Suicide Prevention in Tribal Communities: An Overview of Recent CDC Activities

National Academies of Sciences, Engineering, and Medicine Webinar, June 10, 2022

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Our vision: No lives lost to suicide
National Center for Injury Prevention and Control

Agenda

- **Background**
- General statistics on suicide in the U.S.
- Statistics related to AI/AN suicide
- Prior work on AI/AN suicide

- **Preliminary findings from updated analysis**

- **Recent report**
- Vital Signs

- **CDC prevention activities**

Background

Suicide and Suicidal Behavior, United States, 2020

Nearly

46,000

people died by suicide in 2020

1 death every **11** minutes

Many adults think about suicide or attempt suicide

12.2 million
Seriously thought about suicide

3.2 million
Made a plan for suicide

1.2 million
Attempted suicide

Among high school students during COVID-19:

20%
Seriously thought about suicide

15%
Made a plan for suicide

9%
Attempted suicide

https://www.cdc.gov/injury/wisqars/fatal.html

https://www.samhsa.gov/data/

https://www.cdc.gov/healthyyouth/data/abes/tables/index.htm

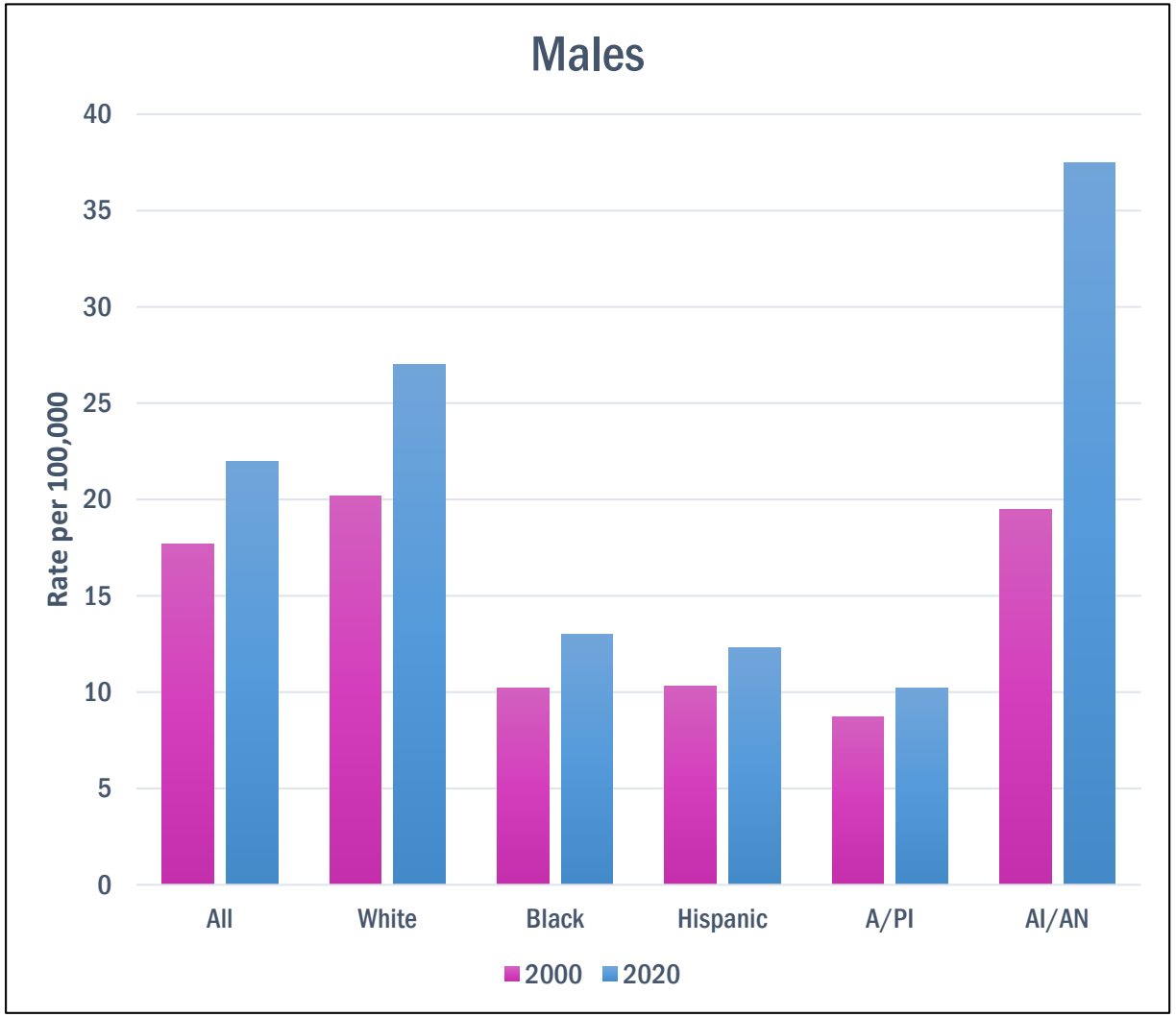
Leading Causes of Death by Age Groups 10-14 to 45-54 Years – United States, All Races/Ethnicities, 2020

