Suicide Surveillance in Colorado

Analysis of Hospital Discharge Data: Identifying characteristics associated with a second hospitalized suicide attempt

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Introduction

Suicide is a major public health issue in the United States, and particularly in states of the Intermountain West, including Colorado. Approximately 135,000 individuals are admitted for self-injury to U.S. hospitals each year, and an additional 117,000 are treated in emergency rooms without being admitted.[1] Non-lethal suicide attempts often precede suicide deaths, particularly among adolescent and young adult decedents. In fact, a suicide attempt is a stronger predictor of suicide death than any other known risk behavior.[2] As such, a better understanding of nonfatal suicide attempts should help reduce the rate of completed suicides by contributing to the development of targeted suicide prevention interventions.

To clarify the problem of fatal and nonfatal suicidal behavior in Colorado, the Injury Epidemiology Program at the Colorado Department of Public Health and Environment (CDPHE) analyzed data from the statewide hospital discharge database (HDD) and vital statistics (VS) databases for suicide/self-harm deaths and hospitalizations from 1998-2003. This report presents the results of analyzing linked data sets with the objective of identifying the characteristics of individuals at increased risk for a second hospitalized attempt within one year.

Study Question

Of individuals who have been hospitalized for a suicide attempt, what are the characteristics of those who have a second hospitalized attempt or death by suicide within one year?

Methods and Analysis

Preparation of the Analysis File

Hospital Discharge Data from 1998-2003 were obtained from the Colorado Health and Hospital Association (CHHA). All 64 acute care facilities in Colorado contribute data to the HDD. Although rehabilitation centers and psychiatric hospitals also provide data to the HDD, these types of facilities were excluded from the analysis in order to capture only acute care stays. Rehabilitation admissions to acute care hospitals (defined as admissions coded as V57 according to the *International Classification of Disease, Version 9, Clinical Modification [ICD-9-CM]*) were also excluded. Federal and military hospitals do not provide data to the HDD. The variables in the HDD are based on the UB-92 billing form and include patient demographics, dates of admission and discharge, discharge diagnoses, procedures, hospital charges, expected source of payment, and hospital length of stay.

The database includes both Colorado residents and non-residents. Additionally, the HDD includes records for individuals who were injured out of state and transferred to a Colorado hospital, as well as readmissions or transfers to the same or different hospitals for the same injury event. Using HDD from 1998-2003, hospitalizations for suicide attempts or intentional self-harm were identified using ICD-9-CM codes E950-E958. Records with only E959 (late effects of self-inflicted injury) were not included. During the six-year study period, 15,927 HDD records with a specified suicide-related E-code were identified.

The Injury Epidemiology Program also obtained personal identifier information for all injury-related hospitalizations from CHHA. These data include patient name, date of birth, full address of residence, hospital, medical record number, and date of admission and discharge. These variables were used to link the personal information records to the HDD suicide records, and then used in a multi-step probabilistic linkage within the database to identify individuals with multiple hospitalizations for suicide attempts. For

individuals with two or more suicide-related hospital records, the number of days between the discharge date at one facility and the admission date at a second (or the same) facility were compared to determine if the second record was a transfer or readmission for the same injury event. A *transfer* is defined as the same individual/event (same name, birth date, gender, similar N-codes and E-codes) with the discharge date at the first hospital equal to or within one day of the admission date at a second hospital. A *readmission* is defined as the same individual/event with a second date of admission (at the same or different hospital) within 2 days of the first admission or if the second admission had a late effect E-code (E959). In this study, transfers and readmissions were not considered as a second attempt.

Using the selection criteria and linking procedures described above, 14,339 unique individuals were identified as being hospitalized for one or more suicide attempts during the study period.

Linking to the VS database available in July 2004, a Colorado death certificate could be found for 955 (6.7 percent) of these 14,339 individuals. For those suicide deaths that occurred in a hospital, the linkage to the VS file was based on hospital, patient name, gender, date of birth, date of death, and county and zip code of residence. For those non-inpatient deaths, linkage was based on patient name, date of birth, gender, and county and zip code of residence.

Data cleaning consisted of the following:

- Ages listed as over 124 years were converted to unknown.
- Miscoded data were converted to unknown/missing.
- Eight records for children younger than age 9 years were identified that had a suicide ICD-9-CM E-code. Review of the medical record indicated that the assigned E-code was incorrect. These records were recoded to "undetermined intent."
- Race/ethnicity data were missing for 25-30 percent of hospitalization records. Because the percent of missing information is large, analyses on race/ethnicity difference in hospitalizations were not conducted.
- County of residence was assigned using Centrus geocoding software based on the address of residence.

