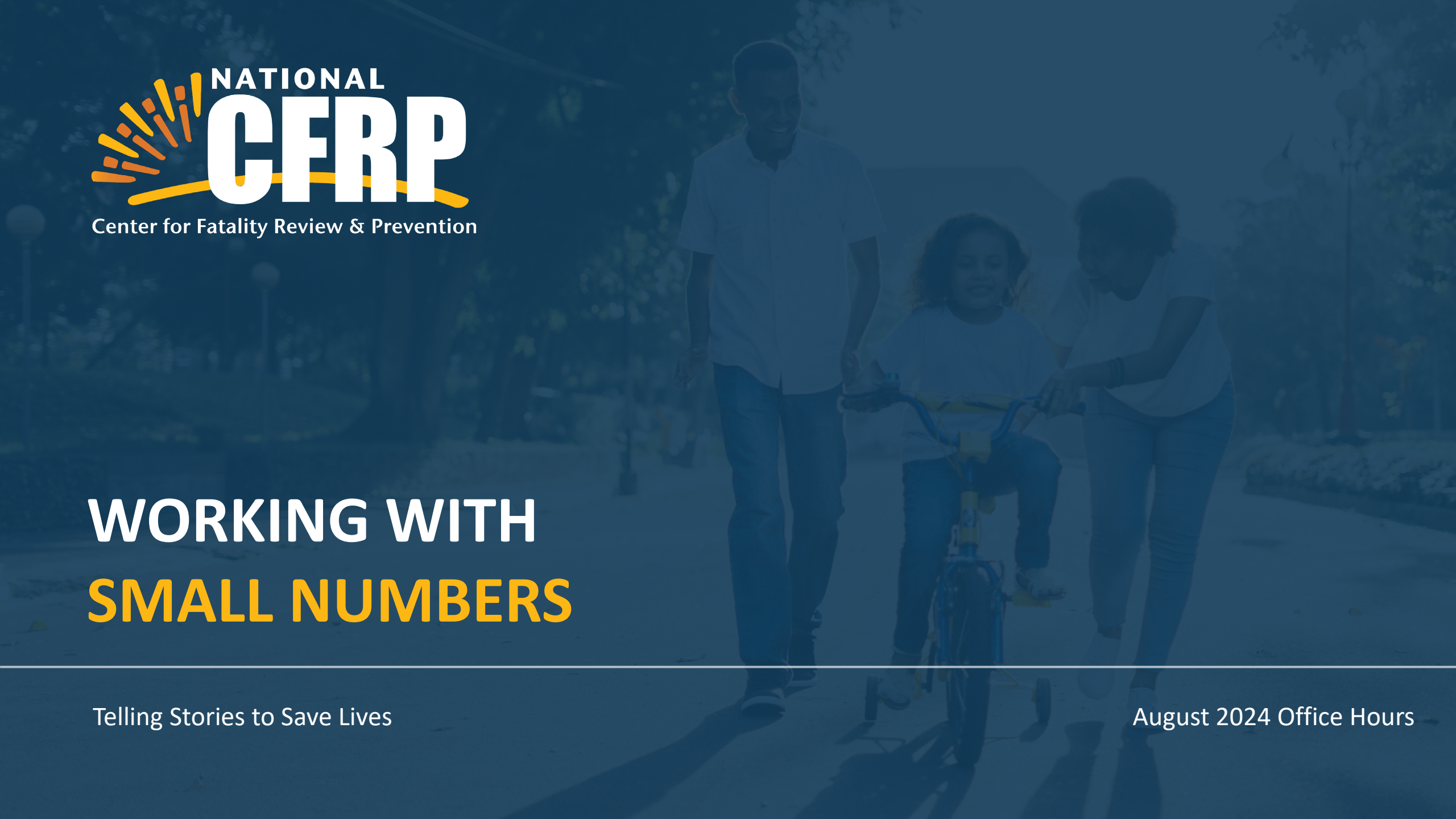

NATIONAL CFRP
Center for Fatality Review & Prevention

WORKING WITH SMALL NUMBERS

Telling Stories to Save Lives

August 2024 Office Hours

Key Funding Partner

Federal Acknowledgement

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Icebreaker

Please Put in the Chat

- Name and pronouns, if comfortable sharing
- What state/jurisdiction are you from?
- What is your favorite way to cool off in the summer?

