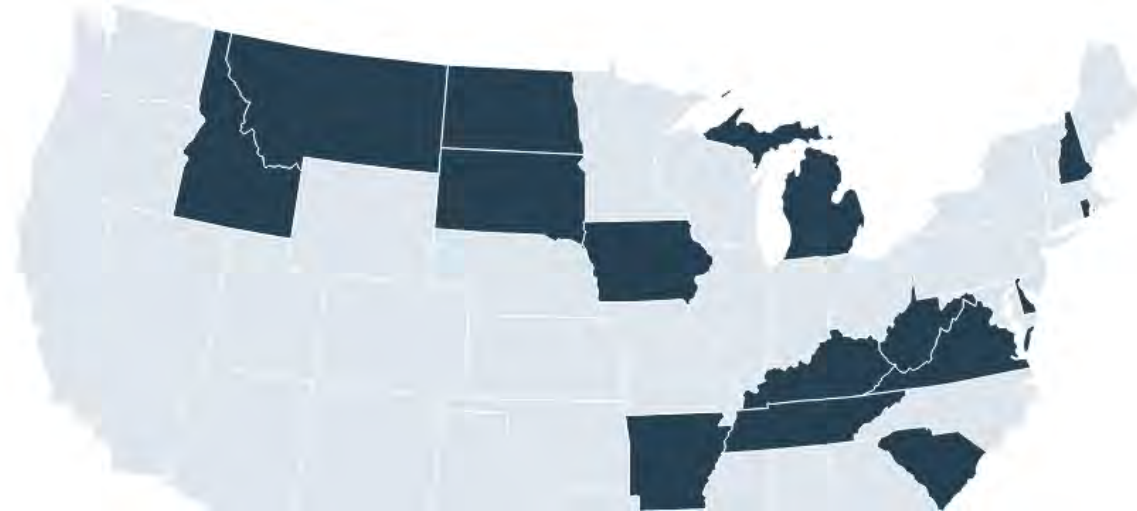
NATIONAL INCIDENT-BASED REPORTING SYSTEM

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 ¹, sodomy ², sexual assault with an object ³, and fondling ⁴. 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.

Click a state to create report

click another state to refresh



What can NIBRS tell us about sexual assault?

In 2015 in Virginia—

- **24%** of all violent victimizations involved a sexual assault; the percentage was higher for females (**21%**) than for males (**4%**).
- There were **62.6 sexual assault victimizations per 100,000** persons; the rate was **5 times** higher for juveniles (**169.7**) than for adults (**30.9**).
- The average age of sexual assault victims was **13 years** for males and **20 years** for females.
- **94%** of sexual assault victimizations were committed by someone the victim knew.

Contents:

- ▶ Part 1: Violent Victimization That Involved a Sexual Assault
- ▶ Part 2: Characteristics of Sexual Assault Victims and Incidents
- ▶ Part 3: Rates of Sexual Assault Victimization, by Victim Demographics
- ▶ Part 4: Clearance and Arrest

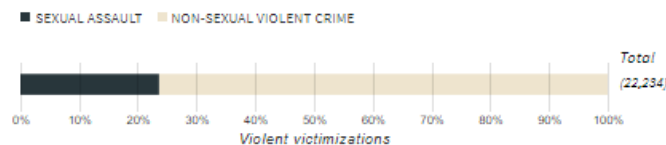
What can NIBRS tell us about sexual assault?

Nearly one-quarter of all violent victimizations ⁱ recorded by law enforcement in Virginia involved a sexual assault offense of rape, sexual assault with an object, sodomy, or fondling.

Violent victimizations that involved a sexual assault, Virginia, 2015

Hover over bars for more detail.

Hover over a category in legend to isolate that category.



Note: See [Methodology](#) for description of [sexual assault victimizations](#) and [non-sexual violent crime victimizations](#). Bureau of Justice Statistics, based on data from the Federal Bureau of Investigation, National Incident-Based Reporting System, 2015.

[Download chart data](#)

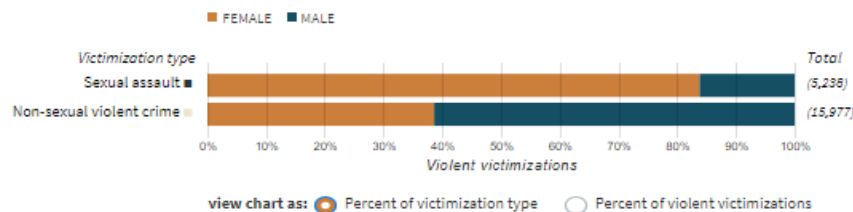
Most sexual assaults—84%—were against a female victim, while males were the majority—61%—of victims of non-sexual violent crimes, such as robbery, aggravated assault, kidnapping, and homicide.