Single vs. Multiple Hospitalizations for Suicide Attempt

During the study period, 14,339 individuals were identified as being hospitalized in a Colorado acute care hospital for a suicide attempt. Table 1 shows the number of individuals who were hospitalized for a single suicide attempt vs. more than one suicide attempt within the study period. The maximum number of suicide attempt hospitalizations for a single individual was 28.

Table 1. Individuals Hospitalized for One or More Suicide Attempts, Colorado, 1998-2003

Number of Suicide Attempts	Number of Individuals
1	13,209
2	881
3	165
4	47
5	13
6	9
7	7
8 or more	8
TOTAL	14,339

Figure 1 shows the decision points used to create the final analysis subset.

Of the 13,209 individuals with a single hospitalized suicide attempt, 288 died during hospitalization (2.2 percent). Eight of these 288 individuals died after discharge from the hospital but the date of injury was equal or prior to the date of admission. Since the primary objective of the study is to identify characteristics of individuals at increased risk for a second suicide attempt resulting in death or hospitalization, these 288 patients were excluded from the analysis. One hundred and twenty-five (125) "single attempters" had a fatal suicide attempt within one year after their first hospitalized suicide attempt. These individuals were reclassified from the "single attempter" group to the "multiple attempter" group. After applying these two criteria, there were 12,796 individuals who were considered to be "single attempters."

Initial linkage identified 1,130 individuals with more than one hospitalized suicide attempt. The 125 patients described above with only one hospitalization but with a fatal suicide attempt within one year after the hospitalization were re-assigned to the multiple attempter group. After this adjustment, there were 1,255 individuals who were considered to be "multiple attempters."

Using the VS database available in July 2004, a Colorado death certificate was found for 667 (4.7 percent) of the 14,051 individuals identified (12,796 single attempters and 1,255 multiple attempters). Among the 667 deaths, 157 (24 percent) were suicide deaths. Of the 1,130 individuals with more than one hospitalized suicide attempt, 105 (9.3 percent) were linked to a death record. Among these 105 deaths, 31 (30 percent) were suicide deaths.

Subset Included in the Analysis

Although 14,051 unique individuals were identified as being discharged alive after hospitalization for a suicide attempt in 1998-2003, only a subset of these individuals was included in the univariate analysis and logistic regression model.

Only records for individuals who were hospitalized in 1999-2002 were used in the analysis to assure:

- There was no hospitalization for a suicide attempt in the previous year for the single attempters (i.e., within the limitations of the data available, individuals hospitalized in 1999 did not have a prior hospitalization in 1998) (n=2,418 individuals excluded).
- There was one year of follow-up for individuals first hospitalized in 2002 (i.e., a full year of follow-up, 2003, was available for the cohort first identified in 2002) (n=2,362 excluded).

