



*Suicidal Behaviors Among American
Indian/Alaska Native Populations:*

Indian Health Service Resource Patient Management System
Suicide Reporting Form Aggregate Database Analysis,

2003-2012

Suicidal Behaviors Among American Indian/Alaska Native Populations:

Indian Health Service Resource Patient Management System Suicide Reporting Form Aggregate Database Analysis, 2003-2012

Great Lakes Inter-Tribal Epidemiology Center



A division of Great Lakes Inter-Tribal Council, Inc.



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Introduction

In August 2010, the Great Lakes Inter-Tribal Epidemiology Center (GLITEC) was approached to conduct a secondary data analysis on the Indian Health Service (IHS) Resource Patient Management System (RPMS) Suicide Reporting Form (SRF) aggregate database. In December 2011, the IHS Division of Behavioral Health and GLITEC signed a data sharing agreement outlining data sharing, protection, and data use requirements. In March 2012, GLITEC received an IHS RPMS SRF limited database, which the IHS Health Performance Evaluation System had de-duplicated, so event-specific records of suicidal behavior were counted only once for each event (N=12,928 records), although individuals could have more than one event, therefore more than one incident of suicidal behavior, recorded within the database. Afterwards, GLITEC used descriptive statistics to conduct the data analysis, and began report writing.

The goals of this report are to describe the three different types of suicidal behavior: “suicide ideation with plan and intent,” “suicide attempts,” and “suicide completions,” observed through analysis of the database; to compare these results to other studies, and to make recommendations to improve the IHS RPMS SRF.

This secondary data analysis yields three main findings. First, although the SRF provides a strong start to studying suicidal behavior among American Indian/Alaska Natives (AI/AN) on a national scale, the number of “unknown and missing” responses in this first iteration presented significant limitations in the analysis and interpretation. Second, data on “suicide ideation with plan and intent” and “suicide attempts” was more complete than information collected about “suicide completions.” Third, these findings from a national database corroborate the epidemiology of suicidal behaviors found in other studies conducted with smaller samples and age subsets.



Epidemiology of suicidal behaviors among American Indian/Alaska Native populations

Studying suicidal behaviors (“suicide ideation with plan and intent,” “suicide attempts,” and “suicide completions”) is challenging because there are neither a standardized nomenclature nor operational definitions for these behaviors; therefore, it is difficult to collect and report reliable and consistent data^{1,2} and to compare data from different databases over time. This is even more challenging when studying AI/AN suicidal behaviors across the United States. Population-based data on AI/AN suicidal behaviors are limited³⁻⁶ and AI/AN populations face unique data quality issues including: being frequently excluded from surveillance systems, racial misclassification,^{2-3,7-9} being combined with other small racial and ethnic populations in the “other” category, and not being oversampled.¹⁰⁻¹¹

Due to the limitations of secondary data sources, and because of the uniqueness of each Tribal nation,^{5-6,12} a number of smaller cross-sectional suicidal behavior studies have been conducted in different AI/AN Tribal populations. These studies have their own limitations since the vast majority focus on youth, and most are either reservation^{3,5-7,13-20} or school-based.^{3-4,13-15,17-18,20-25} Although it is difficult to determine the prevalence or compare trends for different suicidal behaviors, this section reviews data and literature on suicidal behaviors published within the last 15 years and attempts to highlight differences between the all races and AI/AN populations, as well as between gender and age. For readers interested in past research on suicide in AI/AN populations, please refer to May and McCloskey (1997) for a comprehensive annotated bibliography of 293 studies conducted from before 1960 to 1997.²⁶

Differences in suicide ideation, plan and attempts, by race and sex among youth

The Centers for Disease Control and Prevention’s (CDC) Youth Risk Behavior Survey (YRBS) is a national surveillance system which collects data on risk behaviors, including suicidal behaviors, from students in grades 9-12 from 41 states. The 2011 YRBS found 7.8 percent of students had “attempted suicide” at least once in the last year.²⁷ Unfortunately, YRBS suicidal behaviors data were not available for AI/AN youth. Of the studies reviewed, AI/AN youth were found to have a higher prevalence of non-fatal suicidal behaviors than the all races population.^{4,12-15,21,25,28} According to the U.S. Surgeon General and the National Action Alliance for Suicide Prevention’s 2012 *National Strategy for Suicide Prevention: Goals and Objectives for Action* report, “it is estimated that 14 to 27 percent of American Indian/Alaska Native adolescents have attempted suicide.”^{12-13,15,25} In other words, AI/AN youth were 1.7 to 3.4 times more likely to have “attempted suicide” compared to the all races population, whereas 7.8 percent had “attempted suicide” in 2011.²⁷

In addition, research has found that females were more likely to engage in non-fatal suicidal behaviors such as “suicide ideation,” “suicide plans,” and “suicide attempts” than males^{2-4,20}; this finding was corroborated in four other studies specific to AI/AN populations,^{4,24,28-29} two of which were specific to

AI/AN youth. One study found adolescent AI/AN females were over 2.6 times more likely than males to have “current thoughts about suicide.”²⁸

Differences in suicide ideation, plan and attempts, by race and sex among adults

A national surveillance system which collects data on suicidal behaviors, among adults, is the Substance Abuse and Mental Health Services Administration (SAMHSA) National Survey on Drug Use and Health (NSDUH). SAMHSA conducts the NSDUH annually in-person among civilian, non-institutionalized individuals 12 years and older. According to SAMHSA’s 2011 NSDUH, an estimated 3.7 percent of adults 18 and older had “serious thoughts about suicide”, 1.0 percent “made a suicide plan,” and 0.5 percent “attempted suicide” in the past year.³⁰ The 2011 NSDUH was able to provide AI/AN data on one indicator “serious thoughts about suicide.” According to 2011 NSDUH data AI/ANs were over 3.5 times more likely than the all races population to report “serious thoughts about suicide” (13.1 percent compared to 3.7 percent, respectively).³⁰ For AI/AN populations estimates were not presented for additional indicators due to low precision.

Since most AI/AN suicidal behavior studies focus on youth (since youth have a higher prevalence of suicidal behaviors than adults), it was difficult to find AI/AN adult specific data on non-fatal suicidal behaviors. Although, LeMaster et al.’s study (which included AI/AN individuals 15 years and older) found AI/AN females were more likely than AI/AN males to report both lifetime and past year “suicidal thoughts” and “a suicidal plan.”³⁴ This finding corroborates other studies.^{2-4,20,24,28-29}

Differences in suicide mortality, by race and sex

There are more population-based data on AI/AN “suicide completions” than any other type of suicidal behavior. According to the CDC’s National Center for Health Statistics Vital Statistics Reports, in 2009 (the latest year for which data were available at the time this report was written), there were 2,437,163 deaths reported in the United States, of which 36,909 or 1.5 percent were classified as suicides³¹; suicide was the tenth leading cause of death for all races and was the eighth for AI/AN populations.³² While the AI/AN age-adjusted suicide mortality rate (11.9 per 100,000 population) was slightly higher than the all races population (11.8 per 100,000),³¹ at least three national studies which compared self-reported racial classification on US Census Bureau’s population surveys to racial classification on death certificates found a 30 percent net underreporting of AI/AN deaths due to racial misclassification.⁹ This indicates the actual age-adjusted suicide mortality rate, which was already slightly higher for AI/AN population in all likelihood was even higher yet.

Unlike non-fatal suicide behaviors where females had a higher prevalence, males are more likely than females to commit suicide.^{2,20} In fact, for every female that dies from suicide there are approximately 3.9 males.³¹ Although suicide was not one of the top ten leading causes of deaths for all races females or AI/AN females of all ages, suicide was the seventh leading cause of death for all races males and sixth leading cause for AI/AN males of all ages.³²

Differences in suicide mortality, by race, sex and age

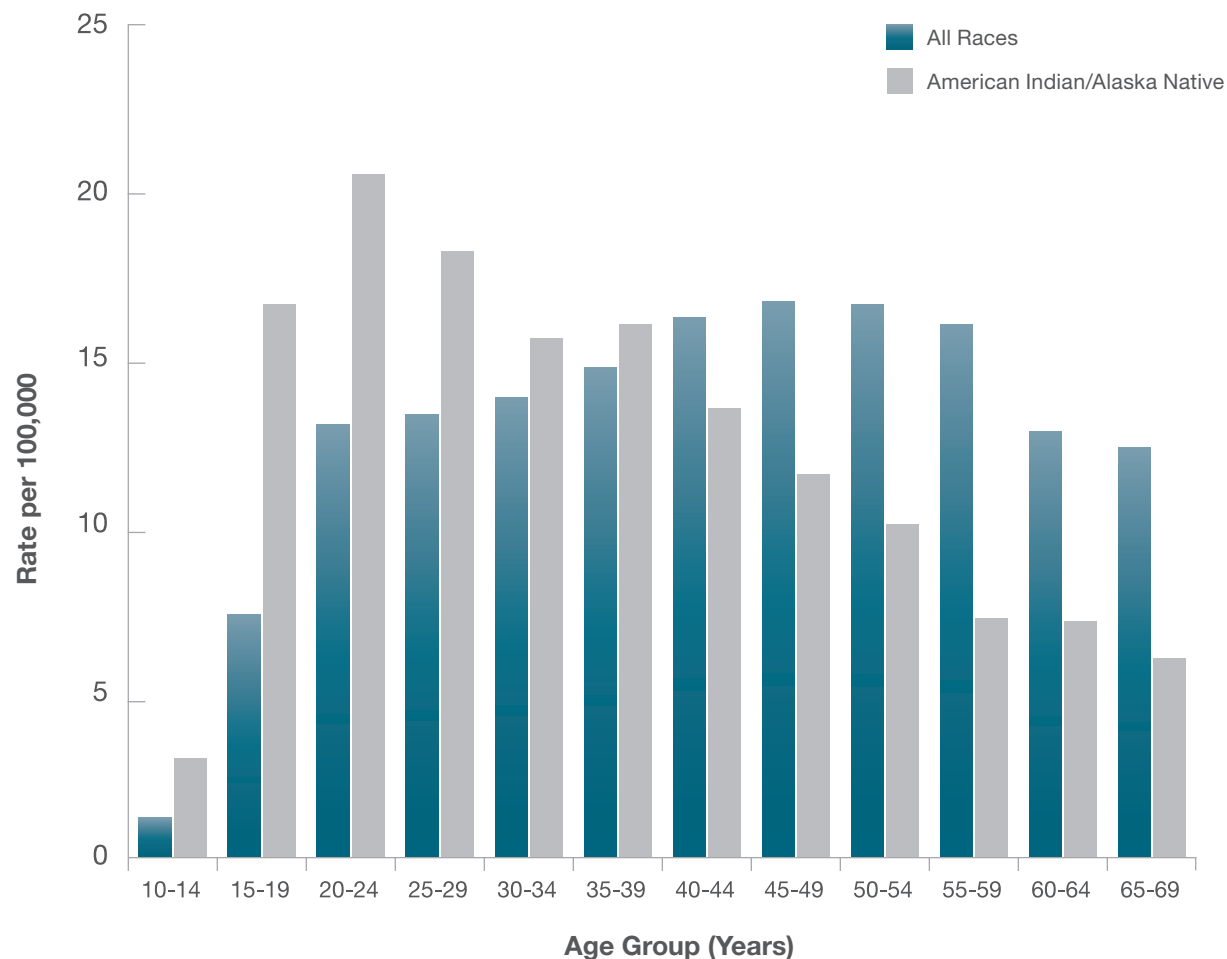
Similar to non-fatal suicidal behaviors, in younger age groups, the prevalence of fatal suicidal behavior is higher for AI/AN populations.^{4,22} For all racial groups, suicide is one of the top five leading causes of death for individuals between 15-34 years old³²; however, within this age range, disparities in suicide mortality rates clearly exist between the AI/AN and all races populations. For example, in 2009, the suicide mortality rate for all races males between 15-19 years old was 12.0 per 100,000, while the AI/AN males rate, for the same age group, was 31.1 per 100,000 or over 2.5 times higher.³²

Unlike cross-sectional data on non-fatal suicidal behaviors, it was possible using the CDC’s Wonder Database to examine 11 years of combined data³³ to see if disparities in suicide mortality rates existed.