In 2015, sexual assaults against females made up a sizeable portion—about 21%—of all violent victimizations recorded by Virginia law enforcement agencies.

Violent victimizations that involved a sexual assault, by victim sex, Virginia, 2015

Hover over bars for more detail.

Hover over a category in legend to isolate that category.



Note: Excludes 1,019 violent victimizations for which victim sex is unknown. See [Methodology](#) for description of [sexual assault victimizations](#) and [non-sexual violent crime victimizations](#). Bureau of Justice Statistics, based on data from the Federal Bureau of Investigation, National Incident-Based Reporting System, 2015.

[Download chart data](#)

What can NIBRS tell us about sexual assault?

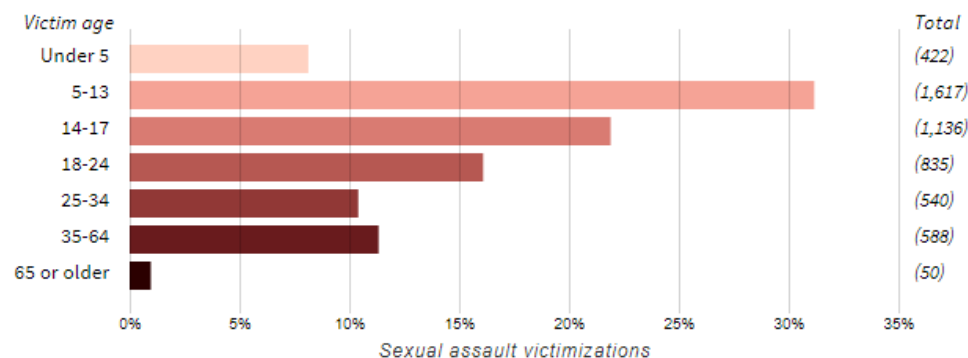
Family members committed over two-thirds (69%) of all sexual assaults against young children under age 5 and over half (53%) of those against children ages 5 to 13. Most sexual assaults against victims age 14 or older were committed by friends and acquaintances.

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Sexual assault victimizations, by victim age, Virginia, 2015

Hover over bars for more detail.

Hover over a category in legend to isolate that category.



Select a view: Victim age by-

VICTIM-OFFENDER RELATIONSHIP

OFFENSE TYPE

VICTIM SEX

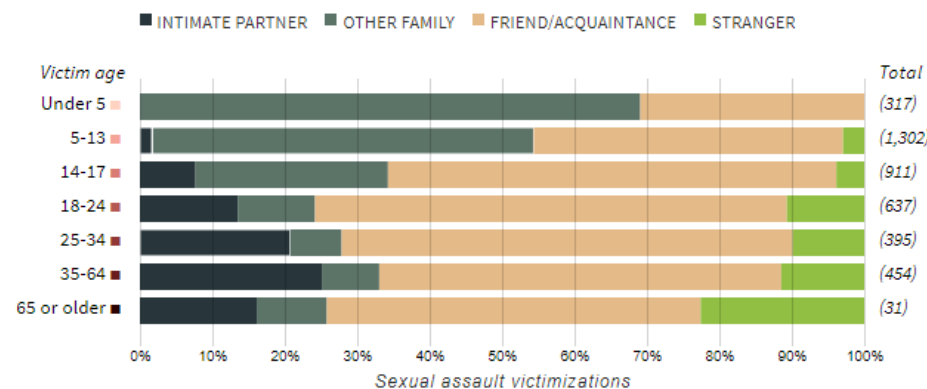
reset

Note: Excludes 63 sexual assault victimizations for which victim age is unknown. Bureau of Justice Statistics, based on data from the Federal Bureau of Investigation, National Incident-Based Reporting System, 2015.

Sexual assault victimizations, by victim age and victim-offender relationship, Virginia, 2015

Hover over bars for more detail.

Hover over a category in legend to isolate that category.



view chart as: Percent of victim age Percent of sexual assault victimizations

Select a view: Victim age by-

VICTIM-OFFENDER RELATIONSHIP

OFFENSE TYPE

VICTIM SEX

reset

Note: Excludes 63 sexual assault victimizations for which victim age is unknown and 1,163 sexual assault victimizations for which victim-offender relationship is unknown. See [Methodology](#) for description of [victim-offender relationship categories](#). Bureau of Justice Statistics, based on data from the Federal Bureau of Investigation, National Incident-Based Reporting System, 2015.

