

# **Colorado Suicide Data Dashboard Guide:** **Data Definitions and Functionality**

Colorado Violent Death Reporting System  
Colorado Department of Public Health and Environment

This document accompanies the Colorado Suicide Data Dashboard, online data visualization tool. The dashboard is housed on several Colorado Department of Public Health and Environment web sites, and the original web link can be found below:

[https://cohealthviz.dphe.state.co.us/t/HSEBPublic/views/CoVDRS\\_12\\_1\\_17/Story1?:embed=y&:showAppBanner=false&:showShareOptions=true&:display\\_count=no&:showVizHome=no#4](https://cohealthviz.dphe.state.co.us/t/HSEBPublic/views/CoVDRS_12_1_17/Story1?:embed=y&:showAppBanner=false&:showShareOptions=true&:display_count=no&:showVizHome=no#4)

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## **Introduction**

- 1.1 Purpose:** This reference document includes detailed descriptions of the data, functionality, and information contained within the Colorado Suicide Data Dashboard, created and housed by the Colorado Department of Public Health and Environment. This dashboard was created using Tableau data visualization software, and Colorado Violent Death Reporting System (CoVDRS) data, to provide an interactive way to look at suicide data in Colorado and inform program planning. The dashboard was created through a partnership between the Center for Health and Environmental Data and the Office of Planning Partnership and Improvement at CDPHE.
- 1.2 Background on CoVDRS data:** The CoVDRS is part of the larger National Violent Death Reporting System (NVDRS), which is funded and maintained by the U.S. Centers for Disease Control and Prevention (CDC). Colorado has been participating in the NVDRS since 2004, and is one of 42 states currently participating in the data system. The NVDRS is an enhanced public health surveillance system aimed at collecting detailed data around violent deaths throughout the nation. For the purposes of the system, a violent death includes any death by suicide, homicide, unintentional firearm death, legal intervention, as well as selected deaths of undetermined intent when the death may have been the result of violence. For each one of these deaths that occur in Colorado, reports are requested from multiple sources including death certificates, coroner/medical examiner reports, and law enforcement investigations. Using these source documents, data is abstracted into a standardized web based data collection tool, provided by the CDC partners. This allows for both state level analyses as well as national analyses, made up of all participating states. Visit <https://www.cdc.gov/violenceprevention/nvdrs/> for more information about the NVDRS.
- 1.3 Data Specifications for the Colorado Suicide Data Dashboard:** The Colorado Suicide Data Dashboard, is made up of suicides deaths in Colorado that occurred between 2004 and the most recent year of data completion. The CoVDRS completes each data year 18 months after the end of the calendar year, and the dashboard will be updated accordingly. The classification of death is based on manner via the death certificate, International Classification of Disease coding on the death certificate, or the culmination of evidence in the law enforcement and coroner report. Data for the CoVDRS is finalized 18 months after the end of the calendar year, and will be updated as such in the dashboard. All deaths included in the dashboard, are of Colorado residents, who died in Colorado. Individuals who weren't residents but died in Colorado are not included in the dashboard. Additionally Colorado residents who die by suicide in another state are also not included. All county level frequencies and percentages are based on the county of residence for the decedent, which may differ from the county of death. Additionally, data is presented geographically by Health Statistics Region, which is a method used by CHED staff to group counties together, to control for small sample sizes, and allow for statistical computations. More information on Colorado Health Statistics Regions can be found here: <http://www.chd.dphe.state.co.us/HealthDisparitiesProfiles/dispHealthProfiles.aspx>  
Data by Health Statistics Region is based on the region of residence and not necessarily the region of death.
- 1.4 Dashboard Sections and Functionality:** The Colorado Suicide Data Dashboard contains four sections that are navigated between by using the grey rectangles at the top of the page. Each dashboard contains maps, stacked bar graphs, line graphs and/or other data visualizations. Throughout the dashboards, orange text denotes places where the user can interact with the data. The visualizations

can be manipulated by changing any of the filters on each dashboard. Filter types include sliders (as seen in the year selection), check boxes (where multiple selections can be made), and drop down menus (where one selection can be made). Selecting a category or range from one or more of the filters will update the data visualizations to the population or timeframe of interest. In some cases, clicking on a data element in one chart or map will filter the other views accordingly. For example, clicking on a county on the map will update other data visualizations according to the selected county. You can select multiple categories if you hold down the CTRL key, and click multiple selections. To deselect, click again. This is detailed more in the specific sections describing the dashboards later in this guide. All counts of less than three are suppressed. These sections will either not appear, or will be represented by an asterisk (\*).

**For more information, or questions about the dashboard refer to the contact info on page 1.**

## **Data Descriptions:**

The following sections will describe the multitude of data elements/variables that are represented in the Colorado Suicide Data Dashboard. It includes information around the source of the variable, the interpretation of the variable, as well as instances where the variable *would* and *would not* be coded.

### **2.1 Demographic Variables**

**Year:** This variable represents the calendar year for which the suicide decedent was pronounced dead, as collected on the death certificate, and verified through coroner/medical examiner, and law enforcement report. It is suggested for users to examine the data in 5 year increments, based on sample size, trends, and other aspects to the data. Examining increments smaller than 5 years, may increase the likelihood of suppressed numbers, and show trends that are more anecdotal.

**Health Statistics Region (HSR):** This metric categorizes the decedent's area of residence into one of 21 Colorado Health Statistics Regions to filter by or examine. These regions are made up of Colorado counties, and combined based on small populations, and urban/rural/ frontier status. This is the HSR of residence for the suicide victim, and more information about HSR can be found here

<http://www.chd.dphe.state.co.us/HealthDisparitiesProfiles/dispHealthProfiles.aspx>

**County:** This filter allows the user to select a county to filter by. This is the county of residence for the suicide victim. So when filtering by a county it represents the number of residents of that county who died by suicide for the time period. Colorado has 64 unique counties which are represented by the outline shapes on the state map.

**Gender:** Presented as male or female gender, as per the death certificate and confirmed with the other data sources. CoVDRS captures data on transgender suicides as well, which we plan to include in future releases.

**Age:** Age is presented as nine age group break outs, and represents the age at death for the suicide victims. The age types are presented as '10-14 years', '15-19 years', '20-24 years', '25-34 years', '35-44 years', '45-54 years', '55-64 years', '65-74 years', and '75+ years'. Age at death is calculated between the victim's birth date and the date when death was pronounced. This comes from the death certificate and is confirmed with the other data sources.

**Race/Ethnicity:** Race and ethnicity are represented as ‘White non-Hispanic’, ‘White Hispanic’, ‘Black/African American’, ‘Asian or Pacific Islander’, ‘American Indian’ or ‘other’. For all categories besides ‘White non-Hispanic’ and ‘White Hispanic’, the race category includes both Hispanic and non-Hispanic victims. This is pulled primarily from the death certificate and confirmed through other sources.

**Marital Status:** Marital status is presented as ‘Currently married’, ‘Not married’, ‘Divorced’, ‘Widowed’, and ‘Unknown’. This is defined as the marital status of the decedent at the time of death, as collected on the death certificate, usually from family interview with the funeral home director, or other administrative reporting sources.

**Veteran Status:** This is represented as any lifetime history of serving in the armed forces, as collected on the death certificate, usually from family interview with the funeral home director, or other administrative reporting sources.