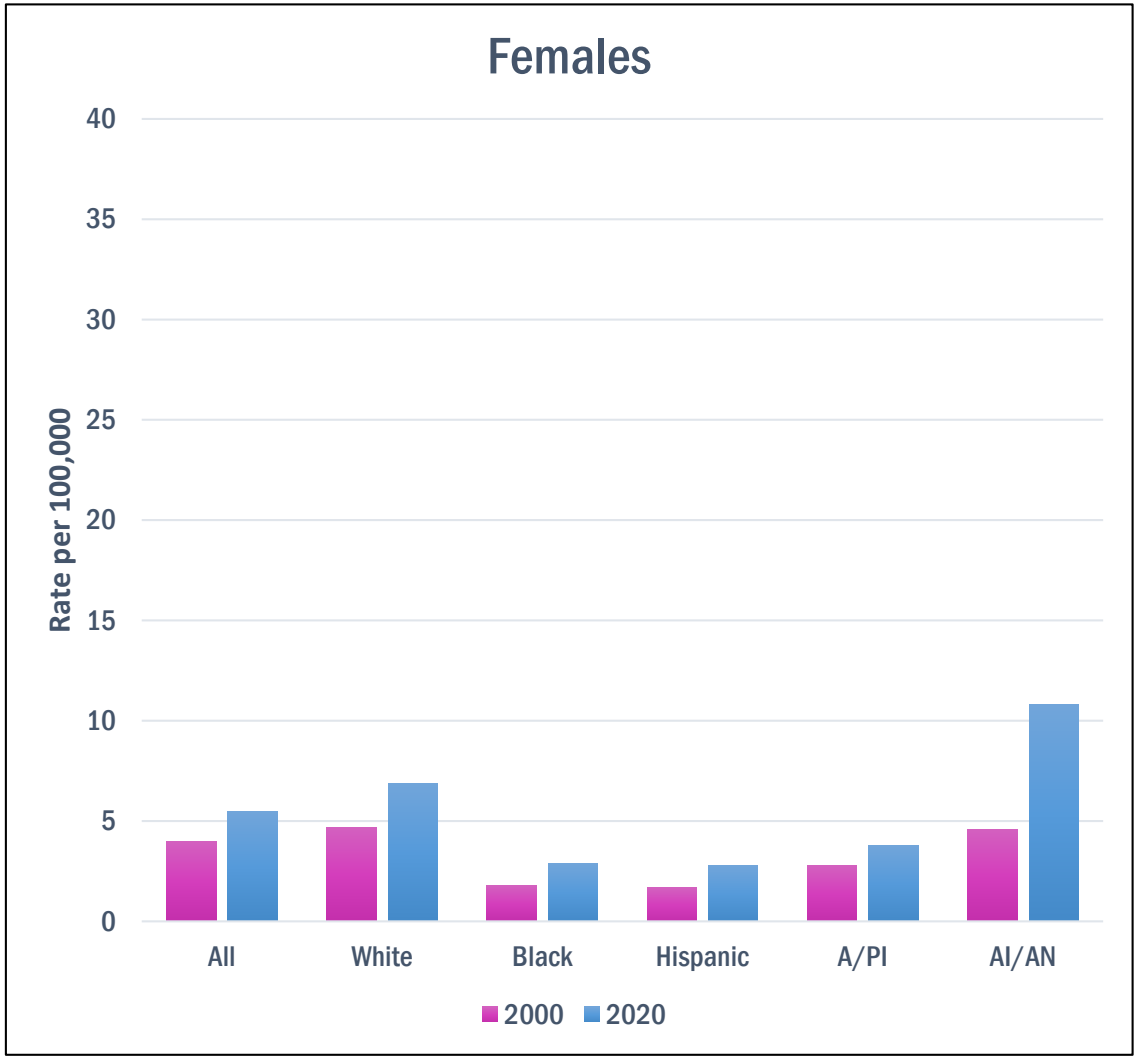
Rank	10-14 Years	15-19 Years	20-24 Years	25-34 Years	35-44 Years	45-54 Years
1	Unintentional Injury	Unintentional Injury	Unintentional Injury	Unintentional Injury	Unintentional Injury	Cancer
2	**Suicide**	Homicide	Homicide	**Suicide**	Heart Disease	Heart Disease
3	Cancer	**Suicide**	**Suicide**	Homicide	Cancer	Unintentional Injury
4	Homicide	Cancer	Cancer	Heart disease	**Suicide**	Covid-19
5	Congenital Malformations	Heart Disease	Heart disease	Cancer	Covid-19	Liver disease
6	Heart Disease	Congenital anomalies	COVID-19	Covid-19	Liver disease	Diabetes
7	Chronic Lung Disease	Covid-19	Diabetes	Liver disease	Homicide	**Suicide**
8	Diabetes	Diabetes	Congenital anomalies	Diabetes	Diabetes	Stroke
9	Influenza and pneumonia	Respiratory disease	Complicated pregnancy	Stroke	Influenza and pneumonia	Respiratory disease

Leading Causes of Death by Age Groups, 10-14 to 45-54 Years, Non-Hispanic American Indian/Alaska Natives, 2020

Rank	10-14 Years	15-19 Years	20-24 Years	25-34 Years	35-44 Years	45-54 Years
1	**Suicide**	Unintentional Injury	Unintentional Injury	Unintentional Injury	Unintentional Injury	COVID-19
2	Unintentional Injury	**Suicide**	**Suicide**	Liver Disease	Liver Disease	Unintentional Injury
3	Homicide	Homicide	Homicide	**Suicide**	COVID-19	Liver Disease
4	Respiratory Disease	Respiratory Disease	Covid-19	COVID-19	Heart Disease	Heart Disease
5	Congenital Malformations	Congenital Malformations	Cancer	Homicide	**Suicide**	Cancer
6	Cancer	Cancer	Complicated Pregnancy	Heart Disease	Homicide	Diabetes
7	Heart Disease	Covid-19	Heart Disease	Cancer	Cancer	Stroke
8	Four tied	Complicated Pregnancy	Stroke	Diabetes	Diabetes	**Suicide**
9	Four tied	Diabetes	Liver Disease	Septicemia	Influenza and pneumonia	Influenza and pneumonia

Age-adjusted Suicide Rates by Race/Ethnicity and Sex
United States, 2000 and 2020





Note: White, Black, A/PI, and AI/AN are non-Hispanic with Hispanic including all races.