BJS Efforts to Develop an Online NIBRS Data Analysis Platform

- **NCS-X Data Dashboard – under development**
 - Online data analytics platform for users to analyze and visualize data.
 - Built via Tableau.
 - Create and download custom data files.
 - Access victimization and crime incident rates for specific population groups.
 - Future goal: To provide public health and socioeconomic data for NIBRS reporters in an effort to contextualizes levels and trends in crime and victimization.

NIBRS DATA

Data Visualizations

NIBRS Reporters

Contextual Data

National Estimates

About

Contact

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.

INCIDENTS | INDIVIDUAL VICTIMS | COMMERCIAL VICTIMS | OFFENDERS | CLEARANCE AND ARRESTS | FIREARMS | BIAS MOTIVATIONS | VICTIM-OFFENDER RELATIONSHIPS | ANALYTICS ON DEMAND
NIBRS REPORTERS

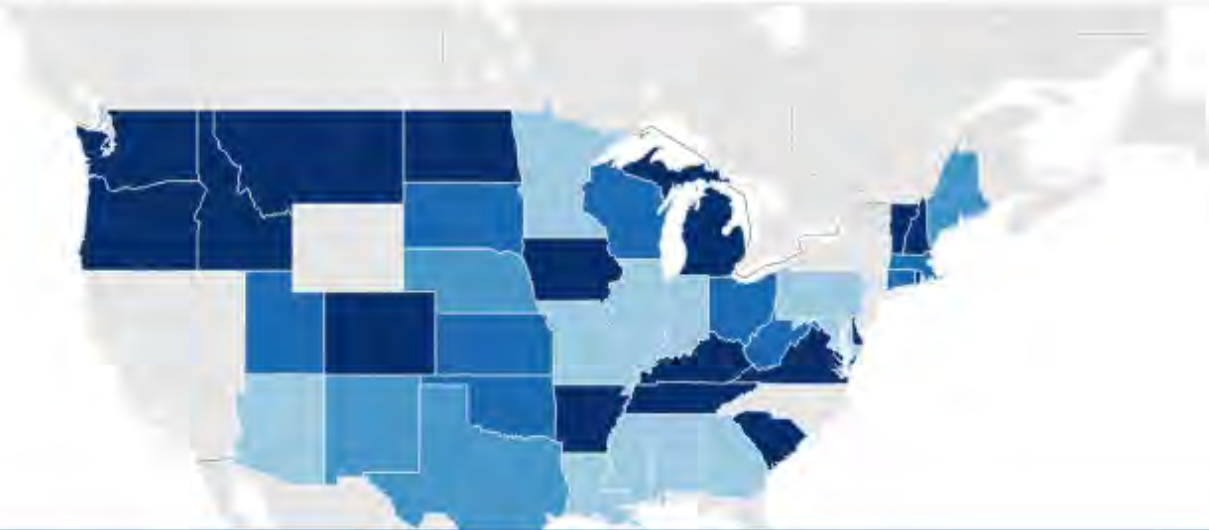
CRIME VIEW | VICTIM VIEW
TREND VIEW

5,708,928
Incidents

GEOGRAPHY

State Major Reporting Agencies

Reporting States, 2018



Filters

Base Filters

Victim Filters

Relationship Filters

RESET VIEWS | DOWNLOAD F

Unit of Anal...

Count
 Percent

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[INDIVIDUAL VICTIMS](#)
[COMMERCIAL VICTIMS](#)
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[NIBRS REPORTERS](#)

[CRIME VIEW](#)
[VICTIM VIEW](#)
[TREND VIEW](#)

1,280,912
Incidents

Filters

Base Filters ▼

Victim Filters ▼

Relationship Filters ▼

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Unit of Analysis...

- Count
 Percent

State
 Major Reporting Agencies

Major Reporting Agencies, 2018



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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 INDIVIDUAL VICTIMS COMMERCIAL VICTIMS OFFENDERS CLEARANCE AND ARRESTS FIREARMS BIAS MOTIVATIONS VICTIM-OFFENDER RELATIONSHIPS ANALYTICS ON DEMAND NIBRS REPORTERS