**Employment Status:** This variable is generated from the CoVDRS variable *Current Occupation*, which is a free text variable collected from coroner/medical examiner reports, and law enforcement reports, and represents the victim’s occupation at the time of death, as gleaned from family/friend interviews or other information gathered as part of the standard death investigation. From the free text variable *Current Occupation*, the categorical variable *Employment Status* is created. From reviewing the free text data, decedent’s current occupation falls in 5 categorical responses; ‘Currently employed’, ‘Unemployed’, ‘Disabled’, ‘Retired’, and the final category ‘Null, N/A, Unknown’. Based on the data quality of the *Current Occupation* variable this is the most conservative and appropriate way to examine this variable. There are inherently high counts in the category ‘Null, N/A, Unknown’ because the current occupation isn’t always known or collected as systematically as the decedent’s usual industry and occupation, which will be covered in a later section. That being said this variable likely under counts for all categories, and especially those in the ‘Currently employed’ sub group. The variable’s strength comes from its capabilities in capturing individuals who were known to be unemployed, retired, and disabled, because these occupational categories are more likely to be revealed in a standard suicide investigation, whereas the specific current occupation may be more likely to be left blank. Therefore the suggested use of this variable is to assess the burden and characteristics of those individuals who are unemployed, retired, and disabled, understanding that there may be under counting in all categories.

## **2.2 Method of injury definitions:**

Method of injury describes what type of weapon was used to inflict the fatal injury for the suicide decedents. It is represented in the following categories; ‘Firearm’, ‘Hanging/strangulation/ suffocation’, ‘Poisoning’, ‘Fall’, ‘Sharp Instrument’, and ‘Other’. ‘Firearm’ represents any and all firearm injuries that resulted in a suicide death. ‘Hanging/strangulation/suffocation’, includes hanging deaths, as well as deaths where oxygen is displaced, for example helium or nitrogen inhalation deaths. ‘Poisoning’ deaths range from prescription drug overdose, illicit drug overdose, toxic substance ingestions (i.e. anti freeze, bleach etc.) and carbon monoxide poisonings. ‘Fall’ includes suicide deaths where the decedent jumped or fell from a height which resulted in death. ‘Sharp instrument’ includes all deaths where the victim cut, stabbed or lacerated themselves severely enough to cause death. The ‘Other’ category includes all other methods, (intentional motor vehicle crash, other vehicle

collision, fire etc.). The percentages are calculated out of the total number of deaths in a selected (filtered) population.

### **2.3 Circumstances definitions:**

The circumstance sections contains a list of the preceding events and characteristics that preceded the suicide death, as per the coroner/medical examiner report or law enforcement report. The stacked bar displays percentages for each circumstance in the population of interest. These percentages are calculated out of the total number of cases where at least one circumstance was known. Therefore, cases where no preceding circumstances were known are excluded from the percentage calculation for these charts. The number of cases with circumstances known, as well as those with no known circumstances are presented at the very top of the figure. This can reveal to the user issues with data quality and completeness. The below section will define each circumstance, highlighting when and when not the circumstance is endorsed. The below definitions are pulled from the NVDRS coding manual. The majority of these data come from coroner/medical examiner reports, and law enforcement reports.

#### ***-Any circumstances known***

Definition: Indicates if any information is available in the CME record about the circumstances, including other circumstances, associated with this suicide death.

Discussion: This variable operates as a stem question. Checking the circumstances known box has to be endorsed to enter any and all other circumstance variables. Not endorsing this variable implies that the circumstances preceding the incident are not known. This variable is used to make up the total pool of individuals where percentages of other circumstances are calculated. For example if 90 out of 100 suicide victims had this variable endorsed, then the percentages for all other circumstances would be calculated out of 90 total suicides. The 10 suicide victims for this example are not included in the calculation of prevalence of other circumstance variables, because no information is known, so they don't represent a case where it can be known if the victim did or didn't have a preceding circumstance.

#### ***-Mental health problem***

Definition: Current diagnosed mental health problem

Discussion: This variable is coded as "Yes" if the victim has been identified as currently having a mental health problem. There does not need to be any indication that the mental health condition directly contributed to the death.

- Mental health problems include those disorders and syndromes listed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) with the exception of alcohol and other substance dependence (as these are captured in separate variables).

- Examples of disorders qualifying as mental health problems include diagnoses such as major depression, schizophrenia, and generalized anxiety disorder, as well as neuro-developmental disorders (such as intellectual disability, autism, attention-deficit /hyperactivity disorder), eating

disorders, personality disorders, and organic mental disorders (such as Alzheimer's and other dementias).

-The endorsement of this variable leads to the endorsement of specific mental health diagnoses as well. This is a broader category to count individuals with any known mental health diagnosis, and the other variables are nested within this variable. Therefore a person with a diagnosed disorder would contribute to the counts and percent's of both this variable as well as the specific disorder they were diagnosed with.

- Also indicated as "Yes" if it is mentioned in the source document that the victim was being treated for a mental health problem, even if the nature of the problem is unclear (e.g., "was being treated for various psychiatric problems").

- It is acceptable to endorse this variable on the basis of past treatment of a mental health problem, unless it is specifically noted that the past problem has been resolved. However, do not code this circumstance based only on a positive toxicology test for psychiatric medications (such as antidepressants). There must also be some indication that the victim was actually being treated for a mental health condition, such as a current prescription, the report of a family member, etc.

#### ***-Diagnosis of Depression***

Definition: Current mental health problem noted as Depression

Discussion: This is coded as yes if the victim was identified as having a diagnosed Depression disorder. There does not need to be any indication that the Depression condition directly contributed to death.

-This variable is nested within the variable ***Mental health problem*** in the CoVDRS, and is the result of the specific mental health diagnosis of Depression, as collected when ***Mental health problem*** is endorsed. This can result in multiple types of mental health diagnoses, and is representative of several variables in the system. All specific diagnoses are defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

- This variable can get endorsed on the basis of past treatment of Depression, unless it is specifically noted that the past problem has been resolved. However, this is not coded based only on a positive toxicology test for psychiatric medications (such as antidepressants). There must also be some indication that the victim was actually diagnosed or being treated for a Depression, such as a current prescription, mental health records, medical records, the report of a family member, etc.

#### ***-Diagnosis of Anxiety***

Definition: Current mental health problem noted as Anxiety

Discussion: This is coded as yes if the victim was identified as having a diagnosed anxiety disorder. There does not need to be any indication that the anxiety condition directly contributed to death

-This variable is nested within the variable **Mental health problem** in the CoVDRS, and is the result of the specific mental health diagnosis of Anxiety disorder, as collected when **Mental health problem** is endorsed. This can result in multiple types of mental health diagnoses, and is representative of several variables in the system. All specific diagnoses are defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

- This variable can get endorsed on the basis of past treatment of an anxiety disorder, unless it is specifically noted that the past problem has been resolved. However, this is not coded based only on a positive toxicology test for psychiatric medications (such as anti-anxiety). There must also be some indication that the victim was actually diagnosed or being treated for an anxiety condition, such as a current prescription, mental health records, medical records, the report of a family member, etc.

#### ***-Diagnosis of Bipolar disorder***

Definition: Current mental health problem noted as Bipolar disorder

Discussion: This is coded as yes if the victim was identified as having a diagnosed Bipolar disorder. There does not need to be any indication that the Bipolar condition directly contributed to death.

-This variable is nested within the variable **Mental health problem** in the CoVDRS, and is the result of the specific mental health diagnosis of Bipolar disorder, as collected when **Mental health problem** is endorsed. This can result in multiple types of mental health diagnoses, and is representative of several variables in the system. All specific diagnoses are defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

- This variable can get endorsed on the basis of past treatment of a Bipolar disorder, unless it is specifically noted that the past problem has been resolved. However, this is not coded based only on a positive toxicology test for psychiatric medications (such as antipsychotics or other Bipolar medication). There must also be some indication that the victim was actually diagnosed or being treated for a Bipolar disorder, such as a current prescription, mental health records, medical records, the report of a family member, etc.

#### ***-Diagnosis of Schizophrenia***

Definition: Current mental health problem noted as Schizophrenia

Discussion: This is coded as yes if the victim was identified as having a diagnosed Schizophrenia disorder. There does not need to be any indication that the Schizophrenia condition directly contributed to death.