Prior Work Conclusions

Morbidity and Mortality Weekly Report (*MMWR*)

CDC

Suicides Among American Indian/Alaska Natives — National Violent Death Reporting System, 18 States, 2003–2014

Weekly / March 2, 2018 / 67(8);237–242

Rachel A. Leavitt, MPH[1,2]; Allison Ertl, PhD[2]; Kameron Sheats, PhD[2]; Emiko Petrosky, MD[2]; Asha Ivey-Stephenson, PhD[2]; Katherine A. Fowler, PhD[2] (View author affiliations)

When compared to non-Hispanic White people, non-Hispanic AI/AN people who died by suicide were:

- younger and lived in more rural areas
- more likely to have a friend or family member who had also died by suicide
- more likely to use alcohol

Suicides Among American Indian/Alaska Natives — National Violent Death Reporting System, 18 States, 2003–2014 | MMWR (cdc.gov)

Preliminary Analysis

Purpose

- To compare descriptive characteristics and precipitating circumstances of suicide among all AI/AN compared to non-AI/AN suicides across 32 states during 2015-2019

Methods

- Comparison groups
  - All AI/AN (Non-Hispanic AI/AN, Hispanic AI/AN, and Multiracial AI/AN)
  - Non-AI/AN

Methods

- Use of National Violent Death Reporting System, 32 states, 2015-2019
- Descriptive characteristics: AI/AN and non-AI/AN compared
  - Age group, sex, urbanicity, means of suicide, location of death
- Circumstances precipitating suicide
  - History of suicidal thoughts and behavior, disclosure of suicide intent
  - Interpersonal circumstances
  - Life stressors
  - Mental health and substance use-related circumstances
- Toxicology results
- Analytic methods
  - Chi-squared tests and logistic regression conducted using SAS software

Select Demographics and Means of Suicide-- Updated Study (2015-2019), NVDRS

	New Study (32 States)	
Demographic characteristics **Means of suicide**	**All AI/AN** (N=2,639) N(%)	**Non-AI/AN** (N=141,859) N(%)
Age 10-24 years	739 (28.0)*	8,322 (13.8)
Rural residence	1169 (44.5)*	26,080 (18.5)
Homelessness status	79 (3.2)*	1,862 (1.4)
Select means of suicide		
Firearms	954 (36.2)*	69,271 (48.8)
Suffocation	1,261 (47.8)*	41,147 (29.0)

*represents significant differences between the AI/AN group and the comparison group at p<.05
Red indicates results are significantly greater among AI/AN than comparison group
NVDRS=National Violent Death Reporting System
NH-non-Hispanic; AI/AN=American Indian/Alaska Native

States: Alaska, Arizona, Colorado, Connecticut, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont, Virginia, Washington, Wisconsin

Select Circumstances of Suicide-- Updated Study (2015-2019), NVDRS

	Updated Study (32 States)	
Circumstance preceding suicide	**All AI/AN** (N=2,639) N (%)	**Non-AI/AN** (N=141,859) N (%)
Suicide of friend or family member	97 (4.3)*	3,082 (2.4)
Diagnosed mental health problem	955 (42.1)*	63,437 (49.5)
Current mental health treatment	448 (19.8)*	34,173 (26.6)
Alcohol problem	696 (30.7)*	23,351 (18.2)
Other substance problem	584 (25.8)*	21,852 (19.6)
Criminal/legal problem	281 (12.4)*	10,248 (8.0)
History of suicide attempts	492 (21.7)	25,781 (20.1)

*represents significant differences between the AI/AN group and the comparison group at p<.05
Red indicates results are significantly greater among AI/AN than comparison group
NVDRS=National Violent Death Reporting System
NH-non-Hispanic; AI/AN=American Indian/Alaska Native

Toxicology-- Updated Study (2015-2019), NVDRS

		Updated Study (32 States)	
Substance tested	**Tested/ Test Positive**	**All AI/AN** (N=2,639) N (%)	**Non-AI/AN** (N=141,859) N (%)
Any toxicology testing	Tested Positive (any)	1,732 (65.6) 1,348 (77.8)	88,371 (62.3) 67,586 (76.5)
Alcohol	Tested Positive	1,624 (61.5) 784 (48.3)*	75,131 (53.0) 30,029 (40.0)
Marijuana	Tested Positive	1,040 (39.4) 347 (33.4)*	49,481 (34.9) 11,449 (23.1)
Amphetamines	Tested Positive	1,411 (53.5) 265 (18.8)*	56,273 (39.7) 7,088 (12.6)
Opioids	Tested Positive	1,420 (53.8) 179 (12.6)*	61,597 (43.4) 14,897 (24.2)

*represents significant differences between the AI/AN group and the comparison group at p<.05
Red indicates results are significantly greater among AI/AN than comparison group
NVDRS=National Violent Death Reporting System
NH-non-Hispanic; AI/AN=American Indian/Alaska Native