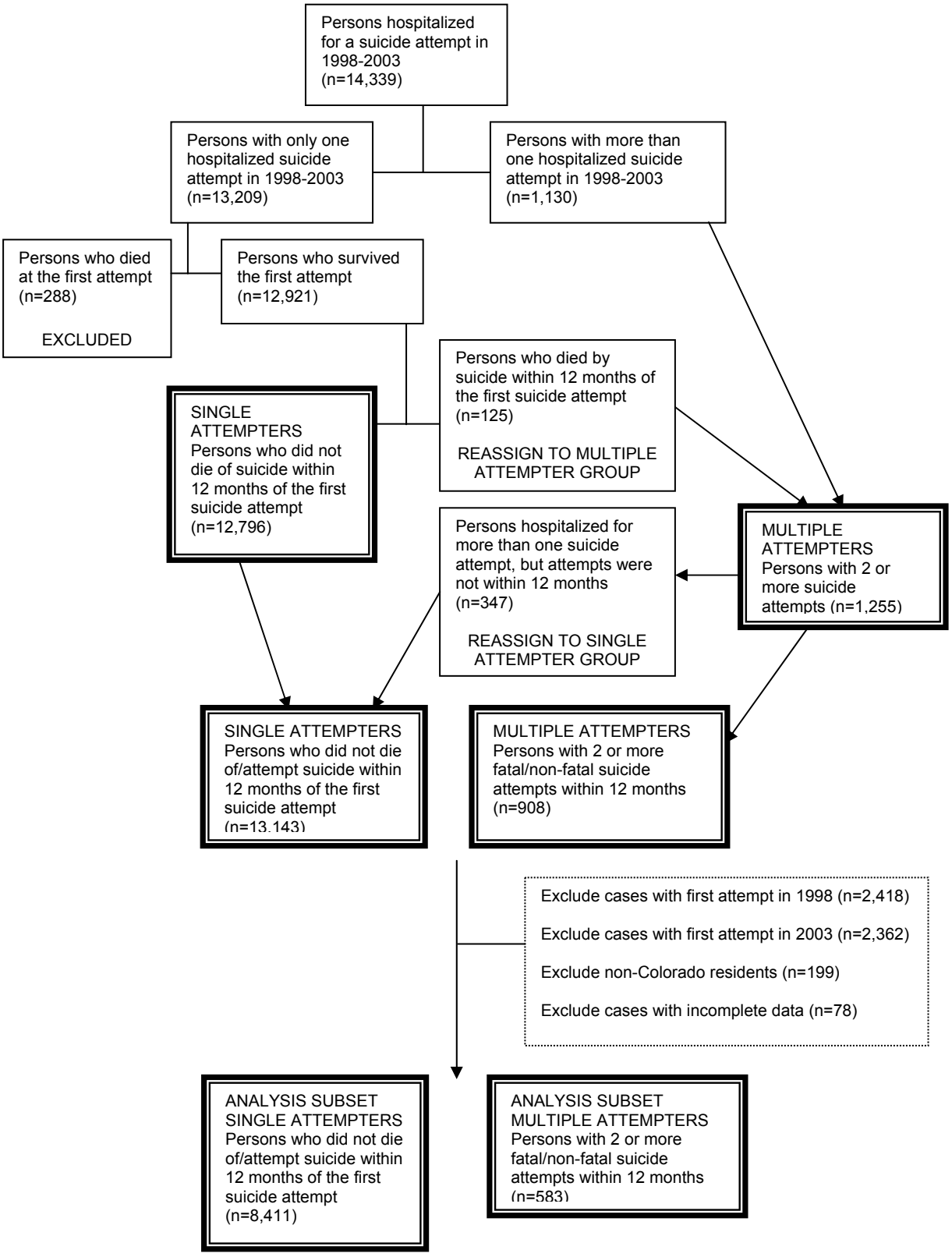
For the multiple attempters, the second hospitalized attempt must be within one year of the first identified hospitalized attempt. Multiple attempters with more than one year between the first two attempts were reclassified from the multiple attempter group to the single attempter group (n=347 reclassified as a single attempter).

Individuals who were non-Colorado residents were excluded (n=199 excluded).

Individuals with unknown values for county of residence, expected payment source, or other variables of interest were excluded (n=78 excluded).

After applying these criteria, data for 8,411 single attempters and 583 multiple attempters were included in the univariate analysis and development of the logistic regression model.

Figure 1. Creation of Analysis Subset



Results

Characteristics of Single vs. Multiple Attempters

In order to determine if there are factors predicting a second hospitalized suicide attempt, characteristics of individuals with a single suicide attempt hospitalization who were discharged alive ("single attempters," n=8,411) were compared to those of individuals with multiple suicide attempt hospitalizations ("multiple attempters," n=583). The percentage distribution of age, gender, urban or rural county of residence, expected source of payment, discharge status, hospital length of stay, method of suicide, any mention of a mental illness diagnosis, and other variables were calculated for each group. The detailed results of these comparisons are provided in Appendix A. To quantify the uncertainty of the point estimate, approximate 95 percent confidence limits based on a normal distribution were calculated to determine if there was a significant difference between the two groups. Confidence limits were only calculated when at least one event in a category occurred. When a negative lower limit was obtained, the lower limit was set equal to zero.[3]

The results of the univariate analyses are shown in tables 2, 3, 4, and 5.