-This variable is nested within the variable **Mental health problem** in the CoVDRS, and is the result of the specific mental health diagnosis of Schizophrenia, as collected when **Mental health problem** is endorsed. This can result in multiple types of mental health diagnoses, and is representative of several variables in the system. All specific diagnoses are defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

- This variable can get endorsed on the basis of past treatment of Schizophrenia, unless it is specifically noted that the past problem has been resolved. However, this is not coded based

only on a positive toxicology test for psychiatric medications (such as antipsychotics, anti-tremors). There must also be some indication that the victim was actually diagnosed or being treated for Schizophrenia, such as a current prescription, mental health records, medical records, the report of a family member, etc.

***-Other mental health diagnosis***

Definition: Current mental health problem noted as Other mental health diagnosis, not falling in one of the other four categories (Depression, Anxiety, Bipolar Disorder, or Schizophrenia).

Discussion: This is coded as yes if the victim was identified as having a diagnosed mental health disorder, other than the four categories previously covered. There does not need to be any indication that the other mental health condition directly contributed to death.

-This variable is nested within the variable ***Mental health problem*** in the CoVDRS, and is the result of a diagnosis of another mental health condition, as collected when ***Mental health problem*** is endorsed. This can result in multiple types of mental health diagnoses, and is representative of several variables in the system.

-Other mental health diagnoses examples include, Post-Traumatic Stress disorder, ADD or hyperactive disorder, Eating disorders, and Obsessive-compulsive disorders.

- This variable can get endorsed on the basis of past treatment for the other mental health problem, unless it is specifically noted that the past problem has been resolved. However, this is not coded based only on a positive toxicology test for psychiatric medications (such as antidepressants). There must also be some indication that the victim was actually diagnosed or being treated for the mental health problem, such as a current prescription, mental health records, medical records, the report of a family member, etc.

***-Ever treated for mental health problem***

Definition: History of ever being treated for a mental health or substance abuse problem

Discussion: The variable indicates whether the victim was noted as ever having received treatment (e.g., had a current prescription for a psychiatric medication, saw a mental health professional within the past two months or participated in self-help program such as alcohol anonymous) for a mental health problem (including alcohol and other substance abuse problems), either at the time of death or in the past.

-If a victim is in current treatment, by definition ever in treatment would be endorsed as well.

- This circumstance isn't endorsed based only on a positive toxicology test for psychiatric medications (such as antidepressants). There must also be some indication that the victim was actually was treated for a mental health condition, such as a current prescription, the report of a family member, mental health records, medical records, etc.

- Note that a diagnosis does not imply that treatment was received. A victim may have been out of compliance with treatment for a diagnosed condition.



***-Current treatment for mental health problem***

Definition: Currently in treatment for a mental health problem or substance abuse problem

Discussion: This should be coded “Yes” if the victim was in current treatment (e.g., had a current prescription for a psychiatric medication, saw a mental health professional within the past two months or participated in treatment for substance abuse such as outpatient treatment or alcohol anonymous) at the time of the injury.

- Treatment includes:

- Seeing a psychiatrist, psychologist, medical doctor, therapist, or other counselor (including religious or spiritual counselors) for a mental health or substance abuse problem;
  - Receiving a prescription for an antidepressant or other psychiatric medicine; Attending anger management classes;
  - Residing in an inpatient, group home, or halfway house facility for mental health or substance abuse problems; or
  - Alcohol or narcotics anonymous.
- Do not code this circumstance based only on a positive toxicology test for psychiatric medications (such as antidepressants). There must also be some indication that the victim was actually being treated for a mental health condition, such as a current prescription, the report of a family member, etc.
- Note that a diagnosis does not imply that treatment was received. A victim may have been out of compliance with treatment for a diagnosed condition.

***-Abused as a child***

Definition: The victim had a history of abuse (physical, sexual, or psychological) or neglect (physical, including medical/dental, emotional, or educational neglect; or exposure to violent environments or inadequate supervision) as a child.

Discussion: This variable more broadly captures victim’s experiences of abuse and neglect irrespective of its relationship to the violent death. This is represented as “Yes” if the victim experienced abuse or neglect, but there is no direct link to the violent death or the link is unknown.

- This variable is coded as “Yes” if the victim had been the victim of child abuse at any point in the past, even if the victim is currently an adult.

- This variable is coded as “Yes” if the evidence of ongoing abuse is suspected, but not confirmed.

- This variable is coded “Yes” if autopsy evidence reported an indication of previous abuse.

- Abuse can be physical, psychological, sexual or others as long as the source document refers to ‘abuse’. Neglect may be physical or emotional.

***-Anniversary of a traumatic event***

Definition: Incident occurred on or near the anniversary of a traumatic event in the victim's life and was perceived as a contributing factor.

Discussion: This variable identifies deaths that may be related to the anniversary of a traumatic experience in the victim's life, such as the death of a relative or friend. Other traumatic experiences include: sexual or physical victimization, community violence, mass shooting/killings, natural disasters, etc.

-This is coded as "Yes" if the incident occurred on or near the date of a traumatic event in the victim's life, regardless of how far in the past the event was, as long as the incident was perceived as a contributing factor to the death.

***-Argument preceded death***

Definition: An argument or conflict that led to the victim's death.

Discussion: This variable identifies suicide where a specific argument was perceived as related to the death. There must be a specific argument or disagreement that is related to the violent death (e.g., an argument over money, a relationship problem or an insult).

- The following would be coded "Yes":
  - +Suicide Examples: If a child has an argument with their parent, becomes distraught and then dies by suicide that night.
  
  - +A principal expels the victim from school after which victim dies by suicide
  
  - +Victim has an argument with his boss over poor performance then goes to a local park and dies by suicide
  
- Ongoing conflicts and chronic arguing isn't enough for this variable to be endorsed. If a specific argument is noted, in regard to chronic arguing then this would be endorsed

***-Civil legal problem***

Definition: Civil legal (non-criminal) problems appear to have contributed to the death

Discussion: This variable represents if at the time of the incident the victim was facing civil legal problems, such as a divorce, custody dispute or civil lawsuit, or legal problems that were unspecified as either criminal or civil, and these problems appear to have contributed to the death.

***-Crisis 2 weeks before death***

Definition: The crisis variable identifies deaths that appear to involve an element of impulsivity and be related to a crisis. A "Crisis" is a current/acute event within 2 weeks of death that is indicated in one of the source reports to have contributed to the death. The crisis variable is nested within the other circumstance variables.

Discussion: A crisis can precede the death (e.g., had a bad argument the day before the Incident, divorce papers served that day, or victim laid off the week before) or be an impending event (e.g., house was to be foreclosed on the day after the incident or court date for a criminal offense three days after the suicide).

- A Crisis is interpreted from the eyes of the victim. This is particularly relevant for young victims whose crises, such as a bad grade or a dispute with parents over a curfew, may appear to others as relatively minor.

- An actual time period for the crisis may not be mentioned in the records, but language can imply the crisis, as in this example “Decedent had just received a pink slip at work” would be coded because the word “just” indicates that the crisis occurred right before the death, or within two weeks.

-Ongoing/chronic problems are not coded as crises unless there was an acute change in the status (change in prognosis of chronic illness). The presence of a crisis does not mean that there aren’t also chronic conditions that have contributed to the victim’s death.

***-Decedent had a depressed mood around the time of death***

Definition: Victim was perceived by self or others to be depressed at the time of the injury.

Discussion: This variable is ONLY coded when the victim had a depressed mood at the time of injury. There does NOT need to be a clinical diagnosis and there does not need to be any indication that the depression directly contributed to the death. Other words that can trigger coding this variable besides “depressed” are sad, despondent, down, blue, low, unhappy, etc. Words that do not trigger coding this variable are agitated, angry, mad, anxious, overwrought, etc.

