



Bureau of Justice Statistics

# Generating National Estimates of Crime Using NIBRS Data: Understanding the Transition

October 4, 2022  
3:00pm – 4:30pm ET

# Agenda

- **Welcoming Remarks & Introductions**  
**Alex Piquero**, Director, BJS
- **National Incident-Based Reporting System (NIBRS) Transition and Estimation Update**  
**Edward L. Abraham**, Unit Chief, Criminal Justice Information Services Division, FBI
- **The Transition to Incident-Based Crime Reporting through NIBRS**  
**Erica L. Smith**, Chief, Law Enforcement Incident-Based Statistics Unit, BJS
- **Q&A Session**  
**Kevin M. Scott**, Deputy Director, Statistical Operations, BJS



Bureau of Justice Statistics

# National Incident-Based Reporting System (NIBRS) Transition and Estimation Update



Crime and Law Enforcement  
Statistics Unit Chief  
Edward L. Abraham

October 4, 2022



# 2021 CRIME in the NATION



## CRIME in the NATION Uniform Crime Reporting October Release of 2021 Data



### Data included and where to find it.



### Data not included for 2021 due to NIBRS transition

5-, 10-, and 20-Year Offense Trends  
5- and 10-Year Arrest Trends



\*The NIBRS Master File and the converted datasets used to create summary tables are available for download on the FBI's Crime Data Explorer at <https://crime-data-explorer.fr.cloud.gov/>.



09/30/2022





# Crime in the United States, 2021

- *Crime in the United States (CIUS)* has been the traditional snapshot of four violent crimes and four property crimes.
  - *CIUS* violent crimes: murder and non-negligent manslaughter, rape, robbery, aggravated assault
  - *CIUS* property crimes: burglary, larceny-theft, motor vehicle theft, arson
- *CIUS, 2021* will be an abridged release based on reports from agencies that submitted 12 months of complete NIBRS data.
- The submitted NIBRS data were converted to summary data, as was collected by the Summary Reporting System.



# NIBRS, 2021

- This report is based on data from agencies that submitted one or more months of NIBRS data.
- Tables with aggregate data include submissions from agencies that reported one or more months of NIBRS data.
- Tables with agency-level data include submissions from agencies that reported 12 months of complete NIBRS data.



# NIBRS Estimates, 2021

- The NIBRS Estimation Process was developed to make inferences about the rich information submitted on crime incidents reported through NIBRS.
- NIBRS data includes hundreds of indicators.
  - To better focus the data, certain indicators were reviewed among multiple stakeholders and prioritized for estimation.
- This release is based on data from agencies that submitted three or more months of data.
- This release includes 108 comma separated value (CSV) files
  - Users can import the CSV files into different software applications to study various data aspects.

# The Transition to the NIBRS: A comparison of 2020 and 2021 NIBRS Estimates



- The NIBRS estimation methods were applied to the 2020 data to produce 2020 estimates.
- This gave the FBI the ability to produce a year-over-year comparison of violent and property crime for the nation, region, and where possible, state.
- In addition to discussing trends, this report highlights the improvements available to the nation's understanding of crime and its characteristics using 2021 estimates.





# Estimation and Trend Analysis

- The recent transition to the more complex NIBRS-only collection method has resulted in lower participation by law enforcement agencies (LEAs), causing a heavier reliance on estimations for the 2021 data.
- NIBRS participation is showing steady growth with a positive trend over the past six years.
- The FBI's Uniform Crime Reporting (UCR) Program will continue to offer transitional support to LEAs with the goal to increase reported data for a more comprehensive national view of crime.
  - Continue to engage state UCR programs and collaborate with all LEAs
  - Continue to message importance of NIBRS
  - Continue to engage with major law enforcement organizations



Bureau of Justice Statistics

# Establishing New Methods for Estimating Crime in the U.S.

## The Transition to Incident-Based Crime Reporting through NIBRS

**Erica L. Smith**, Unit Chief

Law Enforcement Incident-Based Statistics Unit

Bureau of Justice Statistics, Office of Justice Programs

October 4, 2022

# National Crime Statistics Exchange (NCS-X) and the NIBRS Transition

On January 1, 2021, the FBI UCR Program fully transitioned law enforcement crime reporting to the National Incident-Based Reporting System (NIBRS)

The National Crime Statistics Exchange (NCS-X) supported the NIBRS transition by:

1. Creating a partnership between BJS and the FBI for funding, technical assistance, training, and other resources
2. Supporting state UCR programs and local law enforcement agencies to transition to NIBRS reporting – invested approximately \$120 million in funding since FY2015
3. Developing methodologies and procedures by which national, regional, and state level crime estimates can be produced
  - BJS-funded the NIBRS Estimation Project - established to develop, test, and implement procedures on which national estimates of crime using NIBRS data will be based
  - The NIBRS Estimation Project is a full partnership with the FBI – we meet approximately 4 times a month and coordinate on communications planning and project documentation



# Comparing Summary Reporting to NIBRS

## KEY DIFFERENCES BETWEEN SRS AND NIBRS—A BRIEF PRIMER

SRS	NIBRS
» Outdated, 90-year-old system of counting crime that does not meet the needs of 21st-century policing	» Modern system capturing the detailed information necessary for making informed decisions about crime
» Limited to an aggregate monthly tally of crime	» Captures circumstances and context for crime in addition to counts, providing more meaningful data
» Records limited data for 10 offense types and reported arrests for 20 additional crimes	» Collects incident-specific data for more than 50 offenses and reported arrests for 10 additional offenses
» The most serious offense in an incident is reported; additional offenses are excluded	» Includes up to 10 offenses per incident and provides a more precise account of crime
» Does not collect contextual information about the crime, the victim, or the offender	» Captures 58 data elements about the crime, including characteristics of the victim and offender, their relationship, type of injury, location, and weapons present
» Cannot be used to answer important questions about the nature of crime	» Can be used for tactical or strategic analysis at the local, state, and national levels



Bureau of Justice Statistics





Bureau of Justice Statistics

# National NIBRS Estimation System Objectives

## Primary Objectives

- Determine set of key NIBRS indicators for which accurate and reliable estimates can be produced.
- Develop population served estimates which can be split by key demographic characteristics such as age, sex and race.

## Secondary Objectives

- Produce subnational (e.g., state- and regional-level) estimates.
- Develop population served estimates for agencies traditionally classified as zero population agencies.

# Key Indicators for Estimation

## Key indicator

Critical measures prioritized for estimation

## Why these key indicators?

Identified with stakeholder input, including FBI, BJS, law enforcement executives, criminal justice and victim services practitioners, and academics

## Can the indicators change?

Yes! New indicators can be added, and existing measures can be modified, based on changes in data quality and reporting coverage, among other things.



Bureau of Justice Statistics

# Key Indicators by Offense Type

## Crimes Against Persons

- Aggravated assault\*
- Simple assault
- Intimidation
- Murder & Nonnegligent Manslaughter\*
- Negligent Manslaughter
- Kidnapping and abduction
- Sex trafficking\*
- Labor trafficking\*
- Rape\*
- Fondling
- Nonforcible sex offenses

## Crimes Against Property

- Arson\*
- Bribery
- Burglary\*
- Counterfeiting/forgery
- Destruction, damage, and vandalism
- Embezzlement
- Extortion/blackmail
- Fraud offenses
- Larceny/theft offenses\*
- Motor vehicle theft\*
- Robbery\*
- Stolen property offenses

## Crimes Against Society

- Animal cruelty
- Drug/narcotic offenses
- Gambling offenses
- Prostitution/obscene material
- Prostitution offenses
- Weapon law violations

*\*Indicates Part 1 offenses reported through summary UCR.*



Bureau of Justice Statistics

# Additional indicators

## Characteristics of Individuals

- Victim age, sex, race
- Offender age, sex, race
- Juvenile disposition
- Multiple arrest indicator
- Arrestee armed (yes/no)
- Victim-offender relationship

## Characteristics of Incidents

- Multiple offenders
- Multiple offense incident
- Population group (cities and counties combined by population size)
- Agency indicator
- Property loss
- Bias motivation type
- Location type
- Time of day
- Weapon involved
- Injury
- Cleared through arrest
- Exceptional clearance
- Gang involvement
- Officer assault type



