Child Death Review

- East and West River Teams
- Standardize the process
- Support/Training for the review teams.
- Abstracting of child deaths in 2021
  - Review statewide deaths 0-12 years of age
  - This includes infants post hospitalization
  - Each team will meet three times a year

South Dakota
Infant Death Review

South Dakota State University®

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SOUTH DAKOTA DEPARTMENT OF HEALTH

South Dakota Infant Death Review

- **FORMATION:**
  - History
  - IDR officially formed in 2012
  - Began utilization of Child Death Review (CDR) Case Reporting System data collection tool

- **GOALS**:
  - To understand why infants die and to act to prevent other deaths
  - To utilize the CDR data reporting tool so that data can be reviewed by a state-level advisory group for prevention efforts and to annually review data to make recommendations to help turn tragedies into lessons that can prevent other deaths.

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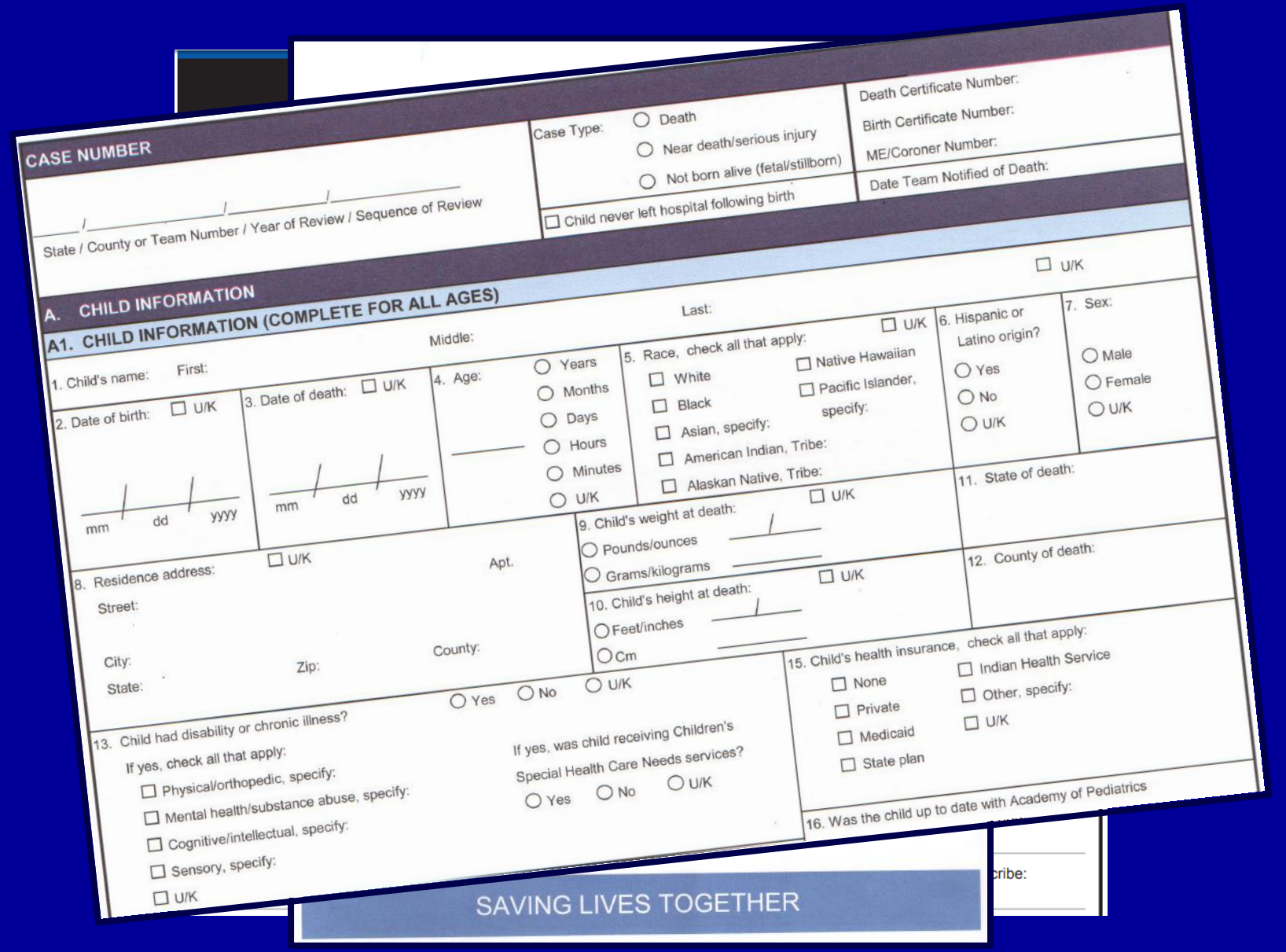
Infant Death Review PROCESS

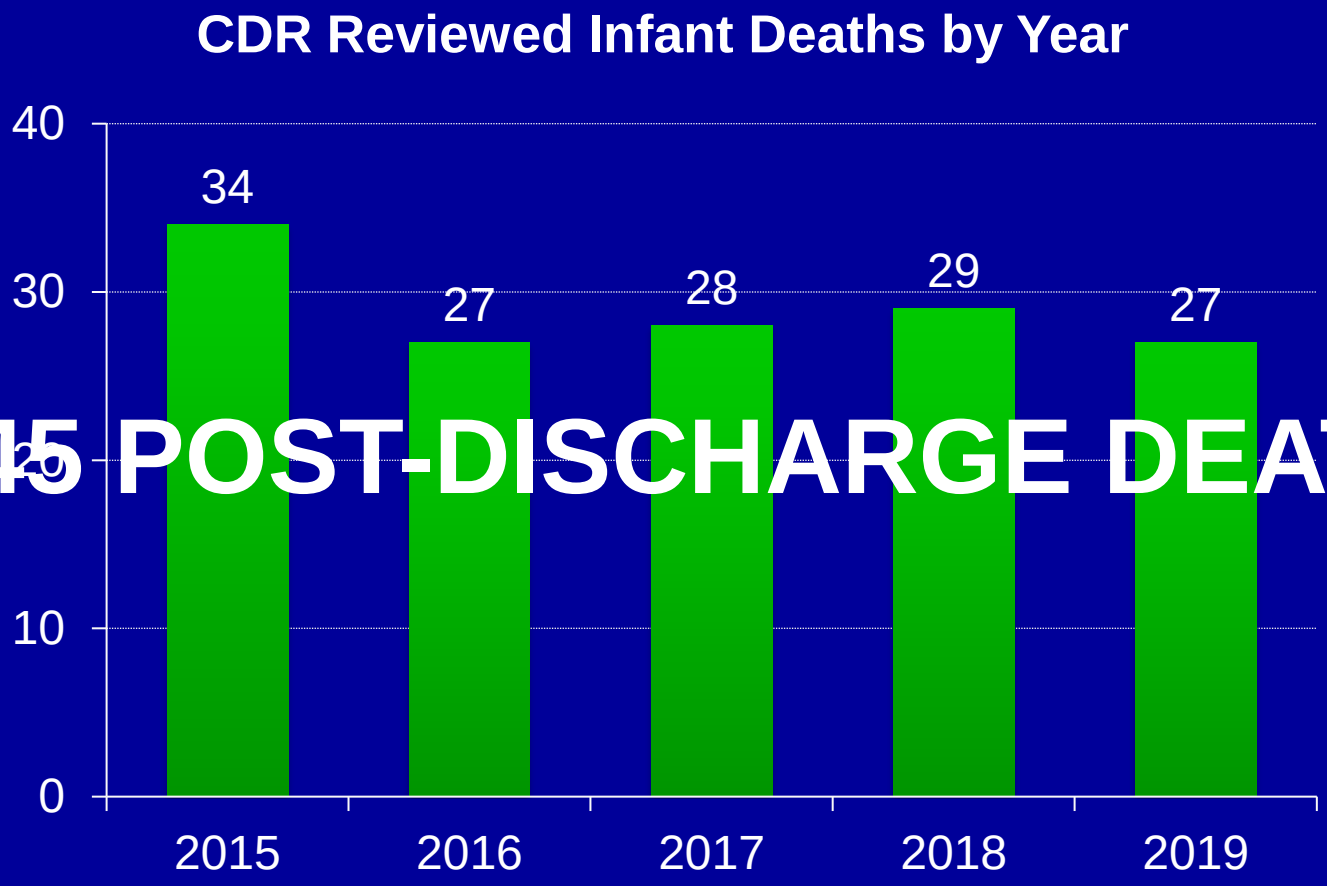


Principal Data Sources

- Death certificate
- SUID Investigation Reporting Form
- Coroner and medical examiner records
  - Autopsy results
  - Chart review
  - Lab work (toxicology, metabolic, X-rays, etc.)
- Law enforcement reports
- Birth Certificate
- Child Death Review
- Medical record
- EMS/ED records

Infant Death Review Demographics

2015 - 2019



145 POST-DISCHARGE DEATHS

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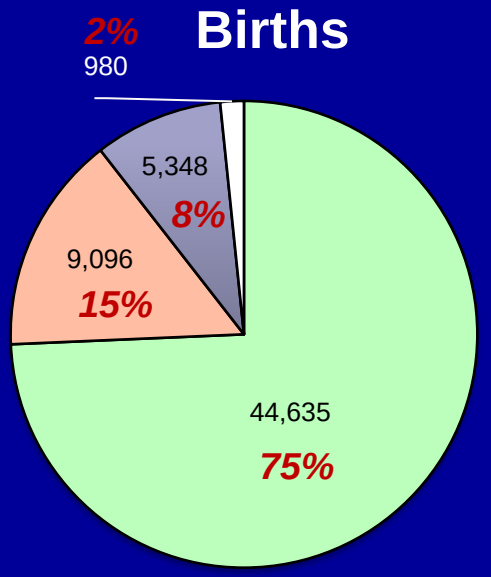
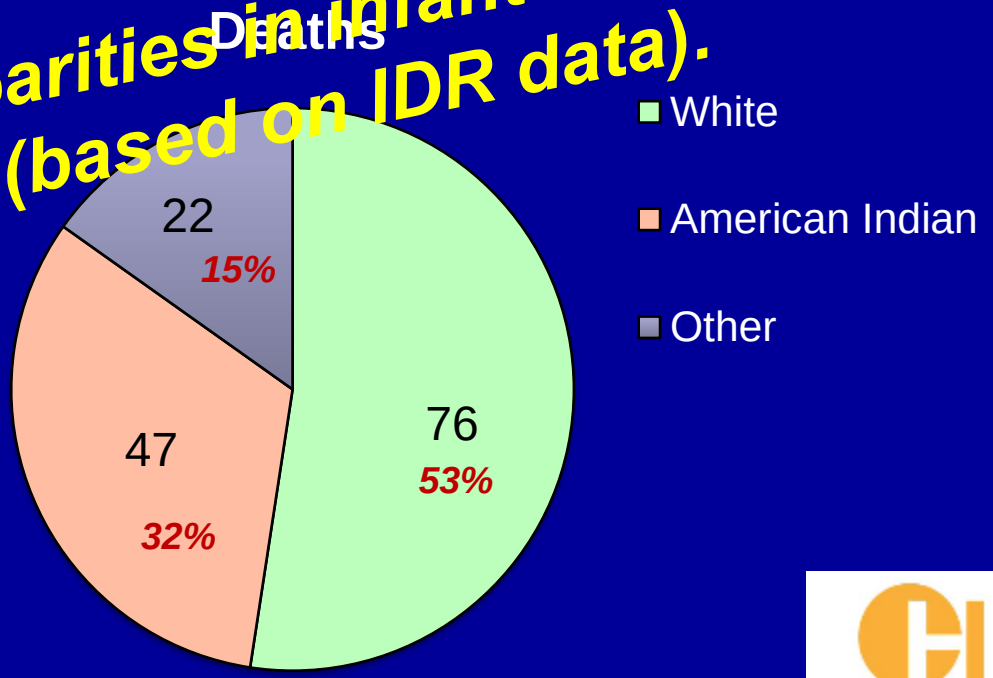
Demographics - Race
2015 - 2019



There are racial disparities in infant deaths post-discharge – (based on IDR data).



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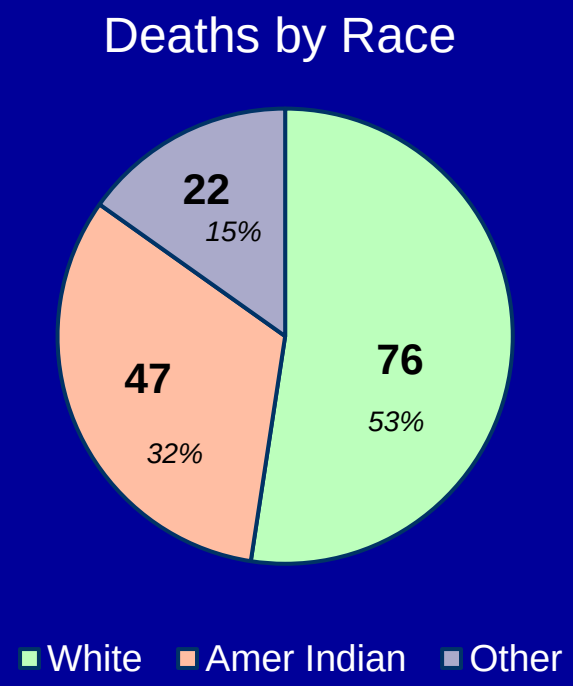
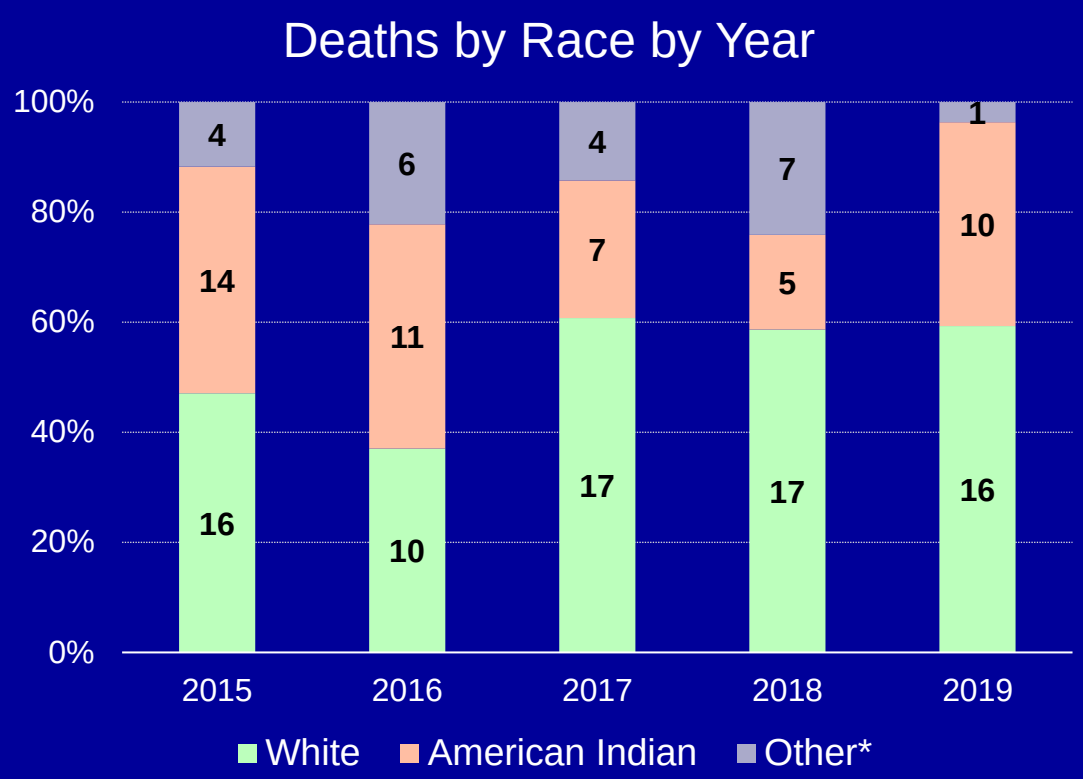
Demographics
2015 - 2019