-If the victim has a known clinical history of depression, but had no depressive symptoms at the time of the incident, this variable would NOT be selected.

- Depressed mood is not inferred based on the circumstances (e.g., because the person reports a bankruptcy); rather it must be noted in the record.

***-Eviction or loss of home***

Definition: A recent eviction or other loss of the victim’s housing, or the threat of it, appears to have contributed to the death.

Discussion: This is coded as “Yes” if at the time of the incident the victim had recently been, was in the process of being evicted or foreclosed on, or was confronted with an eviction, foreclosure, or other loss of housing (e.g., kicked of house by a relative), and this appears to have contributed to the death. Inclusion in the investigative reports is sufficient to code “Yes”.

***-Family relationship problem***

Definition: Victim had relationship problems with a family member (other than an intimate partner) that appear to have contributed to the death.

Discussion: Code as “Yes” if at the time of the incident the victim was experiencing a relationship problem with a family member other than an intimate partner (e.g., a child, mother, in-law), and this appears to have contributed to the death.

-Example: The victim is despondent over his argument with his parents and dies by suicide.

***-Physical fight preceded death***

Definition: Before the suicide death, there was a physical fight between two individuals

Discussion: Most physical fights will be preceded by arguments and this variable is directly related to a physical escalation of an argument. It is directly related to the ***Argument preceded death***.

***-Financial problem***

Definition: Financial problems appear to have contributed to the death

Discussion: This variable is coded as “Yes” if at the time of the incident the victim was experiencing a problem such as bankruptcy, overwhelming debts, or foreclosure of a home or business, and this appears to have contributed to the death. Inclusion in the investigative reports is sufficient to code “Yes”.

***Suicide death of friend or family***

Definition: Suicide of a family member or friend appears to have contributed to the death.

Discussion: There is no time limit for when the suicide of the family or friend occurred, except that it occurred during the victim’s lifetime and that it is noted to have contributed to the victim’s death.

-Coded as “Yes” if at the time of the incident the victim was distraught over or reacting to a suicide of a friend or family member.

- Coded as “Yes” if the victim was distraught over an anniversary of the suicide.

***-Non-suicide death of friend or family***

Definition: Death of a family member or friend due to something other than suicide appears to have contributed to the death.

Discussion: This variable is coded as “Yes” if at the time of the incident the victim was distraught over, or reacting to a death of a friend or family member. The death could have been recent or many years ago.

-If a source document indicates that the victim’s suicide took place on the anniversary of the death of a friend or family member, this variable is coded “Yes”.

-If the death happened long before the incident, it’s only endorsed if the victim was very upset about the incident because of an anniversary or some other factor that made their feelings about the death stronger

### ***-Physical health problem***

Definition: Victim's physical health problem(s) appear to have contributed to the death

Discussion: The victim was experiencing physical health problems (e.g., terminal disease, debilitating condition, chronic pain) that were relevant to the event.

-This variable is endorsed only if a health problem is noted as contributing to the death (e.g., despondent over recent diagnosis of cancer or complain that he could not live with the pain associated with a condition).

- The simple mention of a health problem does not trigger coding the death as health-related. Coroner and Medical Examiners reports generally include the decedent's existing medical problems (e.g., diabetes, asthma, cancer). This variable is not endorsed Based simply on a list of conditions.

-“Debilitating” conditions that would leave the victim confined to bed, oxygen dependent, or requiring basic daily care from a third party, would be endorsed as physical health problem.

- Health conditions are coded from the perspective of the victim. If the victim believed him- or herself to be suffering from a physical health problem, and this belief was contributory to the death, it does not matter if any particular health problem was ever treated, diagnosed, or even existed. For instance, it would be coded as “Yes” if the victim only suspected he might have AIDS and killed himself before he received his test results.

### ***-Intimate partner problem***

Definition: Problems with a current or former intimate partner appear to have contributed to the suicide death.

Discussion: This is coded as “Yes” if at the time of the incident the victim was experiencing problems with a current or former intimate partner, such as a divorce, break-up, argument, jealousy, conflict, or discord, and this appears to have contributed to the death.

- Definition of Intimate Partner: For all intimate partner-related variables intimate partner is defined as a current or former girlfriend/boyfriend, dating partner, ongoing sexual partner, or spouse. It DOES NOT include instances of sex/intimacy in exchange for money/goods. There must be evidence of an intimate relationship (this does not apply to instances where there is simply attraction/infatuation between two individuals or in cases where one person is romantically interested in the other, but the feelings are not returned). The definition of intimate partner does not require sexual intimacy. This definition includes same-sex partners.

- The burden of caring for an ill spouse or partner would NOT be coded as an intimate partner problem unless there is also evidence of relationship problems.

- Phrases such as “victim was having relationship problems” is assumed to indicate intimate partner problems.

### ***-Job problem***

Definition: Job problem(s) appear to have contributed to the death

Discussion: This variable is endorsed if at the time of the incident the victim was either experiencing a problem at work (such as tensions with a co-worker, poor performance reviews, increased pressure, feared layoff) or was having a problem with joblessness (e.g., recently laid off, having difficulty finding a job), and this appears to have contributed to the death.

- Simply being unemployed is not sufficient—there must be an indication that the victim was experiencing difficulty finding or keeping a job.

- This is coded “Yes” if the victim experienced a recent major job problem such as being fired from their job, being demoted or having a serious conflict with his/her boss.

- Coded as “No” if a person left his or her job as part of a suicide plan (e.g., “Victim left work four days ago and checked into a hotel; the body was found after co-workers contacted the victim’s family to try to locate him”).

### ***-Criminal legal problem***

Definition: Criminal legal problems appear to have contributed to the death

Discussion: This is coded as “Yes” if at the time of the incident the victim was facing criminal legal problems (recent or impending arrest, Law enforcement pursuit, impending criminal court date, etc.), and this appears to have contributed to the death. This includes military crimes such as AWOL.

- Criminal legal problems, as opposed to civil legal problems, are those resulting from conduct considered as harmful to society as a whole that it is prohibited by statute and prosecuted by the government. Driving while intoxicated offenses are considered a criminal offense.

- Committing a crime alone is not sufficient basis for endorsing this variable; there must be evidence of negative legal or law enforcement consequences (e.g., about to enter jail, facing a court date, on the run from law enforcement) that appear to be associated with the death.

### ***-Precipitated by crime before death***

Definition: The death was precipitated by another serious crime (e.g., drug dealing, robbery)

Discussion: This variable identifies the proportion of violent deaths that are related to other criminal activity, specifically felonies (e.g., robbery or drug-trafficking). Coded as “Yes” if the incident occurred as the result of another serious crime. Note that the crime must occur prior to the violent injury, and not after it.

- Serious crimes (such as drug trafficking, robbery, burglary, motor vehicle theft, arson, resisting arrest, and witness intimidation/elimination) are felonies. These are crimes that carry a sentence of one or more years in prison.

-Misdemeanors such as traffic infractions, shoplifting, petty larceny (e.g., stealing someone's jacket), public drunkenness, and minor assaults (no injury or deadly weapon involved) are not considered serious crimes.

***-Other crime in progress***

Definition: A precipitating crime was in progress at the time of the incident

-Discussion: An "in-progress crime" is a serious or felony-related crime, as discussed under "Precipitated by another crime," that is being committed or attempted at the time of the incident.

- For deaths that are precipitated by felony- criminal activity (as discussed in, "Precipitated by another crime"), this variable identifies whether the crime listed for "first other crime in progress" was in progress when the victim died.

- Example: The victim assaults a store owner and is pursued by law enforcement. Once law enforcement corners him in a building, the victim commits suicide (Note: Also, code criminal legal problem).