Similar to 2009 data, between 1999 and 2010, the suicide mortality rate was significantly higher for AI/AN populations between 10-39 years old than all races population, although from 40 years old and older the AI/AN rate was lower than the all races suicide mortality rate (see figure A).

Figure A:

All Races and American Indian/Alaska Native suicide mortality rates, by age group, Centers for Disease Control and Prevention, National Center for Health Statistics, 1999-2010



Differences in American Indian/Alaska Native suicide mortality rates by IHS Area

Suicide mortality rates not only vary by race/ethnicity, sex, and age, but also vary by Tribe^{5-6,12,34}; therefore, these rates also vary by IHS Area. While the 2000 all races age-adjusted suicide mortality rate was 10.6 per 100,000, the 1999 to 2001 age-adjusted IHS service area population overall suicide mortality rate, which was also adjusted for racial misclassification on death certificates, was 17.0 per 100,000 population.³⁵ The California and Nashville IHS Areas had the lowest suicide mortality rates (5.5 and 7.1 per 100,000, respectively), while the Tucson and Alaska IHS Areas had the highest suicide mortality rates (23.1 and 38.5 per 100,000, respectively).³⁵



Methodology

Instrument

The Indian Health Service (IHS) Resource Patient Management System (RPMS) Suicide Reporting Form (SRF) was developed by the IHS Office of Information Technology, behavioral health providers at IHS, Tribal and Urban facilities, and subject matter experts. The SRF was developed to document patients' suicidal behaviors ("suicide ideation with plan and intent," "suicide attempts," and "suicide completions") among individuals using IHS, Tribal or Urban RPMS facilities that use the SRF. The SRF includes demographic items along with standard suicide epidemiological data items (i.e. method, substances involved, contributing factors, etc.) For a complete list of all items included in the SRF, please see Appendix D.

Use of the Suicide Reporting Form

Not all IHS, Tribal or Urban facilities utilize the RPMS or the RPMS Behavioral Health System (BHS) where the SRF is stored; these facilities must manually enter paper SRFs into the RPMS BHS to be included in the database. There are no universal guidelines on how to complete the SRF or when to export data to IHS Area Offices; however, facilities are encouraged to export data to IHS Area Offices monthly. After the SRFs are uploaded to local IHS Area Offices, data are exported monthly to the IHS Division of Behavioral Health's national data mart, Indian Health Performance Evaluation System.

At the time this report was written, non-RPMS BHS facilities were not submitting SRF data; therefore, all data within this report came from IHS, Tribal, and Urban facilities using the RPMS BHS. It was unknown how many RPMS BHS facilities had the ability to collect or submit SRFs to their IHS Area Offices, and what percentage of those facilities collected and submitted SRFs to their IHS Area Offices. Therefore, the results within this report cannot and should not be generalized to all IHS, Tribal and Urban facilities.

Database

The SRF database contained 41 variables (the vast majority were categorical) and was de-duplicated so there were 12,928 event-specific records of suicidal behavior. However, individuals could have more than one event, therefore, more than one record of suicidal behavior within the database. Although, the database was supposed to be limited to only individuals with suicide morbidity or mortality, there were 599 records where the suicidal behavior variable was "missing". The vast majority of records, 95.4 percent, reported suicidal behaviors that occurred between October 1, 2003 and January 30, 2012.

Data cleaning, recording and analysis

GLITEC initially ran frequencies using SAS 9.3 ® software³⁶ to look for impossible values (e.g. values of "-5" and "-82" for the age variable), outliers (e.g. values of "1" and "123" for the age variable), and

“missing” data. Afterwards, the “other (specify):” attribute for two variables were recoded, by three different reviewers, to ensure inter-rater reliability. Although the SRF included six variables with an “other (specify):” attribute, the SRF database only included text responses for the “other (specify):” attribute for the disposition and method variables.

All text responses for each “other (specify):” attribute, for each variable, were reviewed independently. Afterwards, reviewers came together and agreed upon recoding attributes into either existing or newly created attributes, before data were recoded. For example, “Cutting wrist w/broken glass”, “CUTTING ON RIGHT WRIST” and “Planned to slit throat” were all recoded as a “Stabbing/Laceration” attribute for the method variable, while a newly created attribute “Burning or fire” was created to include “other (specify):” text responses such as: “ATTEMPT TO START COAT ON FIRE,” “douse self with gas & light fi” and “Set self on fire/gasoline.” Disposition “other (specify):” attributes were also reviewed and recoded using the same process.

Because of data limitations (e.g. the high percentage of “unknown” and “missing” records and not having a denominator, which made it impossible to calculate rates of suicidal behavior), it was only possible to conduct descriptive statistics to describe the SRF database, and cross-tabulations to examine the relationship between independent variables (e.g. method, substances involved, contributing factors, etc.) and dependent suicidal behavior variables (“suicide ideation with plan and intent,” “suicide attempts,” “suicide completions”). Therefore, 599 records that did not include a suicidal behavior were removed from the database. Because the analysis only focused on suicidal behaviors occurring between fiscal years 2003 and 2012, an additional 1,217 records were removed (since some facilities had entered SRFs occurring before October 1, 2003). This resulted in a total of 11,112 records to be analyzed. Due to the large variation in the number of records reported by each IHS Area, cross-tabulations were not run for each Area. For example the Alaska IHS Area submitted only eight completion records (1.7 percent of all “suicide completion” records), although the age-adjusted suicide mortality rate in the Alaska IHS Area was higher (38.5 per 100,000) than any other IHS Area.³⁵

Reading Notes

The results section includes all of the records submitted from the 2003-2012 fiscal years and does not necessarily represent the number of individuals. For example, multiple reports of “suicide ideation with plan and intent” or “suicide attempts” could be submitted for one individual. Presumably, only “suicide completion” records correspond to unique individuals; therefore, the results section reports on all the records collected and for simplicity refer to records collected from females simply as “female,” and records collected from 10-14 year olds as “10-14 year olds,” etc.

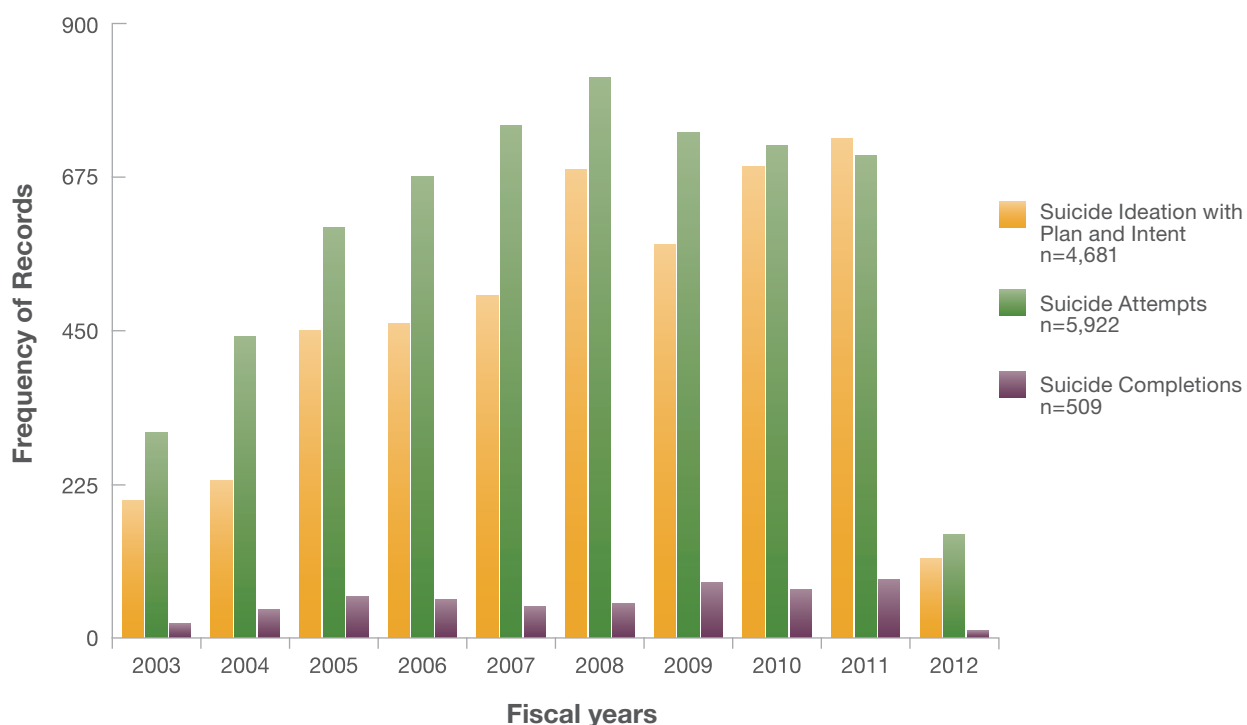
Finally, because the number of records of “suicide ideation with plan and intent” and “suicide attempts” greatly exceeded the number of records of “suicide completion,” the overall results shown in this section mostly reflect the characteristics of “suicide ideation with plan and intent” and “suicide attempts.” Due to the amount of information presented, summaries of each figure or table for all suicidal behaviors, as well as the results for the specific types of suicidal behaviors (“suicide ideation with plan and intent,” “suicide attempts,” and “suicide completions”) are presented for clarity, while the discussion section reviews general trends.



Results

Overall, between 2003 and 2012 more “suicide attempt” records (n=5,922) were reported to the IHS Division of Behavioral Health’s national data mart, Indian Health Performance Evaluation System, than “suicide ideation with plan and intent” (n=4,681) or “suicide completions” records (n=509) (see Figure 1). Between 2003 and 2012, on average 592.2 “suicide attempts” records were submitted annually. For the same time period, the mean number of “suicide ideation with plan and intent” records and “suicide completion” records were 468.1 and 50.9, respectively. Of the 11,112 records submitted to the IHS Division of Behavioral Health’s national data mart, Indian Health Performance Evaluation System, the majority, 86.2 percent, were entered by individuals working in the behavioral health field.