What to Expect Today

August Office Hours

SMALL NUMBERS MATTER

Small changes can lead to less certainty

EQUITY IN ANALYSIS AND DISSEMINATION

Suppression or exclusion of small numbers can lead to underrepresentation and/or misinterpretation

SUPPLEMENTAL DATA SOURCES

Supplement fatality review data with other sources

Sample Size

In fatality review, we often can't use standard ways of increasing our sample size, other than combining years of data when possible

Representativeness

We often can't say with certainty that our reviews are representative of the larger population

Denominators

Most fatality review teams don't have information about the times a behavior was present in the population but did not result in death

Underrepresentation

Collapsing categories together hides categories with smaller counts

WHY IT MATTERS

Small Numbers

Challenges

- Small changes in small numbers can result in erroneous interpretations
    - For example, small changes by one or two deaths may cause large changes in a percentage or a rate calculation
- We must balance confidentiality considerations with concerns about underrepresenting populations in our data

Increasing Sample Size

Traditional Approaches

- The traditional strategies in data and research for overcoming small numbers are to:
  - Gather a larger sample
  - Oversample an underrepresented population
  - Weight cases
- Whether you're a jurisdiction that reviews all deaths or not, these strategies often aren't available or feasible in the context of fatality review

Cell Suppression Rules

Impact on Representation

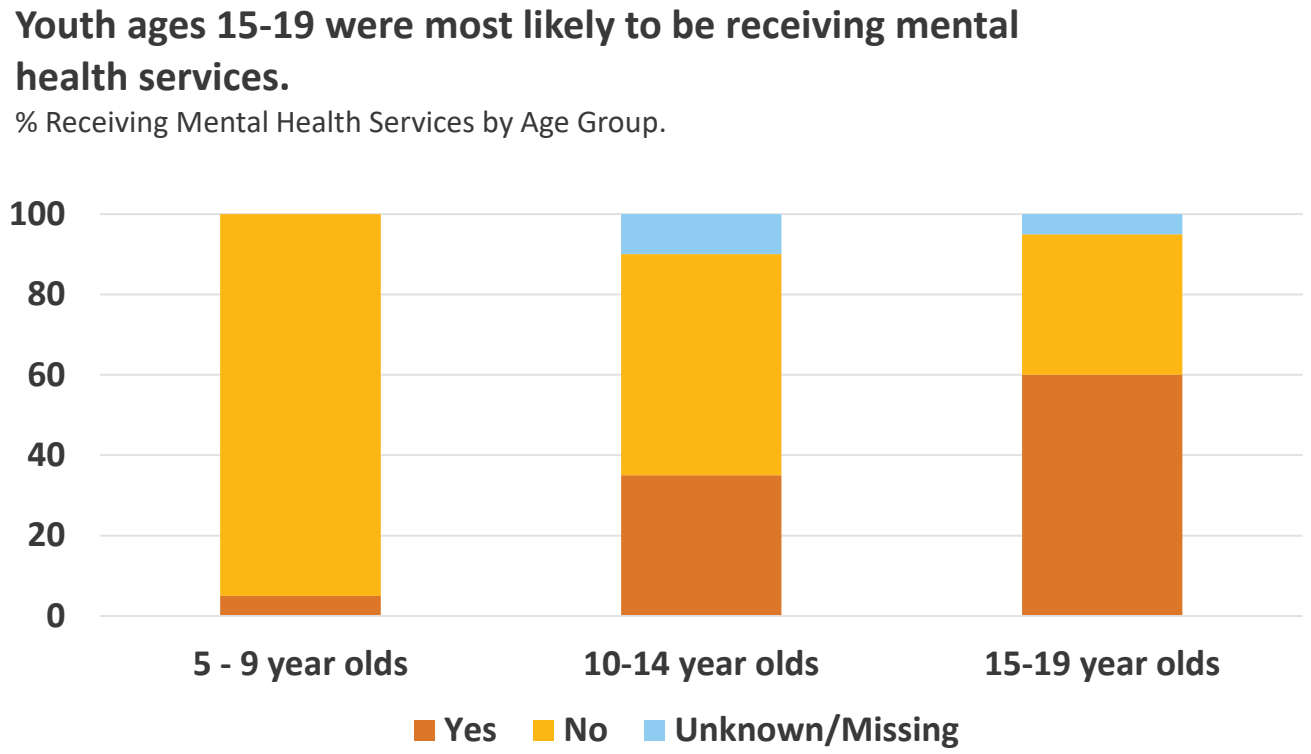
- Most analysts are guided by cell suppression policies at their agency
- Policies vary, suppressing counts as few as one to as many as 20
- Sometimes suppression guidelines vary within the same agency, depending on the type of data being presented
- **We must follow these policies, yet balance wanting to represent and honor all children, impacted families and communities**


Do you experience any of these challenges? What other small number challenges do you face?

