What Should I Know Before Using Suicide and Self-Inflicted Injury Data?

NCDHHS Division of Public Health, Injury and Violence Prevention Branch (IVPB), Epidemiology, Surveillance, and Informatics (ESI) Unit

SUICIDE AND SELF-INFLICTED INJURY DATA CONSIDERATIONS

Injury and Violence Prevention Branch (IVPB) suicide and self-inflicted injury data can be used in many ways, from identifying risks, tracking trends, and developing effective prevention strategies, to supporting advocacy, funding decisions, and public awareness campaigns.

This document outlines what you should know and consider before using IVPB suicide and self-inflicted injury data resources.

Suicide and Self-Inflicted Injury Terminology

These terms describe different suicide-related health outcomes.

Suicide, Self-Inflicted Injury, and Self-Harm

Suicide, self-inflicted injuries, and self-harm describe the intent of fatal or non-fatal injuries. They are injuries that happen when a person hurts themselves on purpose.

Suicide

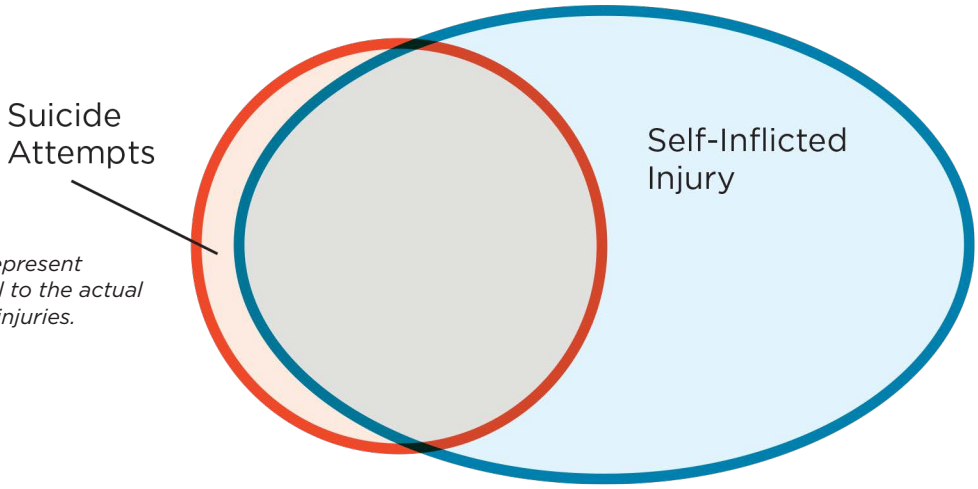
Suicides are fatal injuries where someone intended to take their own life.

Self-Inflicted Injury and Self Harm

Self-harm and self-inflicted injury describe when someone injures themselves on purpose. These terms are often used interchangeably to describe non-fatal injuries.

- IVPB normally uses the term self-inflicted injury.
- Self-harm can sometimes to be used to describe behavior rather than the injury outcome of the behavior and can include self-harming behaviors that do not result in immediate physical injuries (e.g., illicit drug use).
- Some people who self-harm or experience self-inflicted injury may not want to end their life when they injure themselves.
    - Some people engage in self-harming behaviors, like cutting or taking excessive amounts of medications or drugs, but do
    - These behaviors can be used to cope with mental illness, trauma, and physical or environmental stressors.

Not all self-inflicted injuries are suicide attempts.



Note: The size of the shapes above do not represent specific data values and are not proportional to the actual number of suicide attempts or self-inflicted injuries.

Suicidal Ideation

Suicidal ideation describes when someone has repeated thoughts about wanting to end their own life.

- Suicidal ideation includes when someone has thoughts of suicide, regardless of if they make specific plans for carrying out suicide.
- Not everyone that experiences suicidal ideation acts on those thoughts or ends up taking their own life.

Method and Means

Method and **means** both describe how someone injured themselves, or the mechanism of injury.

- These terms (method, means, injury mechanism) are often used interchangeably.
- For more information on injury mechanism, visit Injury Mechanism and Intent.

Lethal means describes the methods people may use to try to end their life that are more likely to result in a death, such as firearm injuries.

Communicating about Suicide and Self-Inflicted Injury Data

Language Used to Describe Suicide and Self-Inflicted Injury

The language used to describe and communicate about suicide and self-inflicted injury has important impacts on suicide and injury prevention.

- Negative language can contribute to **stigma**.
  - Stigma is when someone is viewed in a negative way because of particular characteristics or attributes, like their skin color, culture, substance use, or mental illness.
  - For more information, visit the Stop Stigma Together website.
- Stigma and negative language can lead to victim-blaming.
  - Victim-blaming is when someone who dies by suicide, or family and friends that survived them, are held responsible for the death.
  - People may victim-blame as a way to understand or cope with a traumatic event such as suicide.
  - It is important to remember that suicide is often an action made by someone experiencing a crisis.