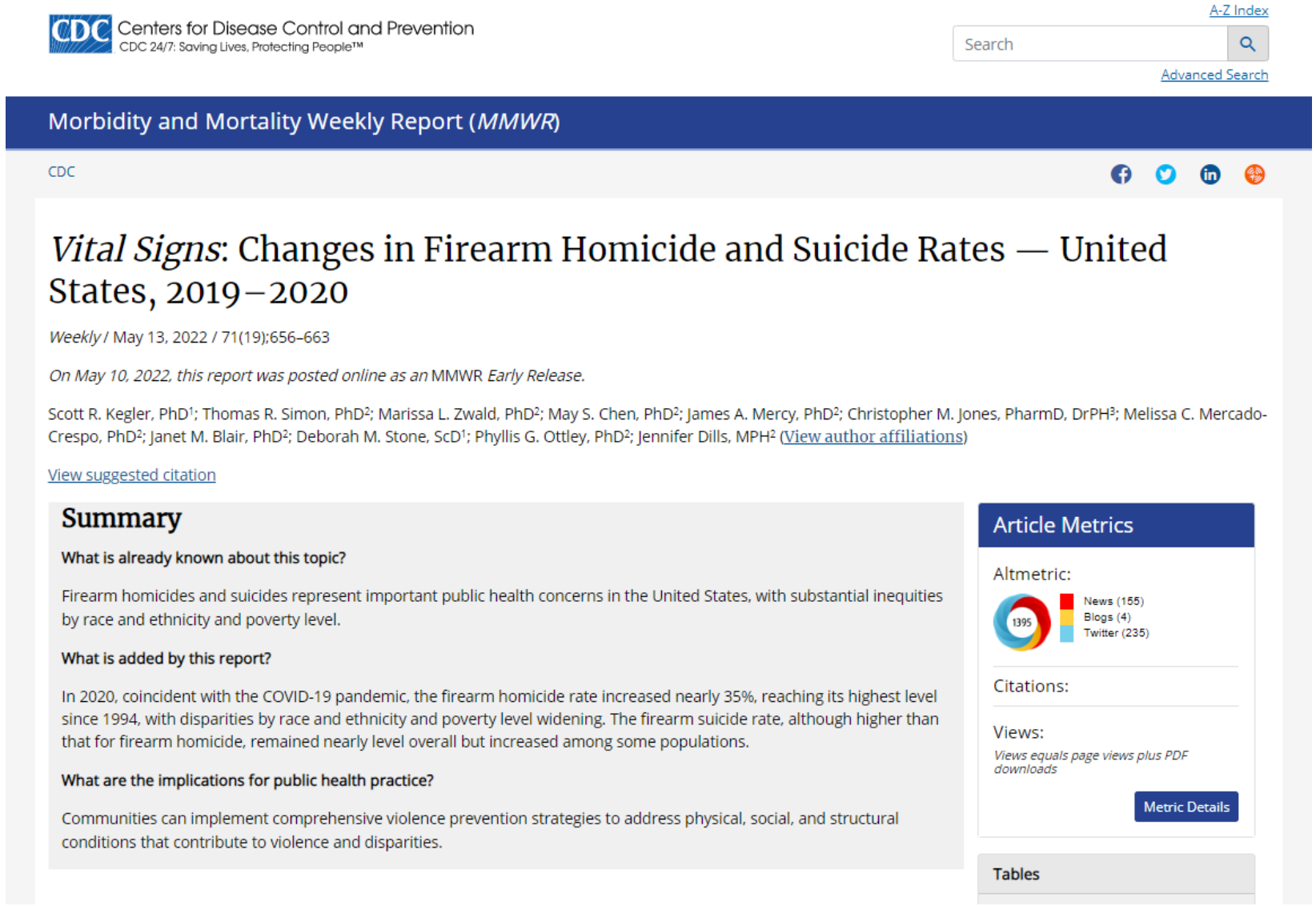
Limitations

- Race of AI/AN decedents are prone to misclassification leading to underestimates of AI/AN mortality
- Tribal affiliation is not collected in NVDRS
- Mental health diagnoses and treatment status are based on next of kin reporting and may be under-reported in either or both groups
- 2020 data not yet included

Vital Signs Report

Purpose

To examine changes in firearm homicide and firearm suicide rates coinciding with the emergence of the COVID-19 pandemic in 2020.



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

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Morbidity and Mortality Weekly Report (*MMWR*)

CDC

Vital Signs: Changes in Firearm Homicide and Suicide Rates — United States, 2019–2020

Weekly / May 13, 2022 / 71(19);656–663

On May 10, 2022, this report was posted online as an MMWR *Early Release.*

Scott R. Kegler, PhD[1]; Thomas R. Simon, PhD[2]; Marissa L. Zwald, PhD[2]; May S. Chen, PhD[2]; James A. Mercy, PhD[2]; Christopher M. Jones, PharmD, DrPH[3]; Melissa C. Mercado-Crespo, PhD[2]; Janet M. Blair, PhD[2]; Deborah M. Stone, ScD[1]; Phyllis G. Ottley, PhD[2]; Jennifer Dills, MPH[2] (View author affiliations)

View suggested citation

Summary

What is already known about this topic?

Firearm homicides and suicides represent important public health concerns in the United States, with substantial inequities by race and ethnicity and poverty level.

What is added by this report?

In 2020, coincident with the COVID-19 pandemic, the firearm homicide rate increased nearly 35%, reaching its highest level since 1994, with disparities by race and ethnicity and poverty level widening. The firearm suicide rate, although higher than that for firearm homicide, remained nearly level overall but increased among some populations.

What are the implications for public health practice?

Communities can implement comprehensive violence prevention strategies to address physical, social, and structural conditions that contribute to violence and disparities.