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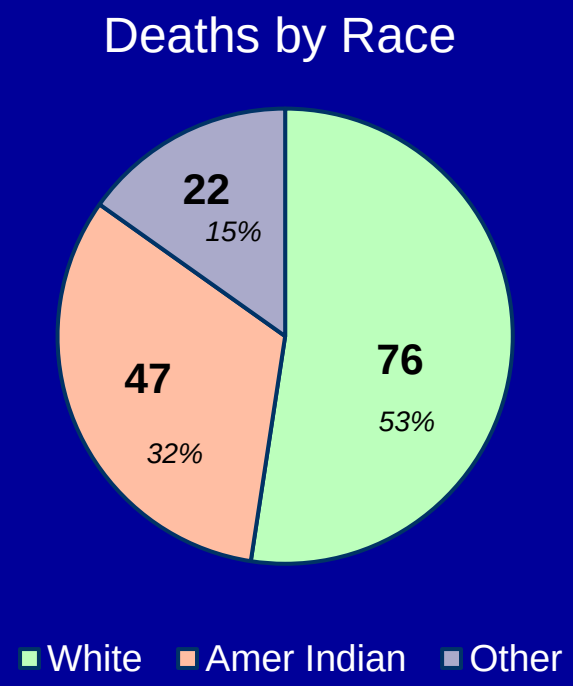
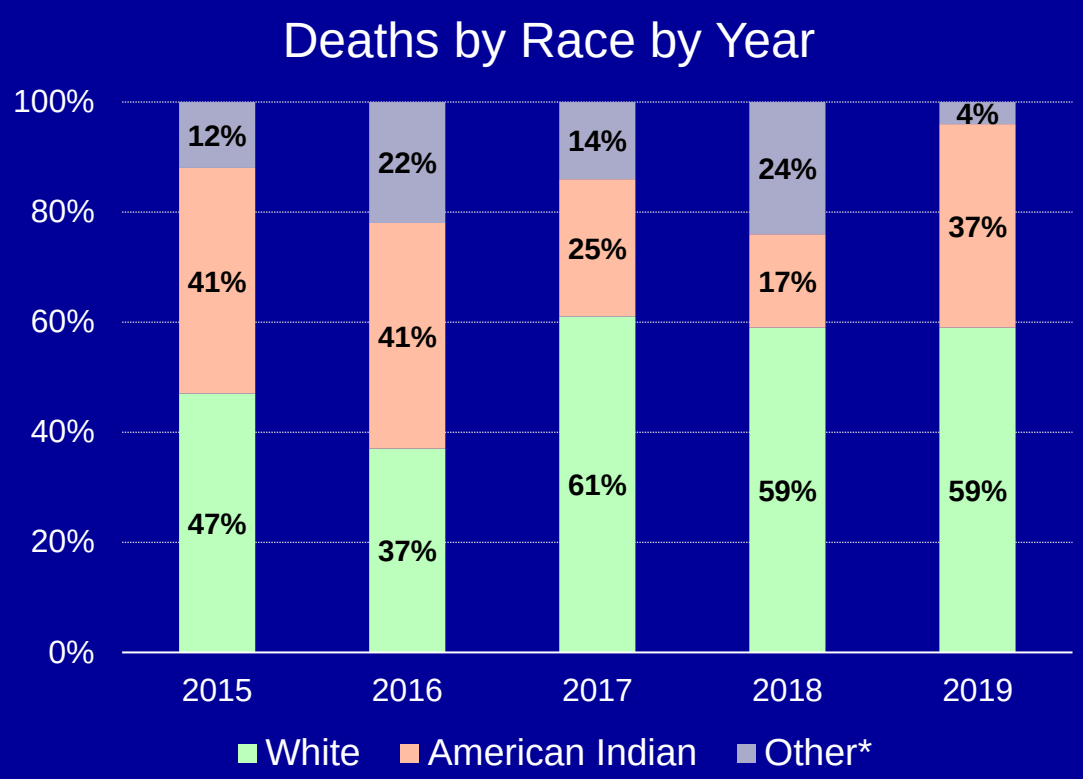
* Includes 17 multiracial

Demographics
2015 - 2019





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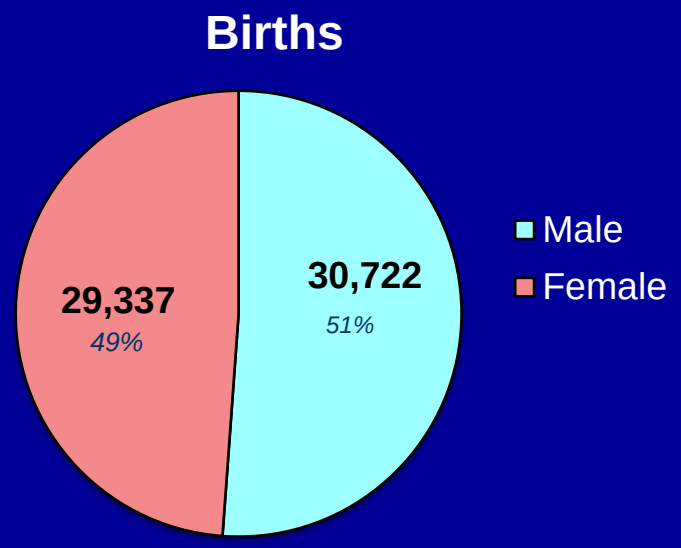
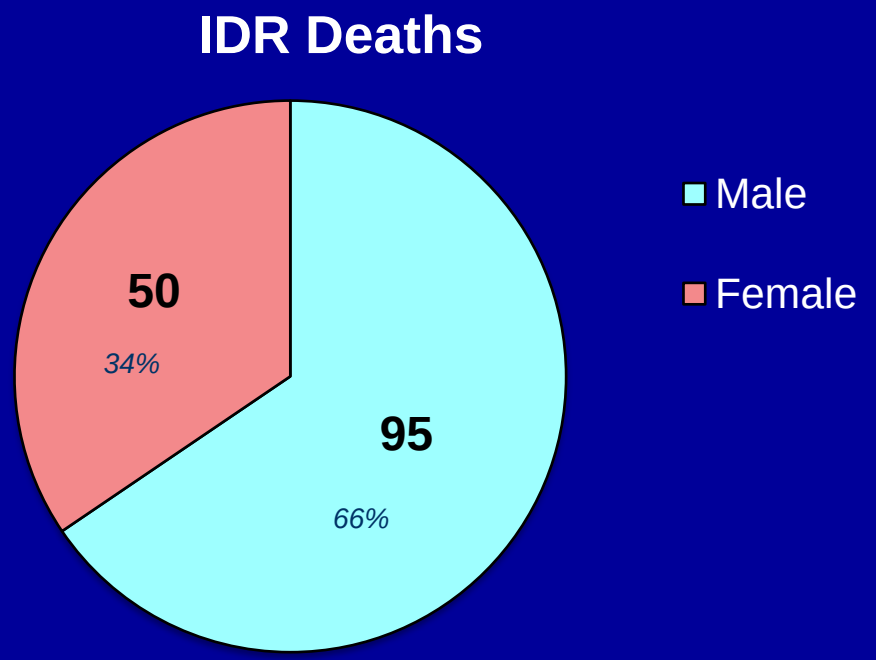
* Includes 20 multiracial

Demographics - Sex
2015 – 2019





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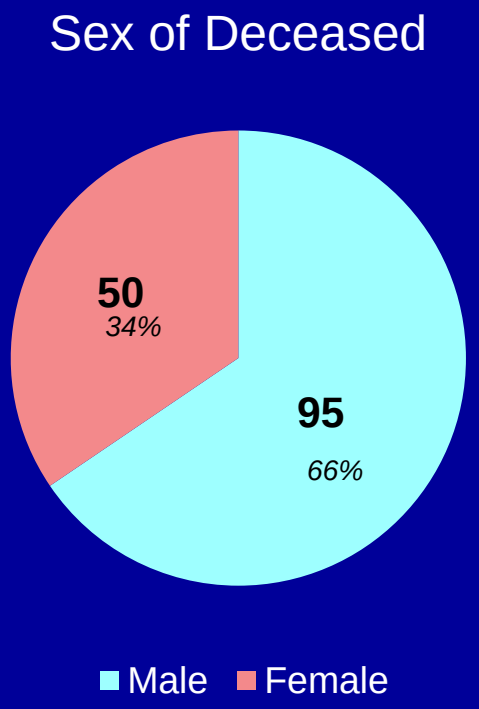
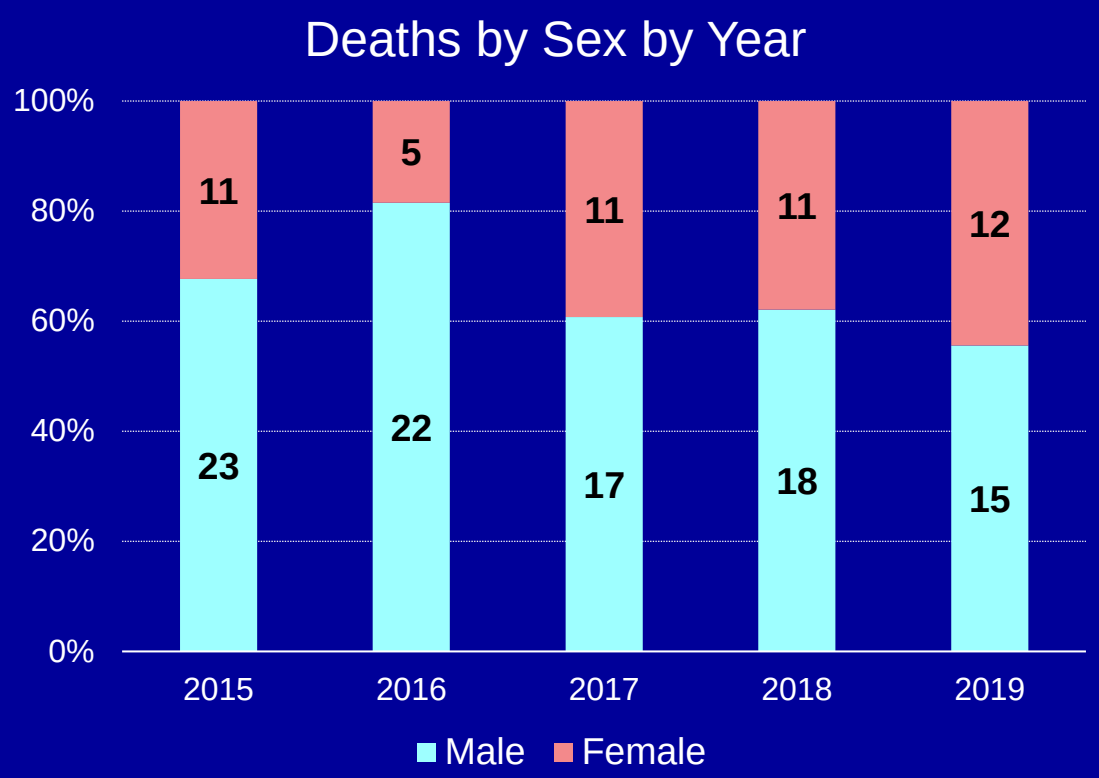
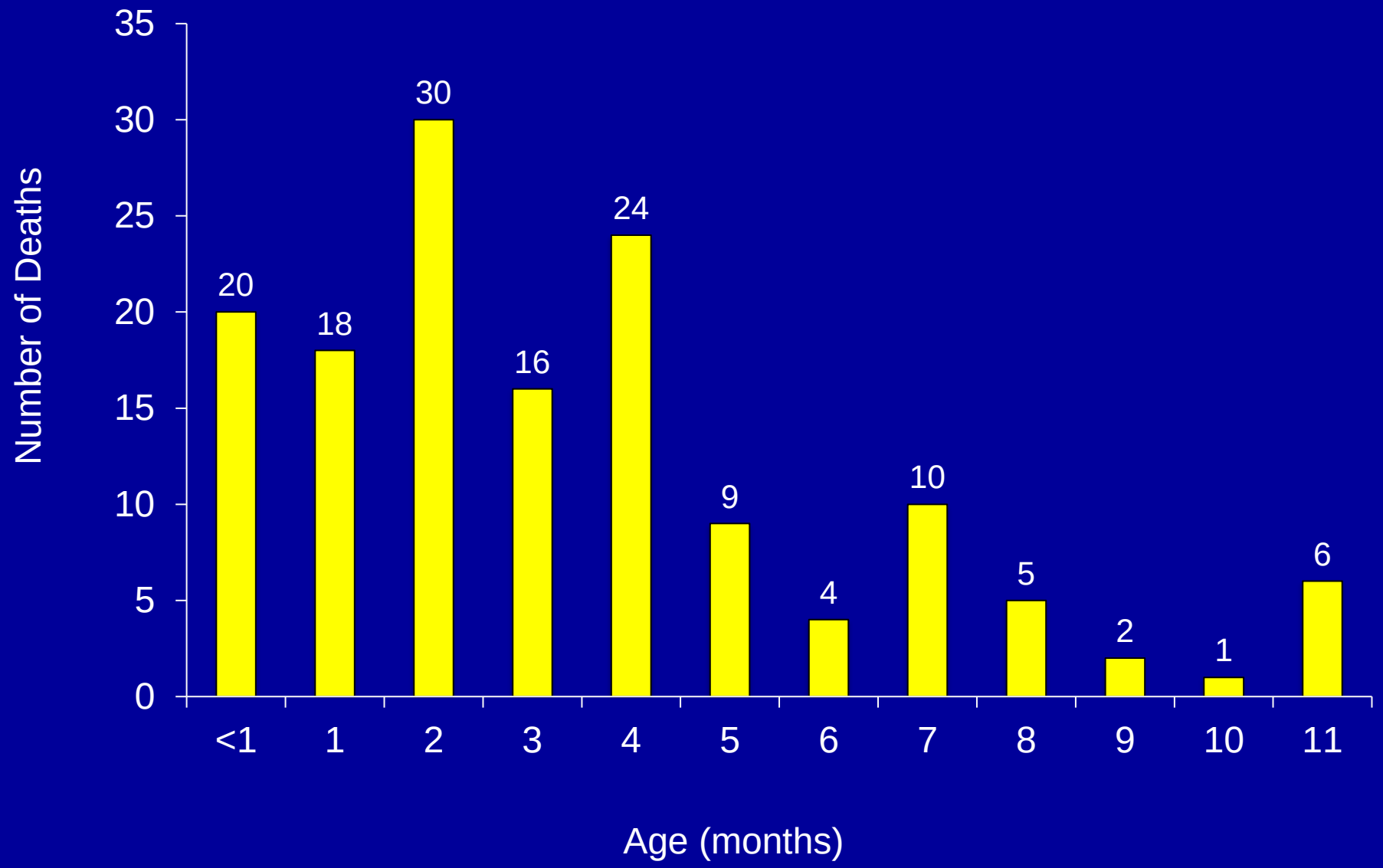
Demographics
2015 – 2019