Figure 1:
Frequency of Suicide Ideation with Plan and Intent, Suicide Attempts, and Suicide Completions Records by Fiscal Year, IHS RPMS SRF Aggregate Database, 2003-2012*



*2012 data were not available for the entire fiscal year. In 2012 the last reported record of “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” occurred on January 30, 2012.

The number of SRFs completed varied across IHS Areas. The Aberdeen IHS Area submitted the most SRFs (n=3,925); the Nashville Area submitted the least (n=10). All of the IHS Areas, with the exception of the Aberdeen and Oklahoma IHS Areas, submitted more “suicide attempt” records than “suicide ideation with plan and intent” records.

Table 1:

Frequency of Suicide Ideation with Plan and Intent, Suicide Attempts, and Suicide Completions Records Submitted by Indian Health Service Area, IHS RPMS SRF Aggregate Database, 2003-2012*

IHS Area	Suicide Ideation with Plan and Intent		Suicide Attempts		Suicide Completions	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Aberdeen	1,970	43.1	1,810	31.7	145	30.1
Alaska	74	1.6	139	2.4	8	1.7
Albuquerque	68	1.5	90	1.6	12	2.5
Bemidji	173	3.8	451	7.9	45	9.4
Billings	538	11.8	687	12.0	47	9.8
California	62	1.4	93	1.6	7	1.5
Nashville	4	0.0	6	0.1	0	0.0
Navajo	856	18.7	1,377	24.1	72	15.0
Oklahoma	276	6.0	182	3.2	9	1.9
Phoenix	338	7.4	578	10.1	38	7.9
Portland	178	3.9	224	3.9	35	7.3
Tucson	37	0.8	69	1.2	63	13.1
Total	4,574	100.0	5,706	100.0	481	100.0

n=10,761

*2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.

As seen in Table 2, the majority of records for all types of suicidal behaviors including: “suicide ideation with plan and intent”, “suicide attempts” and “completed suicides”, were collected from unemployed, single females. The largest percentage of records was collected from individuals between 15-19 years old, who had completed less than 12 years of school.

For “suicide ideation with plan and intent,” (Appendix A) the majority of records were collected from females (55.1 percent). Of records for “suicide ideation with plan and intent,” the most commonly reported demographic characteristics indicated that the individual was aged 15-19 years old (23.0 percent), had less than 12 years of education (42.4 percent), and/or was single (62.7 percent). The majority of records, 51.9 percent, collected from individuals reporting “suicide ideation with plan and intent” indicated that the individual was unemployed.

For “suicide attempts,” (Appendix B) the majority of records were also collected from females (59.6 percent). Of records for “suicide attempts,” the most commonly reported demographic characteristics indicated that the individual was 15-19 years old (27.3 percent), had less than 12 years of education (38.9 percent), and/or was single (59.0 percent). Similar to “suicide ideation with plan and intent,” 51.4 percent of records collected from individuals who “attempted suicide” indicated that the individual was unemployed.

The demographics of individuals who “completed suicide” (Appendix C) were different than the other types of suicidal behaviors. Males accounted for 72.5 percent of “suicide completions.” Records of “suicide completion” most frequently indicated that the individual was between 15-19 years old (25.1 percent), had less than 12 years of education (27.6 percent), was unemployed (33.3 percent), and/or was single (49.4 percent). In general, there were more “unknown or missing” responses for records of “suicide completions” than for records of “suicide ideation with plan and intent” and “suicide attempts.”

Table 2:

Demographics, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*

Demographics		Frequency	Percentage
Sex n=11,111	Female	6,249	56.2
	Male	4,862	43.8
Age n=11,082	5-9 years	91	0.8
	10-14 years	1,238	11.2
	15-19 years	2,816	25.4
	20-24 years	1,773	16.0
	25-29 years	1,234	11.1
	30-34 years	1,005	9.1
	35-44 years	1,575	14.2
	45-54 years	950	8.6
	55-64 years	282	2.5
	65 years and older	118	1.1
Education n=10,763	Less than 12 years	4,296	39.9
	High School Graduate/GED	1,865	17.3
	Some College/Technical	801	7.4
	College Graduate	135	1.3
	Post Graduate	47	0.4
	Unknown	3,619	33.6
Employment n=10,824	Full-time	1,068	9.9
	Part-time	264	2.4
	Retired	76	0.7
	Self-employed	122	1.1
	Student	2,076	19.1
	Student and Employed	48	0.4
	Unemployed	5,510	50.8
	Unknown	1,678	15.5
Relationship Status n=10,991	Cohabiting/Common-Law	886	8.1
	Divorce/Separated	894	8.1
	Married	1,375	12.5
	Same Sex Partnership	48	0.4
	Single	6,605	60.1
	Widowed	123	1.1
	Unknown	1,060	9.6

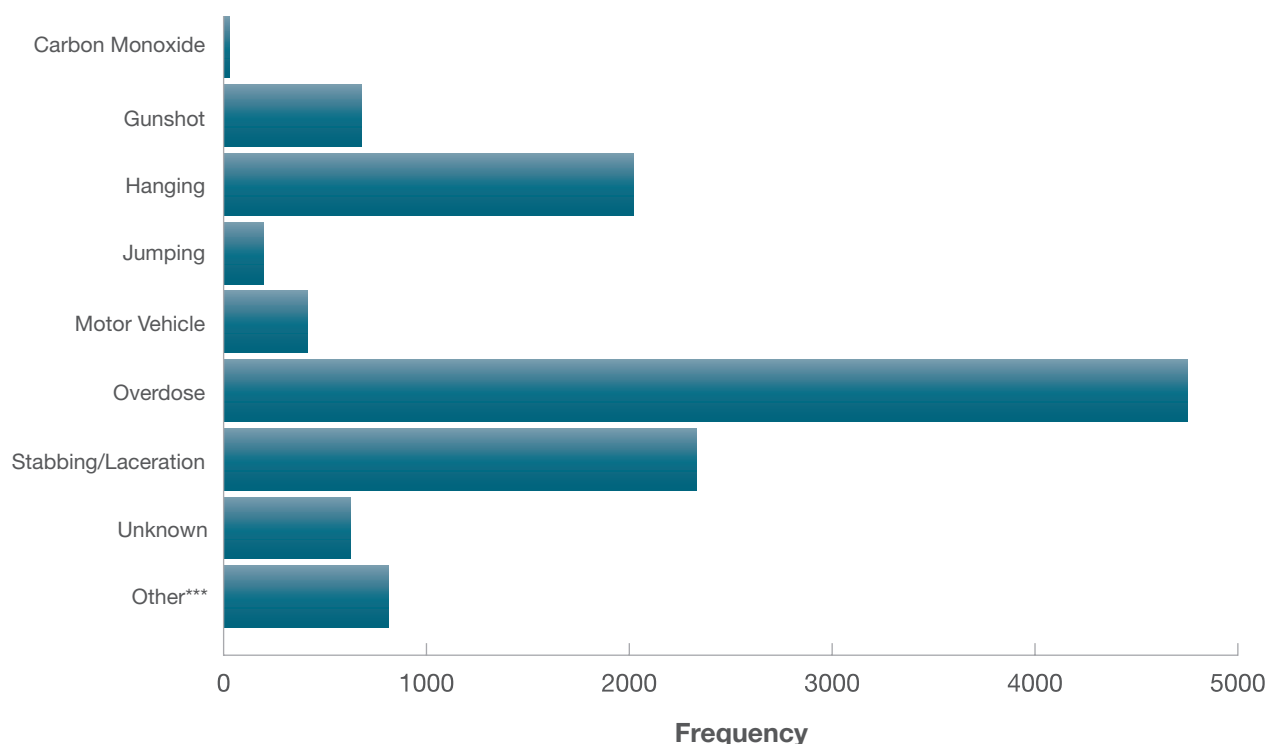
*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent," "Suicide Attempts," and "Suicide Completions" records occurred on January 30, 2012.

The most frequently reported methods intended or used in all types of suicidal behaviors, in descending order, included overdose, stabbing/laceration and hanging. Because the SRF allowed individuals to select multiple responses, the total number of methods recorded may exceed the number of records in each category.

For “suicide ideation with plan and intent,” the most frequently reported intended methods were overdose (25.0 percent of recorded methods), stabbing/laceration (19.6 percent), and hanging (18.7 percent); for “suicide attempts,” the most frequently reported methods were overdose (58.0 percent of recorded methods), stabbing/laceration (23.8 percent), and hanging (14.3 percent). Although the most frequently reported methods for “suicide ideation with plan and intent” and “suicide attempts” were the same, the most frequently reported methods in “suicide completions” differed from these: hanging was the method most frequently used in “suicide completions” (61.8 percent of recorded methods), followed by gunshot (25.5 percent) and overdose (9.5 percent).

In addition, “suicide completions” had the most complete methods data of any type of suicidal behavior; only 2.7 percent of records had “missing” responses and there were no “unknown” responses. While the percentage of “missing” and “unknown” responses for “suicide attempts” was similar to “suicide completions,” (1.7 percent of records had “missing” responses and 0.8 percent of responses were “unknown”), “suicide ideation with plan and intent” had a larger proportion of “missing” and “unknown” responses (16.1 percent of records were “missing”; 9.8 percent of responses were “unknown”).

Figure 2:
Methods, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*,**



*2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.

**The SRF allowed individuals to select more than one method; therefore, the sum of all methods (10,990) is greater than the n of 10,243.

***Additional information on the “other” variable is presented in Table 3.

For all suicidal behavior records for which an “other (specify)” method was recorded, the most frequently reported “other (specify)” method was “other.” This result was also found in “suicide ideation with plan and intent” (n=563) and “suicide attempts” (n=186) while suffocation was the most frequently reported “other (specify)” method for “suicide completions” (n=4).