Negative language and stigma about suicide and self-inflicted injury can make it harder for people to ask for help or get the support they need.

For suggested language to use as well as words and phrases to avoid when talking about suicide and self-inflicted injury, visit People Matter, Words Matter: Are you Using Destigmatizing Language About Suicide?

Recommendations for Reporting on Suicide and Self-Inflicted Injury

Acknowledge the lives impacted by suicide and self-inflicted injury when sharing data.

- Remember suicide data represent people who have lost their lives to suicide.
- Impacts of suicide are far reaching. Loved ones left behind are also impacted by suicide.

How suicide is discussed online and in the media can promote help-seeking behavior or contribute to suicide contagion.

- Suicide contagion is when exposure to suicide or suicidal behaviors leads to an increase in suicidal thoughts or behaviors among others.
- For more information, visit Reporting on Suicide for guidelines and best practices for media reporting on suicide.
- See the Postvention Resources on the IVPB Suicide Prevention page for more information on responding after a suicide loss.

Using Provisional Data

Some IVPB data resources, including the quarterly Self-Inflicted Injury ED Visit Surveillance Reports, use provisional data to:

- Share information about self-inflicted injuries in NC quickly.
- Spot changes in trends before the final data are available.
- See patterns that help us know when to take action.

Provisional numbers can change as more information becomes available.

- Provisional data should be used carefully because there may be missing information or delays in reporting.
- Provisional data become available at different times for different data sources.
    - There are longer delays for death certificate data (at least six months).
    - This delay is because of the time it takes to investigate deaths and assign an official cause of death (ICD-10 code).

For more information on provisional data and when they become available, visit Using Provisional Data for Monitoring Injuries.

How Suicide and Self-Inflicted Injury are Measured

Who Is Included in Suicide and Self-Inflicted Injury Data?

IVPB Limits Suicide and Self-Inflicted Injury Data to Those Ages 10 and Older.

IVPB follows guidelines from the Centers for Disease Control and Prevention for identifying suicide and self-inflicted injury, which exclude deaths among those under the age of 10.

- Suicide among those under the age of 10 is extremely rare.
- Determining if an injury in a very young child was self-inflicted can be challenging.
    - Very young children sometimes do not yet understand how serious death is or that it lasts forever.
    - Behaviors that may look like suicidal self-harm could have been related to curiosity or impulsive action rather than a child wanting to end their life.

However, suicide and self-inflicted injuries are increasingly impacting youth in NC.

- While data about very young children are not shared publicly, IVPB continues to monitor suicide and self-inflicted injuries among all ages to identify any changes or trends.

Occurrence vs Residence When Measuring Suicide and Self-Inflicted Injury

Occurrence describes where something happened. Residence describes the area where someone has reported that they live.

Residence Rates

Most suicide and self-inflicted injury metrics are limited to NC residents.

County-level data are limited to county residents, except for the NC Violent Death Reporting System (NC-VDRS) county-level factsheets, which use occurrence rates (see below for more information).

- Limiting to residents allows for rate calculations using NC resident population estimates.
  - This limitation ensures that the information used to calculate rates is consistent.
  - Limiting to residents allows for more accurate comparisons across groups and between counties.
- This limitation excludes people that died by suicide or experienced a self-inflicted injury in a county but are not residents of that county.
  - Someone living in a county, but who has not yet updated their residence status to that county would also be excluded.
- While limiting to county residents works well for most counties, there are some counties where this limitation may impact the local suicide rate, such as counties with colleges and universities or large tourist populations.

Occurrence Rates

The county-level NC-VDRS fact sheets include data on suicides. These fact sheets use occurrence rates and include suicides that happened in a county, regardless of whether the individuals were residents of that county.

- Occurrence rates include all suicides and self-inflicted injuries that happened in a given area, regardless of whether the individuals were residents of that area.
- For counties with lots of people coming and going, like counties with universities or colleges, the occurrence rate is often higher than the resident rate.
  - Limiting to residents would exclude these transient populations and can underestimate the burden of suicide on local systems.
- Counting cases based on where they happen rather than where people live helps us understand how suicide and self-inflicted injuries affect local systems and services and can inform local suicide prevention planning.

Injury Location

Where a suicide or self-inflicted injury ED visit or hospitalization occurs can be different from where the injury itself occurred. This distinction can also impact differences in occurrence vs resident rates of suicide injury and death.