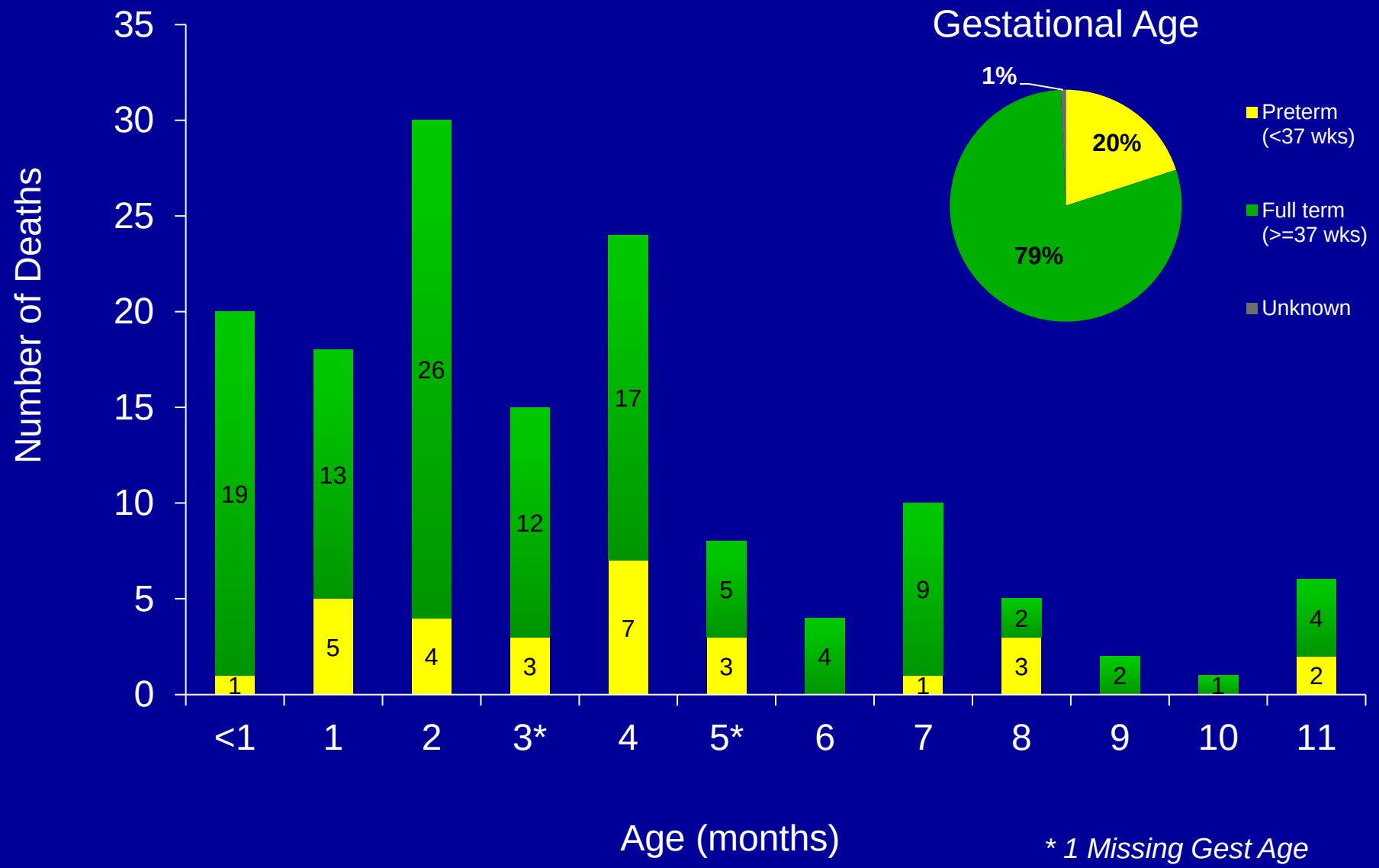


South Dakota State University

Demographics
2015 - 2019



Demographics
2015 - 2019



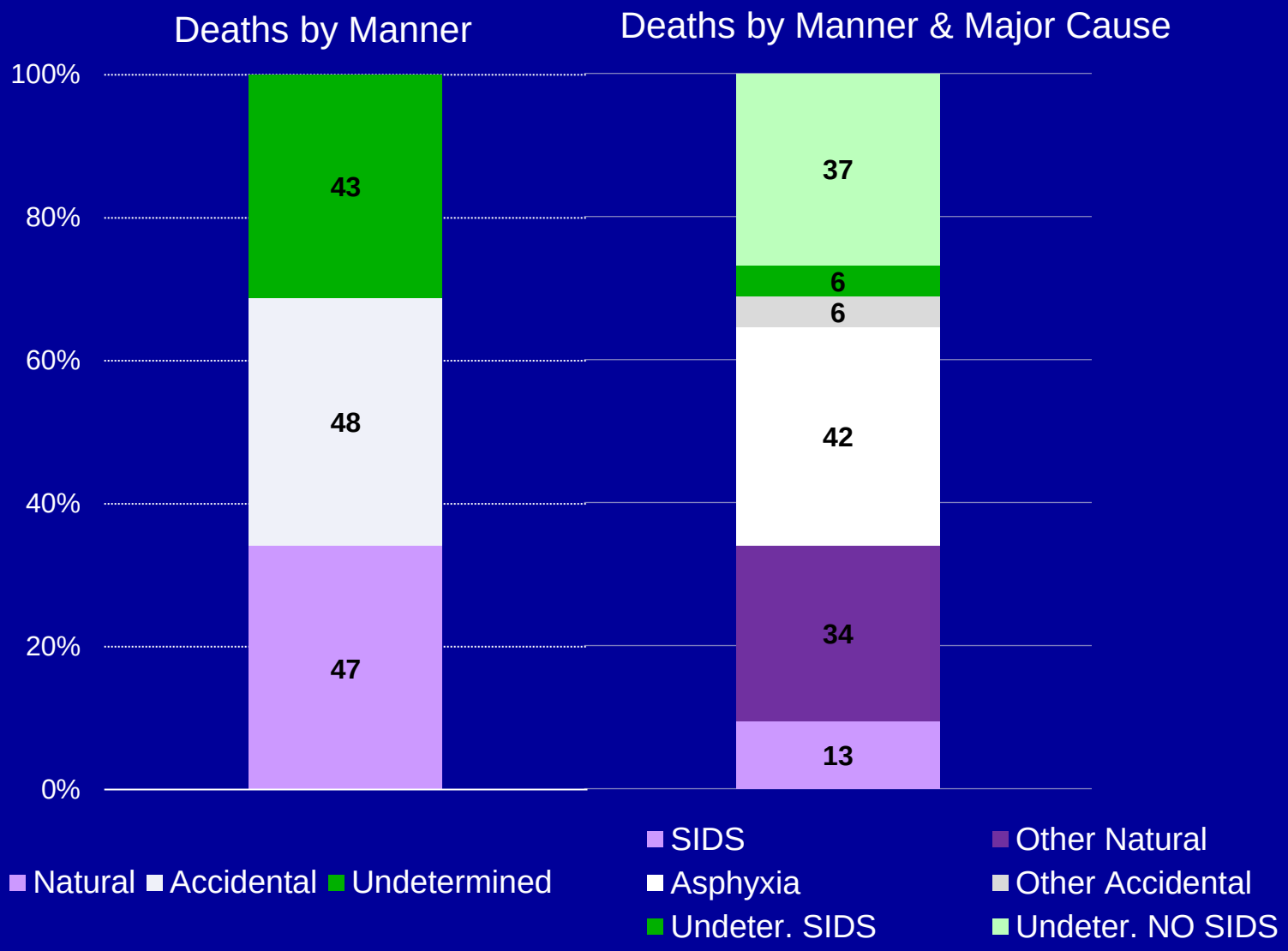
** 1 Missing Gest Age*

Manner & Cause of Death
2015 - 2019

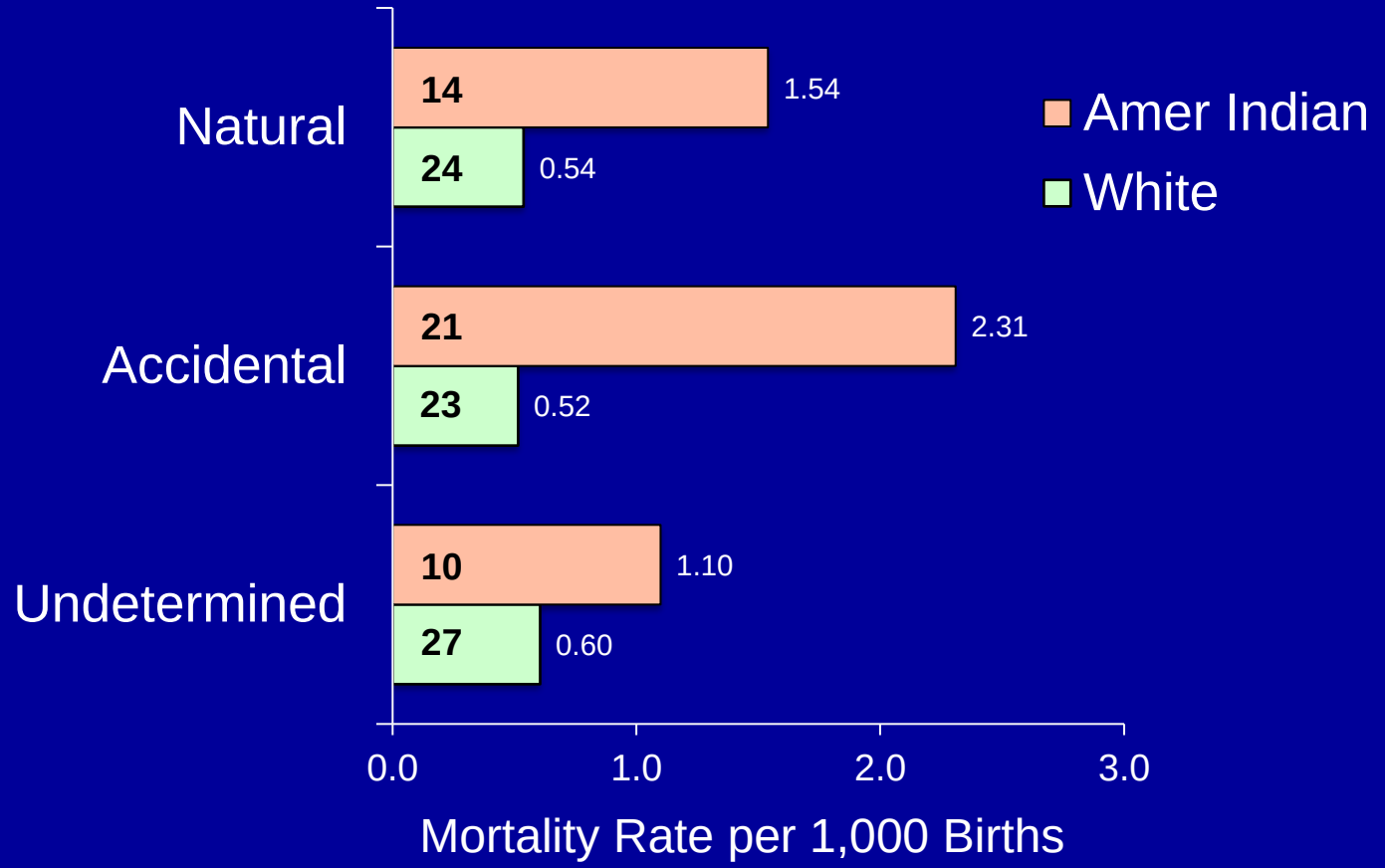
- Natural (**47**)
  - SIDS (13)
  - Congenital anomalies (8)
  - Other medical (6)
  - Other infection (5)
  - Pneumonia (4)
  - Cardiovascular (4)
  - Other perinatal (1)
  - Cancer (1)
  - Influenza (1)
  - Null or Unknown (4)
- Accidental (**48**)
  - Asphyxia (42)
  - Motor vehicle (3)
  - Drowning (1)
  - SIDS (1)
  - UNK (1)
- Homicide (**7**)
  - Weapon (3)
  - External - Other (3)
  - External - Unknown (1)
- Undetermined (**43**)
  - Undetermined (35)
  - SIDS (6)
  - Unknown (2)

Manner & Cause

2015 – 2019



Manner of Death by Race, 2015-2019



Numbers of deaths are given within the bar.
Includes only deaths among American Indian & White infants; homicides and unknown manner of death are not shown.