Table 3:

“Other” Methods, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*,**

“Other” Methods	Frequency
Attacking Law Enforcement/Others	16
Burning or Fire	19
Drowning	24
Eating Sharp/Toxic Item(s)	43
Electrocution	8
Exposure	10
Refusing Food/Medication(s)	13
Self-Mutilation	33
Suffocation	64
Other	523

n=753

**2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.*

***Because the SRF allowed individuals to select more than one method, we assumed an individual could write in more than one “other (specify)” response; therefore, we have chosen only to show the frequency of responses.*

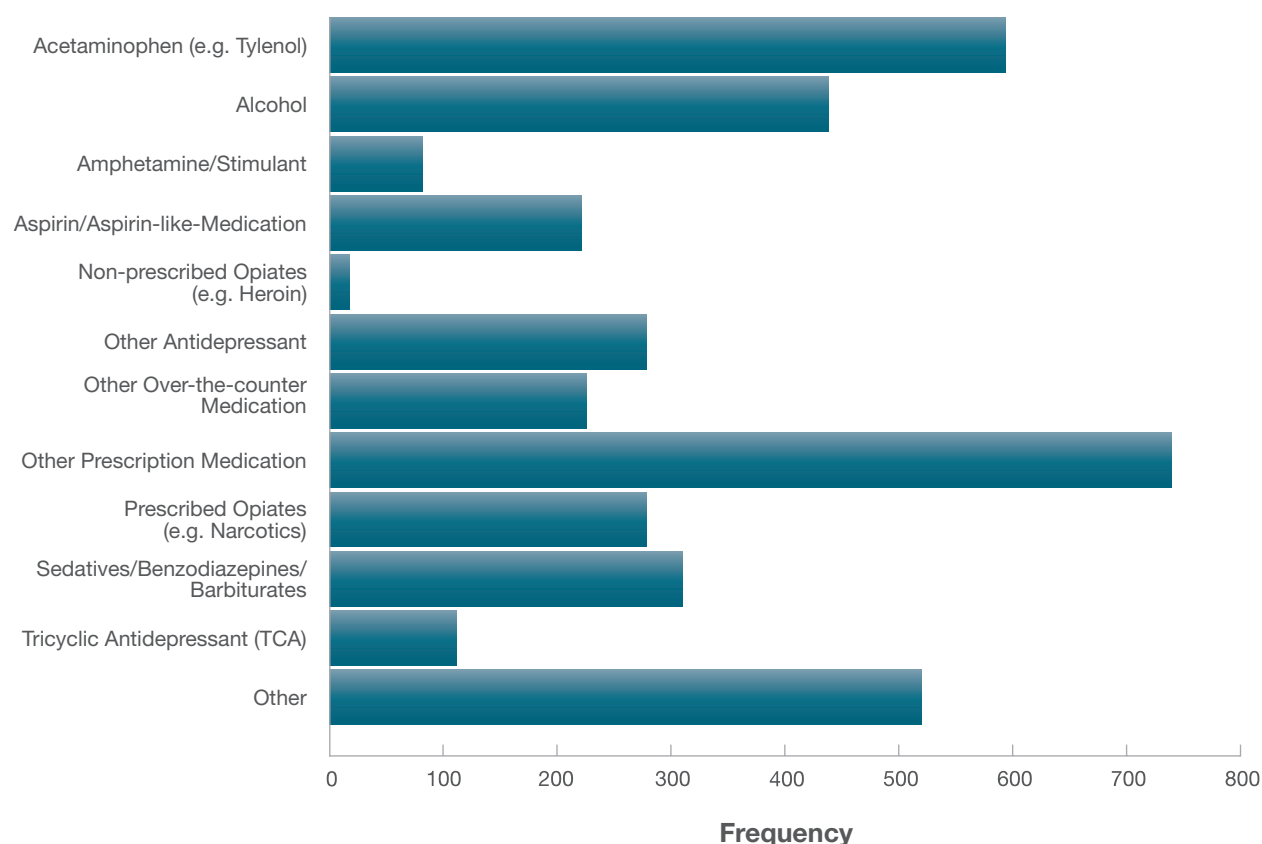
For all suicidal behaviors for which substance overdose was recorded, the most commonly reported overdose substance was “other prescription medication.” It is interesting to note that “alcohol” was one of the three most commonly reported overdose substances in “suicide ideation with plan and intent” and “suicide completion,” but not “suicide attempts.”

For reported “suicide ideation with plan and intent” records indicating overdose as an intended method (n=982), the most commonly reported substance was “other prescription medication.” “Alcohol” was the third-most commonly reported intended overdose substance, after “other”.

For reported “suicide attempts” indicating overdose as a method (n=3,375), the most commonly reported substance was “other prescription medication.” “Acetaminophen (e.g. Tylenol)” was the second most commonly reported overdose substance, followed by “other”.

For reported “suicide completions” indicating overdose as a method (n=47), the most commonly reported substance was “other” followed closely by “prescribed opiates” and “alcohol.”

Figure 3:
Type of Overdose Substances, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}



^{*}2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.

^{**}The SRF allowed individuals to select more than one overdose substance; therefore, the sum of overdose substances (3,810) is greater than the n of 3,130.

For all suicidal behaviors, 44.7 percent of records indicated that the individual had previously attempted suicide at least once before, whereas 31.5 percent of records indicated that the individual had no previous suicide attempts. A history of previous suicide attempts was “unknown” in 23.7 percent of records.

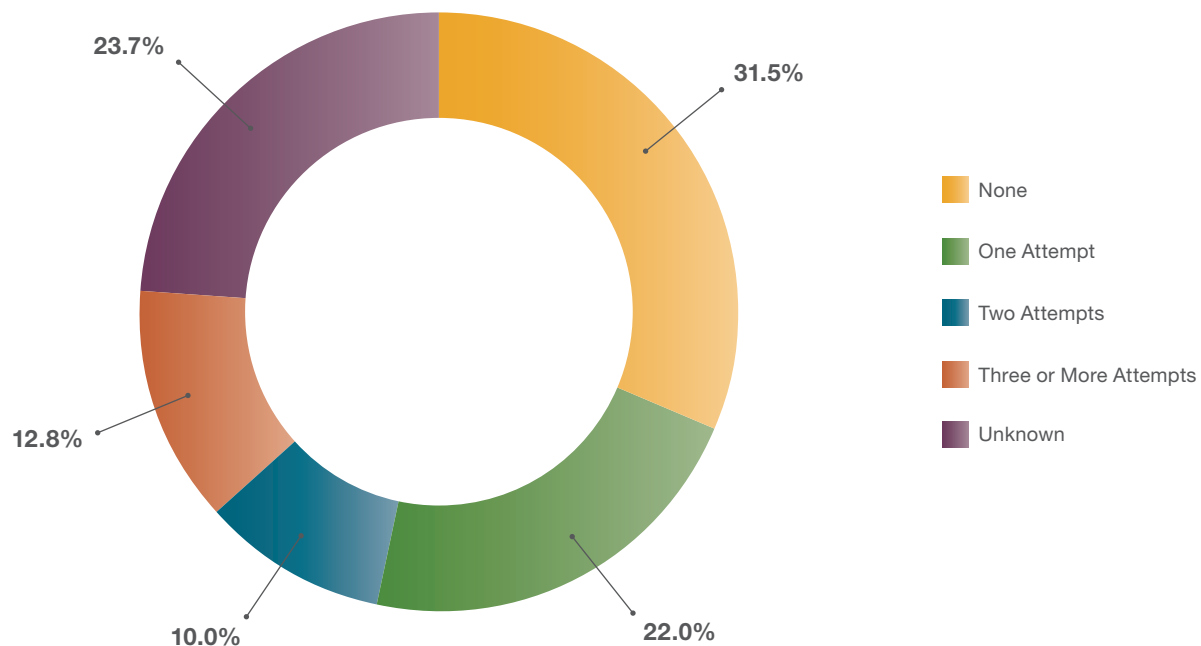
For “suicide ideation with plan and intent,” 46.0 percent of records indicated that the individual had previously attempted suicide and 30.2 percent had no prior history of suicide attempts.

For “suicide attempts,” 45.4 percent of records indicated that the individual had previously attempted suicide, while 33.0 percent of individuals who reported a “suicide attempt” had no prior history of suicide attempts.

For “suicide completions,” a previous history of suicide attempts was “unknown” for 49.0 percent of records. Only 24.1 percent of records indicated that the individual had ever previously attempted suicide and 27.0 percent of individuals had no prior history of suicide attempts.

Figure 4:

Previous Suicide Attempts, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*



n=10,932

**2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.*

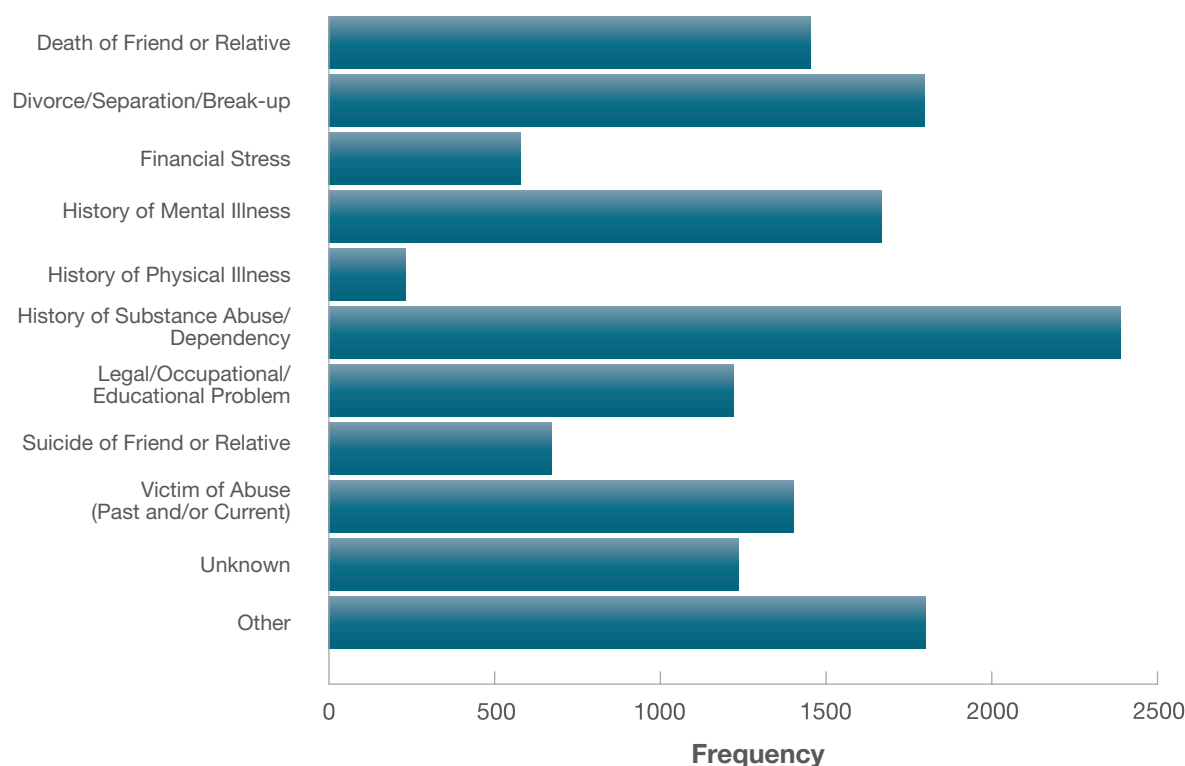
The most frequently reported contributing factors in all suicidal behaviors, in descending order, were “history of substance abuse/dependency,” “other,” “divorce/separation/break-up,” and “death of a friend or relative.” “History of substance abuse/dependency” was the most commonly reported contributing factor in all three types of suicide behavior recorded. Because individuals were able to select multiple contributing factors, the total number of contributing factors recorded may exceed the number of records in each category.