Article Metrics

Altmetric:

1395
News (155)
Blogs (4)
Twitter (235)

Citations:

Views:

Views equals page views plus PDF downloads

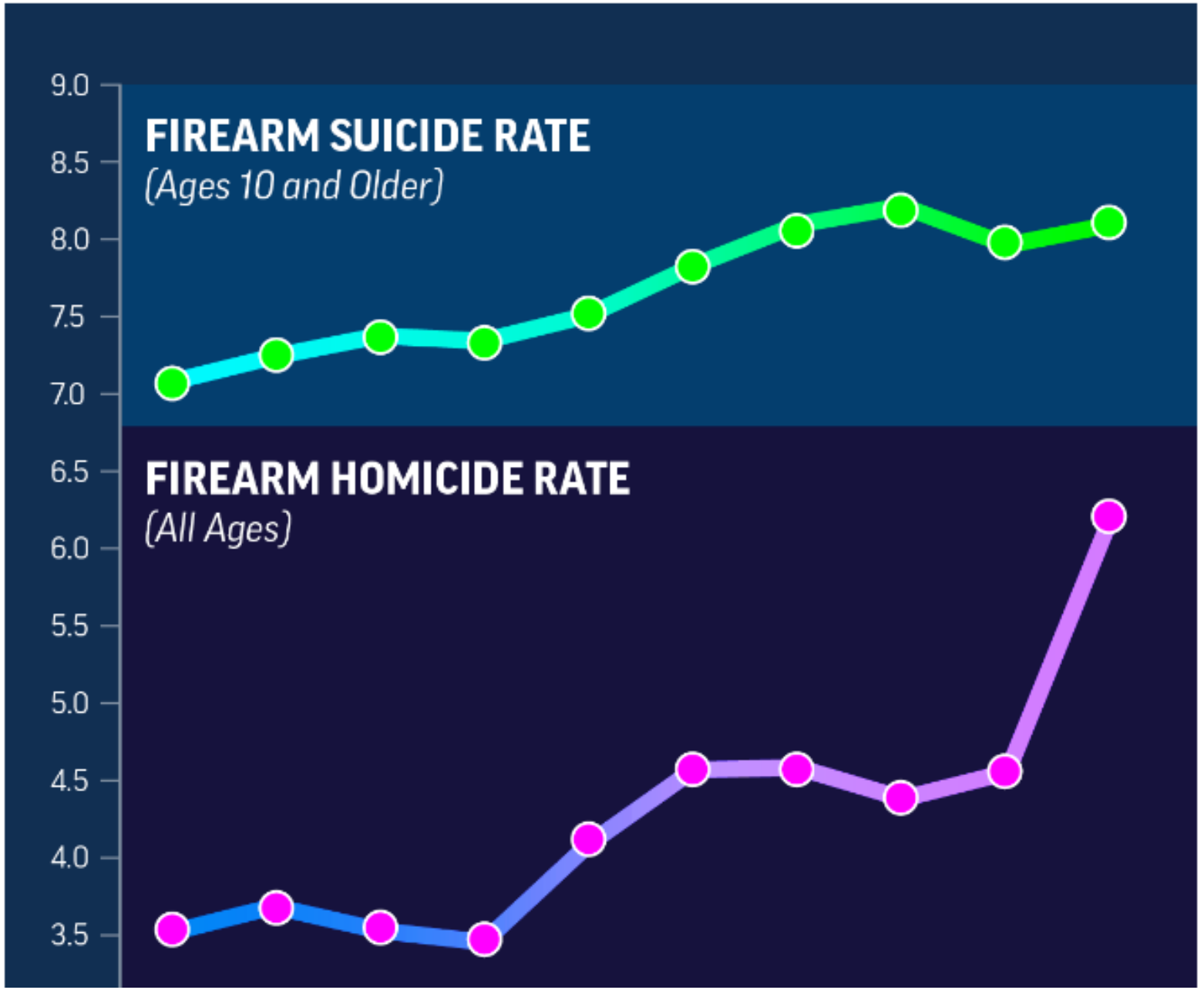
Metric Details

Tables

https://www.cdc.gov/mmwr/volumes/71/wr/mm7119e1.htm

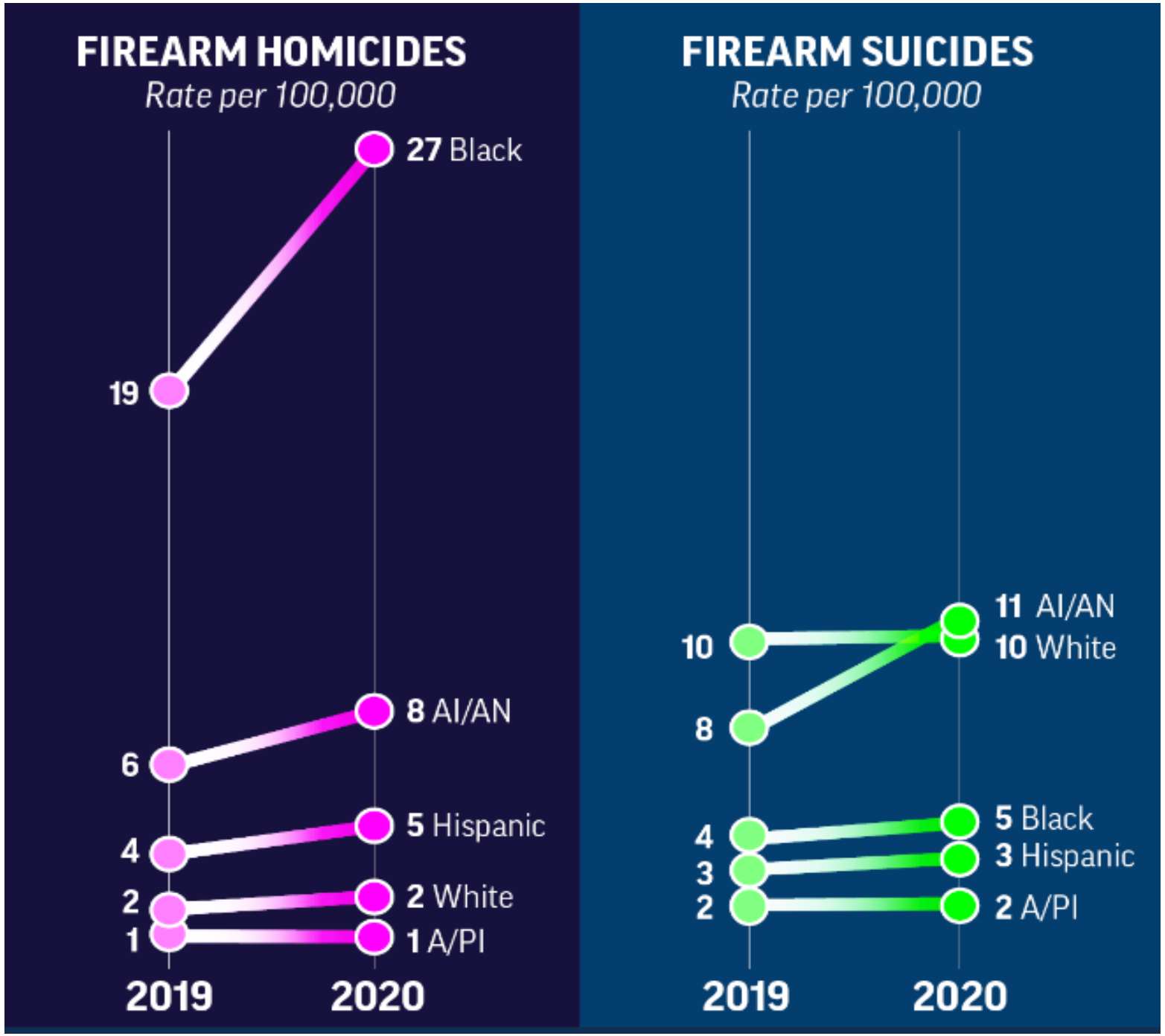
Results

- From 2019 to 2020, the firearm homicide rate increased 35% and the firearm suicide rate remained high.



Results

- The firearm homicide rate increased most for non-Hispanic black populations (39%), and the suicide rate increased most for non-Hispanic AI/AN populations (42%).



Results