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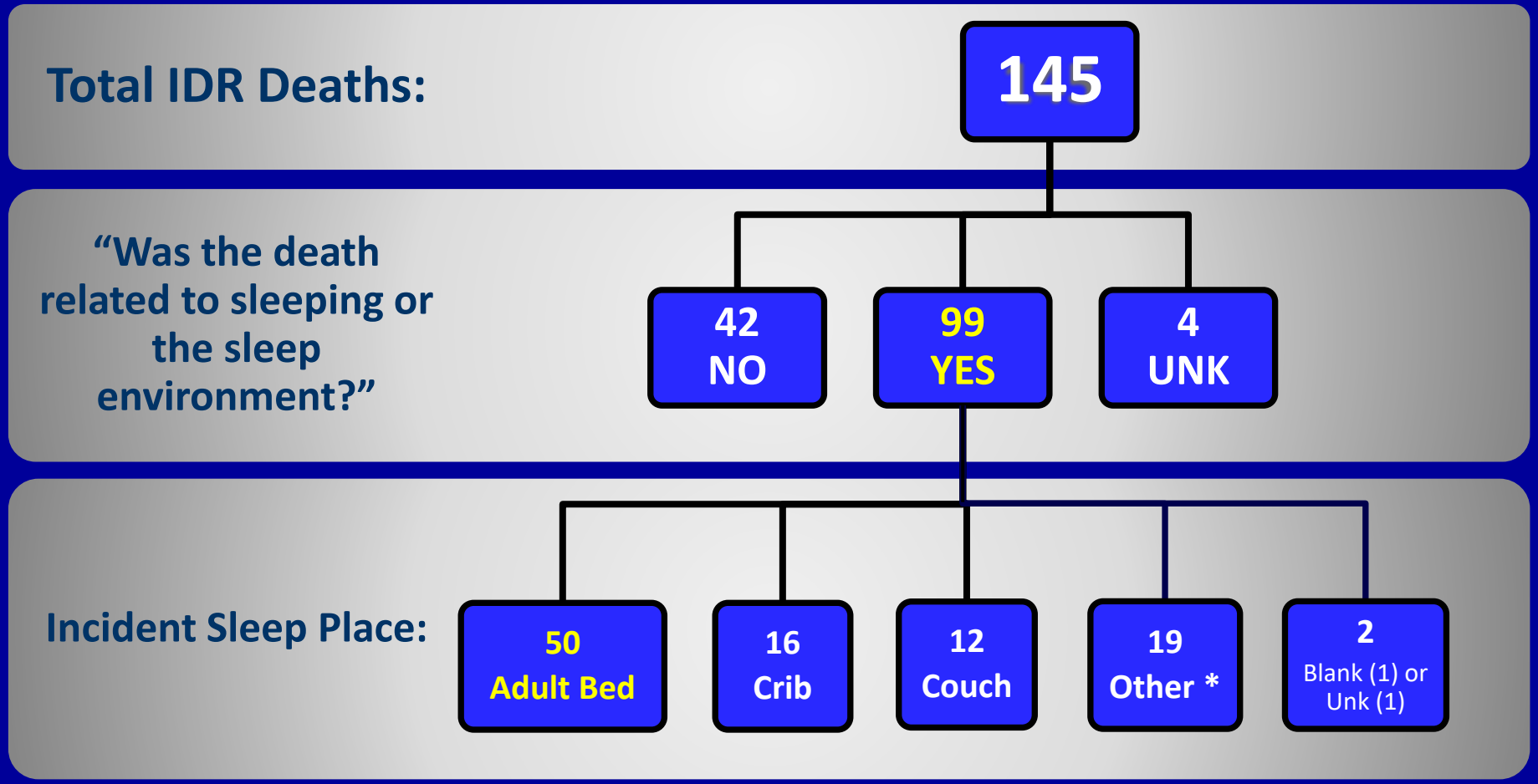
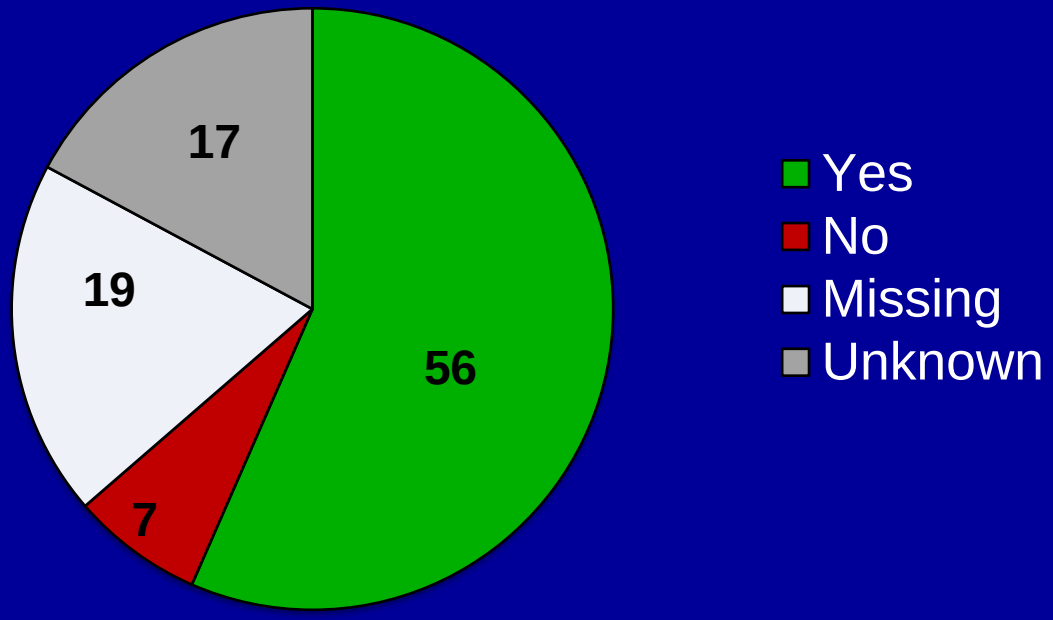
Deaths Related to Sleep Surface
2015 - 2019



** Other includes floor (6), car seat (4), bassinet (4), Rock 'N Play (2), Changing mat wedge (1), Rocker chair (1), Bouncy chair (1)*

Crib Availability for Sleep-related Deaths
2015 - 2019

Was there a crib *(includes Pack 'n Play)*, bassinet, bed side sleeper or baby box in the home?



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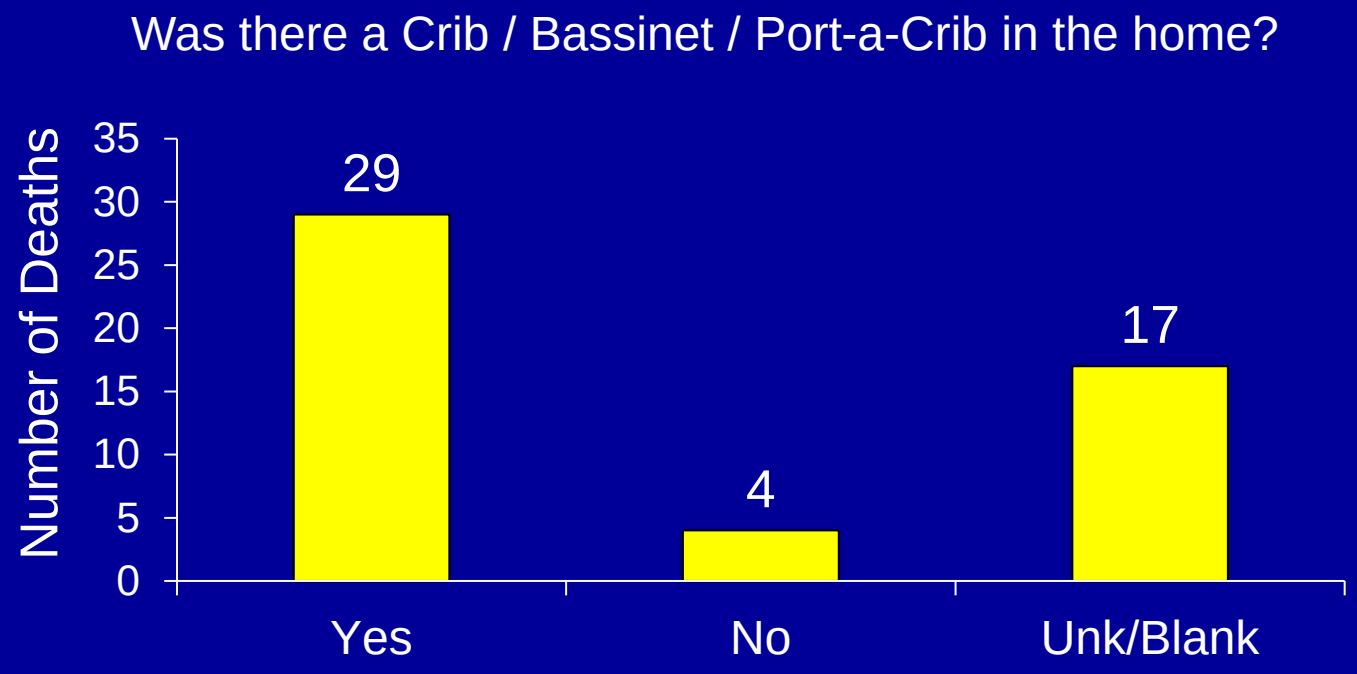
Crib Availability
2015 - 2019

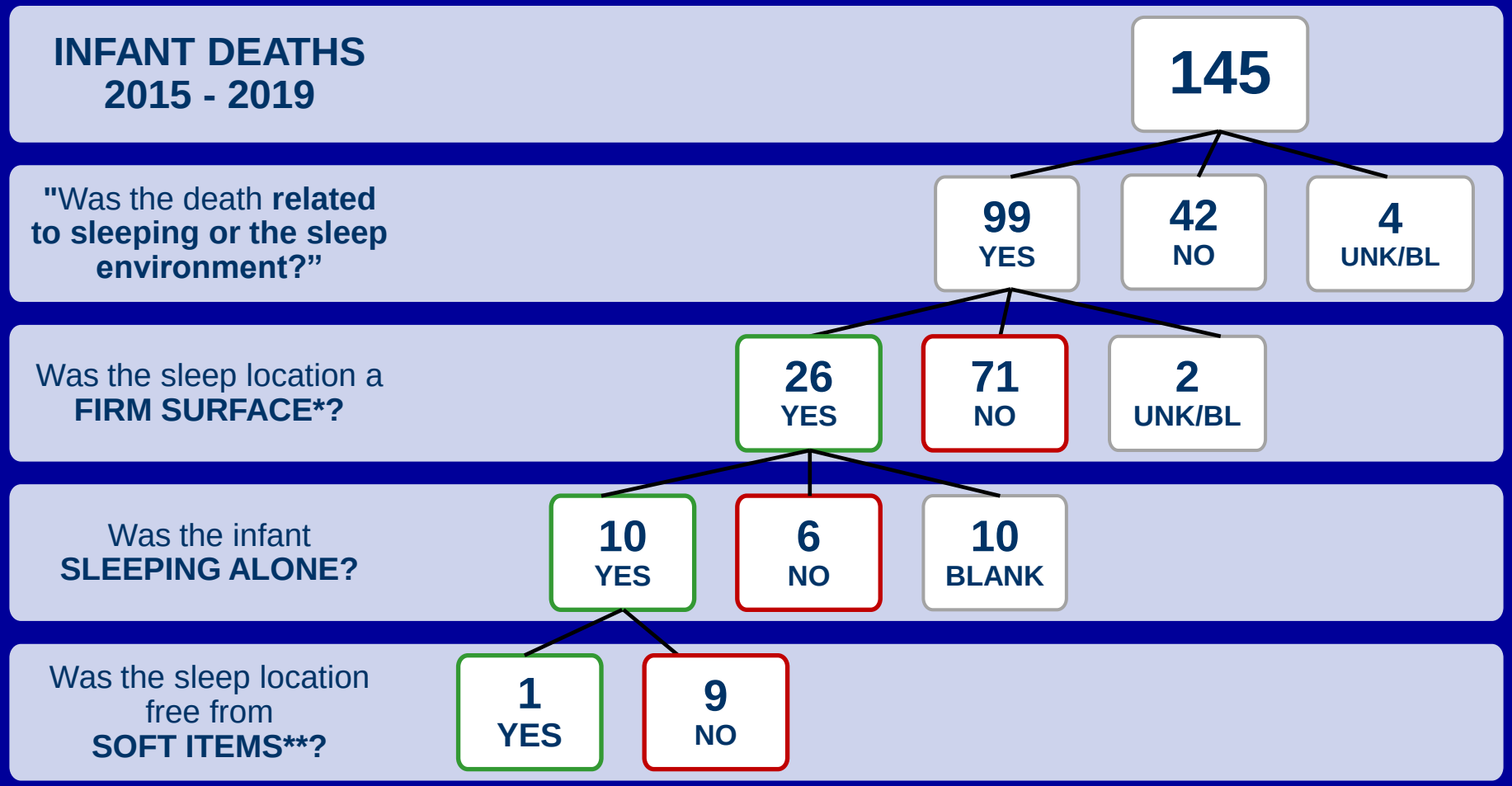
Of the 99 sleep-related deaths, 52% occurred in an adult bed *(N=50)*:



Of 99* sleep-related deaths, 55 occurred when infant was bed-sharing ***(39 with an adult, 6 with a child, 10 with an adult AND another child).***

**21 of the 99 did not have these questions answered, so bed-sharing could be even higher.*

Sleep Environment Breakdown



* "*Firm Surface*" includes **crib** *(including pack 'n play)*, **bassinet**, or **floor**.