For “suicide ideation with plan and intent,” the most frequently reported contributing factors were “history of substance abuse/dependency” (contributing factor in 22.4 percent of records), “history of mental illness” (20.2 percent) and “death of a friend or relative” (18.1 percent). Contributing factors were “unknown” or “missing” in 20.2 percent of records of “suicide ideation with plan and intent”.

For “suicide attempts,” the most frequently reported contributing factors were “history of substance abuse/dependency” (contributing factor in 26.6 percent of records), “other” (20.4 percent) and “divorce/separation/break-up” (19.8 percent). Contributing factors were “unknown” or “missing” in 24.3 percent of records of “suicide attempts”.

Contributing factors were “unknown” or “missing” in 42.4 percent of records of “suicide completions.” For those records for which contributing factors were known, the most frequently reported contributing factors were “history of substance abuse/dependency” (contributing factor in 19.8 percent of records), “divorce/separation/break-up” (17.7 percent) and “death of a friend or relative” (11.9 percent).

Figure 5:
Contributing Factors, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}



^{*}2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.

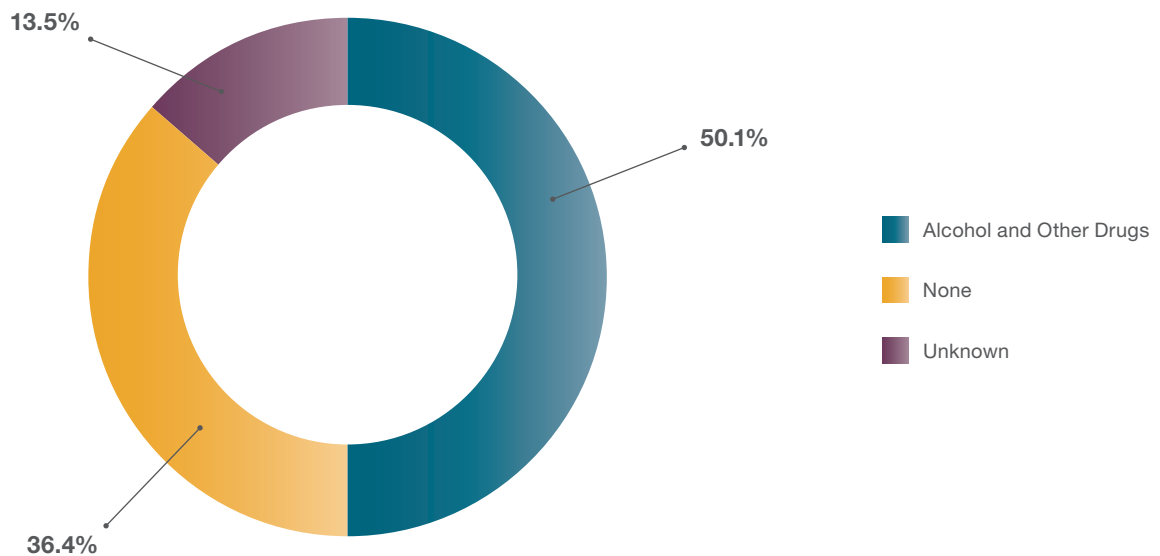
^{**}The SRF allowed individuals to select more than one contributing factor; therefore, the sum of contributing factors (14,445) is greater than the n of 9,728.

Alcohol and other drugs were reported in 50.1 percent of all suicidal behaviors. For “suicide ideation with plan and intent,” 42.5 percent of records indicated alcohol and other drugs were involved. For “suicide attempts,” alcohol and other drugs were reported in 56.6 percent of records.

For “suicide completion,” alcohol and other drug involvement was reported in 43.3 percent of records, but information about alcohol and other drugs involved was “unknown” or “missing” in 46.6 percent of records.

Figure 6:

Percentage of records indicating Substance involvement, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*



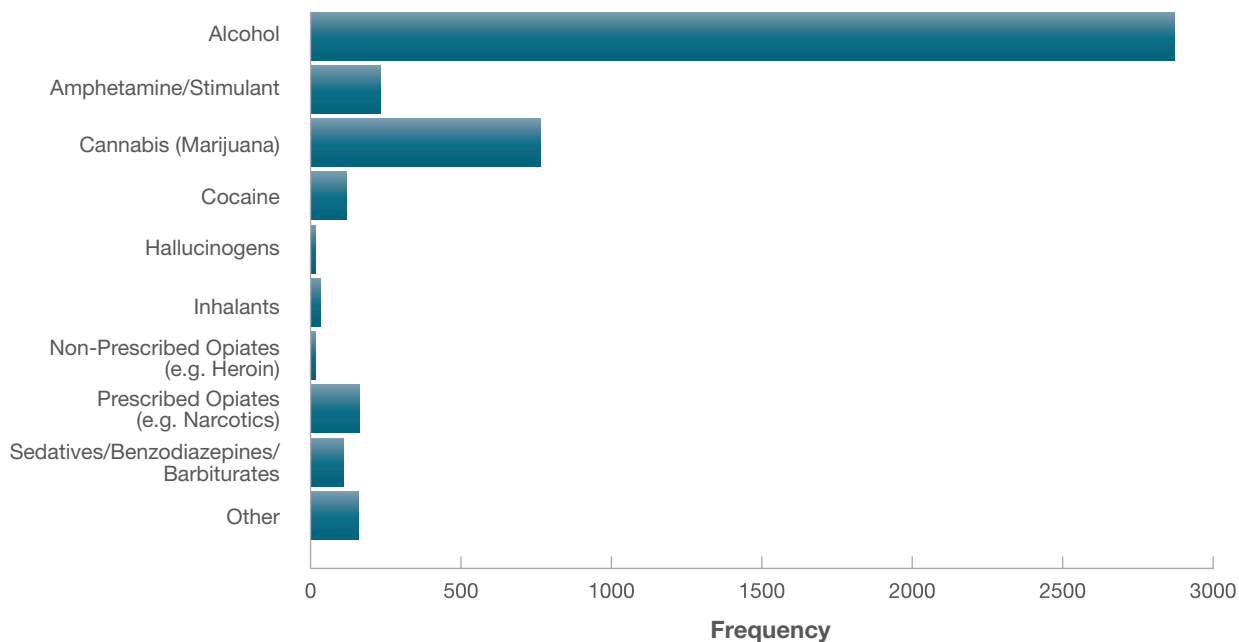
n=9,485

**2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.*

Alcohol was the most frequently reported substance used in all three types of suicidal behaviors. Of records indicating that any substance was involved, alcohol was reported in 74.7 percent of records of “suicide ideation with plan and intent”, 82.4 percent of records of “suicide attempts”, and 86.1 percent of “suicide completions.”

Figure 7:

Types of Substances Involved, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*,**



*2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.

**The SRF allowed individuals to select more than one substance; therefore, sum of all of substances (4,490) is greater than the n of 3,596.

Table 4:

Location, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*

Location	Frequency	Percentage
Home or Vicinity	8,178	77.1
Jail/Prison/Detention Facility	513	4.8
Medical Facility	109	1.0
School	427	4.0
Treatment Facility	75	0.7
Work	55	0.5
Unknown	591	5.6
Other	658	6.2

The majority, 77.1 percent, of all suicidal behaviors reported occurred at home or in the surrounding vicinity. Over 71 percent of records on “suicide ideation with plan and intent” indicated this suicidal behavior occurred at home or in the surrounding vicinity. In addition, 81.5 percent of records on “suicide attempts” and 77.8 percent of records on “suicide completions” indicated that the attempt or completion occurred at home or in the surrounding vicinity.

n=10,606

*2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.

Table 5:

Disposition, All Suicidal Behaviors, IHS RPMS SRF Aggregate Database, 2003-2012*

Disposition	Frequency	Percentage
Alcohol/Substance Abuse Follow-up	14	0.2
In-patient Mental Health Treatment Involuntary	44	0.5
In-patient Mental Health Treatment Voluntary	84	1.0
Medical Treatment (ED or In-patient)	114	1.4
Mental Health Follow-up	92	1.1
Not Applicable/Patient Deceased	72	0.9
Outreach to Family/School/Community	83	1.0
Referred/Remanded to Law Enforcement	105	1.3
Treatment/Follow up Denied or Refused	33	0.4
Unknown	7,694	92.3
Other	4	0.0

The vast majority, 92.3 percent, of disposition (or follow-up) data were “unknown” for all suicidal behaviors. Disposition data was “unknown” for 93.0 percent of “suicide ideation with plan and intent” and 92.8 percent of “suicide attempts” records; therefore, no meaningful conclusions can be drawn.

n=8,339

*2012 data were not available for the entire fiscal year. In 2012 the last reported “Suicide Ideation with Plan and Intent,” “Suicide Attempts,” and “Suicide Completions” records occurred on January 30, 2012.



Discussion

This secondary data analysis yields three main findings. First, although the SRF provides a strong start to studying suicidal behavior among AI/AN populations on a national scale, the number of “unknown and missing” responses in this first iteration of data collection presented significant limitations in the analysis and interpretation. Second, the data collected about “suicide ideation with plan and intent” and “suicide attempts” was more complete than information collected about “suicide completions.” Third, these findings from a national database corroborate the epidemiology of suicidal behaviors found in other studies conducted with smaller samples and age subsets.

Unknown and missing data

Many records in the database had “unknown or missing” responses (“unknown” data refer to records where “unknown” was selected as a response, whereas “missing” data implies no information was given) for at least one variable. Therefore, all available data were included in the analysis, regardless of “missing or unknown” responses, our rationale was that if records were eliminated that included a “missing or unknown” response, there would not have been enough records to analyze, even though keeping these records at times made it difficult to interpret these data.

For all suicidal behaviors recorded (n=11,112), 23.4 percent of records had “missing or unknown” responses for contributing factors, 24.9 percent had “missing or unknown” responses for previous attempts, and 26.1 percent of records had “missing or unknown” responses for any substances involved. Most strikingly, 94.2 percent of records had “missing or unknown” responses for disposition. With respect to demographic variables, 32.6 percent of records had “missing or unknown” responses for education levels, and 15.1 percent of records had “missing or unknown” responses for employment.

Unknown and missing data by suicidal behavior

When analyzing data by type of suicidal behavior, more complete information was collected for “suicide ideation with plan and intent” and “suicide attempts” than for “suicide completion.” These differences are most evident when comparing the number of “missing or unknown” responses for contributing factors and substances involved. For the contributing factors variable, 42.4 percent of records for “suicide completions” (216 of 509) had “missing or unknown” responses, compared to 20.2 percent of records of “suicide ideation with plan and intent” (946 of 4,681) and 24.3 percent of records of “suicide attempts” (1,444 of 5,922). Similarly, 46.6 percent of records of “suicide completions” had “missing or unknown” responses for substances involved, compared to 26.6 percent for “suicide ideation with plan and intent” and 24.0 percent for “suicide attempts.” Information about “suicide ideation with plan and intent” and “suicide attempts” is presumably collected through interviews; the differences in “unknown and missing” responses may indicate that it is easier to collect information required by the SRF from interviews than death certificates or other sources used to report “suicide completions.”