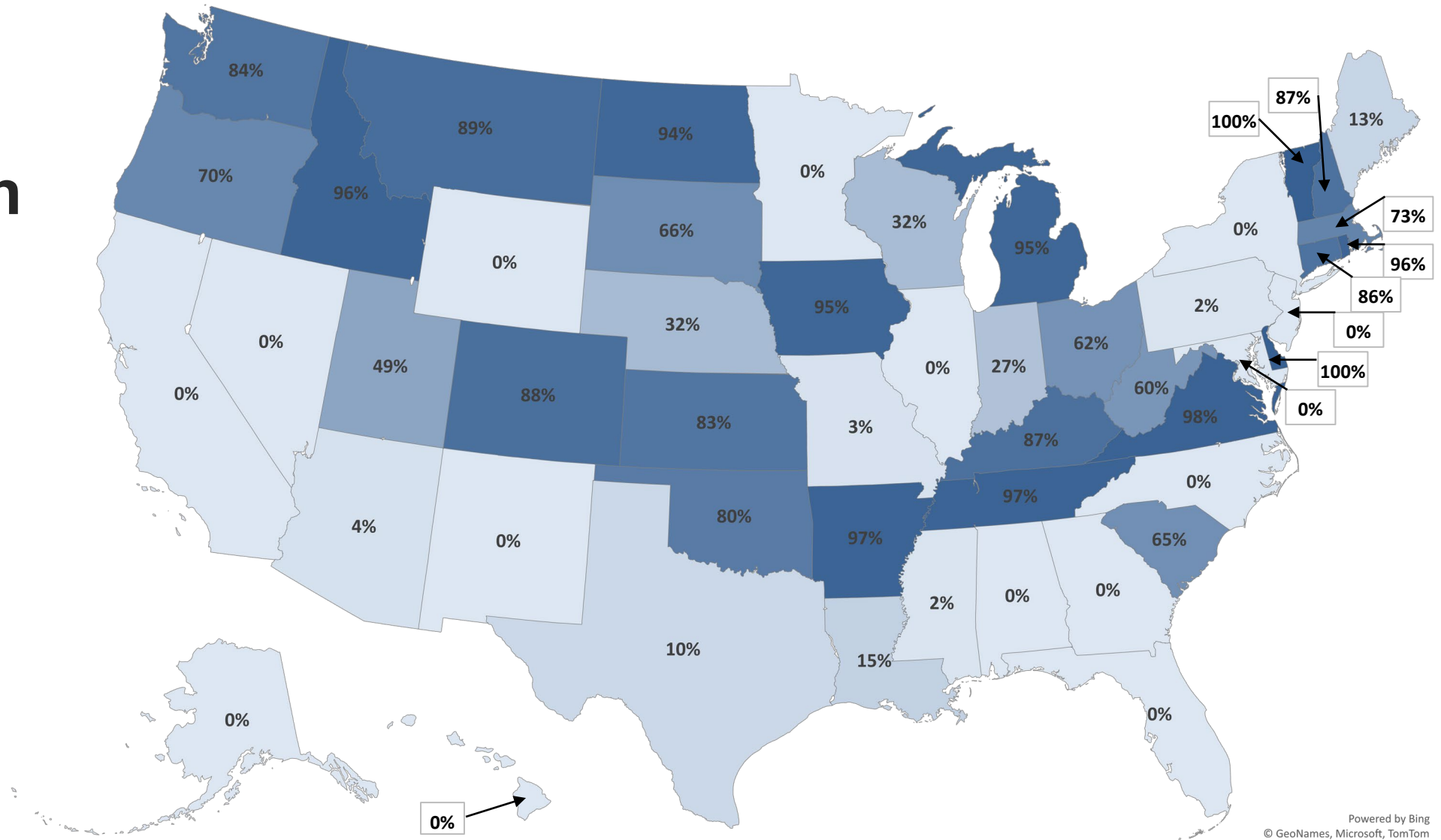
Bureau of Justice Statistics



# NIBRS Coverage

2016 NIBRS Agency Coverage  
0% 100%