***-School problem***

Definition: Problems at or related to school appear to have contributed to the death

Discussion: This is coded as "Yes" if at the time of the incident the victim was experiencing a problem such as poor grades, difficulty with a teacher, bullying, social exclusion at school, school detention/suspension, or performance pressures, and this appears to have contributed to the death.

- This is coded as "No" if the victim was only noted as having low grades, but no specific problem was cited (e.g., received a failing grade recently) or victim was not described as being upset about the low grades.

-Examples include the victim failing a test the day before the suicide, the victim having a suspension hearing scheduled the day after the suicide, and the victim was beat-up the week before and was afraid to go to school.

***-Left a suicide note***

Definition: Victim left a suicide note (or other recorded communication). Note can be written or electronic

Discussion: A will or folder of financial papers near the victim does not constitute a suicide note.

- If the record states the person left a "note", it is inferred it was a suicide note in the absence of information indicating that the note had some other purpose.

- A suicide "note" can be any essentially durable message; it does not have to be on a piece of paper. Emails, text messages, voice mail, or writing on any object (such as a wall or table) all qualify.

- A text or electronic message sent right before the suicide occurred is labeled a suicide note if there was no time between the sending/receipt of the message and the suicide. If there was time to intervene, this is coded as “disclosed suicidal thought or intent”.

***-Problem with alcohol***

Definition: Person has alcohol dependence or alcohol problem

Discussion: This variable represents if the victim was perceived by self or others to have a problem with, or to be addicted to, alcohol. There does not need to be any indication that the alcohol problem directly contributed to the death.

- A victim who is noted as participating in an alcohol rehabilitation program or treatment including self-help groups and 12-step programs — are coded as “Yes” for “Alcohol Problem” even if the victim was noted as being currently sober.

-An alcohol problem from the past (i.e., five years or more ago) that has resolved and no longer appears to apply is coded as no.

- This is not coded if victim was using alcohol in the hours preceding the incident and there is no evidence of dependence or a problem.

***-Substance abuse problem***

Definition: Person has a non-alcohol related substance abuse problem

Discussion: This variable is coded as “Yes” if the victim was perceived by self or others to have a problem with, or to be addicted to drugs other than alcohol. There does not need to be any indication that the addiction directly contributed to the death. It can be endorsed if a victim was noted as using illegal drugs (such as heroin or cocaine), abusing prescription medications (such as pain relievers or Valium), or regularly using inhalants (e.g., sniffing gas).

-A victim who is noted as participating in a drug rehabilitation program or treatment — including self-help groups and 12-step programs — would be coded as “Yes” even if the victim was noted as being currently clean.

- A problem from the past (i.e., five years or more ago) that has resolved and no longer appears to apply would not be coded.

- If the victim is mentioned as using illegal drugs — even if addiction or abuse is not specifically mentioned — this variable is endorsed.

- The exception to this is marijuana use. For marijuana, the use must be noted as chronic, abusive, or problematic (e.g., “victim smoked marijuana regularly,” “victim’s family indicated he had been stoned much of the past month”).

- The phrase “history of drug abuse” is sufficient to justify endorsing this variable, unless it is noted that the victim is no longer a drug user.



- Previously attempting suicide via overdose is not sufficient justification for endorsing this variable in the absence of other information.

- This is not coded based on toxicology findings alone because multiple reasons could explain the presence of the substances.

### ***-History of previous suicide attempts***

Definition: Victim has a history of attempting suicide before the fatal incident

Discussion: This variable is coded as “Yes” if the victim was known to have made previous suicide attempts before the fatal incident, regardless of the severity of those attempts or whether any resulted in injury. Per the CDC uniform definition of suicide attempt (A non-fatal, self-directed, potentially injurious behavior with any intent to die as a result of the behavior; which may or may not result in injury), the victim must have engaged in a POTENTIALLY INJURIOUS BEHAVIOR. A potentially injurious behavior is one which in and of itself has the ability to cause injury and/or death

- Russian roulette: pulling the trigger on a firearm IS considered potentially injurious regardless of whether the weapon fires when the victim pulled the trigger.

- Swallowing a lethal dose of pills then calling 911 IS potentially injurious.

- If the victim is making a suicidal gesture (placing ligature around their neck, standing on a bridge preparing to jump, holding a gun to his head) but is stopped before taking action (e.g., does not pull the trigger after talking to family or pulled from bridge by law enforcement before jumping), this potentially injurious behavior is considered a suicide attempt.

-Evidence of a history of suicide attempts includes self-report and report or documentation from others including family, friends, and health professionals.

### ***-Disclosed suicidal intent***

Definition: Victim disclosed to another person their thoughts and/or plans to commit suicide within the last month. Disclosure of suicidal thoughts or plan can be verbal, written or electronic.

Discussion: This variable helps identifies suicides for which opportunities to intervene and prevent the death may have been present near the time of the suicide. It is also useful for exploring the association between stated intent and actual death.

- This is coded as “Yes” if the victim had disclosed suicidal thoughts or plans to another person recently or within the last month, whether explicitly (e.g., “I have been thinking about suicide lately” or “I plan to go to my cabin with my gun and never come back”) or indirectly (e.g., “I know how to put a permanent end to this pain”).

- This is coded as “Yes” if there was opportunity to intervene between the time the person disclosed intent and the injury event.

- This variable is not coded if the victim disclosed the intention to kill him or herself only at the moment of the suicide (i.e., when there was no opportunity to intervene to stop the Suicide). For instance, sending an email or text message right before the victim shot him/herself. This would be considered a suicide note.
- This variable is not endorsed if the victim had talked about suicide sometime in the distant past, but had not recently disclosed a current intent to commit suicide to anyone. This would be coded as “History of disclosed suicidal thoughts/plans”.
- A separate suicide attempt by the victim within a month of the suicide would be coded as “Yes”. In this case, “History of suicide attempts” would also be coded, “Yes”.
- The timing of when the victim disclosed the suicidal intent may be unclear (e.g., recently Or some time ago) or not mentioned. So the following rules describe the coding:
  - It is coded as “Yes” if the narrative states the victim “just” or “recently” told someone about his/her suicidal intent.
  - If the record indicates disclosure of intent, but is unclear about the timeframe (i.e., does not mention it all), it would be coded as “Yes”.
  - Law enforcement or CME documents may be unclear about timing of the disclosure. If the record indicates disclosure of intent in the past, but states that there was no disclosure for the current incident, it would not be coded, instead “History of suicidal thoughts/plan/attempts” would be endorsed.
  - If the victim disclosed suicidal intent “a long time ago”, “more than a month ago” or in the “past”, this would be coded as “No” and instead coded as “History of disclosed suicidal thought/plans/actions”.

***-History of suicidal thoughts***

Definition: Victim had a history of suicidal thoughts or plans. Disclosure of suicidal thoughts or plan can be verbal, written or electronic.

Discussion: This variable represents victims who have at any time in their life expressed suicidal thoughts or plans. The victim may or may not have disclosed suicidal thoughts and/or plans close to the time of the suicide.

- Suicidal ideation can be expressed directly (e.g., “I am thinking of killing myself”) or indirectly (e.g., “I don’t know if I want to go on living”).
- When the timing is unclear (e.g., timing not mentioned) or if the suicidal thoughts were described as occurring in the “past”, “a few years ago”, or “just”, history of suicidal thoughts would be “Yes”.
- Also “Recently disclosed suicidal thoughts/plans” would be coded in addition to this item if the victim disclosed suicidal thoughts and/or plans close to the time (within one month) of the suicide.”

- It would be coded as “No” for just previous suicide attempts, without known threats or ideation. Previous suicide attempts would be coded as “History of Suicide Attempts”.

***-Perpetrator of violence in last 30 days***

Definition: Victim was a perpetrator of violence within the past month that was distinct and occurred before the violence that killed the victim

Discussion: This variable refers to all violence (e.g., a robbery of a stranger or an assault in a bar).