Findings corroborating other studies

Despite the large percentage of “missing and unknown” data, the data that were collected from this national database support findings from other studies about suicidal behaviors in smaller populations and age subsets of AI/AN populations. Records of “suicide ideation with plan and intent” and “suicide attempts” were reported more frequently than “suicide completions”, which reinforces other findings that “completed suicides” are less prevalent than either “suicide attempts” or “suicide ideation with plan and intent.”²

Similar to other studies, the majority of records on “suicide ideation with plan and intent” and “suicide attempts” reported that these behaviors occurred in females (55.1 percent of records of “suicide ideation with plan and intent,” 59.6 percent of records of “suicide attempts”), whereas the majority of records on “suicide completions” reported that this behavior occurred in males (72.5 percent). Also, for all three types of suicidal behaviors the largest percentage of records were from individuals between 15-19 years old. Many other studies have also found that adolescent or young adult females are more likely to plan or attempt suicide, whereas adolescent and young adult males are more likely to complete suicide.^{3-4,17-18,24,37}

The most frequently reported methods for “suicide completion” were different than the most frequently reported intended methods for “suicide ideation with plan and intent” and methods for “suicide attempts.” The intended methods of suicide most frequently reported in records of “suicide ideation with plan and intent” and methods for “suicide attempts” were overdose (25.0 percent in “suicide ideation with plan and intent” records and 58.0 percent in “suicide attempts” records), stabbing/laceration (19.6 percent in “suicide ideation with plan and intent” records and 23.8 percent in “suicide attempts” records), and hanging (18.7 percent in “suicide ideation with plan and intent” records and 14.3 percent in “suicide attempts”). In contrast, the known methods most frequently reported in “suicide completions” were hanging (61.8 percent), gunshot (25.5 percent) and overdose (9.5 percent). Other authors have reported that the majority of individuals who attempted suicide had overdosed on drugs or other substances^{2,38}; suicide completions frequently involved violent and more lethal methods like hanging and firearms.¹⁷

Two types of suicidal behavior indicated that at least one substance was involved more frequently than no substance at all, since 56.6 percent of “suicide attempts” and 43.3 percent of “suicide completions” indicated at least one substance was involved, compared to 31.8 percent of “suicide attempts” and 18.1 percent of “suicide completions” which indicated no substances were involved. This variable also included an “unknown” attribute (data are not presented), although it did not include a “missing” attribute, information was “missing” for 14.0 percent of “suicide attempts” and 8.8 percent “suicide completions”. Alcohol was the most common substance involved in all cases of substance involvement regardless of the type of suicidal behavior. Other studies have supported this finding of alcohol and other substance involvement in suicidal behaviors.^{6-7,18-19,26}



Recommendations

One of the major issues with the SRF database was the large percentage of “unknown and missing” responses. It is difficult to identify the source of the poor data quality. It may be a result of issues with the SRF instrument (e.g. particularly the disposition variable) or implementing the SRF at local facilities, especially since each site currently determines its own policies and procedures for SRF data collection, entry, exportation, analysis, etc. In addition, it is unknown if sites are following their policies and procedures, and what type of training each site has had on the SRF. All of these issues jeopardize AI/AN suicidal behavior data quality.

When this project was conceived, GLITEC was tasked with providing potential recommendations to improve the SRF. To avoid “reinventing the wheel,” during our literature review we reviewed others’ recommendations^{5,7,12,39-40} and found many authors had previously made recommendations to address issues with AI/AN data quality, specific to suicidal behaviors. It was striking how many authors made similar recommendations. In fact, some of the recommendations stemming from a 1990 conference convened to address suicide prevention for AI/AN youth were similar to those written in the 2011 *American Indian/Alaska Native National Suicide Prevention Strategic Plan*, which indicates that changes have not been made to improve AI/AN suicide data quality. While we have included pertinent recommendations from other authors, we have also used the SAMHSA Strategic Prevention Framework (SPF)⁴¹ for making recommendations. The SPF is guided by cultural competence and sustainability principals, and includes the following steps:

Assessment

- Survey all IHS, Tribal and Urban facilities to determine if the SRF is being implemented. Use a comprehensive assessment tool to discover why the SRF is or is not being implemented in all facilities (i.e. include questions on IT systems, access, etc.). For facilities implementing the SRF, inquire about data quality issues, determine why there are a high percentage of “unknown” and “missing” responses for certain variables (e.g. alcohol or other drug use during suicidal behaviors, previous attempts, etc.). Ask facilities to provide policies and procedures used for SRF data collection, entry, exportation and analysis, etc. In addition, ask what type of training staff has had implementing the SRF. For facilities that are not using the SRF, determine readiness to implement the SRF.

Capacity Building/Strategic Planning

- Gather a multi-disciplinary work group for several strategic planning sessions. The workgroup could include key stakeholders working in different agencies/systems across the United States. It could include, but would not be limited to, individuals who initially developed the SRF, those who are and are not implementing the SRF, IT staff, individuals with suicidal behaviors, etc.

- Collaborate with the workgroup to review this report, all of the data from the potential SRF assessment, the SRF and other relevant documents and make data-driven decisions to address all of the issues with the SRF including issues of data quality.
- Edit the SRF and create universal data collection, entry, exportation and analysis policies and procedures^{5,7,12,40} using standardized terminology.^{5,12}
- Invite individuals/facilities working outside of the IHS system or who are not working with Tribes, to hopefully develop identical surveillance systems in adjacent, non-Native communities, in order to ensure surveillance systems are connected.^{7,12}
- Before implementing the revised SRF, conduct focus groups with AI/AN adolescents and young adults to determine if the revised SRF is asking the “right” questions.
- In addition make the disposition variable a “check all that apply” variable since alcohol and other drug abuse and mental health issues often co-occur; and add a “not applicable” response for those who have completed suicide.

Implementation

- Advertise the opportunity to pilot test the revised SRF with the newly created universal data collection, entry, exportation and analysis policies and procedures. Pilot test these at a subset of facilities across the United States while providing standardized training and guidance.
- After pilot testing is complete, make any necessary changes before implementing with all IHS, Tribal, Urban facilities and other facilities. Continue to advertise the revised SRF with the newly created policies and procedures to get more facilities across the United States to use the SRF.
- Provide standardized training and guidance on the revised SRF and newly created data collection, entry, exportation and analysis policies and procedures to ensure accurate, valid, reliable, timely data are consistently collected.^{5,7,12,40}

Evaluation

- Three to five years after all changes have been made to the SRF, and national SRF data collection, entry, exportation and analysis policies and procedures are in place, evaluate the SRF surveillance system, collaboration efforts, and other activities.³⁹⁻⁴⁰

This secondary data analysis of a limited SRF database shows that the SRF has the capability to address some of these long called for data quality recommendations. However, it is critical that the revised SRF be utilized and implemented under consistent guidelines. Utilizing the revised SRF and following national guidelines could improve AI/AN data quality. With the lack of a national suicidal behavior surveillance system, the revised SRF has the potential to serve as a model or “best practices” suicide data collection system and provide a basis for other systems to be developed to better understand suicidal behaviors for all populations.



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Appendix A: Suicide Ideation with Plan and Intent

Table 6:

Suicide Ideation with Plan and Intent: Demographics, IHS RPMS SRF Aggregate Database, 2003-2012*

	Demographics	Frequency	Percentage
Sex n=4,681	Female	2,580	55.1
	Male	2,101	44.9
Age n=4,675	5-9 years	59	1.3
	10-14 years	710	15.2
	15-19 years	1,076	23.0
	20-24 years	594	12.7
	25-29 years	436	9.3
	30-34 years	405	8.7
	35-44 years	656	14.0
	45-54 years	498	10.7
	55-64 years	179	3.8
	65 years and older	62	1.3
Education n=4,549	Less than 12 years	1,931	42.4
	High School Graduate/GED	775	17.0
	Some College/Technical	333	7.3
	College Graduate	58	1.3
	Post Graduate	15	0.3
	Unknown	1,437	31.6
Employment n=4,595	Full-time	434	9.4
	Part-time	120	2.6
	Retired	40	0.9
	Self-employed	54	1.2
	Student	1,051	22.9
	Student and Employed	19	0.4
	Unemployed	2,384	51.9
	Unknown	493	10.7
Relationship Status n=4,638	Cohabiting/Common-Law	300	6.5
	Divorce/Separated	413	8.9
	Married	592	12.8
	Same Sex Partnership	21	0.5
	Single	2,907	62.7
	Widowed	59	1.3
	Unknown	346	7.5

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.

Table 7:

Suicide Ideation with Plan and Intent: Intended Methods, IHS RPMS SRF Aggregate Database, 2003-2012*,**

Methods	Frequency	Percentage
Carbon Monoxide	13	0.3
Gunshot	378	9.6
Hanging	735	18.7
Jumping	105	2.7
Motor Vehicle	250	6.4
Overdose	982	25.0
Stabbing/Laceration	768	19.6
Unknown	519	13.2
Other	563	14.3

n=3,927

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.

**The SRF allowed individuals to select more than one method; therefore, sum of all percentages is greater than 100 percent and the sum of all methods (4,313) is greater than the n of 3,927.

Table 8:

Suicide Ideation with Plan and Intent: Intended "Other" Methods, IHS RPMS SRF Aggregate Database, 2003-2012***

"Other" Methods	Frequency
Ate Sharp/Toxic Item(s)	9
Attacked Law Enforcement/Others	13
Burning or Fire	10
Drowning	13
Electrocution	8
Exposure	6
Refuse Food/Medication(s)	12
Self-Mutilation	23
Suffocation	19
Other	450

n=563

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.

***Because the SRF allowed individuals to select more than one method, we assumed an individual could write in more than one "other (specify)" response; therefore, we have chosen only to show the frequency of responses.

Table 9:

Suicide Ideation with Plan and Intent: Intended Type of Overdose Substances, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Substances used in overdoses	Frequency	Percentage
Acetaminophen (e.g. Tylenol)	65	11.6
Alcohol	95	17.0
Amphetamine/Stimulant	19	3.4
Aspirin/Aspirin-like Medication	26	4.7
Non-Prescribed Opiates (e.g. Heroin)	4	0.7
Other Antidepressant	37	6.6
Other Over-the-counter Medication	38	6.8
Other Prescription Medication	122	21.8
Prescribed Opiates (e.g. Narcotics)	45	8.1
Sedatives/Benzodiazepines/Barbiturates	53	9.5
Tricyclic Antidepressant (TCA)	21	3.8
Other	120	21.5

n=559

^{*}2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.

^{**}The SRF allowed individuals to select more than one overdose substance; therefore, the sum of all percentages is greater than 100 percent and the sum of overdose substances (645) is greater than the n of 559.

Table 10:

Suicide Ideation with Plan and Intent: Previous Suicide Attempts, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

Previous Attempts	Frequency	Percentage
None	1,391	30.2
One	1,013	22.0
Two	472	10.2
Three or More	638	13.8
Unknown	1,098	23.8

n=4,612

^{*}2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.