- This distinction is especially true in rural areas where a single hospital or health care facility may serve a large area across multiple counties.
- Someone may experience a self-inflicted injury in one county and then be transported and later die in a hospital in another county.
  - This transfer of care to another county is common for people with serious injuries that require treatment at a designated trauma center.

For more information on suicide and self-inflicted injury case definitions, visit Understanding Injury Surveillance Case Definitions.

What Is Counted in Suicide and Self-Inflicted Injury Data?

Suicide and self-inflicted injury data include all mechanisms of injury where someone directly intended to injure themselves.

These data include:

- Suicide deaths
- Suicide attempts
- Self-harm injuries where someone may not have intended to end their life

Non-fatal self-inflicted injury data do not capture:

- Self-inflicted injuries treated outside of the ED or hospital.
  - These data can include self-inflicted injuries treated at urgent care clinics, by primary care providers, or by other health care providers.
- Self-inflicted injuries where someone does not seek medical care or that are treated at home.
  - This can include self-harming behaviors, like cutting.
  - Not seeking care for a self-inflicted injury can be another form of self-harm.
  - Despite not always resulting in severe injury, self-harming is a high-risk behavior that can escalate to more severe outcomes, like suicide.

What Else is Measured to Monitor Suicide and Self-Inflicted Injury Risk?

In addition to how many people died by suicide or experienced a self-inflicted injury, IVPB also monitors:

How Suicides and Self-Inflicted Injuries Happened

- While most fatal and non-fatal self-inflicted injuries involve firearms, poisonings, or hanging, other less common methods are also included (falls, motor vehicle injuries, drowning, injuries from sharp instruments, etc.).
- The method or means of suicide and self-inflicted injury differs greatly between populations.
  - For example, males are much more likely to use a firearm, and females are more likely to take an overdose of medications/drugs.
- For more information on injury mechanism, visit Injury Mechanism and Intent.

Circumstances Surrounding Suicides

- Circumstances are the events leading up to or context around a suicide death that help us understand why the suicide happened.
- See Suicide Death Data section below for more information.

Other Health Outcomes and Health Behaviors Related to Suicide

Suicidal Ideation

IVPB uses the following data to monitor suicidal ideation as a risk factor of suicide:

- ED visits and hospitalizations coded for suicidal ideation.
  - Not every health care encounter for self-inflicted injury will receive a code for suicidal ideation.
    - Sometimes people can intentionally injure themselves but do not want to end their life.
  - Suicidal ideation may be identified during a health care encounter where someone has not injured themselves.

- Emergency Medical Services (EMS) responses for suicidal ideation and suspected suicide attempts.
    - See the EMS data section below for more detail.
- Self-reported suicidal behavior among middle and high school students.
    - IVPB uses data from the Youth Risk Behavior Survey (YRBS) to understand how many students report considering, planning, and attempting suicide.
    - See the Survey Data section below for considerations when using YRBS.
    - For more information on YRBS, visit Data Sources IVPB Uses for Injury Surveillance or NC Healthy Schools Data.

Mental Health

Mental health conditions, like depression, and feelings of loneliness can greatly increase someone's risk of suicide.[1-2]

IVPB uses the following data to understand the mental health and well-being of youth and adults in NC:

- Self-reported data about mental health and related suicide risk factors
    - IVPB uses data from the NC Behavioral Risk Factor Surveillance System (BRFSS) to understand the mental health and wellbeing of adults in NC.
        - Visit NC State Center for Health Statistics, BRFSS for more information on NC BRFSS.
    - Data from the NC YRBS are used to understand mental health and bullying among high school students.
        - Visit NC Healthy Schools Data for more information on NC YRBS.
    - See the Survey Data section below for considerations when using NC BRFSS and NC YRBS data.
- Mental health-related ED visits
    - IVPB collaborates closely with partners from the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) to identify and monitor ED Visits related to:
        - Anxiety
        - Depression
        - Trauma and stressors
- IVPB also monitors ED visits and other health events related to traumatic brain injury (TBI).
    - Someone who attempts suicide may experience TBI.
    - TBIs, regardless of the cause, can place someone at increased risk of suicide and self-inflicted injury.[3]