CRIME VIEW VICTIM VIEW TREND VIEW

379,568

Incidents

Filters ⓘ

Base Filters ▾

Victim Filters ▾

Relationship Filters ▾

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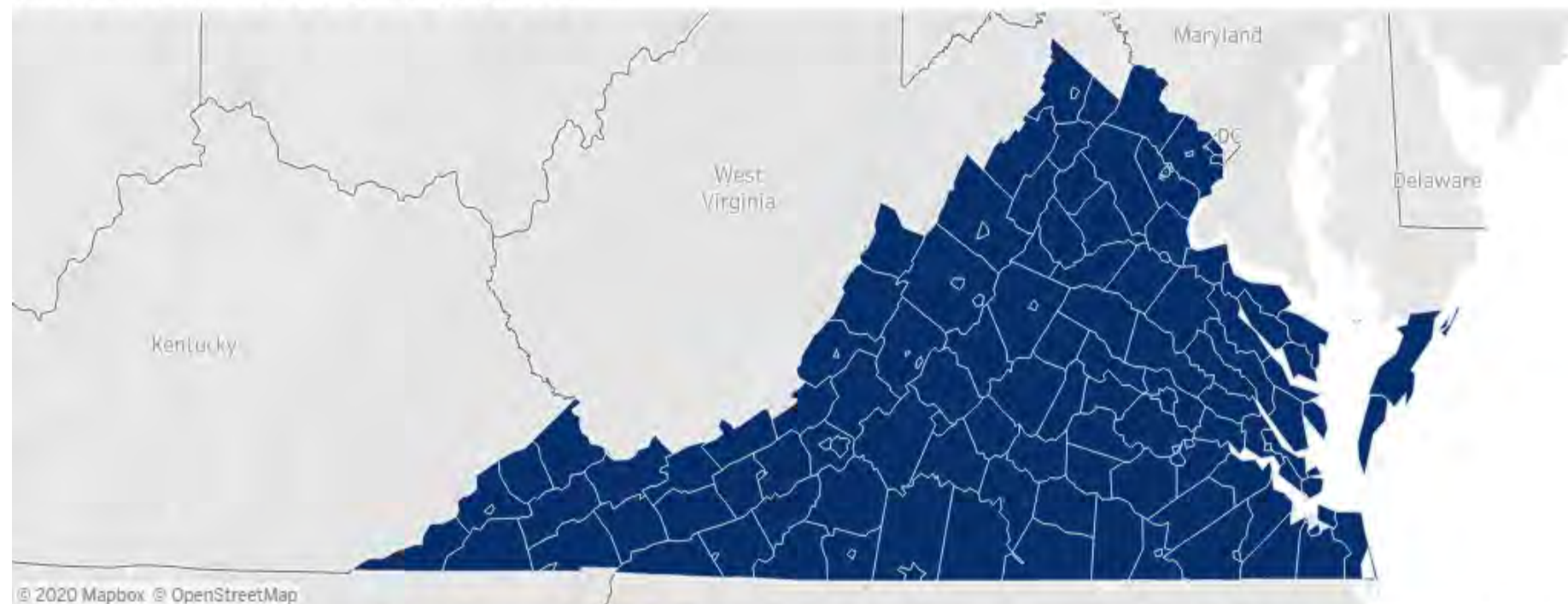
Unit of Analysis... ⌵

- Count
- Percent
- Rate

State County MSA

GEOGRAPHY ⓘ

Reporting Counties, Virginia (All), 2018



© 2020 Mapbox © OpenStreetMap

Filter Summary: Data Year (2018), State (Virginia), 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)

Incidents, Data Year and Victim Age by Offense Category and Relationship Status

Data Year	Victim Age	Offense Category Relationship Status				
		Friend or Acquaintance Relationship	Intimate Partner	Other Family	Other/Unknown	Stranger
2017	Age 1-4	85.0	3.0	177.0	51.0	2.0
	Age 5-14	751.0	74.0	687.0	297.0	36.0
	Age 15-17	476.0	44.0	175.0	156.0	42.0
	Age 18-24	482.0	92.0	72.0	138.0	89.0
	Age 25-34	273.0	126.0	39.0	102.0	63.0
	Age 35-64	254.0	125.0	36.0	133.0	55.0
	Age 65 and Older	21.0	1.0	9.0	19.0	5.0
2018	Age 1-4	78.0	1.0	184.0	36.0	2.0
	Age 5-14	815.0	83.0	833.0	325.0	41.0
	Age 15-17	475.0	56.0	188.0	120.0	27.0
	Age 18-24	552.0	105.0	75.0	169.0	80.0
	Age 25-34	331.0	121.0	49.0	114.0	65.0
	Age 35-64	282.0	144.0	34.0	129.0	68.0
	Age 65 and Older	24.0	6.0	4.0	15.0	2.0

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)

Count
 Rate
 Table
 Map

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Incidents, State and Offense Category by Data Year and Victim Sex

			Data Year Victim Sex			
			2018			
			Female	Male	Unknown	
State	Offense Category	Montana	Assault Offenses	5,245	4,579	109
			Sex Offenses	1,172	183	17
		North Dakota	Assault Offenses	4,638	3,734	41
			Sex Offenses	844	101	4
		Virginia	Assault Offenses	50,778	38,059	386
			Sex Offenses	5,127	785	15

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)