Table 11:

Suicide Ideation with Plan and Intent: Contributing Factors, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Contributing Factors	Frequency	Percentage
Death of Friend or Relative	739	18.1
Divorce/Separation/Break-up	691	16.9
Financial Stress	272	6.7
History of Mental Illness	826	20.2
History of Physical Illness	117	2.9
History of Substance Abuse/Dependency	917	22.4
Legal/Occupational/Educational Problem	664	16.2
Suicide of Friend or Relative	343	8.4
Victim of Abuse (Past and/or Current)	692	16.9
Unknown	356	8.7
Other	712	17.4

n=4,089

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.*

***The SRF allowed individuals to select more than one contributing factor; therefore, the sum of all percentages is greater than 100 percent and the sum of contributing factors (6,329) is greater than the n of 4,089.*

Table 12:

Suicide Ideation with Plan and Intent: Percentage of records Substances involved, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

Substances Involved	Frequency	Percentage
Alcohol and Other Drugs	1,678	42.5
None	1,756	44.5
Unknown	516	13.1

n=3,950

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.*

Table 13:

Suicide Ideation with Plan and Intent: Types of Substances involved, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Types of Substances	Frequency	Percentage
Alcohol	932	74.7
Amphetamine/Stimulant	104	8.3
Cannabis (Marijuana)	318	25.5
Cocaine	37	3.0
Hallucinogens	6	0.5
Inhalants	17	1.4
Non-Prescribed Opiates (e.g. Heroin)	8	0.6
Prescribed Opiates (e.g. Narcotics)	72	5.8
Sedatives/Benzodiazepines/Barbiturates	28	2.3
Other	51	4.1

n=1,247

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.*

***The SRF allowed individuals to select more than one substance; therefore, the sum of all percentages is greater than 100 percent and the sum of substances (1,573) is greater than the n of 1,247.*

Table 14:

Suicide Ideation with Plan and Intent: Location, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

Location	Frequency	Percentage
Home or Vicinity	3,140	71.3
Jail/Prison/Detention Facility	237	5.4
Medical Facility	95	2.2
School	282	6.4
Treatment Facility	41	0.9
Work	32	0.7
Unknown	254	5.8
Other	324	7.4

n=4,405

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.*

Table 15:

Suicide Ideation with Plan and Intent: Disposition, IHS RPMS SRF Aggregate Database, 2003-2012*

Disposition	Frequency	Percentage
Alcohol/Substance Abuse Follow-up	4	0.1
In-patient Mental Health Treatment Involuntary	18	0.5
In-patient Mental Health Treatment Voluntary	49	1.4
Medical Treatment (ED or In-patient)	46	1.3
Mental Health Follow-up	33	0.9
Not Applicable/Patient Deceased	6	0.2
Outreach to Family/School/Community	40	1.1
Referred/Remanded to Law Enforcement	46	1.3
Treatment/Follow up Denied or Refused	7	0.2
Unknown	3,309	93.0
Other	0	0.0

n=3,558

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Ideation with Plan and Intent" record occurred on January 30, 2012.

Appendix B: Suicide Attempts

Table 16:

Suicide Attempts: Demographics, IHS RPMS SRF Aggregate Database, 2003-2012*

Demographics		Frequency	Percentage
Sex n=5,921	Female	3,529	59.6
	Male	2,392	40.4
Age n=5,902	5-9 years	29	0.5
	10-14 years	492	8.3
	15-19 years	1,613	27.3
	20-24 years	1,082	18.3
	25-29 years	729	12.4
	30-34 years	553	9.4
	35-44 years	839	14.2
	45-54 years	420	7.1
	55-64 years	95	1.6
	65 years and older	50	0.8
Education n=5,732	Less than 12 years	2,232	38.9
	High School Graduate/GED	1,010	17.6
	Some College/Technical	449	7.8
	College Graduate	71	1.2
	Post Graduate	28	0.5
	Unknown	1,942	33.9
Employment n=5,767	Full-time	586	10.2
	Part-time	135	2.3
	Retired	31	0.5
	Self-employed	62	1.1
	Student	961	16.7
	Student and Employed	26	0.5
	Unemployed	2,966	51.4
	Unknown	1,000	17.3
Relationship Status n=5,857	Cohabiting/Common-Law	535	9.1
	Divorce/Separated	437	7.5
	Married	722	12.3
	Same Sex Partnership	27	0.5
	Single	3,453	59.0
	Widowed	60	1.0
	Unknown	623	10.6

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

Table 17:

Suicide Attempts: Methods, IHS RPMS SRF Aggregate Database, 2003-2012*,**

Methods	Frequency	Percentage
Carbon Monoxide	11	0.2
Gunshot	127	2.2
Hanging	830	14.3
Jumping	77	1.3
Motor Vehicle	124	2.1
Overdose	3,375	58.0
Stabbing/Laceration	1,386	23.8
Unknown	59	1.0
Other	186	3.2

n=5,821

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

**The SRF allowed individuals to select more than one method; therefore, the sum of all percentages is greater than 100 percent and the sum of all methods (6,175) is greater than the n of 5,821.

Table 18:

Suicide Attempts: "Other" Methods, IHS RPMS SRF Aggregate Database, 2003-2012*,**

"Other" Methods	Frequency
Ate Sharp/Toxic Item(s)	34
Attacked Law Enforcement/Others	3
Burning or Fire	9
Drowning	11
Electrocution	0
Exposure	3
Refuse Food/Medication(s)	1
Self-Mutilation	10
Suffocation	43
Other	72

n=186

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

**Because the SRF allowed individuals to select more than one method, we assumed an individual could write in more than one "other (specify)" response; therefore, we have chosen only to show the frequency of responses.

Table 19:

Suicide Attempts: Type of Overdose Substances, IHS RPMS SRF Aggregate Database, 2003-2012*,**

Substances used in overdoses	Frequency	Percentage
Acetaminophen (e.g. Tylenol)	526	20.8
Alcohol	333	13.2
Amphetamine/Stimulant	60	2.4
Aspirin/Aspirin-like Medication	194	7.7
Non-Prescribed Opiates (e.g. Heroin)	13	0.5
Other Antidepressant	241	9.5
Other Over-the-counter Medication	187	7.4
Other Prescription Medication	611	24.1
Prescribed Opiates (e.g. Narcotics)	222	8.8
Sedatives/Benzodiazepines/Barbiturates	253	10.0
Tricyclic Antidepressant (TCA)	88	3.5
Other	387	15.3

n=2,533

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

** The SRF allowed individuals to select more than one overdose substance; therefore, the sum of all percentages is greater than 100 percent and the sum of overdose substances (3,115) is greater than the n of 2,533.

Table 20:

Suicide Attempts: Previous Suicide Attempts, IHS RPMS SRF Aggregate Database, 2003-2012*

Previous Attempts	Frequency	Percentage
None	1,928	33.0
One	1,323	22.7
Two	576	9.9
Three or More	754	12.9
Unknown	1,257	21.5

n=5,838

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

Table 21:

Suicide Attempts: Contributing Factors, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Contributing Factors	Frequency	Percentage
Death of Friend or Relative	659	12.7
Divorce/Separation/Break-up	1,023	19.8
Financial Stress	298	5.8
History of Mental Illness	801	15.5
History of Physical Illness	107	2.1
History of Substance Abuse/Dependency	1,378	26.6
Legal/Occupational/Educational Problem	511	9.9
Suicide of Friend or Relative	285	5.5
Victim of Abuse (Past and/or Current)	684	13.2
Unknown	705	13.6
Other	1,054	20.4

n=5,175

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.*

***The SRF allowed individuals to select more than one contributing factor; therefore, the sum of all percentages is greater than 100 percent and the sum of contributing factors (7,505) is greater than the n of 5,175.*

Table 22:

Suicide Attempts: Percentage of records Substances involved, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

Substances Involved	Frequency	Percentage
Alcohol and Other Drugs	2,884	56.6
None	1,617	31.8
Unknown	591	11.6

n=5,092

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.*

Table 23:

Suicide Attempts: Types of Substances involved, IHS RPMS SRF Aggregate Database, 2003-2012**,**

Types of Substances	Frequency	Percentage
Alcohol	1,822	82.4
Amphetamine/Stimulant	122	5.5
Cannabis (Marijuana)	435	19.7
Cocaine	80	3.6
Hallucinogens	9	0.4
Inhalants	14	0.6
Non-Prescribed Opiates (e.g. Heroin)	10	0.5
Prescribed Opiates (e.g. Narcotics)	87	3.9
Sedatives/Benzodiazepines/Barbiturates	81	3.7
Other	101	4.6

n=2,212

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

**The SRF allowed individuals to select more than one substance; therefore, the sum of all percentages is greater than 100 percent and the sum of substances (2,761) is greater than the n of 2,212.

Table 24:

Suicide Attempts: Location, IHS RPMS SRF Aggregate Database, 2003-2012*

Location	Frequency	Percentage
Home or Vicinity	4,670	81.5
Jail/Prison/Detention Facility	254	4.4
Medical Facility	13	0.2
School	139	2.4
Treatment Facility	32	0.6
Work	22	0.4
Unknown	312	5.5
Other	286	5.0

n=5,728

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

Table 25:

Suicide Attempts: Disposition, IHS RPMS SRF Aggregate Database, 2003-2012*

Disposition	Frequency	Percentage
Alcohol/Substance Abuse Follow-up	10	0.2
In-patient Mental Health Treatment Involuntary	26	0.6
In-patient Mental Health Treatment Voluntary	35	0.8
Medical Treatment (ED or In-patient)	67	1.5
Mental Health Follow-up	58	1.3
Not Applicable/Patient Deceased	2	0.0
Outreach to Family/School/Community	34	0.8
Referred/Remanded to Law Enforcement	59	1.3
Treatment/Follow up Denied or Refused	26	0.6
Unknown	4,131	92.8
Other	4	0.1

n=4,452

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Attempt" record occurred on January 30, 2012.

Appendix C: Suicide Completions

Table 26:

Suicide Completions: Demographics, IHS RPMS SRF Aggregate Database, 2003-2012*

	Demographics	Frequency	Percentage
Sex n=509	Female	140	27.5
	Male	369	72.5
Age n=505	5-9 years	3	0.6
	10-14 years	36	7.1
	15-19 years	127	25.1
	20-24 years	97	19.2
	25-29 years	69	13.7
	30-34 years	47	9.3
	35-44 years	80	15.8
	45-54 years	32	6.3
	55-64 years	8	1.6
	65 years and older	6	1.2
Education n=482	Less than 12 years	133	27.6
	High School Graduate/GED	80	16.6
	Some College/Technical	19	3.9
	College Graduate	6	1.2
	Post Graduate	4	0.8
	Unknown	240	49.8
Employment n=480	Full-time	48	10.0
	Part-time	9	1.9
	Retired	5	1.0
	Self-employed	6	1.3
	Student	64	13.3
	Student and Employed	3	0.6
	Unemployed	160	33.3
	Unknown	185	38.5
Relationship Status n=496	Cohabiting/Common-Law	51	10.3
	Divorce/Separated	44	8.9
	Married	61	12.3
	Same Sex Partnership	0	0.0
	Single	245	49.4
	Widowed	4	0.8
	Unknown	91	18.3

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completion" record occurred on January 30, 2012.