**Agencies  
reporting in  
2016**



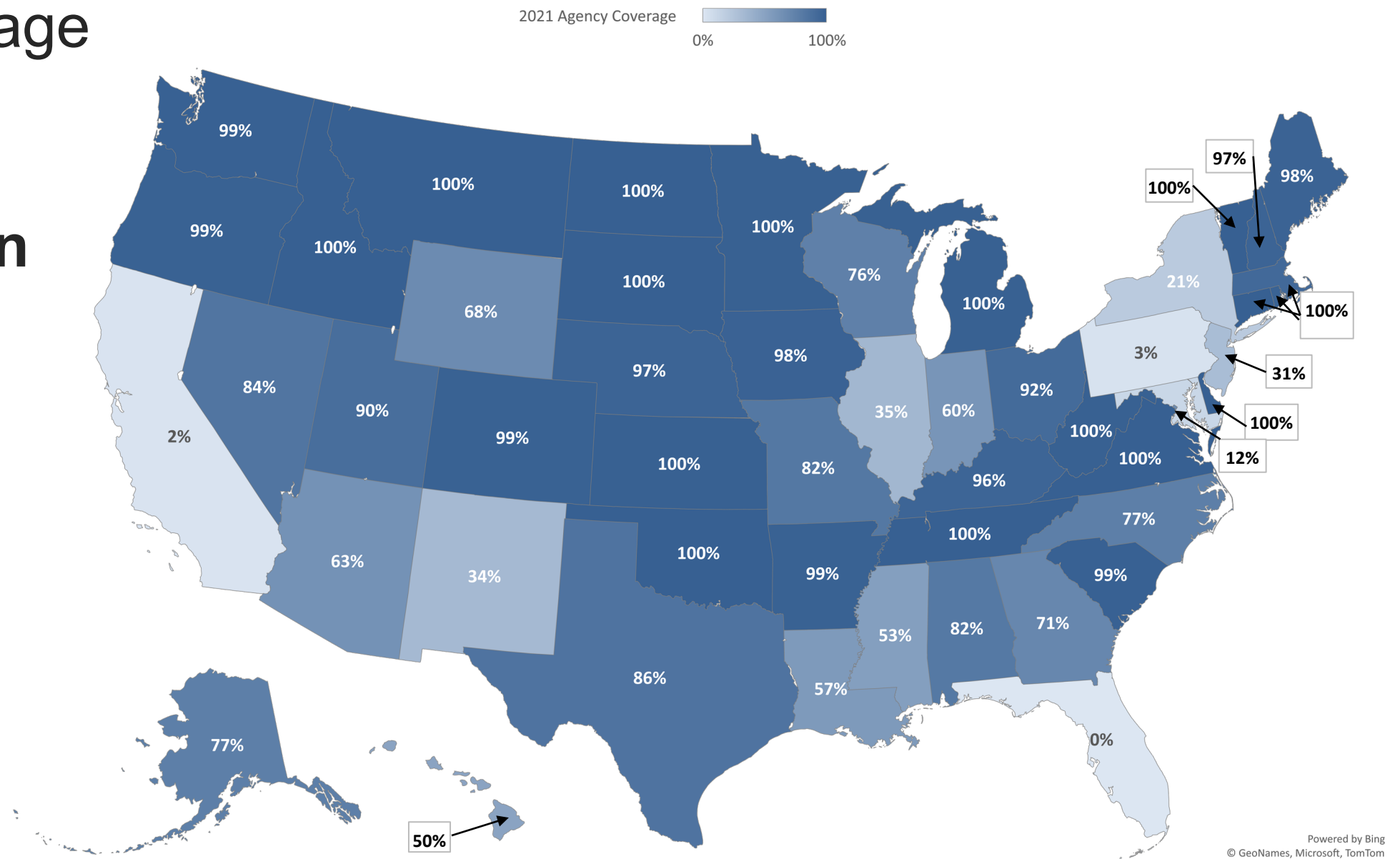
Powered by Bing  
© GeoNames, Microsoft, TomTom