** "*Soft Items*" includes comforter, blanket/flat sheet, pillow, cushion, boppy, positioner, bumper pads, or toy.

Summary

- Disproportionate number of deaths among American Indian population than among whites.
- Disproportionate number of deaths among males than among females.
- Younger infants have a higher number of deaths than older infants.
- 73% of deaths were related to sleeping or the sleep environment. Of these, 52% occurred in an adult bed and of the records with bed-sharing questions answered, 71% reported bed-sharing *(55/78).*

To reflect on the information and data that was just presented;

What positives did you identify?

What was concerning to you?

Did you identify any gaps in the data?

Based on that reflection;

What are some areas of improvement? (either to the data collection process, data analysis, ideas for prevention strategies)

SOUTH DAKOTA DEPARTMENT OF HEALTH

South Dakota Maternal Mortality and Morbidity

Katelyn Strasser, MPH, RN
Maternal Child Health Epidemiologist, SDDOH

Dr. Mary Carpenter
Medical Director-Department of Health and Medicaid

Shortcuts / Serena Williams and the realities of the 'maternal mortality crisis'

Huge Racial Disparities Found in Deaths Linked to Pregnancy

Major maternal health legislation signed into law

The briefing / Why do women still die giving birth?

Courtesy of the Bloomstein Family

The Last Person You'd Expect To Die In Childbirth

For Every Woman Who Dies In Childbirth In The U.S., 70 More Come Close

MATERNAL MORTALITY DEFINITIONS:

Pregnancy-associated death: The death of a woman while pregnant or within one year of the termination of pregnancy, regardless of the cause. This makes up the universe of maternal mortality. Within that universe are pregnancy-related deaths and pregnancy-associated, but not related deaths.

Pregnancy-associated, but not related death: The death of a woman during pregnancy or within one year of the end of pregnancy, from a cause that is not related to pregnancy.

Pregnancy-related death: The death of a woman during pregnancy or within one year of the end of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

Source: Review to Action

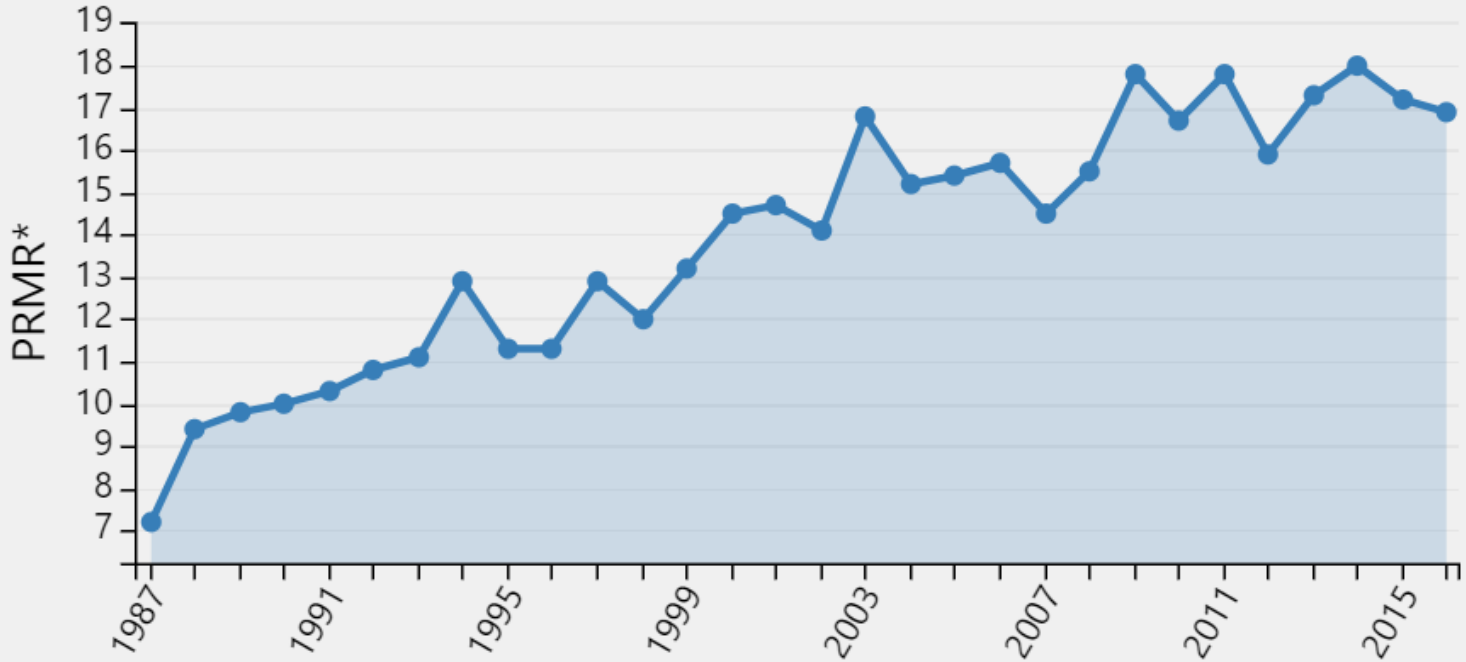
Data Sources

Pregnancy Mortality Surveillance System (PMSS)

- Use death certificates linked to fetal death and birth certificates
- Reviewed by medical epidemiologists
- Classify as pregnancy-associated, pregnancy-related, cause of death, and identify injury relatedness
- Most recent data is from 2017
- Does not count SD resident deaths that occurred in other states

Source:
CDC PMSS

Trends in pregnancy-related mortality in the United States: 1987-2016



*Number of pregnancy-related deaths per 100,000 live births per year

Sources:
CDC PMSS
Catalano, AJOG

Racial/Ethnic Disparities in Pregnancy-Related Mortality Exist
PMSS data 2011-2016

Pregnancy-related mortality ratios:

- 42.4 deaths per 100,000 live births for Black non-Hispanic women
- 30.4 deaths per 100,000 live births for American Indian/Alaskan Native non-Hispanic women
- 14.1 deaths per 100,000 live births for Asian/Pacific Islander non-Hispanic women
- 13.0 deaths per 100,000 live births for white non-Hispanic women
- 11.3 deaths per 100,000 live births for Hispanic women

Source: CDC
PMSS

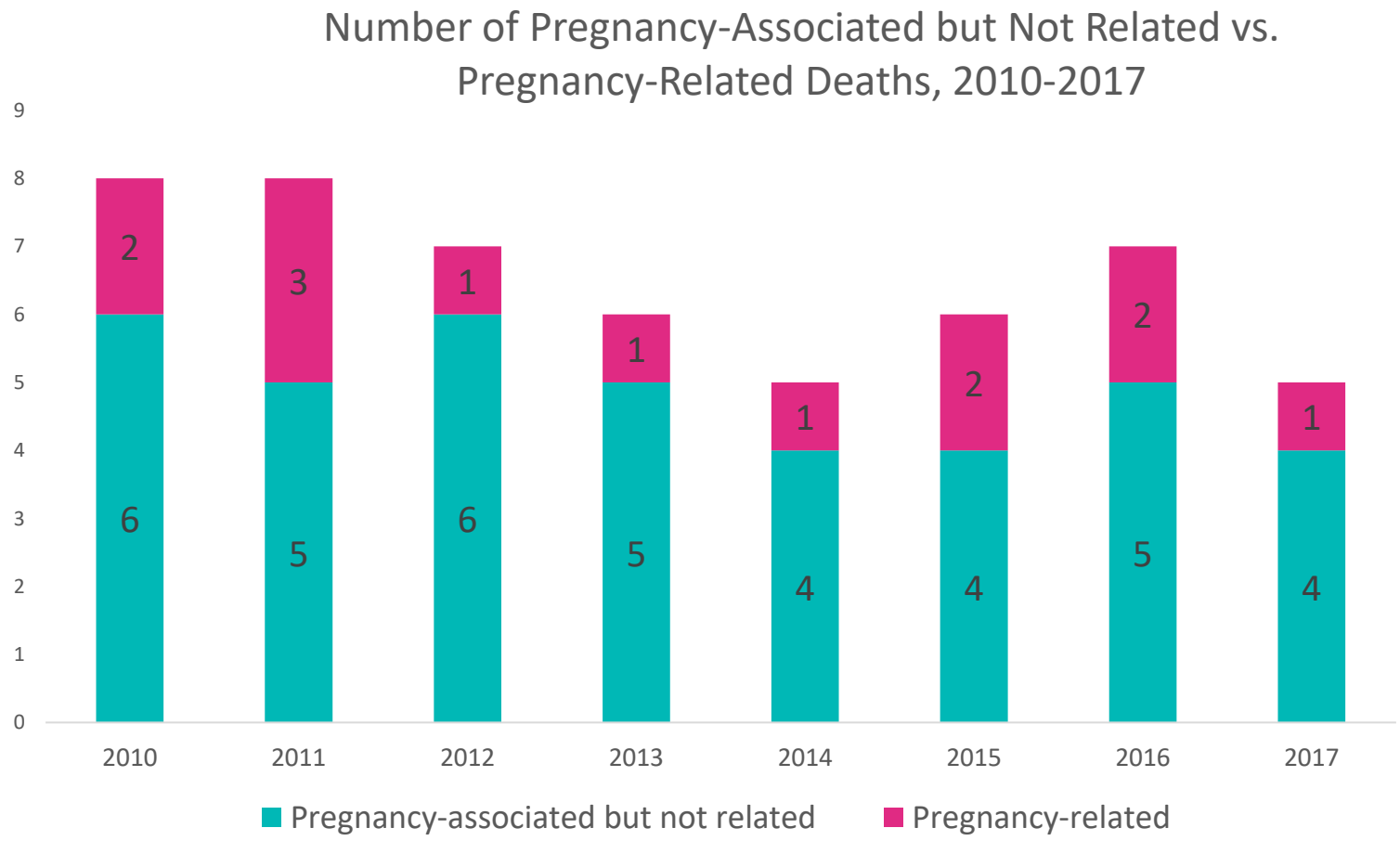
Factors in disproportionate pregnancy-related mortality ratios