Overcoming Cell Suppression

Presenting in a bar chart

Idea: Present percentages without total counts.
This ensures the viewer cannot back-calculate small numbers



Note: Charts use fake data.

Overcoming Cell Suppression

Presenting in a table

Idea: Present percentages without total counts.
This ensures the viewer cannot back-calculate small numbers

Youth ages 15-19 were most likely to be receiving mental health services.

% Receiving Mental Health Services by Age Group.

	Yes	No	Unknown
5-9 years	5%	95%	0%
10-14 years	35%	55%	10%
15-19 years	60%	35%	5%

Note: Charts use fake data.

Overcoming Cell Suppression

Collapse categories, if it makes sense

Idea: Whenever possible, it is best to disaggregate groups. However, it sometimes makes sense to combine groups to avoid suppression

Race	Raw Data (N)	How It Would Display*
Alaska Native	4	*
American Indian	2	*
Asian	7	7
Black	15	15
Multiracial	10	10
Native Hawaiian	3	*
Pacific Islander	5	*
White	25	25

*Following suppression rules of <6.

Race	Raw Data (N)	How It Would Display*
American Indian/ Alaska Native*	6	6
Asian	7	7
Black	15	15
Multiracial	10	10
Native Hawaiian/ Pacific Islander*	8	8
White	25	25

*Groups combined to avoid suppression.

Note: Charts use fake data.

Equity Considerations

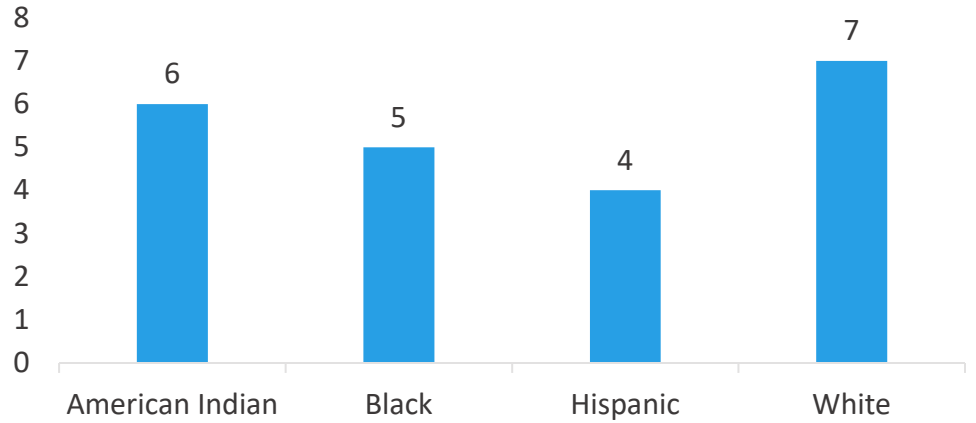
Another Small Numbers Challenge

- Small cells sizes might be found for minoritized populations that need to be visible in the data
- Plus, some information (e.g., sexual orientation, gender identity) is challenging to collect through death scene investigation
- Because of these limitations:
    - Many charts on race and ethnicity only show white, Black, and Hispanic/Latinx people
    - Many charts showing breakdowns by gender neglect nonbinary and transgender people by only presenting males and females

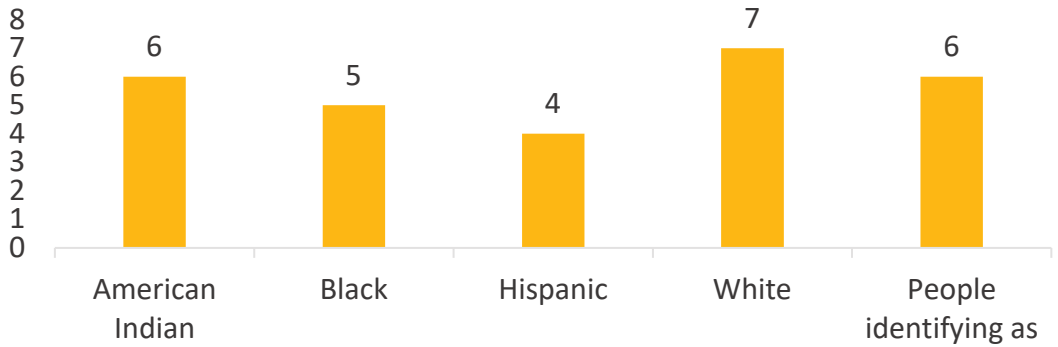
Consider Missing Groups and Don't "Other"

Ideas:

- Disaggregate, whenever possible
- Be transparent. Use footnotes in tables/charts to show groups for which data were collected but are not shared
- Avoid lumping groups with small cell sizes into an "other" category. Instead, suppress or use an alternative label
  - For race/ethnicity, alternative labels include: another race, additional groups, people identifying as other or multiple races



Please note that data were collected for Alaska Native, Asian, Multiracial, Native Hawaiian, and Pacific Islander children. However, these data were suppressed to protect confidentiality.