In 2020, counties with the highest poverty level had firearm homicide rates 4.5 times as high and firearm suicide rates 1.3 times as high as counties with the lowest poverty rates.

Tribal Suicide Prevention

Purpose

To increase capacity to adapt, implement, and evaluate suicide prevention programs to reduce suicide morbidity and mortality.

Activity #1: Review Existing Data

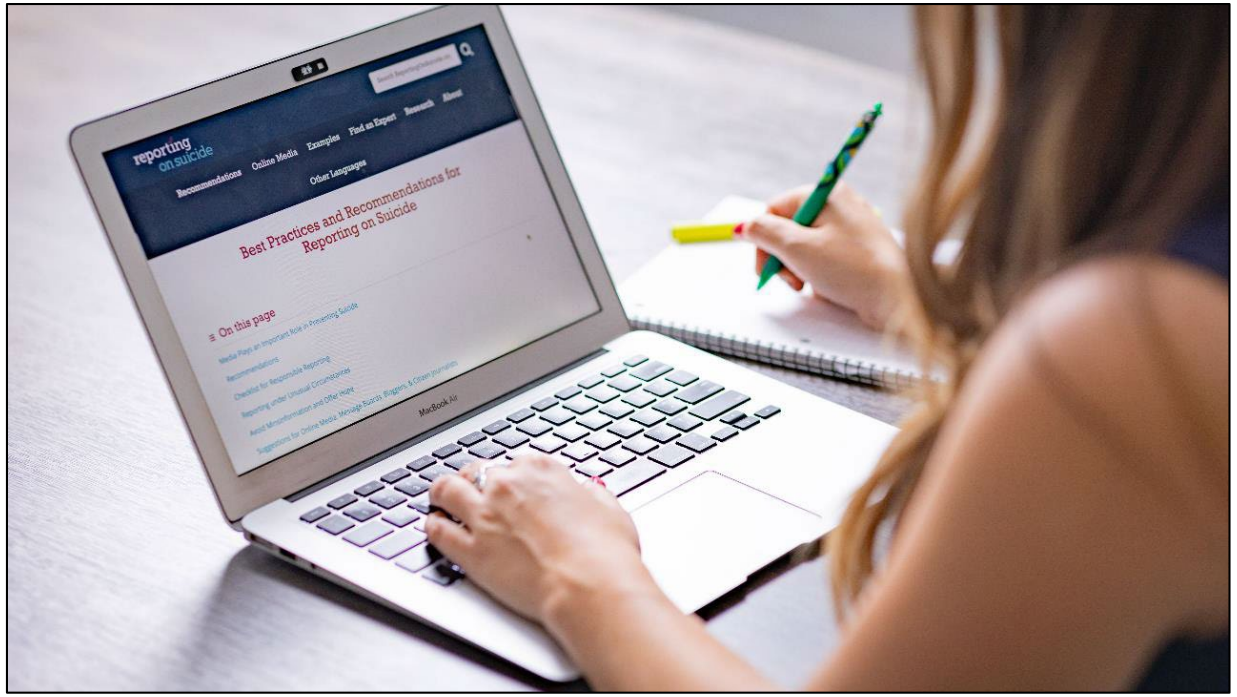
Review existing **data**

- Describe the general suicide problem
- Identify a subgroup/subpopulation at increased risk of suicide compared to the general tribal population

Activity #2: Inventory of Suicide Prevention Programs

Inventory existing suicide prevention programs to:

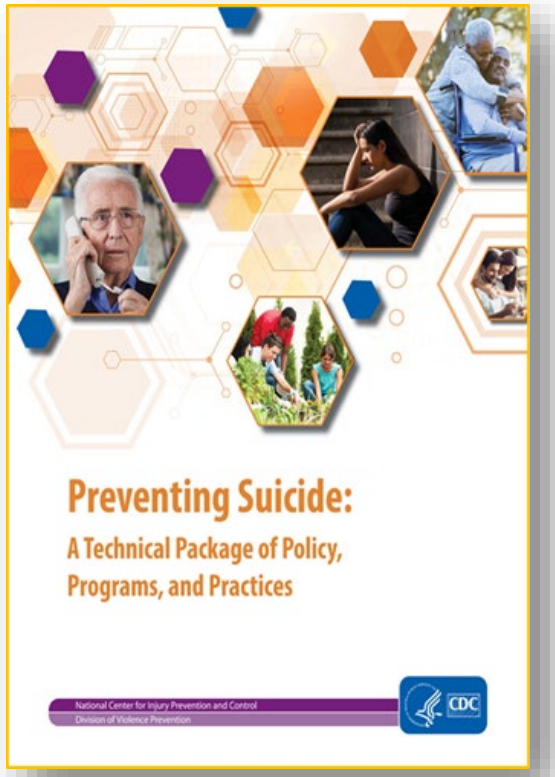
- Identify gaps in prevention
- Identify opportunities to complement existing programs



Activity #3: Selection of Evidence-Based Approach/Program

Select at least one approach from:

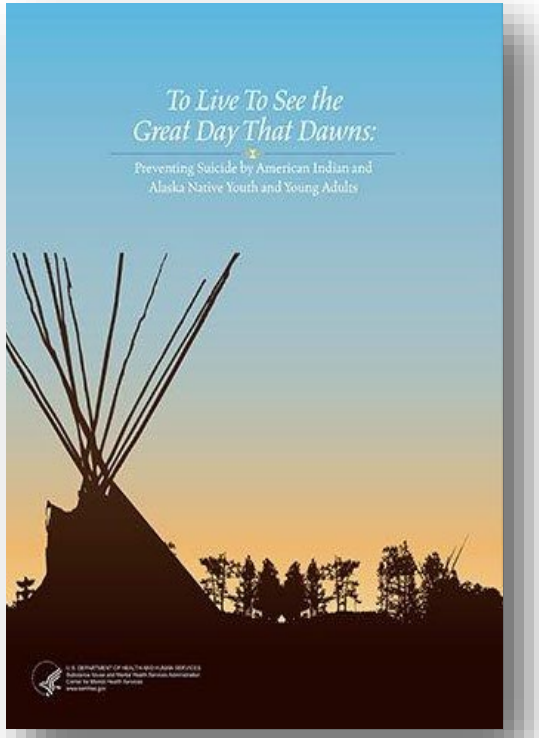
CDC's technical package



Prevention Strategies (cdc.gov)

or

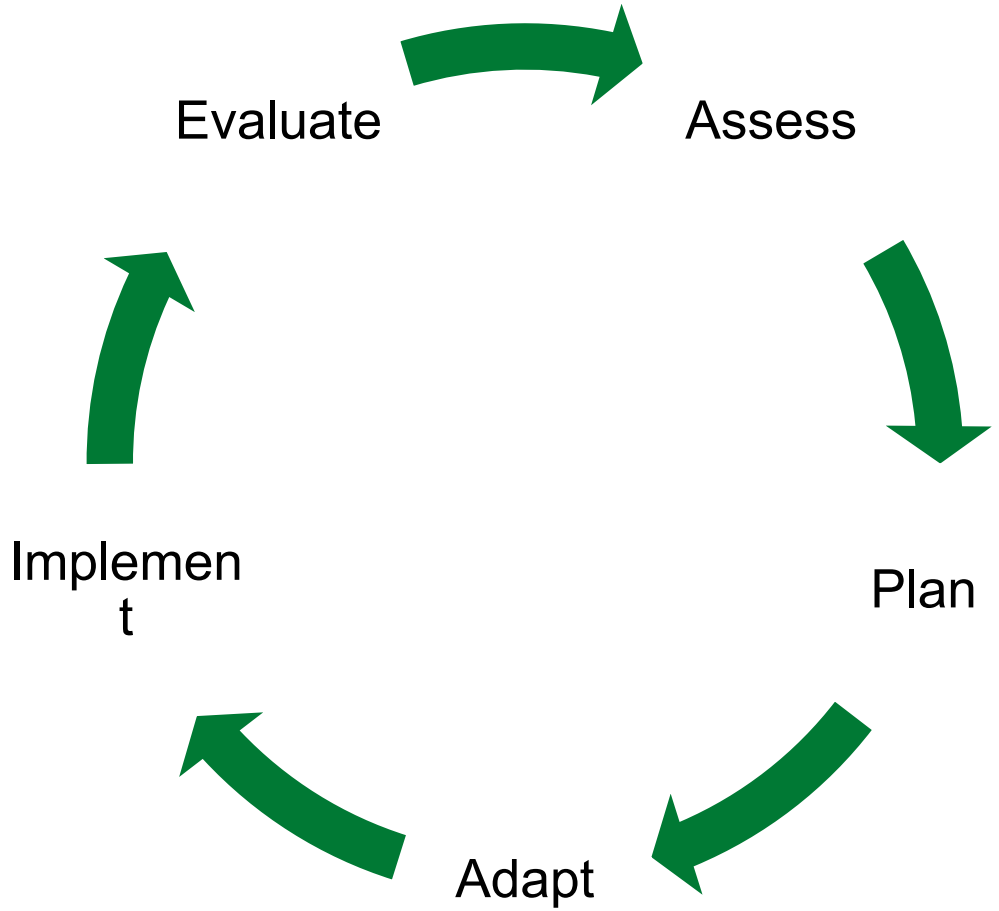
Other evidence-based strategies outside of the technical package