Table 27:Suicide Completions: Methods, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Methods	Frequency	Percentage
Carbon Monoxide	1	0.2
Gunshot	126	25.5
Hanging	306	61.8
Jumping	2	0.4
Motor Vehicle	11	2.2
Overdose	47	9.5
Stabbing/Laceration	5	1.0
Unknown	0	0.0
Other	4	0.8

n=495

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.*

***The SRF allowed individuals to select more than one method; therefore, the sum of all percentages is greater than 100 percent and the sum of all methods (502) is greater than the n of 495.*

Table 28:Suicide Completions: "Other" Methods, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

"Other" Methods	Frequency
Ate Sharp/Toxic Item(s)	0
Attacked Law Enforcement/Others	0
Burning or Fire	0
Drowning	0
Electrocution	0
Exposure	1
Refuse Food/Medication(s)	0
Self-Mutilation	0
Suffocation	2
Other	1

n=4

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.*

***Because the SRF allowed individuals to select more than one method, we assumed an individual could write in more than one "other (specify)" response; therefore, we have chosen only to show the frequency of responses.*

Table 29:

Suicide Completions: Type of Overdose Substances, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Substances used in overdoses	Frequency	Percentage
Acetaminophen (e.g. Tylenol)	2	5.3
Alcohol	10	26.3
Amphetamine/Stimulant	2	5.3
Aspirin/Aspirin-like Medication	1	2.6
Non-Prescribed Opiates (e.g. Heroin)	0	0.0
Other Antidepressant	0	0.0
Other Over-the-counter Medication	0	0.0
Other Prescription Medication	6	15.8
Prescribed Opiates (e.g. Narcotics)	11	28.9
Sedatives/Benzodiazepines/Barbiturates	4	10.5
Tricyclic Antidepressant (TCA)	2	5.3
Other	12	31.6

n=38

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.*

***The SRF allowed individuals to select more than one overdose substance; therefore, the sum of all percentages is greater than 100 percent and the sum of overdose substances (50) is greater than the n of 38.*

Table 30:

Suicide Completions: Previous Suicide Attempts, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

Previous Attempts	Frequency	Percentage
None	130	27.0
One	55	11.4
Two	27	5.6
Three or More	34	7.1
Unknown	236	49.0

n=482

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.*

Table 31:

Suicide Completions: Contributing Factors, IHS RPMS SRF Aggregate Database, 2003-2012*,**

Contributing Factors	Frequency	Percentage
Death of Friend or Relative	55	11.9
Divorce/Separation/Break-up	82	17.7
Financial Stress	9	1.9
History of Mental Illness	40	8.6
History of Physical Illness	7	1.5
History of Substance Abuse/Dependency	92	19.8
Legal/Occupational/Educational Problem	47	10.1
Suicide of Friend or Relative	42	9.1
Victim of Abuse (Past and/or Current)	27	5.8
Unknown	175	37.7
Other	35	7.5

n=464

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.

**The SRF allowed individuals to select more than one contributing factor; therefore, the sum of all percentages is greater than 100 percent and the sum of contributing factors (611) is greater than the n of 464.

Table 32:

Suicide Completions: Percentage of records Substances involved, IHS RPMS SRF Aggregate Database, 2003-2012*

Substances Involved	Frequency	Percentage
Alcohol and Other Drugs	192	43.3
None	80	18.1
Unknown	171	38.6

n=443

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.

Table 33:Suicide Completions: Types of Substances involved, IHS RPMS SRF Aggregate Database, 2003-2012^{*,**}

Types of Substances	Frequency	Percentage
Alcohol	118	86.1
Amphetamine/Stimulant	5	3.6
Cannabis (Marijuana)	11	8.0
Cocaine	4	2.9
Hallucinogens	0	0.0
Inhalants	3	2.2
Non-Prescribed Opiates (e.g. Heroin)	0	0.0
Prescribed Opiates (e.g. Narcotics)	4	2.9
Sedatives/Benzodiazepines/Barbiturates	2	1.5
Other	9	6.6

n=137

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.*

***The SRF allowed individuals to select more than one substance; therefore, the sum of all percentages is greater than 100 percent and the sum of all substances (156) is greater than the n of 137.*

Table 34:Suicide Completions: Location, IHS RPMS SRF Aggregate Database, 2003-2012^{*}

Location	Frequency	Percentage
Home or Vicinity	368	77.8
Jail/Prison/Detention Facility	22	4.7
Medical Facility	1	0.2
School	6	1.3
Treatment Facility	2	0.4
Work	1	0.2
Unknown	25	5.3
Other	48	10.1

n=473

**2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.*

Table 35:

Suicide Completions: Disposition, IHS RPMS SRF Aggregate Database, 2003-2012*

Disposition	Frequency	Percentage
Alcohol/Substance Abuse Follow-up	0	0.0
In-patient Mental Health Treatment Involuntary	0	0.0
In-patient Mental Health Treatment Voluntary	0	0.0
Medical Treatment (ED or In-patient)	1	0.3
Mental Health Follow-up	1	0.3
Not Applicable/Patient Deceased	64	19.5
Outreach to Family/School/Community	9	2.7
Referred/Remanded to Law Enforcement	0	0.0
Treatment/Follow up Denied or Refused	0	0.0
Unknown	254	77.2
Other	0	0.0

n=329

*2012 data were not available for the entire fiscal year. In 2012 the last reported "Suicide Completions" record occurred on January 30, 2012.

Appendix D: Suicide Reporting Form

RPMS Suicide Reporting Form

Local Case Number:		Health Record Number:	
Date Form Completed:		DOB/Age:	
Provider Name:		Sex (M/F):	
Date of Act:		Community Where Act Occurred:	

↑	Employment Status	↑	Relationship Status	↑	Education
	Part-time		Single		High School Graduate/GED
	Full-time		Married		Less than High School, highest grade complete
	Self-employed		Divorced/Separated		Some College/Technical
	Unemployed		Widowed		College Graduate
	Student		Cohabiting/Common-Law		Post Graduate
	Student and employed		Same Sex Partnership		Unknown
	Retired		Unknown		
	Unknown				

↑	Suicidal Behavior	↑	Location of Act	↑	Previous Attempts
	Ideation with Plan and Intent		Home or Vicinity		0
	Attempt		School		1
	Completed Suicide		Work		2
	Att'd Suicide w/ Att'd Homicide		Jail/Prison/Detention		3 or more
	Att'd Suicide w/ Compl Homicide		Treatment Facility		Unknown
	Compl Suicide w/ Att'd Homicide		Medical Facility		
	Compl Suicide w/ Compl Homicide		Unknown		
			Other (specify):		

Method (check all that apply)			
	Gunshot		Overdose list:
	Hanging		Aspirin/Aspirin-like medication
	Motor Vehicle		Acetaminophen (e.g. Tylenol)
	Jumping		Tricyclic Antidepressant (TCA)
	Stabbing/Laceration		Other Antidepressant (specify):
	Carbon Monoxide		Amphetamine/Stimulant
	Overdosed Using (select from list)		Prescribed Opiates (eg. Narcotics)
	Unknown		
	Other (specify):		

Substances Involved (check all that apply)			
	None		Alcohol
	Alcohol & Other Drugs (select from list)		Amphetamine/Stimulant
	Unknown		Cannabis (Marijuana)
			Cocaine
			Hallucinogens
			Other (specify):

Contributing Factors (check all that apply)			
	Suicide of Friend or Relative		History of Substance Abuse/Dependency
	Death of Friend or Relative		Financial Stress
	Victim of Abuse (Current)		History of Mental Illness
	Victim of Abuse (Past)		History of Physical Illness
	Occupational/Educational Problem		
			Divorce/Separation/Break-up
			Legal
			Unknown
			Other (specify):

↑	Disposition	Narrative
	Mental Health Follow-up	
	Alcohol/Substance Abuse Follow-up	
	Inpatient MH Treatment Voluntary	
	Inpatient MH Treatment Involuntary	
	Medical Treatment (ED or In-patient)	
	Outreach to Family/School/Community	
	Unknown	
	Other (specify):	

RPMS Suicide Reporting Form

Instructions for Completing

This form is intended as a data collection tool only. It does not replace documentation of clinical care in the medical record and it is not a referral form. The provider should complete a corresponding RPMS PCC or MH/SS encounter form and update the PCC and/or BH problem lists accordingly. HRN, Date of Act and Provider Name are required fields. If the information requested is not known or not listed as an option, choose “Unknown” or “Other” (with specification) as appropriate.

LOCAL CASE NUMBER:

Indicate internal tracking number if used; not required.

DATE FORM COMPLETED:

Indicate the date the Suicide Reporting Form was completed.

PROVIDER NAME:

Record the name of Provider completing the form.

DATE OF ACT:

Record Date of Act as mm/dd/yy. If exact day is unknown, use the month, 1st day of the month (or another default day), year. If exact date of act is unknown, all providers should use the same default day of the month.

HEALTH RECORD NUMBER:

Record the patient’s health record number.

DOB/AGE:

Record Date of Birth as mm/dd/yy and patient’s age.

SEX:

Indicate male or female.

COMMUNITY WHERE ACT OCCURRED:

Record the community code or the name, county, and state of the community where the act occurred.

EMPLOYMENT STATUS:

Indicate patient’s employment status; choose one.

RELATIONSHIP STATUS:

Indicate patient’s relationship status; choose one.

EDUCATION:

Select the highest level of education attained and, if less than a High School graduate, record the highest grade completed. Choose one.

SUICIDAL BEHAVIOR:

Identify the self destructive act; choose one. Generally, the threshold for reporting should be ideation with intent and plan, or other acts with higher severity, either attempted or completed.

LOCATION OF ACT:

Indicate location of act; choose one.

PREVIOUS ATTEMPTS:

Indicate number of previous suicide attempts; choose one.

METHOD:

Indicate method used. Multiple entries are allowed; check all that apply. Describe methods not listed.

SUBSTANCE USE INVOLVED:

If known, indicate which substances the patient was under the influence of at the time of the act. Multiple entries allowed; check all that apply. List drugs not shown.

CONTRIBUTING FACTORS:

Multiple entries allowed; check all that apply. List contributing factors not shown.

DISPOSITION:

Indicate the type of follow-up planned, if known.

NARRATIVE:

Record any other relevant clinical information not included above.

Last Updated 4/16/10

Appendix E: Great Lakes Inter-Tribal Epidemiology Center Staff

Great Lakes Inter-Tribal Epidemiology Center

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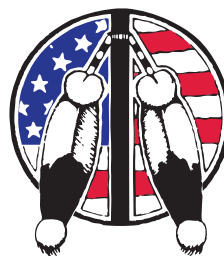
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