- There does not need to be any causal link between the earlier violence and the death itself.

- This variable would also be coded “Yes” if a restraining order has been filed against the victim within the past month.

- This would NOT be coded to represent the fatal incident. For instance, if the victim is killed while assaulting another person, this variable would be coded “No”.

- A victim/suspect who perpetrates a homicide and then dies by suicide (e.g., homicide followed by suicide) would be coded as “Yes”. Also code: Intimate partner violence or intimate partner problem, if applicable.

***-Victim of violence in last 30 days***

Definition: Victim experienced violence in the past month that was distinct and occurred before the violence that killed the victim.

Discussion: This variable refers to all violence (e.g., a robbery targeting the victim or the victim is assaulted in a bar two weeks before the incident).

-There does not need to be any causal link between the earlier violence and the death itself (e.g., victim experienced a robbery by a stranger two weeks before killed themselves).

**-2.4 Toxicology definitions**

This set of variables identifies whether the tests for various drugs or their metabolites were positive or negative, during the toxicological screen conducted at autopsy, or upon hospital admission. Findings can assist in exploring the relationship between drug use and suicide. The variables can also be used to document the presence of certain psychiatric medications among suicide victims in jurisdictions that test for these substances. If a test result for a substance was “Not tested” or “Unknown”, then the data will not be counted, only positive results where a toxicological screen were conducted are counted. The categorical substances type is auto-populated based on the specific drug type entered into the NVDRS web data collection tool. For questions about specific substances and what category they fall in, contact CoVDRS staff (contact on first page).

Discussion: In cases of poisoning deaths, the substance or substances that caused death will be captured in these summary categories, in addition to substances that were in the decedent’s system that didn’t cause death. This variable is designed to capture what substances were in the decedents system at the time of death/injury, and not specifically cause of death. CoVDRS does

have the ability to assess what substance caused death, but it is not currently captured in the data dashboard. For more information contact CoVDRS staff.

***-Alcohol present***

Definition If a toxicological screen was conducted and results were obtained, was alcohol (ethanol) tested for and present in the decedent's system at or around the time of death.

***-Amphetamine present***

Definition If a toxicological screen was conducted and results were obtained, were amphetamine drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Antidepressant present***

Definition If a toxicological screen was conducted and results were obtained, were antidepressant drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Barbiturates present***

Definition: If a toxicological screen was conducted and results were obtained, were barbiturate drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Benzodiazepines present***

Definition: If a toxicological screen was conducted and results were obtained, were benzodiazepines drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Carbon monoxide present***

Definition: If a toxicological screen was conducted and results were obtained, were benzodiazepines drug types and metabolites tested for and present in the decedent's system at or around the time of death.

Discussion: For carbon monoxide substance presence, there is a more strong correlation and significance around the physiological cause of death, rather than just substance presence/abuse. Usually the presence of carbon monoxide in a decedent's system is either directly related to the cause of death (Carbon Monoxide poisoning), or secondarily related (from an automobile collision suicide, or fire related suicides).

***-Cocaine present***

Definition: If a toxicological screen was conducted and results were obtained, were cocaine drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Anticonvulsant present***

Definition: If a toxicological screen was conducted and results were obtained, were anticonvulsant drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Marijuana present***

Definition: If a toxicological screen was conducted and results were obtained, were marijuana drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Opiates present***

Definition: If a toxicological screen was conducted and results were obtained, were opiate drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Antipsychotic present***

Definition: If a toxicological screen was conducted and results were obtained, were antipsychotic drug types and metabolites tested for and present in the decedent's system at or around the time of death.

***-Muscle relaxant present***

Definition: If a toxicological screen was conducted and results were obtained, were muscle relaxant drug types and metabolites tested for and present in the decedent's system at or around the time of death.

For more information on the NVDRS specific variables and details visit the NVDRS page at the below link: <https://www.cdc.gov/violenceprevention/nvdrs/>

**2.5 Industry and Occupation definitions:** This set of variables is collected from the decedent's **Usual Industry** and **Usual Occupation** as collected on the death certificate and confirmed through CME and LE, sources. During the completion of the death certificate, this data is collected by the funeral home director, as reported by the decedent's family or legal next of kin. The decedent's usual occupation is defined as the, 'type of job the individual performed during most of his or her life, or the job held for the longest time'<sup>1</sup>. The decedent's usual industry is defined as the, "Type of business or industry where the decedent worked in his/ her usual occupation."<sup>1</sup>. This information is collected as free text in the NVDRS system.

<sup>1</sup>For more information on the collection of Occupation and Industry data view the CDC and NIOSH 'Guidelines for Reporting Occupation and Industry on Death Certificates'

<https://www.cdc.gov/niosh/docs/2012-149/pdfs/2012-149.pdf>

In order to get a better aggregate view of the data looking at occupation and industry, CoVDRS staff have done extensive work coding this free text data. The CDC's National Institute for Occupational Safety and Health (NIOSH) offer a free Industry and Occupation Computerized Coding System (NIOCCS) which allows user to code industry and occupation data according to several schema. You can code these types of data using NIOCCS to get the 2010 Census industry and occupation codes, as well as **North American Industry Classification System** codes, and **Standard Occupational Classification** codes. For the purposes of this dashboard the data were coded via the 2010 census code groups, which allows for the future calculation of rates, due to the presence of census population data. The census breakouts are as follows:

**Industry Groups:**

- AGRICULTURE, FORESTRY, FISHING AND HUNTING
- MINING
- UTILITIES
- CONSTRUCTION
- MANUFACTURING
- WHOLESALE TRADE
- RETAIL TRADE
- TRANSPORTATION AND WAREHOUSING
- INFORMATION
- FINANCE AND INSURANCE
- REAL ESTATE AND RENTAL AND LEASING
- PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES
- MANAGEMENT OF COMPANIES AND ENTERPRISES
- ADMINISTRATIVE SUPPORT, WASTE MANAGEMENT AND REMEDIATION SERVICES
- EDUCATION SERVICES
- HEALTH CARE AND SOCIAL ASSISTANCE
- ARTS, ENTERTAINMENT, AND RECREATION
- ACCOMMODATION AND FOOD SERVICES
- OTHER SERVICES EXCEPT PUBLIC
- ADMINISTRATION
- PUBLIC ADMINISTRATION
- NON-PAID WORKERS OR NON-WORKERS
- MILITARY

**Occupation Groups:**

- MANAGEMENT OCCUPATIONS
- BUSINESS AND FINANCIAL OPERATIONS OCCUPATIONS
- COMPUTER AND MATHEMATICAL SCIENCE OCCUPATIONS
- ARCHITECTURE AND ENGINEERING OCCUPATIONS
- LIFE, PHYSICAL, AND SOCIAL SCIENCE OCCUPATIONS
- COMMUNITY AND SOCIAL SERVICES OCCUPATIONS
- LEGAL OCCUPATIONS
- EDUCATION, TRAINING, AND LIBRARY OCCUPATIONS
- ARTS, DESIGN, ENTERTAINMENT, SPORTS, AND MEDIA OCCUPATIONS
- HEALTHCARE PRACTITIONER AND TECHNICAL OCCUPATIONS
- HEALTHCARE SUPPORT OCCUPATIONS
- PROTECTIVE SERVICE OCCUPATIONS
- FOOD PREPARATION AND SERVING RELATED OCCUPATIONS
- BUILDING AND GROUNDS CLEANING AND MAINTENANCE OCCUPATIONS
- PERSONAL CARE AND SERVICE OCCUPATIONS
- SALES AND RELATED OCCUPATIONS
- OFFICE AND ADMINISTRATIVE SUPPORT OCCUPATIONS
- FARMING, FISHING, AND FORESTRY OCCUPATIONS
- CONSTRUCTION AND EXTRACTION OCCUPATIONS