Preventing Suicide To Live To See the great Day that dawns. (samhsa.gov)

Activity #4: Adapt, Implement, and Evaluate

- **Adapt** the selected approach/program to fit the cultural context of the tribe
- **Implement and evaluate** the selected approach/program for:
  - Impact on suicide risk and protective factors and/or
  - Impact on suicide attempts and/or suicide

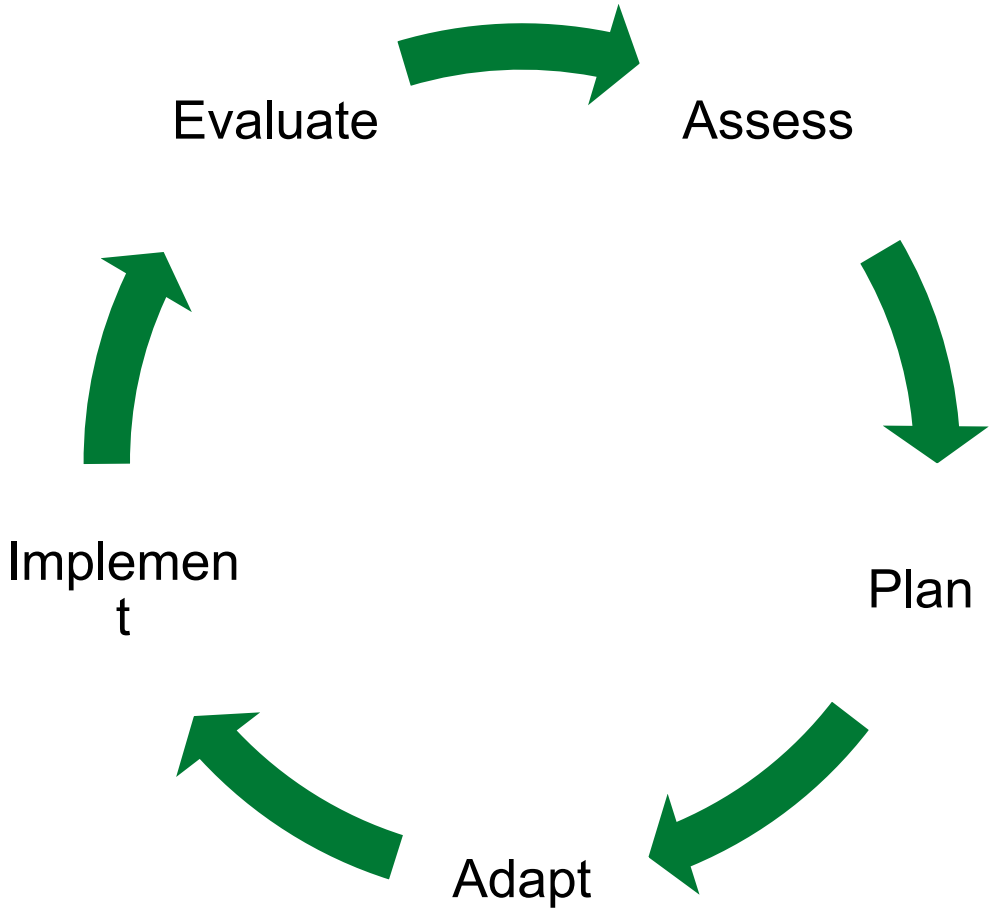


Activity #5: Disseminate

Disseminate results like success stories or lessons learned to stakeholders

Activity #6: Conduct Listening Sessions

Conduct listening sessions to obtain input during the project to adapt approach/program



About the Recipients

Wabanaki Public Health & Wellness

Cultivating the health of our communities

https://www.cdc.gov/suicide/programs/tribal/index.html

Acknowledgements

Current NVDRS Work on AI/AN Suicide

+ Eva Trinh, PhD[1]
+ Hong Zhou[1]
+ Laura Welder, DrPH[1]
+ Pamela End of Horn[2]
+ Deb Stone, ScD, MSW, MPH[1]
+ Katie Fowler, PhD[3]

Affiliations

[1] NCIPC Division of Injury Prevention
[2] Indian Health Services
[3] NCIPC Division of Violence Prevention

Prior Work on AI/AN Suicide

Suicides Among American Indian/Alaska Natives — National Violent Death Reporting System, 18 States, 2003–2014

Rachel A. Leavitt, MPH[1,2]; Allison Ertl, PhD[2]; Kameron Sheats, PhD[2]; Emiko Petrosky, MD[2]; Asha Ivey-Stephenson, PhD[2]; Katherine A. Fowler, PhD[2]

Affiliations

[1] Oak Ridge Institute for Science and Education, Oak Ridge Associated Universities
[2] NCIPC Division of Violence Prevention

Vital Signs

Vital Signs: Changes in Firearm Homicide and Suicide Rates — United States, 2019–2020

Scott R. Kegler, PhD[1]; Thomas R. Simon, PhD[2]; Marissa L. Zwald, PhD[2]; May S. Chen, PhD[2]; James A. Mercy, PhD[2]; Christopher M. Jones, PharmD, DrPH[3]; Melissa C. Mercado-Crespo, PhD[2]; Janet M. Blair, PhD[2]; Deborah M. Stone, ScD[1]; Phyllis G. Ottley, PhD[2]; Jennifer Dills, MPH[2]

Affiliations

[1] NCIPC Division of Injury Prevention
[2] NCIPC Division of Violence Prevention
[3] NCIPC Office of the Director

CDC Tribal Suicide Prevention Funded Recipients

Wabanaki Public Health & Wellness

Cultivating the health of our communities

https://www.cdc.gov/suicide/programs/tribal/index.html

NATIONAL ACADEMIES
Sciences
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Medicine

Thank you!

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.