Table 2. Gender and Age Distribution among Individuals Hospitalized for One or More Suicide Attempts, Colorado, 1999-2002

Factor	Single Attempter*	Multiple Attempter*	Significant Difference
Total	N=8,411	N=583	
Gender			
Male	39.9%	45.1%	p<0.05
Age (years)			
10-24	34.7%	26.2%	p<0.05
25-34	22.4%	21.8%	
35-44	22.7%	32.6%	p<0.05
45-64	16.8%	17.2%	
65+	3.4%	2.2%	

* In this table, a single attempter is defined as a person hospitalized for only one nonfatal suicide attempt during the study period, and a multiple attempter is defined as a person hospitalized for at least one nonfatal suicide attempt who is later hospitalized or dies from a subsequent attempt.

Gender

The majority of all hospitalized single and multiple suicide attempters were female (table 2). However, males were significantly more prevalent among multiple attempters (45.1%) than among single attempters (39.9%).

Age

The age distribution of single attempters compared to multiple attempters based on the age at the time of the first attempt is shown in table 2. Compared to multiple attempters, a significantly higher percent of single attempters were young adults ages 10-24 years (34.7 percent of single attempters compared to 26.2 percent of multiple attempters). In contrast, a significantly higher percent of multiple attempters were adults ages 35-44 (32.6 percent of multiple attempters compared to 22.7 percent of single attempters).

Table 3. County of Residence and Method of Suicide among Individuals Hospitalized for One or More Suicide Attempts, Colorado, 1999-2002

Factor	Single Attempter	Multiple Attempter	Significant Difference
County of Residence			
Denver metro*	54.9%	53.2%	
Other metro*	31.2%	36.9%	p<0.05
Rural	14.0%	10.0%	p<0.05
Method of Suicide			
Poisoning	81.0%	75.8%	p<0.05
Cutting	13.2%	18.5%	p<0.05
Other	5.8%	5.7%	

* "Denver metro" includes Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas and Jefferson counties. "Other metro" includes Larimer, Weld, El Paso, Pueblo and Mesa counties.

County of Residence

The majority of both single (54.9%) and multiple (53.2%) attempters were residents of the metropolitan Denver area (table 3). There were small but significant differences between single and multiple attempters with respect to residence in metropolitan areas outside of Denver (31.2% vs. 36.9%, respectively) and in rural areas (14.0% vs. 10.0%).

Method of Suicide

The method of suicide attempt for the first hospitalization differed slightly between single and multiple attempters (table 3). Although the great majority of first hospitalizations were due to drug overdose, cutting was more prevalent as a method among multiple than single attempters.

Table 4. Mental Illness Diagnosis and Hospital Length of Stay for First Hospitalization among Individuals Hospitalized for One or More Suicide Attempts, Colorado, 1999-2002

Factor	Single Attempter	Multiple Attempter	Significant Difference
Mental Illness Diagnosis[1]			
Yes	86.6%	93.0%	p<0.05
Psychoses[2]	38.8%	49.7%	p<0.05
Neurotic Disorders[3]	12.6%	18.4%	p<0.05
Personality Disorders[4]	5.4%	9.8%	p<0.05
Alcohol Dependence Syndrome[5]	11.5%	15.3%	p<0.05
Prolonged PTSD[6]	3.8%	6.5%	p<0.05
Hospital Length of Stay			
5+ days	13.8%	18.9%	p<0.05

[1] Includes any mention of ICD-9-CM codes N290-299 and N300-316.
[2] Any mention of ICD-9-CM codes N290-299.
[3] Any mention of ICD-9-CM code N300.
[4] Any mention of ICD-9-CM code N301.
[5] Any mention of ICD-9-CM code N303.
[6] Any mention of ICD-9-CM code 309.81.

Mental Illness Diagnosis

Nearly all single (86.6%) and multiple (93.0%) attempters received a mental illness diagnosis when they were first hospitalized (table 3). Specific mental illness diagnoses that differed significantly between

single attempters and multiple attempters included psychoses, neurotic disorders, personality disorders, alcohol dependence syndrome, and prolonged post-traumatic stress disorder (PTSD).

Hospital Length of Stay

Length of stay for the first hospitalization was two days or less among the majority of both single and multiple attempters (68.5% and 64.5%, respectively). Hospital stays exceeding four days were significantly more prevalent among multiple attempters than single attempters (table 4).

Table 5. Source of Payment and Discharge Status among Individuals Hospitalized for One or More Suicide Attempts, Colorado, 1999-2002

Factor	Single Attempter	Multiple Attempter	Significant Difference
Source of Payment			
Private Insurance*	49.2%	49.9%	
Government*	22.6%	30.0%	p<0.05
Self pay	28.2%	20.1%	p<0.05
Discharge Status			
Home	58.0%	50.4%	p<0.05

* "Private insurance" includes commercial insurance/HMO/Managed Care. "Government" includes Medicare, Medicaid, and other government sources.