- INSTALLATION, MAINTENANCE, AND REPAIR OCCUPATIONS
- PRODUCTION OCCUPATIONS
- TRANSPORTATION AND MATERIAL MOVING OCCUPATIONS
- MILITARY SPECIFIC OCCUPATIONS
- HOMEMAKER, VOLUNTEER, OR STUDENT
- RETIRED, DISABLED, OR NON-WORKER

For more information on the types of jobs found in the above categories visit the NIOSH I & O coding page at the below link:

<https://www.cdc.gov/niosh/topics/coding/nioccsuserdocumentation.html>

### **Dashboard 1: Overview (counts):**

**Contents and Capabilities:** The first dashboard, labeled *Suicides in Colorado: An Overview* contains the frequencies (counts) of those Colorado residents who died by suicide in the state of Colorado, and basic demographic breakdowns. Within the page there are a variety of different filters that can be applied to update the information displayed. The first of which is a slide bar at the top of page which allows the user to select what years they wish to examine. Sliding this bar will update the numbers seen throughout the page (map, trend line, stacked bars, etc.) to only those that occurred in the selected time frame. The year represents the calendar year for which the suicide decedents were pronounced dead.

In the top-left of the page there is a geographic map of Colorado containing frequencies of suicide deaths, based on the county and HSR for which the decedent was a resident of, pulled from the death certificate. At the top of the map, you can choose to view the map either by *County* or *Health Statistics Region (HSR)*. As mentioned earlier, HSR is a tool used by CDPHE to group together counties with small sample sizes. Refer to earlier sections of this guide for more information. Alternatively, the viewer can create custom regions to view by selecting multiple counties on the county map. The numbers, which represent the frequency of suicides, in the center of county or region outlines will update based on filters set by the year slider, and other filters to be discussed later. By clicking on one of these geographic regions you can filter and select the geographic areas of interest for the other views. Similar to the year slider, all other figures will show updated numbers based on the geographic county or region of interest. Additionally, by holding the CTRL button and clicking on multiple counties or regions, the numbers will filter for all counties selected while holding down the control key. To deselect these areas, simply click on the region a second time. Below the map is a trend line of deaths by year that will update based on the filters selected. Note that this trend graph includes all years regardless of what years are selected on the date slider at the top of the page.

Next to the map there are a selection of stacked bars representing the demographics of suicide victims in Colorado, or the selected region/county. Similar to the map and year slider, these stacked bars allow the user to filter the data shown. By clicking on a categorical demographic group (either the label or bar chart portion), the user can filter the numbers shown on the map, trend line, and other stacked bar charts. For example if a user was interested in looking at only male suicide deaths, they could scroll over to the gender stacked bar chart and click on either the male label, or male bar. By doing this the dashboard will now only display male suicide victims. To deselect this as a group of interest, simply re click the label or bar for the demographic subgroup. Similarly you can hold down the CTRL button to

select multiple subgroups in a demographic category, or you can click on different stacked bars to get a specific subgroup. For example if you wanted to look at suicide deaths of Hispanic males age 15-19, you would click on the male label or bar, the White, Hispanic label or bar, and the 15-19 year label or bar. This would update the numbers to match this specific subgroup of interest. The text below the map shows the population for which you are viewing data at that time.

## **Dashboard 2: Crude Suicide Rates:**

**Contents and Capabilities:** The next dashboard calculates crude mortality rates for suicides based on the region or demographic specific population. A crude suicide rate can be defined mathematically as;  $(\text{number of deaths/population at risk}) * 100,000$  population. It is interpreted as the number of suicide deaths that occurred out of 100,000 people for a given time frame. So when looking at different rates, these calculation take into account differing population sizes, and allow for comparisons between different sized areas and demographic groups. Rates are calculated based on the filters selected throughout the dashboard. The term crude rates means there are no mathematical adjustments to control for demographic differences, which is covered in the ***Age-adjusted Suicide Rates*** dashboard. County and state based population estimates come from the National Center for Health Statistics bridged race based population estimates, U.S. Centers for Disease Control and Prevention. For more information on these data visit: [https://www.cdc.gov/nchs/nvss/bridged\\_race.htm](https://www.cdc.gov/nchs/nvss/bridged_race.htm)

Central to this page there is a geographic map of Colorado containing crude rates of suicide deaths, per 100,000 population, based on the county or HSR for which the decedent was a resident of. At the top of the map, you can choose to view the map either by *County* or *Health Statistics Region (HSR)*. Also at the top of the map there is a sliding scale for years of interest related to these crude rates. With this tool you can select anywhere from a single year of data to the full spectrum of years, as well as any custom year range in between. In the top right corner of the page there is a table containing the crude suicide rate for the whole state, based on the year range selected. Additionally in this table are the deaths, population, and upper and lower bounds of the 95% confidence interval.

Similar to Dashboard 1, the ***Crude Suicide Rates*** sheet also allows users to filter by geographic county or region. Click on an area of interest to filter all other figures displayed. Hold the CTRL key and click other areas to combine the area, and get combined rates calculated. Click a second time to deselect the area. For all filtering the crude dashboard, calculates rates based on a filtered number of deaths, and the filtered population.

Next to the map there's a selection of stacked bar charts representing the demographic specific crude suicide rates in Colorado, or the selected region/county. This includes rates by age, sex, race/ethnicity, and method of injury used in the suicide. Similar to the map and year slider, these stacked bars allow the user to filter the data shown. To do this click on the bar or demographic grouping of interest to filter all other views on the page. Click again to deselect. The yellow lines on the bar graphs represent the upper and lower bounds of the 95% confidence interval. When comparing two crude rates, one can denote a statistically significant difference when the respective 95% confidence intervals do not overlap.

## **Dashboard 3: Age-adjusted Suicide Rates:**

**Contents and Capabilities:** The dashboard labeled ***Age-adjusted Suicide Rates*** presents mortality rates per 100,000 population similar to the ***Crude Suicide Rates***. The main difference is that the rates presented in this dashboard have been age-adjusted, using the direct standardization method. The



population used to standardize the rates come from the U.S. 2000 population composition. The age-adjusted method is utilized to allow for comparisons between county, state, and national rates, controlling for any differences in population age and composition. When comparing non-age adjusted rates, it is possible that the effects of age and mortality (suicide) risk can show a higher or lower rate between areas, when in fact it may just be a difference in the underlying age composition of the population. For more information on age-adjusted rates visit:

[https://naphsis-web.sharepoint.com/about/Documents/Mortality\\_AgeAdj\\_Final\\_Lois.pdf](https://naphsis-web.sharepoint.com/about/Documents/Mortality_AgeAdj_Final_Lois.pdf)

The Age-adjusted suicide rates also utilize population estimates from the National Center for Health Statistics bridged race based population estimates, U.S. Centers for Disease Control and Prevention. See previous section to learn more.

For this dashboard the ability to filter and explore the data is slightly different based on the underlying data structure from the age-adjustments. At the top of the page there is a dialogue box that states “*Select 1 year or 3 year time frame*”, and a dropdown menu. When using this page it is important to pay attention to this section. Based on the underlying pre-calculated rates, users must select either single year rates or 3 year rates. Similar to grouping counties or regions together, utilizing the 3 year rates decreases the chances of suppressed data, based on an increased population size. After selecting the time frame (1 year or 3 year) then the user can then go on to select the years of interest. If you selected one year time frame, then use the drop down next to the **blue** text, and if you select 3 year time frame then use the dropdown under the **green** text. These year filters will affect all figures and visualizations in the dashboard, when used correctly.