Access to Firearms

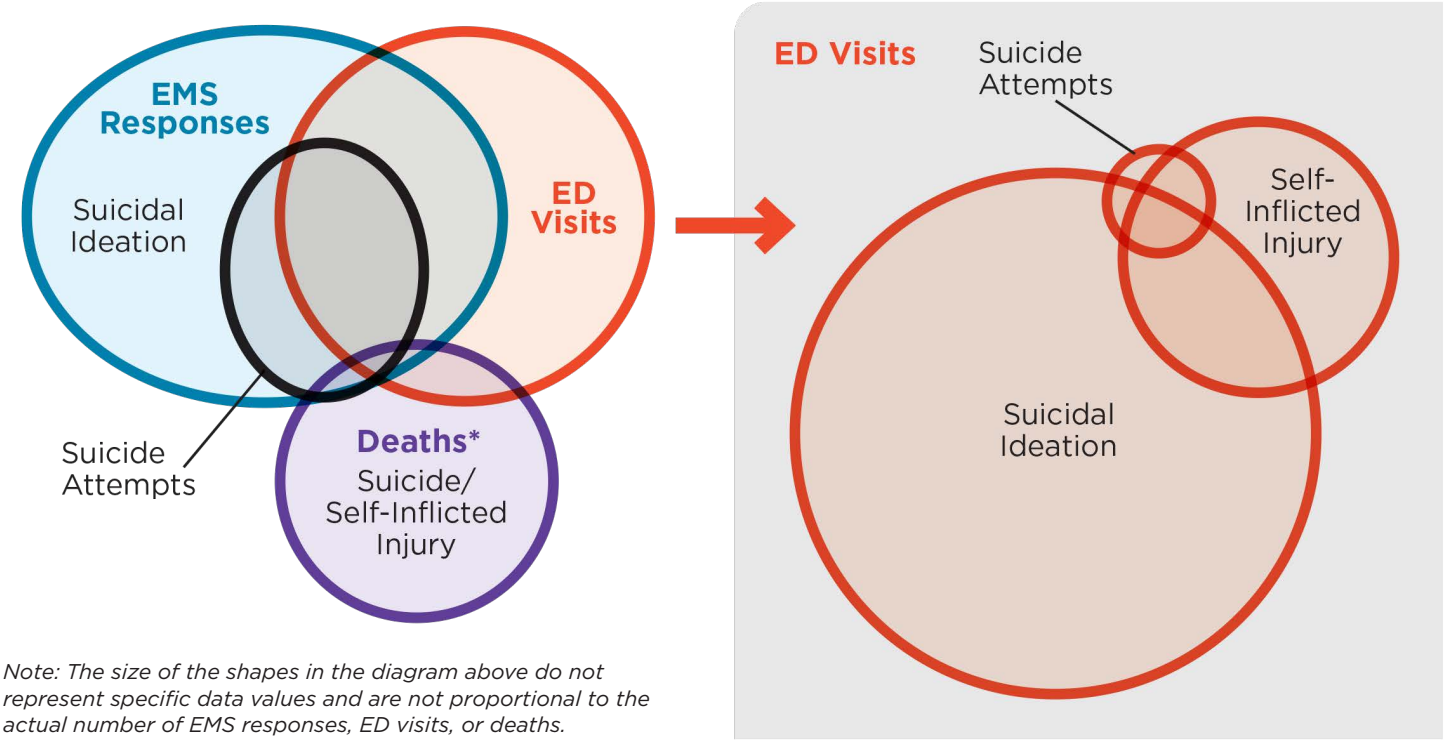
IVPB monitors data about access to firearms and how firearms are stored.

- Storing firearms safely, unloaded and locked, or temporarily removing firearms from the home, can help prevent firearm suicide when someone in the home is at risk.
    - Safe storage or temporary removal of a firearm puts time and distance between someone in crisis and their access to lethal means.
- IVPB uses BRFSS data for information on firearm ownership, access, and storage behaviors that are useful for firearm suicide and other firearm injury prevention.
    - See the Survey Data section below for considerations when using survey data.

Considerations for Using Suicide and Self-Inflicted Injury Data by Data Source

No single data source captures the full scope of suicide in NC. Data sources should be used together to understand the statewide impact of suicide and related health outcomes more fully.

The figure below shows how these data sources can overlap in identifying different suicide-related health outcomes.



Note: The size of the shapes in the diagram above do not represent specific data values and are not proportional to the actual number of EMS responses, ED visits, or deaths.

For more information on a specific data source, visit Data Sources IVPB Uses for Injury Surveillance.

Death Data

IVPB uses NC-VDRS to monitor suicide deaths.

Final NC-VDRS data are the preferred source for monitoring suicide deaths.

- NC-VDRS connects information across multiple sources (death certificates, medical examiner reports, and law enforcement reports) for a more complete understanding about violent deaths in the state.
- NC-VDRS collects data on the circumstances surrounding suicide deaths. These data provide more detailed information about how and why suicides happen, including:
  - Mental health issues
  - Recent crises
  - Substance use
  - Relationship problems
  - Other life stressors
- For more information on NC-VDRS, visit the NC-VDRS Data Users Toolkit and Data Sources IVPB Uses for Injury Surveillance.