*Due to small numbers, category includes Alaska Native, Asian, Multiracial, Native Hawaiian, and Pacific Islander children.

Note: Charts use fake data.

Utilize Supplemental Data Sources

To Tell a Story

- When challenged by small numbers and cell suppression, you might still want to say something about that suppressed group
- Be transparent in a report or presentation about challenges with data collection (e.g., misclassification of race and ethnicity, collection of sexual orientation and gender identity information)
- Follow-up with what we DO know from supplemental data sources, in lieu of being able to share data from fatality review

Supplemental Data Sources *(not exhaustive)*

Fill Gaps and Provide Context

- Youth Risk Behavior Survey (YRBS)
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- Behavioral Risk Factor Surveillance System (BRFSS)
- CDC WISQARS and CDC WONDER
- U.S. Census
- School Health Profiles
- National Survey of Children's Health (NSCH)
- U.S. National Survey on the Mental Health of LGBTQ Young People (The Trevor Project)
- LGBTQ School Climate Survey (GLSEN)
- Medicaid Claims
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Hospitalization Data
- Other state-specific sources, including state vital records
- Peer-reviewed literature

Utilizing Supplemental Data

A State Example

While CFPS does attempt to collect SOGI information, there are notable challenges for CFPS and other mortality data systems to accurately capture this information. As a result, little is known about causes of death in LGBTQ+ people. This has long hindered efforts to understand and prevent these deaths. There are multiple factors that directly affect collection of SOGI data at the time of death. The ability of medicolegal death investigators to collect SOGI information is reliant on the knowledge of friends or family of the young person, who are the key reporting sources for coroner and law enforcement investigators. In many cases, the young person who died may have identified as LGBTQ+ but were not open about their identity.

Be transparent about the challenges to collecting sexual orientation and gender identity information

Bring in state level, supplemental data

Although CFPS faces challenges in collecting data about sexual orientation and gender identity, there are other data sources in Colorado to provide information about risky driving behaviors by sexual orientation and gender identity. The Healthy Kids Colorado Survey (HKCS) is Colorado's only comprehensive survey on the health and well-being of young people.

Similar to national data, HKCS data show that substance use while driving is a bigger risk and concern for LGBTQ+ youth in Colorado when compared to heterosexual and cisgender youth

Source: Child Fatality Prevention System: Motor Vehicle Death Data, 2016-2020

Sharing Rates Based on Small Numbers

Some Practices

- For programs that can use their data to calculate rates, you may want to report a rate that is calculated based on a small number (<20)
- However, these rates are unstable, often with wide confidence intervals
- You may choose to publish the rate with a note about stability and to interpret cautiously
- You may also choose to publish the rate alongside comparable supplemental data

Publishing Rates Based on Small Numbers

A State Example

Between 2016 and 2020, the majority of Colorado residents under age 18 who died by drowning in Colorado resided in an urban county (84.5%, n=49) and 13.8% (n=8) lived in a rural county. Although not statistically significant, the rate of drowning deaths among infants, children, and youth residing in a rural county (1.3 per 100,000 population) was higher than those residing in an urban county (0.9 per 100,000 population). Readers should interpret this data with caution, as the rural rate represents very few deaths, decreasing the stability of the rate.