Source of Payment

Compared to multiple attempters, a higher percent of single attempters had "self pay" as the expected source of payment for the first hospitalization (28.2 percent compared to 20.1 percent). A higher percent of multiple attempters had "Government," mainly Medicare and Medicaid, as the expected source of payment for the first hospitalization (30.0 percent compared to 22.6 percent).

Discharge Status

With regard to discharge status, a higher percent of single attempters were discharged to home after their first hospitalization for a suicide attempt (58.0 percent compared to 50.4 percent).

In addition to the factors discussed above, other discharge diagnoses were also compared between single and multiple attempters. There were no statistically significant differences between single and multiple attempters with regard to the percent of individuals with a discharge diagnosis of heart disease, cancer, chronic obstructive pulmonary disease (COPD), diabetes, cerebrovascular disease, chronic liver disease, HIV, or traumatic brain injury at the time of the first suicide attempt hospitalization.

Multivariate Model of Risk Factors for a Second Hospitalized Suicide Attempt

The results of univariate analysis were used to develop a logistic regression model to identify individuals at higher risk for a second attempt within one year of the first hospitalization.

For this analysis, there were 8,411 single attempters and 583 multiple attempters. Explanatory variables included in the logistic regression model were age group, gender, county of residence at the time of the first attempt, expected source of payment, discharge status, length of stay during the first hospitalization, attempt method used, and discharge diagnoses. The results of the logistic regression model are summarized in table 6.

Table 6. Factors Predicting the Likelihood of a Second Hospitalization for Suicide Attempt, Colorado, 1999-2002

Factor		Odds Ratio	95% Confidence Interval
Age Group (years)			
	65+ (ref)	-	
	10-24	1.55	0.86 – 2.80
	25-34	1.97*	1.09 – 3.58
	35-44	2.79*	1.55 – 5.01
	45-64	1.85*	1.01 – 3.37
Gender			
	Female (ref)	-	
	Male	1.23*	1.03 – 1.46
County of Residence			
	Rural (ref)	-	
	Denver metro	1.28	0.95 – 1.71
	Non-metro Denver metropolitan counties	1.47*	1.09 – 1.99
Attempt Method			
	Poisoning (ref)	-	
	Cutting	1.51*	1.20 – 1.90
	Other method	0.97	0.70 – 1.33
Mental Illness Diagnosis at the First Admission			
	No mental illness diagnosis N290-299 or N300-316 (ref)	-	
	Psychoses (N290-299) or Neurotic, personality and other non-psychotic mental disorders (N300-316)	1.83*	1.32 – 2.54
Hospital Length of Stay			
	< 5 days (ref)	-	
	5+ days	1.32*	1.05 – 1.66
Discharge Status			
	Home (ref)	-	
	Not home	1.45*	1.22 – 1.72
Source of Payment			
	Self pay (ref)	-	
	Private insurance/HMO	1.49*	1.19 – 1.86
	Medicare/Medicaid/Other Government	1.89*	1.47 – 2.43

* Significantly different from the reference group.

The logistic model indicates that age 24-65 years, male sex, living in metro counties outside of Denver, and having a first hospitalized suicide attempt in which cutting was the method, a mental illness diagnosis was given, length of stay exceeded four days, discharge was to other than home (e.g., discharged to intermediate care facilities or skilled nursing facilities), and payment method was other than self pay all correlated with a subsequent hospitalized or fatal suicide attempt within one year. Differences were significant for nearly all subcategories of each of these variables.

For example, individuals in the age groups between 25 and 64 years were approximately two to three times more likely to be admitted or die from a second suicide attempt within one year than those ages 65 years and older. Second attempts were slightly more common among males than females, and more likely

in metropolitan counties than rural counties. These differences in demographic variables are interesting in their own right, and also useful with respect to controlling these variables while examining differences in hospital admission characteristics among patients who do and do not experience multiple suicide attempts in a one year period.

With respect to clinical characteristics, several variables are significantly associated with an increased likelihood of multiple suicide attempts. Patients admitted initially for self-injuries caused by cutting are 51% more likely to present for a subsequent suicide attempt in the same year as those whose first admission was for a suicide attempt by poisoning or other methods. While the great majority of single attempters and multiple attempters were diagnosed with one or more mental illness ICD-9-codes (see table 4), this diagnosis was nonetheless associated with an 83% increased likelihood of a second suicide attempt compared to patients not so diagnosed.