IVPB uses death certificate data to monitor suicide deaths before NC-VDRS data are finalized.

- NC-VDRS data take longer to finalize than death certificate data because it takes time to gather and review all the details across the multiple data sources that feed into the system.
- For more information on when death certificate and NC-VDRS data become available each year, visit Using Provisional Data for Monitoring Injuries.

Differences Between Death Certificate and NC-VDRS Data

There may be some small differences in the number of suicides identified using death certificate data and NC-VDRS data based on:

- Who is included in the data.
  - NC-VDRS data include deaths that happened in NC.
  - Death certificate data also include deaths among NC residents that happened outside of the state.
- Differences in case definitions.
  - The intent of violent deaths may be grouped differently in NC-VDRS than in death certificate data. For example:
    - The injury intent of a death was documented as undetermined on the death certificate.
    - After further investigation, the intent was updated to suicide in the Office of the Chief Medical Examiner data, another data source used in NC-VDRS.
    - The death would be classified as a suicide in NC-VDRS.
- For more information, visit Understanding Differences in Data Reported by IVPB and Data Reported by Other Sources.

Hospital Discharge Data

Hospital discharge data are encounter-based, meaning that the same person may have multiple hospital stays during any given time period.

There may be more hospitalizations related to self-inflicted injury that aren't currently identified in IVPB data.

- ICD-10-CM codes are used to group and classify diagnoses and reasons for health care visits in administrative health care systems, including hospital discharge data.
  - ICD-10-CM codes are intended for administrative and billing purposes, not public health surveillance.
    - This purpose can affect which codes are or are not assigned to a record and therefore which events are included or excluded as self-inflicted injury cases.
  - For more information on ICD-10-CM codes, visit Understanding Injury Surveillance Case Definitions.
- IVPB includes hospital records as self-inflicted injury hospitalizations when there is an ICD-10-CM code for any injury listed as the primary diagnosis, and a self-inflicted injury ICD-10-CM code listed anywhere in the record.
  - Records with a non-injury ICD-10-CM code listed as the primary cause, like a diagnosis code for a mental health condition, are excluded, even if there is also a code for self-inflicted injury.
- IVPB does not exclude hospitalizations that result in death.
  - Including hospitalizations resulting in death helps to understand the full burden of self-inflicted injuries on the NC health care system.

- IVPB's expanded case definition can contribute to differences in the number of self-inflicted injury hospitalizations IVPB identifies compared to those shared by CDC or other sources.
- For more detailed information on how these cases are identified, see Injury Surveillance Technical Notes.

ED Visit Data

ED visit data are encounter-based. The same person may have multiple ED visits during any given time period.

Data Quality

- Trends may be impacted by missing data.
- There were changes in the number of people going to the ED for any reason (ED utilization) during the COVID-19 pandemic.
  - See the Suicide, Self-Inflicted Injury, and COVID-19 section below for more information.

Identifying Self-inflicted Injury ED Visits

ICD-10-CM codes are used to identify ED visits for self-inflicted injury. For more information on ICD-10-CM codes, visit Understanding Injury Surveillance Case Definitions.

- ICD-10-CM codes are intended for administrative and billing purposes, not public health surveillance. This purpose can affect which codes are or are not assigned to a record and therefore which events are included or excluded as self-inflicted injury cases.

Included

- ED visits with an ICD-10-CM code for self-inflicted injury anywhere in the record are included.
- ED visits with an ICD-10-CM code for a suicide attempt anywhere in the record are included, even if they do not have another code for a specific self-inflicted injury.

Not Included

- ED visits that only have a suicidal ideation code but do not have a code for a self-inflicted injury or suicide attempt are not included.
- ED visits with an ICD-10-CM code for non-suicidal self-harm that do not also have a code for a specific self-inflicted injury.
  - National case definitions include records with an ICD-10-CM code for non-suicidal self-harm, even if there isn't also a code for self-inflicted injury. This variation in case definitions can contribute to differences between IVPB and nationally reported self-inflicted injury data.

- IVPB does not exclude ED visits where the patient is admitted to the hospital or visits that result in death.
  - Including ED visits resulting in hospitalization or death helps us understand the full burden of self-inflicted injuries on the NC health care system.
  - These records are excluded in national case definitions. This variation in case definitions can contribute to a difference in the number of self-inflicted injury ED visits IVPB identifies compared to those shared by CDC or other sources.
- Some ED visit case definitions, called syndromes, also search the chief complaint and/or triage notes fields for keywords to identify self-inflicted injury ED visits.
  - Because these definitions also use keywords, they identify more ED visits related to self-inflicted injury than when using ICD-10-CM codes alone.

- For more detailed information on how these cases are identified, see Injury Surveillance Technical Notes.