Bureau of Justice Statistics

# NIBRS Coverage

## Agencies reporting in 2021



Powered by Bing  
© GeoNames, Microsoft, TomTom



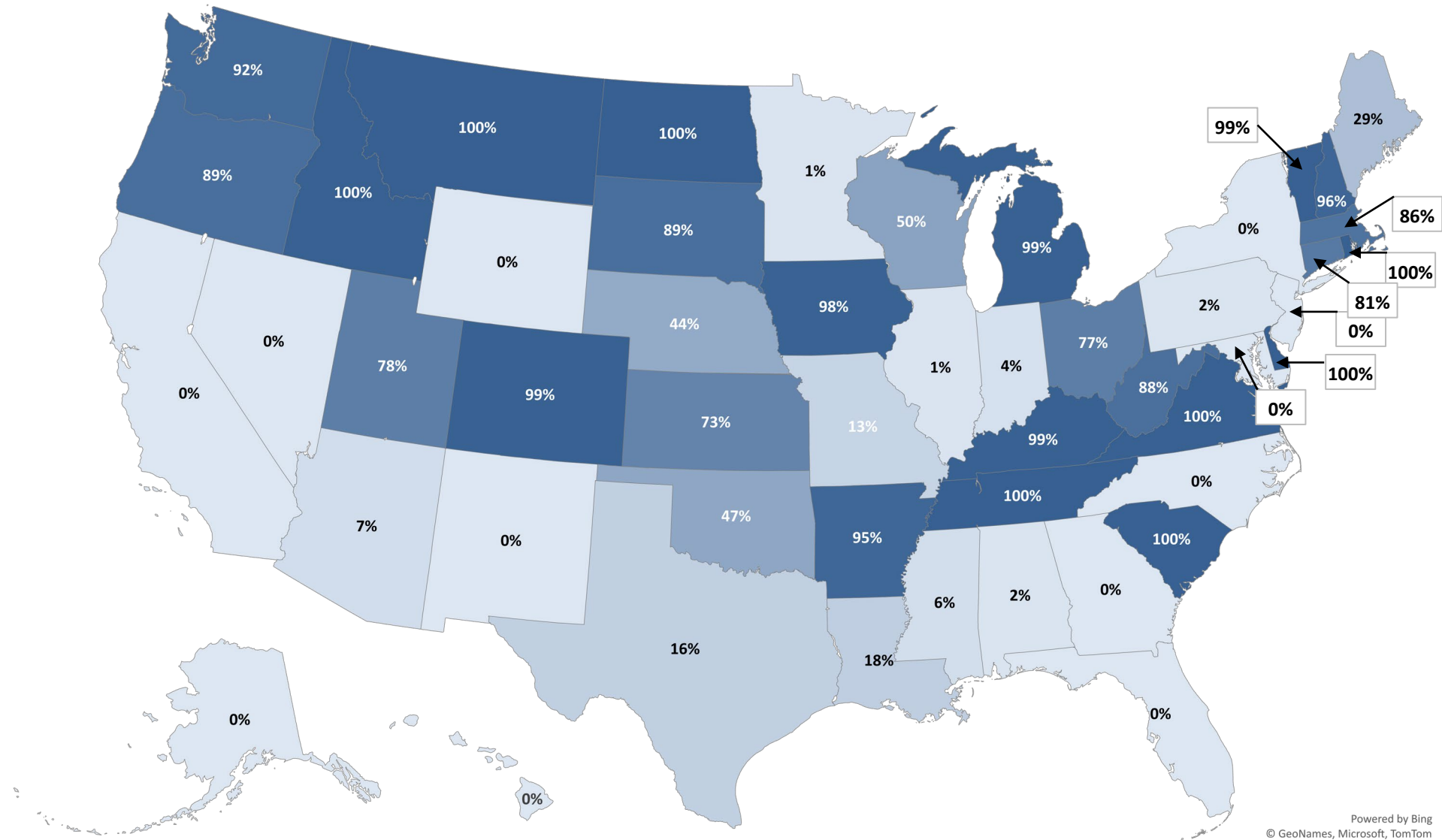
Bureau of Justice Statistics

# NIBRS Coverage

2016 NIBRS Population Coverage



**Population  
covered in  
2016**



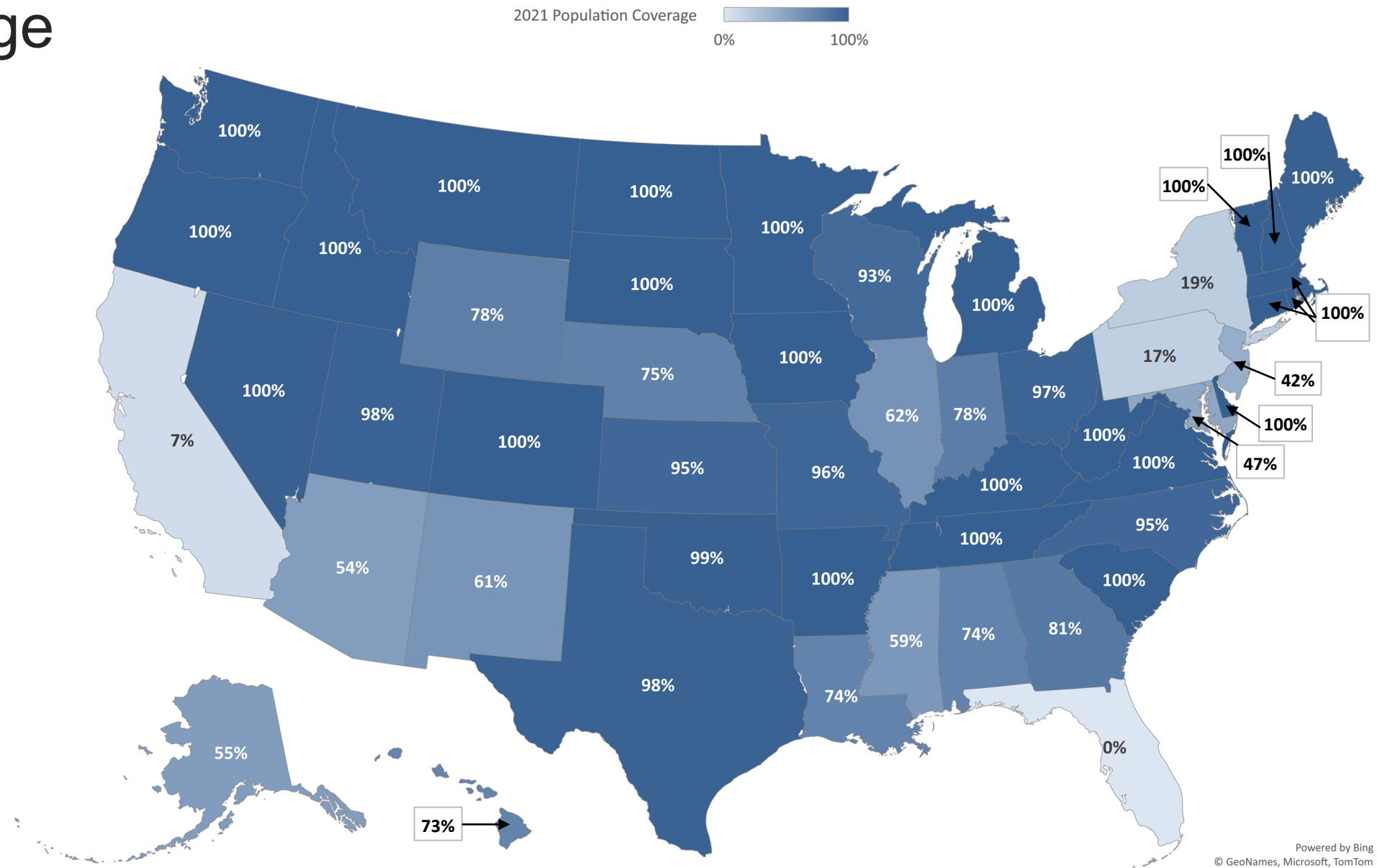
Powered by Bing  
© GeoNames, Microsoft, TomTom



Bureau of Justice Statistics

# NIBRS Coverage

## Population covered in 2021



Powered by Bing  
© GeoNames, Microsoft, TomTom



Bureau of Justice Statistics





Bureau of Justice Statistics

## Coverage rate and why it matters

- The lower the coverage rate, the greater the uncertainty in the estimate
- To understand the amount of uncertainty, we are calculating a confidence interval around each estimate
- Summary-based UCR estimates did not require a confidence interval because of the historically high coverage rates (~95%)

# Coverage: Implications for National Estimation

Some geographical areas and agency subgroups still have low coverage ratios.

- Estimates in some subgroups will be suppressed due to low precision.
- Separate weights were required to generate regional estimates.
- Coverage is expected to improve over the next few years, given NIBRS's expansion.

Using NCS-X sample structure informed the estimation procedures

- By 2020, about half of the original NCS-X sample agencies became NIBRS reporters. Most remaining agencies expected to complete transition by 2022.
- Tribal agencies are one of the big success stories of this transition, with 87% of tribal agencies reporting NIBRS data in 2021.

Precision-based suppression rules were developed to determine if an estimate can be released



Bureau of Justice Statistics

# Implication for State-Level Estimation

NIBRS expansion progress varies greatly by state and will change dramatically in future years.

- 33 states have more than 80% coverage; 2 states have less than 15% coverage
- California, Florida and New Jersey are expected to have significant expansion in 2022

In general, higher coverage rates are better for state-level estimation

- Work was completed to assess which states had sufficient coverage in 2021 to produce state-level estimates
- The assessment determined:
  - If state-level estimates could be generated without all the largest agencies reporting
  - If tribal law enforcement agencies were critical to state-level estimates in certain states



# How Estimation “Changes” Reported Crime Statistics

## Improvements

- Counts all offenses in a crime incident
- Provides a more complete picture of reported crime
- Captures details on the characteristics of each crime incidents

## Major Differences

- Reduced number of reporting agencies
- Suppression of some estimates will occur
- Estimates will be expressed with associated confidence intervals



Bureau of Justice Statistics



# Q&A Session

Please type your questions into the Q&A  
selecting All Panelists



Bureau of Justice Statistics