Access to care

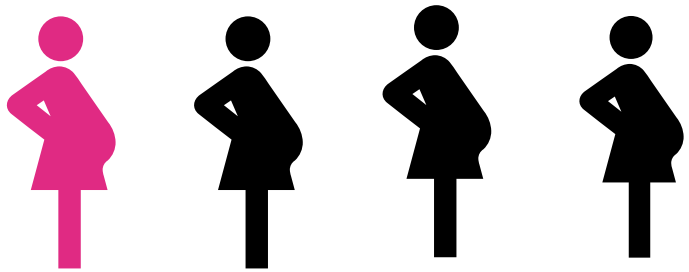
Quality of care

Prevalence of chronic diseases

Source: Petersen, MMWR, 2019

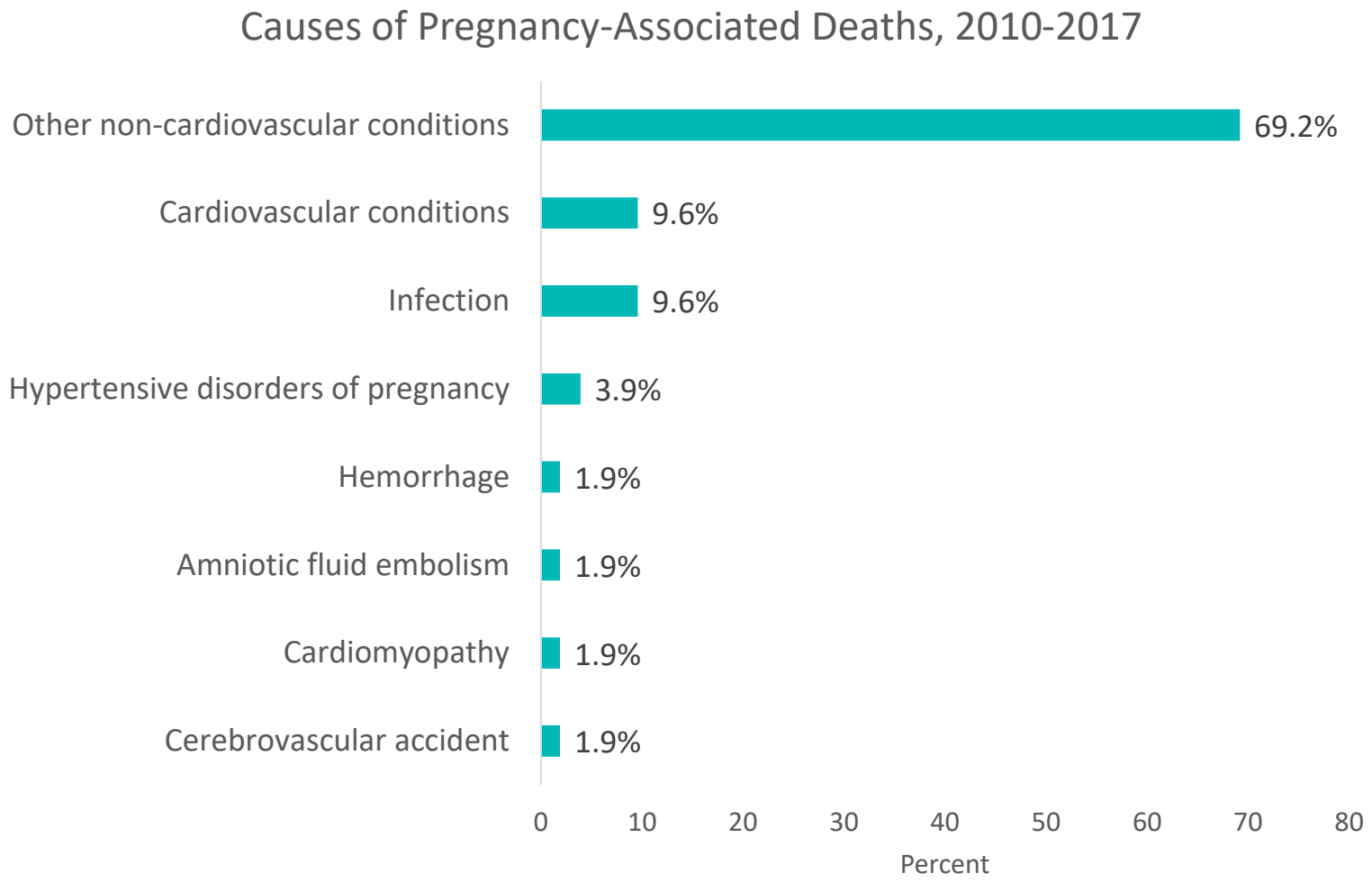


Source: CDC
PMSS



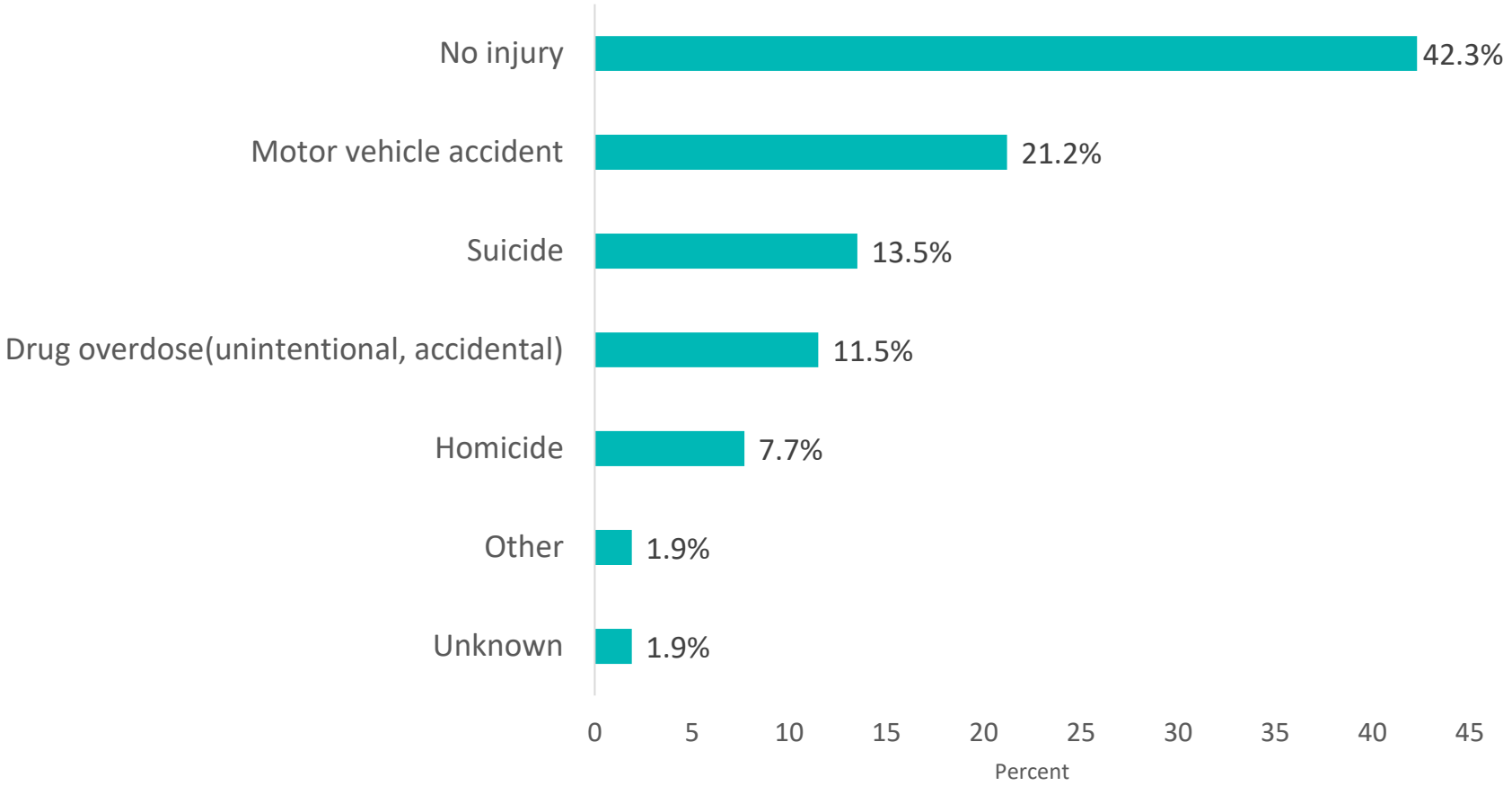
1 in 4 maternal deaths in South Dakota is pregnancy-related

Source: CDC PMSS



Source: CDC
PMSS

Percent of Pregnancy-Associated Deaths Due to an Injury, 2010-2017



Source: CDC
PMSS

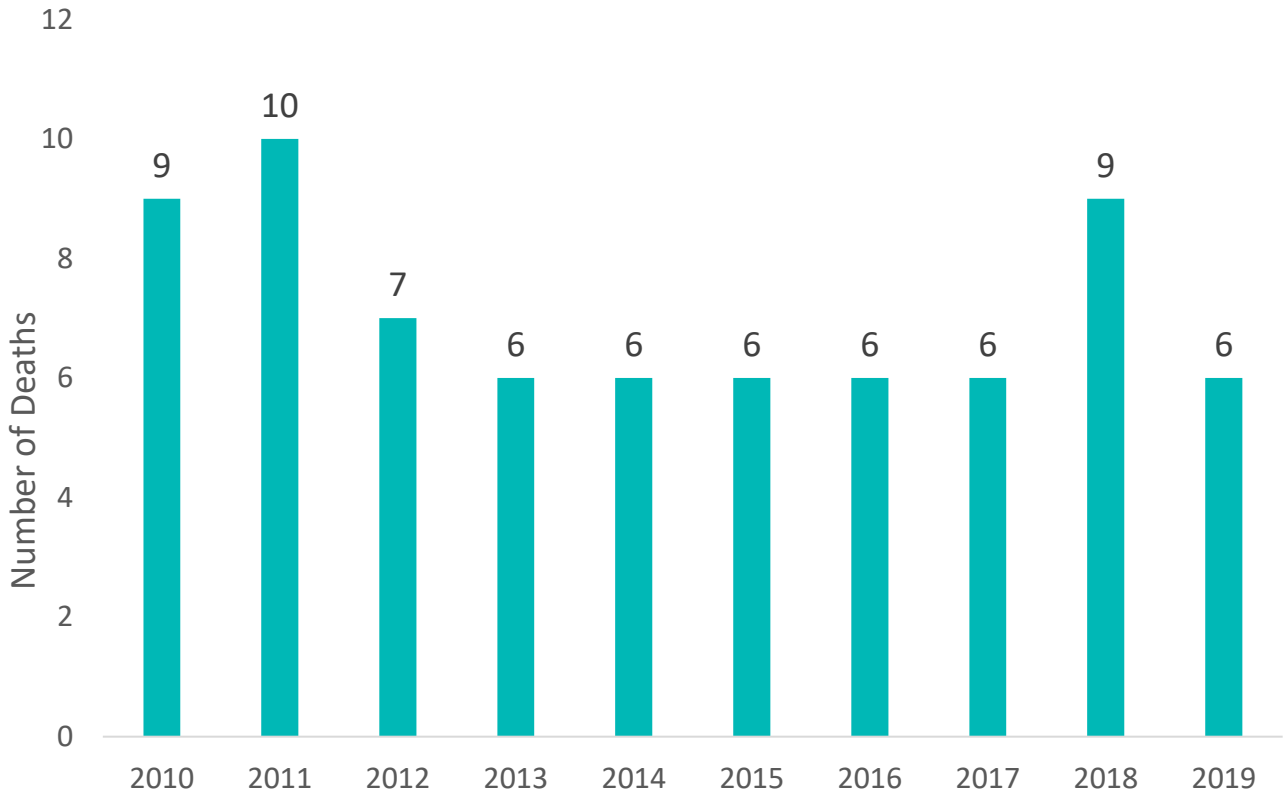
Data Sources

South Dakota Vital Statistics

- Death certificates linked to fetal death and birth certificates
- Reviewed by SDDOH staff
- More current data (2019)
- Considers SD residents that died in other states

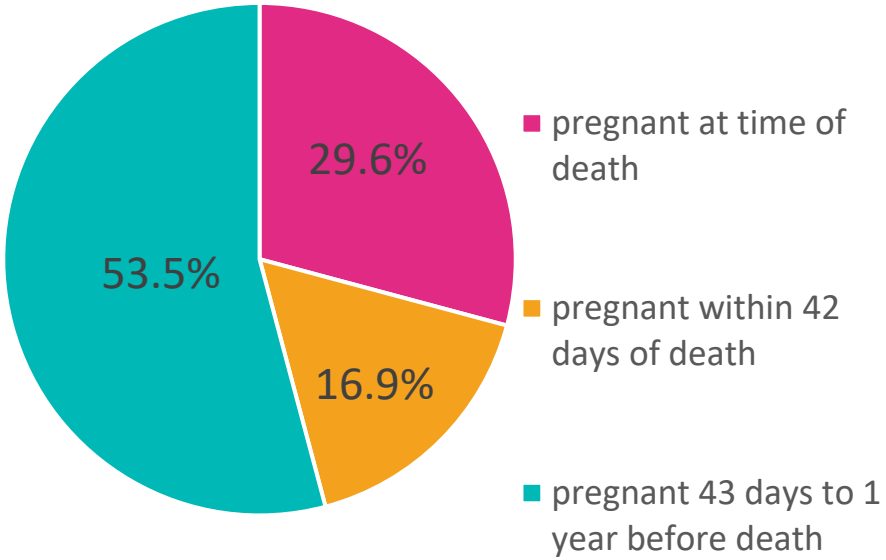
Source:
South Dakota Vital Statistics

Number of Pregnancy-Associated Deaths, 2010-2019



Source:
South Dakota Vital Statistics

Timing of Pregnancy-Associated Deaths, 2010-2019



Source:
South Dakota Vital Statistics

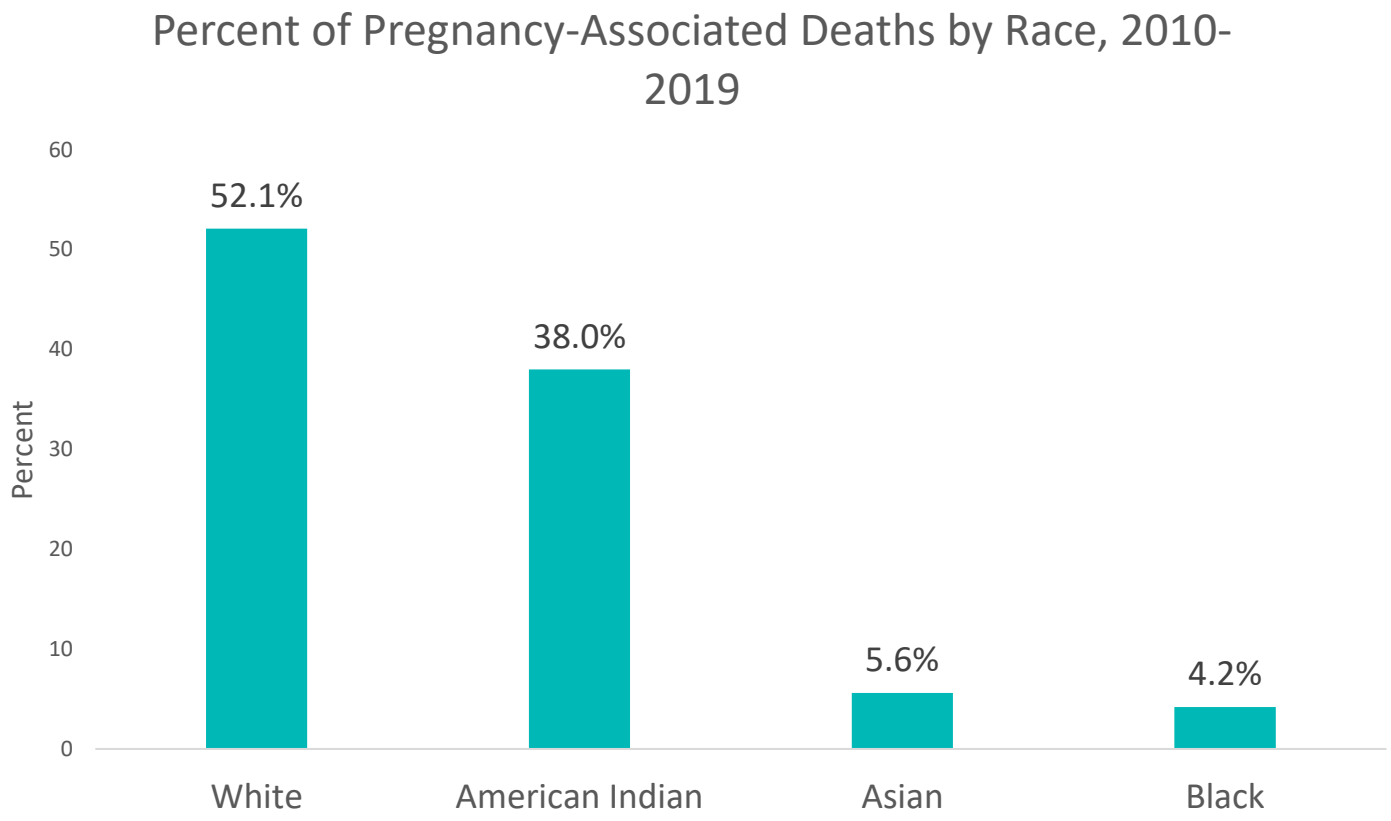
Demographic Characteristics of all Pregnancy-Associated Deaths, 2010-2019 (N=71)

Maternal Age	Frequency	Percent
<20	8	11.3
20-24	9	12.7
25-29	**22**	**31**
30-34	18	25.4
35-39	10	14.1
>=40	4	5.6

Marital Status	Frequency	Percent
Married	29	40.8
Never married	**34**	**47.9**
Divorced	6	8.5
Widowed	1	1.4
Unknown	1	1.4

Education	Frequency	Percent
Less than high school	16	22.5
High school graduate or GED	**29**	**40.8**
Some college	9	12.7
College graduate or higher	16	22.5
Not stated	1	1.4

Source:
South Dakota Vital Statistics



Percent of live births by mother's race from 2010-2019 was 72.3% for white women and 15.0% for American Indian women

Source:
South Dakota Vital Statistics

Data Sources

Maternal Mortality Review Committee (MMRC)

- Multidisciplinary committee that reviews deaths that occur during or within 1 year of pregnancy
- Data gathered by nurse abstractor, put into MMRIA system, and turned into de-identified case narratives
- Determines pregnancy-relatedness and makes specific recommendations for prevention

Source: CDC PMSS

MMRIA

MATERNAL MORTALITY REVIEW COMMITTEE DECISIONS FORM v20 1

REVIEW DATE

Month/Day/Year

RECORD ID #

COMMITTEE DETERMINATION OF CAUSE(S) OF DEATH

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING* CAUSE OF DEATH
Refer to page 3 for PMSS-MM cause of death list.