Identifying ED Visits for Suicidal Ideation

- ED visits with an ICD-10-CM code for suicidal ideation (R45.851) anywhere in the record are included.
  - There does not need to be a code for suicide attempt present in the record for the ED visit to be included.
  - No keywords are used to identify ED visits for suicidal ideation at this time.

ED Visits with Multiple ICD-10-CM Codes

Some self-inflicted injury ED visits may receive multiple ICD-10-CM codes related to the self-inflicted injury event or for self-inflicted injury and other types of injury.

Multiple Injury Intents

- In some instances, there may be multiple injury codes with conflicting intent information, such as a code for an injury of undetermined intent or unintentional injury in addition to a code for self-inflicted injury.
  - The ICD-10-CM coding guidance defaults to classifying injuries as unintentional.
  - Multiple codes may be used to document different aspects of the ED visit, which can contribute to conflicting or inconsistent coding.

Multiple Mechanisms of Injury

- There may be codes to describe multiple types of injuries, for example, a poisoning and a cut/pierce injury.
- These records may have the same intent of self-inflicted injury, or different intents (e.g. one is self-inflicted and one is unintentional).

- A visit with multiple ICD-10-CM codes is counted once in each mechanism and intent category that applies to that ED visit, but only once in the total number of injury ED visits.
- For example:
  - An ED visit that had a code for both an unintentional overdose and a self-inflicted overdose would be counted one time each in:
    - The total number of unintentional injury ED visits
    - The total number of self-inflicted injury ED visits
    - The total number of medication/drug overdose ED visits
    - The total number of injury ED visits
  - Similarly, if multiple types of injuries were identified, like overdose and a cut/pierce injury, the ED visit would be counted once in each of those injury mechanism categories.
  - If the ED visit had different mechanism and intent categories, such as a code for both an unintentional cut/pierce injury and a self-inflicted overdose, it would be counted once in each category:
    - The total number of unintentional injury ED visits
    - The total number of self-inflicted injury ED visits
    - The total number of cut/pierce injury ED visits
    - The total number of overdose ED visits
    - The total number of injury ED visits

	Injury ICD-10-CM Codes in the ED Visit Record	How IVPB Counts the Injury ED Visit (each box represents the visit being counted once in the number of injuries by intent, mechanism, and total injury)		
		Intent	**Mechanism**	**Total Injury**
ED Visit A	**Multiple Intents** • **Self-Inflicted** Overdose • **Unintentional** Overdose	Self-Inflicted Unintentional	Medication/ Drug Overdose	Injury ED Visit
ED Visit B	**Multiple Types of Injuries** • Self-Inflicted **Overdose** • Self-Inflicted **Cut/Pierce Injury**	Self-Inflicted	Medication/ Drug Overdose Cut/Pierce	Injury ED Visit
ED Visit C	**Multiple Injuries and Intents** • **Unintentional** Cut/Pierce Injury • **Self-Inflicted Overdose**	Unintentional Self-Inflicted	Cut/Pierce Medication/ Drug Overdose	Injury ED Visit

There may be more ED visits related to self-inflicted injury than current IVPB data show.

- Some patients are unwilling to disclose to doctors during an ED visit that they harmed themselves.
- Providers may not document an injury as self-inflicted without the patient confirming how the injury happened, even if they suspect the injury was self-inflicted.

Emergency Medical Services (EMS) Data

EMS data are also encounter-based. The same person may be involved in multiple EMS responses during any given time period.

IVBP is currently using EMS data to monitor only suspected opioid overdoses, suspected suicide attempts, and suicidal ideation.

- EMS data are useful for identifying the broader impact from self-inflicted injuries, especially when the injury doesn't require medical attention in the ED or hospital.
  - — EMS data include EMS responses where the patient is treated on-scene and not transported to the hospital, as well as those that are transported.
- IVPB identifies EMS responses using ICD-10-CM codes and other information from the EMS record to estimate EMS responses for suicidal ideation and suspected suicide attempt.
  - — Suicidal ideation EMS responses must include ICD-10-CM codes for suicidal ideation or suicide attempt as an impression or a cause of injury, or keywords related to suicidal ideation in the chief complaint.
    - The EMS suicidal ideation syndrome definition accurately identifies 93% of suicidal ideation responses using keywords in the chief complaint or a symptom or impression of suicidal ideation.