In the top right corner of the page there is a table containing the Age-adjusted suicide rate for the whole state, based on the year range selected. Additionally in this table are the deaths, population, and upper and lower bounds of the 95% confidence interval. Central to this dashboard is the map which contains the Age-adjusted suicide rates per 100,000 population based on county or region of residence. At the top of the map, there is a drop down menu that allows the user to choose to view the map either by *County or Health Statistics Region (HSR)*.

Upon initial view of the Age-adjusted suicide rate dashboard there are no stacked bar charts for rates by demographic groupings. In order to view these data the user must select a region or county of interest to filter by. Once the user has clicked on a region of interest the demographic specific age-adjusted rates will appear to the right of the map. Based on the nature of the underlying data users can't filter based on demographic groupings in this section. Like in the **Crude Suicide Rate** page, the yellow bars represent the 95% confidence interval. When comparing two age-adjusted rates, one can denote a statistically significant difference when the respective 95% confidence intervals do not overlap.

#### **Dashboard 4: Methods, Circumstances and Toxicology:**

**Contents and Capabilities:** The dashboard titled **Methods, Circumstances and Toxicology**, builds upon what was presented in the overview page, and allows the user to drill deeper into the greater detailed data of the CoVDRS. The top of the page contains multiple dropdown menus which allow the user to filter what population of interest is being examined. Review the data descriptions portion of this guide for the specific data definitions and source, for the 8 filters presented on this page.

Below these filters there are three stacked bar charts which will populate according to the selected filters. The first stacked bar represents the method type used to inflict the fatal injury in the suicide death. The second bar chart represents the circumstances that preceded the suicide death, as indicated

in either the coroner/medical examiner report, or the law enforcement report. Indication of a circumstance in either of the reports will lead to the circumstance being counted. The final stacked bar contains the substances that were found in the decedents system at the time of death, if a toxicological screen was conducted during the death investigation/autopsy. For more information on weapon type, circumstances, or toxicology, see the data descriptions section earlier in this guide. Within the bars of each chart, the yellow line that intersects the bar represents the state level percentage or value for the measure of interest. This reference line will update based on the filters applied to the visualizations.

The small tables above the circumstances and toxicology section represent the data quality metrics for their respective data types. Represented in these tables is the amount of cases where at least one circumstance is known (either law enforcement or coroner/medical examiner), as well as the cases where no circumstances were known. The cases with no known circumstances are not included in the percentage calculations in the stacked bar charts below the table. So, the denominator for the percentage calculations is the suicides for which 1+ circumstances were known. Similarly, there is a table showing the number of cases for which toxicology information was available (even if the toxicology returned no positive results, but proof that a toxicological screen was conducted), or not available (meaning either no toxicological results were provided or a toxicological screen was not conducted). As with the circumstances, the percentage of cases with a substance present are calculated only out of cases where toxicology information was known.

The functionality of this page lends itself to examining populations of interest, and looking at the unique weapon types, circumstances, and toxicology for those victims. Each drop down filter option allows for the user to select multiple subgroups using the checkbox functionality. You can apply as little or as many filters as wanted, and the figures will update accordingly. One note: as the user gets into more specific subgroups, particularly in smaller counties, the chance that data will be suppressed (hidden for counts of less than 3) goes up. So when looking at very specific subgroups it may be easier to use larger geographical regions, or vice versa, in terms of looking at more broad subgroups in smaller populations.

### **Dashboard 5: Demographics for Circumstances and Toxicology:**

**Contents and Capabilities:** The 3<sup>rd</sup> dashboard labeled *Demographics for Circumstances and Toxicology*, takes a different look at the data related to CoVDRS circumstances. This dashboard allows the user to take a circumstance or toxicological result of interest and look at the demographic breakdown of suicide decedents for whom it was indicated had this contributing circumstance or substance type present at the time of death. For expanded definitions of the circumstance and toxicology variables see the data descriptions section earlier in this guide.

This dashboard also allows users to define the geographical region of interest (county of residence or HSR of residence) as well as the year range. The manipulation of these different filters will update the demographic stacked bars on the side of the page, as well as the trend line at the bottom of the page. This dashboard is designed to be a helpful tool when a user is particularly interested in the types of suicide decedents who had particular characteristic related to their suicide death. For example if a user was interested in seeing what types of suicide decedents had a contributing criminal legal problem. The user would select this circumstance and the trend, and demographic bar chart will update showing only the cohort of suicide victims who were noted as having a criminal legal problem that contributed to their suicide death. This can be further defined by the geographic and temporal filters.

## **Dashboard 6: Industry and Occupation:**

**Contents and Capabilities:** The final data dashboard labeled *Industry and Occupation* incorporates data pulled from the suicide decedent's *Usual Industry* and *Usual Occupation*. This dashboard only includes information for suicide decedents age 15 and older, based on the legally presumed age of ability to work in the U.S. For more information on the data descriptions, subgroups and methods related to coding I&O data see the data description earlier in this document.

This dashboard allows the user to access information around what types of employment, suicide decedents in Colorado work in. The top of the page has a slider for years of interest, a drop down for HSR and county, and a dropdown for a handful of demographic filters. These drop down filters will update the stacked bar charts present on the page. When you first land on this dashboard, only the stacked bar for industry of suicide decedents is populated. This represents the count of individuals whose usual industry falls in one of the specific categories presented.

Clicking on an industry of interest will cause more stacked bar charts to load. The left chart represents the occupations of suicide decedents nested within the selected industry. The circumstances table represents the suicide circumstances of the individuals who worked in the selected industry. As with other dashboards, the user can push CTRL and select multiple industries of interest.

In addition to the filters allowing the user to select a specific geographic and temporal population, the user can also select a demographic factor from the drop-down to add color coded breakdowns for the demographic variable of interest, nested within the industry stacked bar chart. For example by selecting the gender demographic grouping, the industry bar chart will show the counts in each industry group by sex. The Key in the top right corner of the dashboard shows which color represents each demographic group within the chart. This can be looked at for age and race in addition to gender.

With this tool, the user can drill even deeper into the industry data by clicking on a specific color portion of the industry stacked bar. This will update the occupation and circumstances stacked bar charts to show only suicide decedents in the selected industry and demographic group. For example, if gender is selected in the drop-down at the top and the user clicks on the portion of the manufacturing industry bar that is color coded for women, then the below occupation and circumstances charts, will show data for women who died by suicide whose usual/lifetime industry was primarily manufacturing.

## **Saving Figures from the Dashboard:**

With the Colorado Suicide Data Dashboard, the user has the ability to download and save specific figures, charts, or data. This information can be saved for both the default view and the selected view. At the bottom of the dashboard there is a small tab that says "Download" and has a download image. Scrolling over this menu will cause "PDF" and "Image" options to pop up. Selecting these will create .PDF files and .PNG files for the respective options. The other options in the menu are greyed and aren't an option for the user.

When clicking on the PDF option another menu will pop-up. This allows the user to have options about how they want the figures/image to be printed (i.e. portrait vs. landscape), as well as what content they want to print (includes all or some of the included worksheets/other dashboard). Once the user decides to download the option, a final window pops up alerting the user that the PDF or PNG file has been

generated. Then click the download option to get the actual file to download from your browser. These figures can then be saved and referenced for any multitude of purposes.

When using the figures or pictures from this dashboard use the following citation:

Colorado Violent Death Reporting System, Colorado Department of Public Health and Environment.  
Colorado Suicide Data Dashboard. Accessed MM/YYYY.

[https://cohealthviz.dphe.state.co.us/t/OPPILPublic/views/CoVDRSSuicideData/Story1?:embed=y&:showShareOptions=true&:display\\_count=no&:showVizHome=no](https://cohealthviz.dphe.state.co.us/t/OPPILPublic/views/CoVDRSSuicideData/Story1?:embed=y&:showShareOptions=true&:display_count=no&:showVizHome=no)

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