PREGNANCY-RELATEDNESS: SELECT ONE

- ☐ **PREGNANCY-RELATED**
  A death during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy
- ☐ **PREGNANCY-ASSOCIATED, BUT NOT-RELATED**
  A death during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy
- ☐ **PREGNANCY-ASSOCIATED BUT UNABLE TO DETERMINE PREGNANCY-RELATEDNESS**
- ☐ **NOT PREGNANCY-RELATED OR-ASSOCIATED**
  (i.e. false positive, was not pregnant within one year of death)

TYPE	OPTIONAL: CAUSE (DESCRIPTIVE)
UNDERLYING*	
CONTRIBUTING	
IMMEDIATE	
OTHER SIGNIFICANT	

ESTIMATE THE DEGREE OF RELEVANT INFORMATION (RECORDS) AVAILABLE FOR THIS CASE:

- ☐ **COMPLETE**
  All records necessary for adequate review of the case were available
- ☐ **MOSTLY COMPLETE**
  Minor gaps (i.e. information that would have been beneficial but was not essential to the review of the case)
- ☐ **SOMEWHAT COMPLETE**
  Major gaps (i.e. information that would have been crucial to the review of the case)
- ☐ **NOT COMPLETE**
  Minimal records available for review (i.e. death certificate and no additional records)
- ☐ **N/A**

DOES THE COMMITTEE AGREE WITH THE UNDERLYING* CAUSE OF DEATH LISTED ON DEATH CERTIFICATE? ☐ YES ☐ NO

COMMITTEE DETERMINATIONS ON CIRCUMSTANCES SURROUNDING DEATH

DID **OBESITY** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **DISCRIMINATION** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **MENTAL HEALTH CONDITIONS** *OTHER THAN SUBSTANCE USE DISORDER* CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **SUBSTANCE USE DISORDER** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN

MANNER OF DEATH

WAS THIS DEATH A SUICIDE?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
WAS THIS DEATH A HOMICIDE?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN

IF ACCIDENTAL DEATH, HOMICIDE, OR SUICIDE, LIST THE **MEANS OF FATAL INJURY**

- ☐ FIREARM
- ☐ SHARP INSTRUMENT
- ☐ BLUNT INSTRUMENT
- ☐ POISONING/ OVERDOSE
- ☐ HANGING/ STRANGULATION/ SUFFOCATION
- ☐ FALL
- ☐ PUNCHING/ KICKING/BEATING
- ☐ EXPLOSIVE
- ☐ DROWNING
- ☐ FIRE OR BURNS
- ☐ MOTOR VEHICLE
- ☐ INTENTIONAL NEGLECT
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

IF HOMICIDE, WHAT WAS THE **RELATIONSHIP OF THE PERPETRATOR TO THE DECEDENT?**

- ☐ NO RELATIONSHIP
- ☐ PARTNER
- ☐ EX-PARTNER
- ☐ OTHER RELATIVE
- ☐ ACQUAINTANCE
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

*Underlying cause refers to the disease or injury that initiated the chain of events leading to death or the circumstances of the accident or violence which produced the fatal injury.

MMRIA

MATERNAL MORTALITY REVIEW COMMITTEE DECISIONS FORM v20 2

COMMITTEE DETERMINATION OF PREVENTABILITY

A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

WAS THIS DEATH PREVENTABLE?	☐ YES	☐ NO
CHANCE TO ALTER OUTCOME	☐ GOOD CHANCE ☐ NO CHANCE	☐ SOME CHANCE ☐ UNABLE TO DETERMINE

CONTRIBUTING FACTORS AND RECOMMENDATIONS FOR ACTION (Entries may continue to grid on page 5)

CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death?
Multiple contributing factors may be present at each level.

RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	CONTRIBUTING FACTORS (choose as many as needed below)	LEVEL	COMMITTEE RECOMMENDATIONS [Who?] should [do what?] [when?] Map recommendations to contributing factors.	LEVEL	PREVENTION TYPE (choose below)	EXPECTED IMPACT (choose below)

CONTRIBUTING FACTOR KEY (DESCRIPTIONS ON PAGE 4)

- Access/financial
- Adherence
- Assessment
- Childhood abuse/ trauma
- Chronic disease
- Clinical skill/ quality of care
- Communication
- Continuity of care/ care coordination
- Cultural/religious
- Delay
- Discrimination
- Environmental
- Equipment/ technology
- Interpersonal racism
- Knowledge
- Law Enforcement
- Legal
- Mental health conditions
- Outreach
- Policies/procedures
- Referral
- Social support/ isolation
- Structural racism
- Substance use disorder - alcohol, illicit/prescription drugs
- Tobacco use
- Unstable housing
- Violence
- Other

DEFINITION OF LEVELS

- **PATIENT/FAMILY:** An individual before, during or after a pregnancy, and their family, internal or external to the household, with influence on the individual
- **PROVIDER:** An individual with training and expertise who provides care, treatment, and/or advice
- **FACILITY:** A physical location where direct care is provided - ranges from small clinics and urgent care centers to hospitals with trauma centers
- **SYSTEM:** Interacting entities that support services before, during, or after a pregnancy - ranges from healthcare systems and payors to public services and programs
- **COMMUNITY:** A grouping based on a shared sense of place or identity - ranges from physical neighborhoods to a community based on common interests and shared circumstances

PREVENTION TYPE

- **PRIMARY:** Prevents the contributing factor before it ever occurs
- **SECONDARY:** Reduces the impact of the contributing factor once it has occurred (i.e. treatment)
- **TERTIARY:** Reduces the impact or progression of what has become an ongoing contributing factor (i.e. management of complications)

EXPECTED IMPACT

- **SMALL:** Education/counseling (community- and/or provider-based health promotion and education activities)
- **MEDIUM:** Clinical intervention and coordination of care across continuum of well-woman visits (protocols, prescriptions)
- **LARGE:** Long-lasting protective intervention (improve readiness, recognition and response to obstetric emergencies/LARC)
- **EXTRA LARGE:** Change in context (promote environments that support healthy living/ensure available and accessible services)
- **GIANT:** Address social determinants of health (poverty, inequality, etc.)

Maternal Mortality Review in South Dakota

- South Dakota Preventable Death Committee
  - Provide recommendations for death review processes
- Ad hoc maternal mortality committee
  - Formed multidisciplinary group
  - Received technical assistance from CDC MMRIA
  - Signed onto MMRIA platform and attended 2019 MMRIA training
- New abstractor joining our team in April
- Have data sharing agreements out to health facilities for signature
- Maternal Mortality Review Committee- TBD 2021

To reflect on the information and data that was just presented;

What positives did you identify?

What was concerning to you?

Did you identify any gaps in the data?

Based on that reflection;

What are some areas of improvement? (either to the data collection process, data analysis, ideas for prevention strategies)

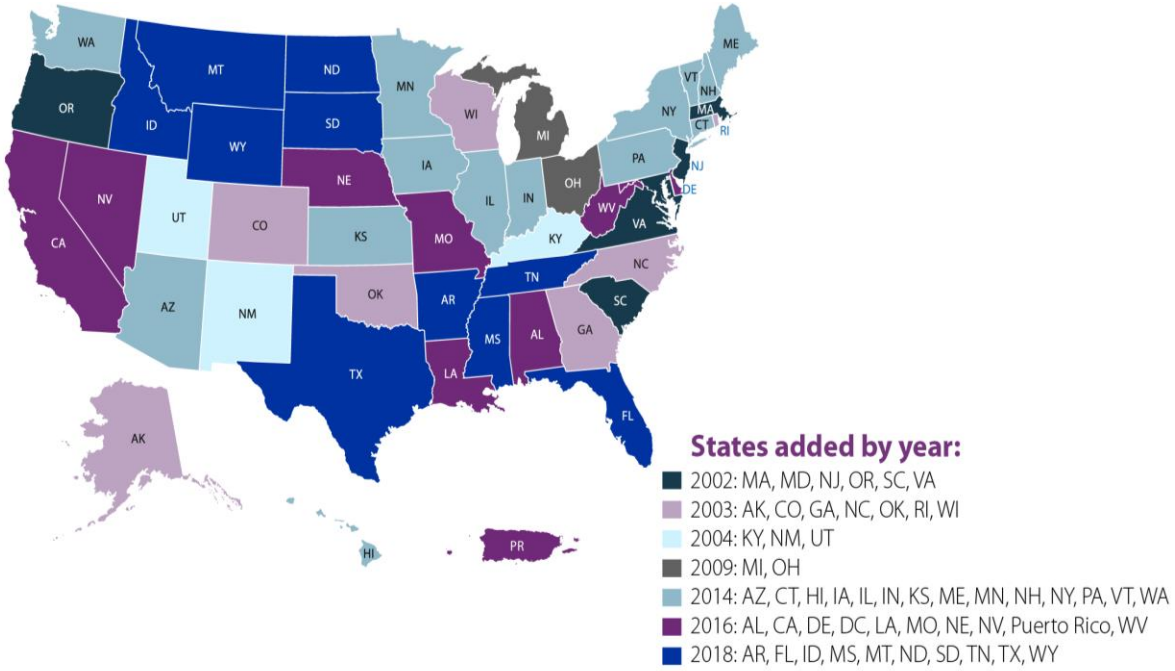
SOUTH DAKOTA DEPARTMENT OF HEALTH

SD VDRS

South Dakota Violent Death Reporting System

National Violent Death Reporting System (NVDRS)

- NVDRS is a state-based anonymous surveillance system
- CDC funding out of the National Center for Injury Prevention and Control
- SD, one of the ten remaining states to implement this system in 2018



- Collects information on all violent deaths
- A violent death includes:
  - Suicides
  - Homicides
  - Undetermined Intent
  - Unintentional firearm
  - Legal intervention
  - Terrorism

National Violent Death Reporting System

- Over **600 variables**
- Data about **victim, suspect, incident, weapon, toxicology**
- Comprehensive depiction of the **who, what, where, when, and how** to gain insight as to **why** the death occurred

Death Certificates

Coroner/Medical Examiner Reports

Law Enforcement Reports

SD VDRS

South Dakota Violent Death Reporting System

- South Dakota Department of Health received funding from CDC in 2018
  - 4-year project period (9/2018 - 8/2022)
  - Data collection started January 1st, 2019
    - Pilot year (Minnehaha and Pennington County)
  - Statewide data collection started January 1st, 2020

- SD-VDRS aims to provide our state and communities with a clearer understanding of violent death.

- This information can be used to guide state and local prevention efforts

SDVDRS
South Dakota Violent Death Reporting System

Team;

- **Kiley Hump-** Administrator, Chronic Disease Prevention and Health Promotion
  PI/Grant Manager, assist with the Preventable Death Committee
- **Matt Tribble-** Injury Prevention Coordinator
  Program coordinator, assist with the Preventable Death Committee, prevention programming
- **Amanda Nelson-** Injury Prevention Epidemiologist/East River Data Abstractor
  Data collection, abstraction and analysis
- **Kaylyn Davis-** West River Data Abstractor (Black Hills Special Services Cooperative)
  Data collection, abstraction and prevention programming
- **Mariah Pokorny-** State Registrar, Office of Vital Statistics
  Death certificates and coordination with coroners
- **Jamie Messerli-** Program Evaluator (Sanford Health)
  Evaluation design, implementation, and reports

SOUTH DAKOTA DEPARTMENT OF HEALTH

Source: SD-VDRS

Preliminary 2019 SD-VDRS Data

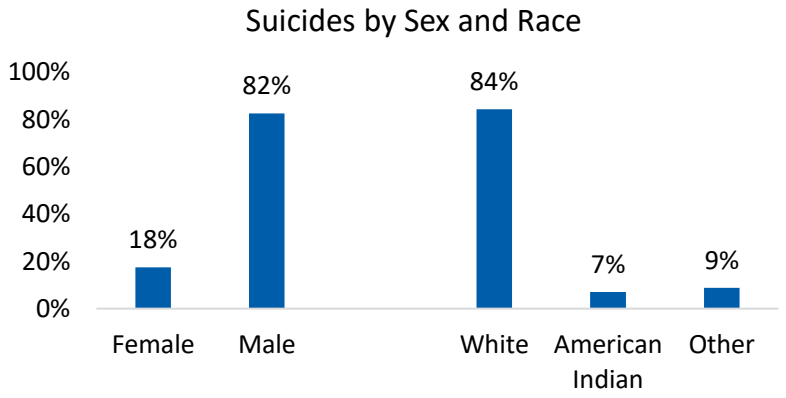
68 Violent Deaths in Minnehaha and Pennington County

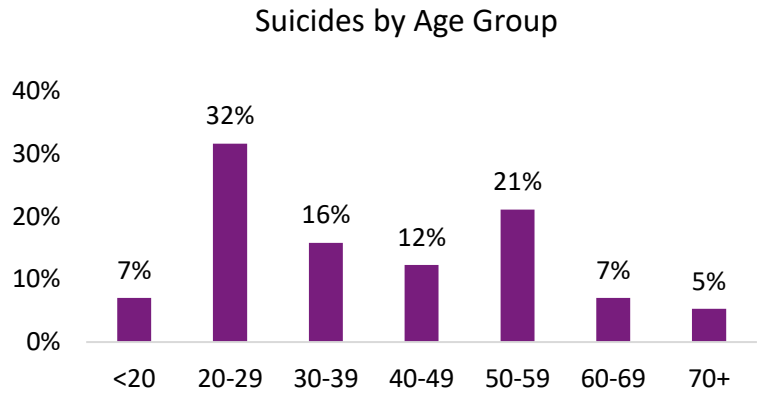
Violent Deaths by County:
- 49% of cases occurred in Pennington County
- 51% of cases occurred in Minnehaha County

Manner of Death
- 83.8% Suicides
- 14.7% Homicides
- 1.5% Undetermined

57 suicide deaths in Minnehaha and Pennington county

Suicide Methods
- 51% Firearm
- 32% Hanging/Suffocation
- 14% Poisoning
- 4% Other