        - The accuracy of this syndrome is strong given the aim is to identify as many potential suicidal-ideation responses as possible
    - Suspected suicide attempt EMS responses must include ICD-10-CM codes for suicide attempt, or suicidal ideation and intentional self-harm, or specific keywords in the chief complaint indicating suicidal ideation and a suicide attempt or self-harm act.
        - The suicidal ideation and suicide attempt EMS definitions are designed so that suicide attempts are a subset of suicidal ideation records.
        - This definition can identify some responses that are not related to suicide attempts (24%), most of which include patients who described a detailed plan for suicide without acting on those plans.
    - Definitions search for synonyms and misspellings of keywords and include criteria to exclude records based on keywords (negations, conditional language to indicate that the attempt did not occur, etc.).
    - EMS providers must have made contact with the patient for the response to be included
        - Patients who are allowed to refuse transport are excluded unless they are released to law enforcement.
- For more detailed information about how suicidal ideation and suspected suicide attempts are identified in the EMS data, visit EMS Syndrome Definitions.

Current EMS case definitions for suicide attempts or self-inflicted injury do not capture everyone experiencing these events.

- EMS response is not always requested for all suicide attempts or self-inflicted injuries.
    - People who experience a self-inflicted injury may go to the ED on their own or be transported privately by someone other than EMS personnel.
    - Some people may not call EMS for help after a self-inflicted injury because they fear negative interactions with law enforcement or worry about being judged or mistreated due to mental health stigma.
- Assumptions about a person's mental health can affect whether they are included in EMS data on suicide attempts and self-inflicted injuries.
    - First responders may assume that someone is or is not in crisis based on their emotional or physical appearance.
        - A person may be perceived differently based on whether they seem calm or agitated.
        - If EMS arrives quickly or the person stops the attempt before major physical harm occurs, there may be few physical signs of distress. For example, if EMS responds before an overdose affects how alert a person is or their vital signs, the patient may appear calm and unharmed despite the severity of their crisis.
    - Mental health conditions and suicidal behaviors may not always be documented in the same way.
        - What is documented may depend on the primary reason EMS was called and the specific circumstances of the event.

Survey Data

IVPB uses data from the NC BRFSS and the NC YRBS to better understand mental health, suicidal behavior, and suicide risk to guide suicide prevention.

Survey data are self-reported and may show different rates of mental health issues than what people are actually experiencing. Survey data on mental health, suicidal behavior, and suicide risk can be affected by:

- **Social Desirability Bias –** People may report less severe mental health issues than they experience. They could also report not experiencing them at all when they do.
  - People may be embarrassed by or not want others to know about their mental health issues.
  - People may respond with what they think will make them look good.
- **Recall Bias –** People may forget exactly how often over the reporting period their mental health was not good.
- **Nonresponse Bias –** People with poor mental health may not respond to the mental health questions in the survey.
  - They may feel uncomfortable and skip the question.
  - Some respondents may have stopped taking the survey before getting to that question.
  - They may choose not to participate in the survey at all.

Visit Data Sources IVPB Uses for Injury Surveillance for more information on how IVPB uses BRFSS and YRBS data and considerations for using these data.

NC Behavioral Risk Factor Surveillance System (BRFSS)

- The NC BRFSS surveys adults living in NC about behaviors that impact their health, including questions about mental health and wellbeing.
- The survey asks adults about their experiences with the following mental health issues:
  - Frequent mental distress
  - Physical or mental health issues that prevent them from doing their usual activities
  - Feelings of loneliness
  - Feeling dissatisfied with life
  - Being unable to access needed emotional or social support
- NC BRFSS data are available statewide and regionally.
  - NC BRFSS data are not available at the county level.
- The NC BRFSS is conducted every year. However, the questions included in the NC BRFSS vary from year to year and may change over time.
  - For information on the specific questions included in these surveys and when mental health and suicide-related questions were asked, visit NC State Center for Health Statistics, BRFSS
- Visit Data Sources IVPB Uses for Injury Surveillance for more information on how IVPB uses NC BRFSS and YRBS data and considerations for using these data.

NC Youth Risk Behavior Survey (YRBS)

- The NC YRBS asks middle school and high school students in NC about behaviors that impact their health
  - The NC YRBS is conducted every other year.
  - Questions included in the YRBS can vary over time.
- NC YRBS asks middle and high school students about suicidal behaviors over the previous year, including if they:
  - Seriously considered suicide
  - Made a plan to attempt suicide
  - Attempted suicide
  - Attempted suicide which resulted in an injury that required medical treatment

- Middle and high school students are also asked about:
  - Their experiences with bullying
  - How often their mental health is not good
  - Social support
  - Social connectedness
  - How they feel about themselves
- NC YRBS data are available statewide and regionally.
  - NC YRBS data are not available at the county level.
- For information on YRBS and the specific questions included in the survey, visit:
  - NC YRBS: NC Department of Public Instruction, NC Healthy Schools Data

Changes in Suicide and Self-Inflicted Injury Metrics Over Time

When changes are made to suicide and self-inflicted injury surveillance case definitions, those changes are also applied to historical data whenever possible.