A note about stability

Followed by supplemental national data and context

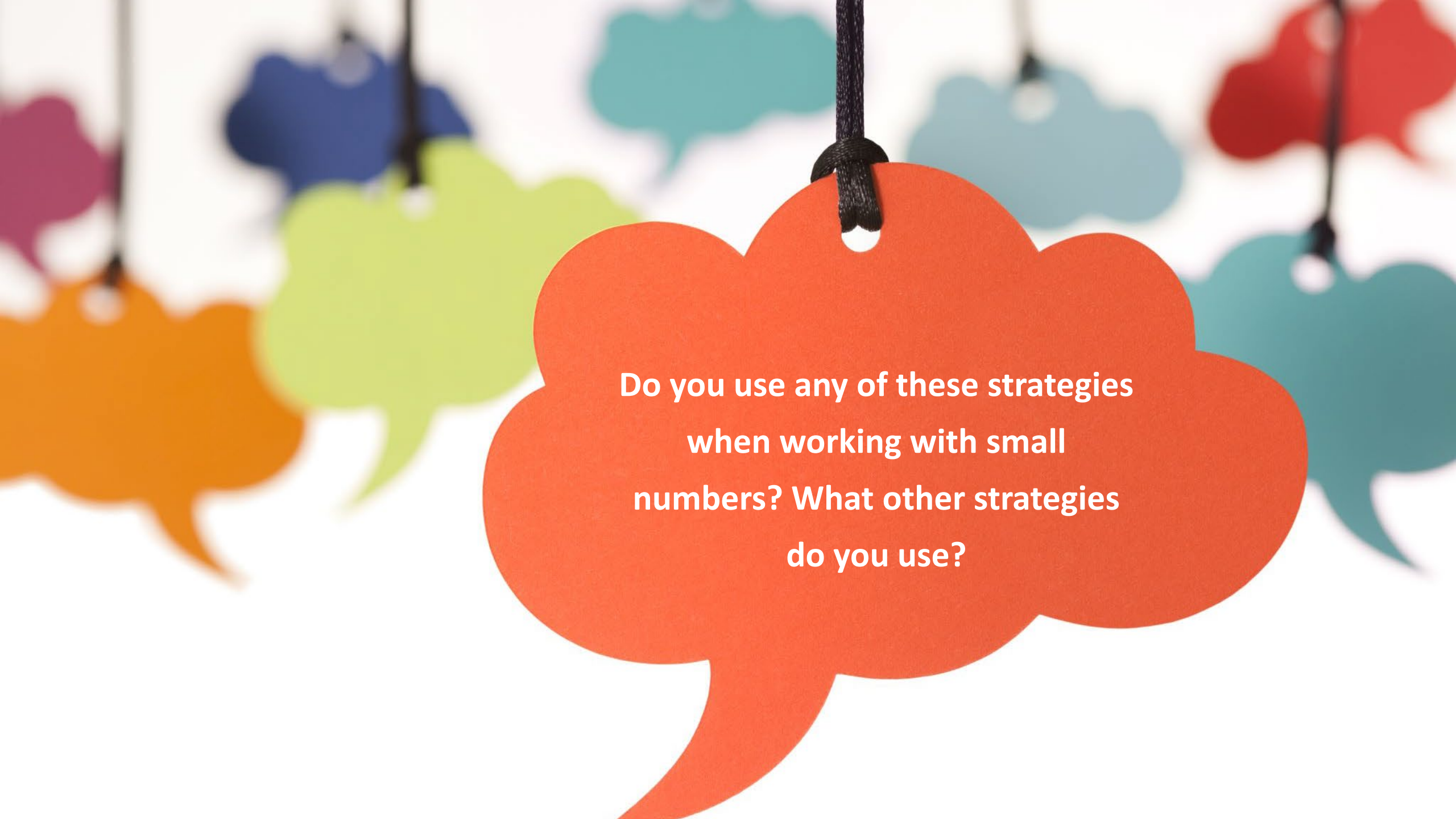
This rate data is consistent with national data showing higher drowning rates in rural areas. From 2016 to 2020 in the U.S., the most rural areas (1.7 per 100,000 population) had a drowning rate among those under age 18 that was nearly twice as high as the most urban areas (0.9 per 100,000 population).[46] These disparities may be due to increased access to open water environments in rural areas, which may not have physical barriers or warning signs about entering the water. Rural and frontier areas also experience limited access to Level 1 trauma centers and longer response times by emergency medical services to the scene of an incident,[47] which may impact emergency response to drowning incidents.

Source: Child Fatality Prevention System: Drowning Death Data, 2016-2020

Points of Consideration

Based on your own policies

- Report a child as American Indian/Alaska Native regardless of whether multiple race categories are checked (as long as the numbers meet your suppression guidelines)
- Consider whether you will report counts of 0
- Consider whether you will report small counts when the category is “Missing” or “Unknown”


Do you use any of these strategies when working with small numbers? What other strategies do you use?

OPEN DISCUSSION

How can we help you today?

Visit ncfrp.org/center-resources/office-hours/ to register and view past sessions!

Date	Topic
9/17/2024	Involving Family and Those with Lived Experience in Fatality Review
10/15/2024	Accessing Records
11/19/2024	Best Practices in Self Care
12/17/2024	Sharing Your Data: Writing Abstracts and Proposals

Upcoming topics may be subject to change.

CONTACT INFORMATION

2395 Jolly Rd., Suite 120
Okemos, MI 48864

Phone: 800-656-2434

info@ncfrp.com

www.ncfrp.org