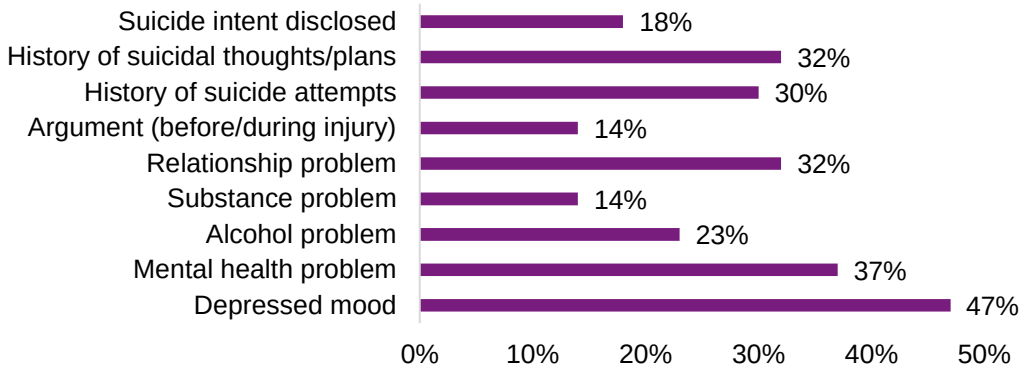


SOUTH DAKOTA DEPARTMENT OF HEALTH

Source: SD-VDRS

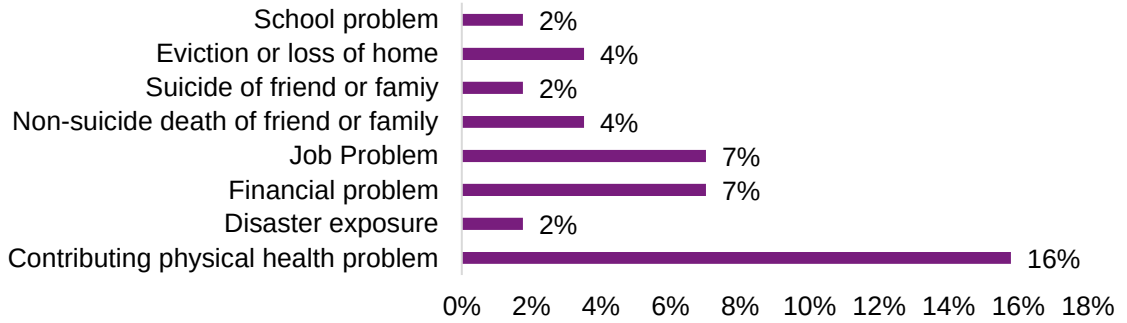
Preliminary 2019 SD-VDRS Data

Factors Contributing to Suicide Deaths



Life Stressors Contributing to Suicide Deaths

33% of suicides had a life stressor documented in the coroner and/or law enforcement records.



Note: Circumstances surrounding suicide deaths were documented in reports by coroners and/or law enforcement. Persons who died by suicide may have had multiple circumstances. It is possible that other circumstances could have been present and not diagnosed, known, or reported.

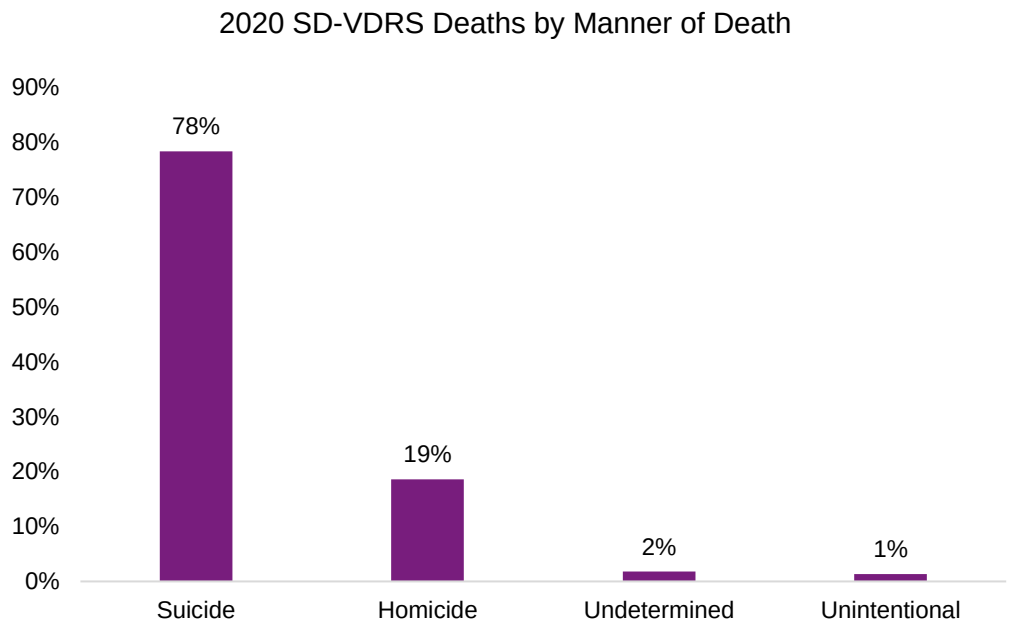
Thank you to our data providers from Minnehaha and Pennington County!

Source: SD-VDRS

Preliminary 2020 SD-VDRS Data

As of 2/24/21:

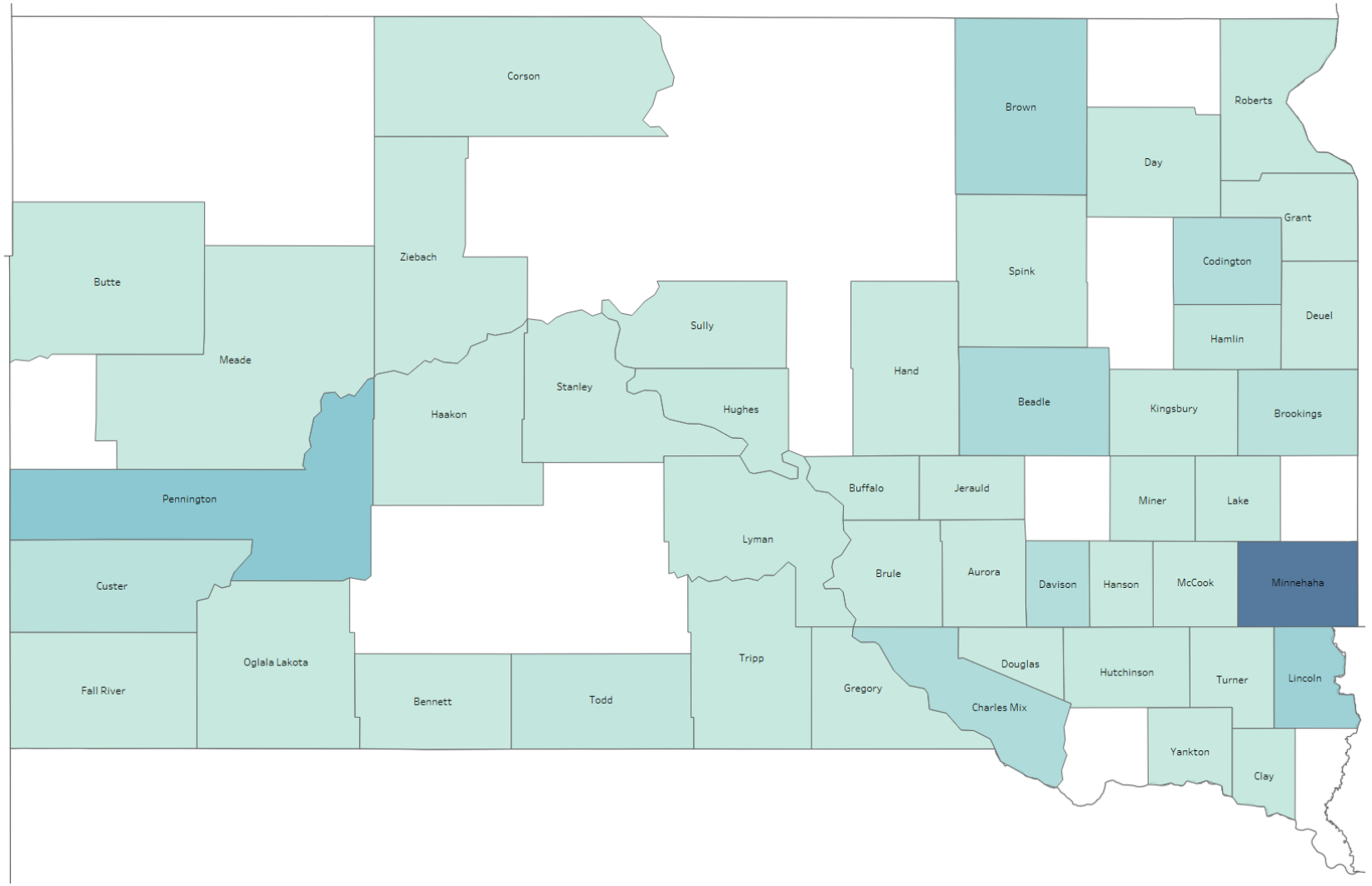
- 226 cases abstracted into NVDRS
  - 43% (98) cases completed



Source: SD-VDRS

Preliminary 2020 SD-VDRS Data

SD-VDRS Cases by County of Injury (189 Cases)

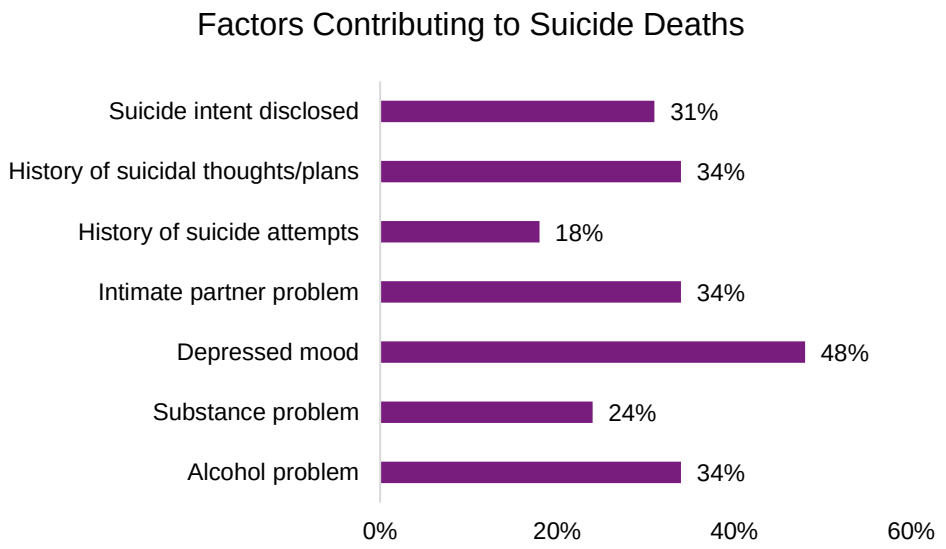


Source: SD-VDRS

Preliminary 2020 SD-VDRS Data: Suicides

80 suicide deaths – completed cases

Suicide Methods
- 55% Firearm
- 33% Hanging/Suffocation
- 11% Poisoning
- 1% Other



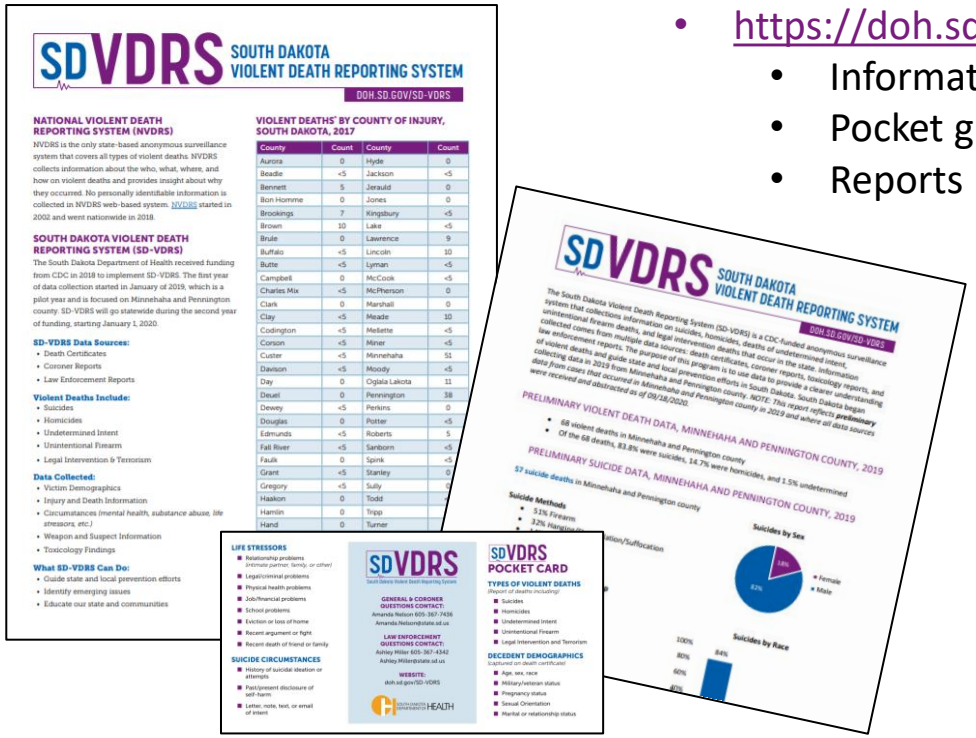
Note: Circumstances surrounding suicide deaths were documented in reports by coroners and/or law enforcement. Persons who died by suicide may have had multiple circumstances. It is possible that other circumstances could have been present and not diagnosed, known, or reported.

Resources

- South Dakota Preventable Death Committee
  - https://doh.sd.gov/statistics/PreventableDeath.aspx
    - Committee members, meeting minutes, and meeting presentations

- Coroner Training
  - Overview of SD-VDRS, SUDORS, and Coroner Worksheets

- South Dakota Violent Death Reporting System (SD-VDRS)
  - https://doh.sd.gov/statistics/sd-vdrs/
    - Informational one-pager
    - Pocket guide
    - Reports



For printed resources, contact
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