- The changes are applied retroactively so that suicide and self-inflicted injuries can be counted in the same way across multiple years of data.
  - This allows IVPB to accurately monitor trends.
- Data IVPB shared before a change was implemented can be different from data shared for the same time-period today.
  - Use the data resources posted to the Suicide and Self-Inflicted Injury Data or the Violent Death Data webpages to be sure you are accessing the most up-to-date information on suicide and self-inflicted injury in NC.
  - If you have questions about data you have received from IVPB previously, email us at InjuryData@dhhs.nc.gov.

Suicide, Self-Inflicted Injury, and COVID-19

There have been many implications from the COVID-19 pandemic that began in 2020, including changes to the numbers and rates of suicide, self-inflicted injury, and related health outcomes.

- Suicide deaths have increased since the start of the pandemic.
  - The number of suicides increased by 17% from 2019 to 2023.
- There were large impacts to ED visits during the pandemic.
  - There was a large drop in the number of people going to the ED for any reason (ED utilization) starting in March 2020 when the COVID-19 stay at home order was implemented.
    - ED utilization slowly increased but remained lower than normal throughout most of 2020.
    - This drop in ED utilization also impacted the number of ED visits for specific injuries, including self-inflicted injuries in 2020.
  - There has been an increase in self-inflicted injury and suicidal ideation ED visits since 2020, most of which has been driven by increases among youth.
    - Self-inflicted injury ED visits among those less than 18 years old increased by about 25% from 2020 to 2021.
    - Self-inflicted injury ED visits among youth remain higher than they were before the pandemic.
- Changes to suicide and self-inflicted injuries in NC align with trends seen across the United States during the pandemic.

Who is Most Affected by Suicide and Self-inflicted Injury?

Who we count, and how, changes what we know about self-inflicted injury.

The most reliable way to collect information on race and ethnicity is when it is self-reported, where individuals choose the race and ethnicity they use to describe themselves.

Asking someone to report their own race and ethnicity ensures the data are accurate.

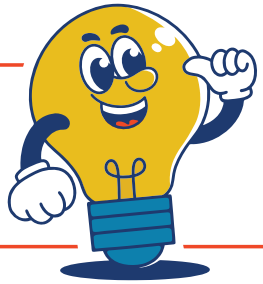
- In some cases, race and ethnicity may not be self-reported and may instead be assigned based on someone's name or their appearance.
- This assumption may happen if the person was unresponsive when EMS responded or when they arrived at the ED.
- This assumption can result in misclassification of race and ethnicity, when someone is categorized into a racial or ethnic group that they do not identify with.

For more information on how race and ethnicity are collected in the data sources IVPB uses, and how IVPB groups race and ethnicity, visit Using Injury Data by Race and Ethnicity.

Monitoring Suicide and Self-Inflicted Injuries by Demographic Groups

IVPB uses rates to compare the burden of suicide and self-inflicted injury across groups, including by age group, sex, and race/ethnicity.

- This approach allows IVPB to identify groups that are experiencing the greatest burden of suicide and self-inflicted injury.
  - Rates account for the size of the population and allow us to compare injuries that happened in small populations to injuries in larger groups.
  - Comparing rates helps us understand differences in self-inflicted injuries between groups.
  - For more information, visit Understanding Counts and Rates.
- When data are broken out for specific groups, results may need to be suppressed if there are very few self-inflicted injuries or suicides within a given group.
  - When the number of injuries or deaths is small, it becomes difficult to separate data further to understand more specifically who was impacted.
  - For example, if there are only a small number of self-inflicted injuries among non-Hispanic Black residents, it may not be possible to share more detailed information for non-Hispanic Black residents by age group or by the method of self-inflicted injury.
  - Visit Data Suppression and Working with Small Numbers



FOR MORE RESOURCES:
Visit our Injury Data Users Toolkit

[1] Centers for Disease Control and Prevention. (2024, May 15). Health effects of social isolation and loneliness. *U.S. Department of Health & Human Services*. https://www.cdc.gov/social-connectedness/risk-factors/index.html

[2] Centers for Disease Control and Prevention. (2024, April 25). Risk and protective factors for suicide. *U.S. Department of Health & Human Services*. https://www.cdc.gov/suicide/risk-factors/index.html

[3] Madsen, T., Erlangsen, A., Orlovska, S., Mofaddy, R., Nordentoft, M., & Benros, M. E. (2018). Association between traumatic brain injury and risk of suicide. *JAMA,* 320(6), 580–588. https://doi.org/10.1001/jama.2018.10211