As can be seen in table 6, an extended hospital length of stay predicted a subsequent attempt within one year, while being discharged to home was associated with a decreased likelihood of a subsequent attempt. These variables may serve as indicators for the severity of the first attempt, although they cannot distinguish between severity of injury caused by the attempt from severity of mental illness at the time of the attempt.

Finally, having any kind of insurance rather than no insurance (self pay) was associated with a greater likelihood of a subsequent attempt.

Discussion and Conclusions

This study uses data linking to identify individuals who, having survived an initial hospitalized suicide attempt, will attempt a second time within twelve months of the initial attempt. Since any suicide attempt has, by definition, a risk of death, we have chosen not to distinguish fatal and nonfatal subsequent attempts. The goal of this study is to identify factors associated with such subsequent attempts, such that individuals at high risk of multiple attempts can be identified and provided treatment designed to minimize this risk. Using this strategy will reduce fatal and nonfatal suicidal behavior, presumably by improving mental health among individuals known to have a history of at least one suicide attempt.

Some of the variables identified in this study are consistent with other research results; some are novel; some are difficult to interpret. For example, the finding that younger individuals are more likely to have multiple suicide attempts than those 65 years old and older is consistent with other research noting that while suicide fatality rates are highest among the elderly, nonfatal suicide attempts are highest among young adults. Conversely, the finding that multiple attempts are more likely among residents of metropolitan than rural areas is at odds with the fact that suicide rates are higher in rural than non-rural areas. The implication may be that Colorado differs from U.S. patterns, but this finding more likely indicates that suicide attempts are higher in metro areas, but fatality rates are higher in rural areas. This higher fatality rate may result from use of, or perhaps facile access to, highly lethal methods as well as probability of discovery prior to death, and the availability of emergency health care facilities.

Several clinical indicators predicted later suicide attempts. It is not clear why individuals who attempt suicide by cutting are more likely to be hospitalized or die from a re-attempt than those who use other methods. It would be interesting to examine whether differences in method used for the first attempt were repeated in later attempts, or if a pattern could be identified between first and later suicide attempts among those who use multiple methods.

A mental illness diagnosis was made for most hospitalized patients at their initial attempt, and as such is not a particularly specific indicator of later suicide risk. It may be more useful when considered in concert with other indicators of illness severity such as hospital length of stay and transfer to a mental health facility rather than to home. Subsequent research that distinguished clinical measures of illness severity from the severity of injuries caused by the attempt would be useful. It is likely that these two factors are related, but whether the lethality (and concomitant severity of injury) of any suicide attempt is an adequate predictor of suicide intent remains to be demonstrated.

The association between payment method and later suicide attempts is not obvious. It may be that individuals with insurance are more likely to be identified as having a second attempt because they are more likely to seek care for such attempts. It may also be that patients who lack insurance are more likely to move out of state such that subsequent suicide attempts would not be included in the Colorado hospital discharge database. While it is possible that the identified relationship is direct, i.e. that patients with insurance are more likely to attempt suicide multiple times than patients who are self-pay, such a finding would be novel and require additional empirical support.

This study has identified several factors that are associated with suicide attempts following an initial nonfatal attempt. These factors will help predict the risk of subsequent suicide attempts among persons hospitalized for suicidal behavior. The identification of subpopulations that are at higher risk for a second suicide attempt provides an opportunity for: 1) increased awareness by those providing care to the hospitalized suicide attempter; and, 2) targeted interventions directed specifically to those at increased risk for a second attempt. Prevention strategies directed to these subpopulations may reduce the frequency of second suicide attempts: Without a second attempt, there can be no subsequent death by suicide.

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Appendix A. Selected Characteristics for Individuals with Hospitalized Suicide Attempt (CO residents, 1999-2002)

Characteristics	Total		Single Attempter*				Multiple Attempter**			
	N	%	N	%	Lower Limit	Upper Limit	N	%	Lower Limit	Upper Limit
Total	8,994	100.0	8,411	100.0			583	100.0		
Age										
10-14	427	4.7	405	4.8	4.4	5.3	22	3.8	2.1	5.4
15-24	2,648	29.4	2,517	29.9	28.9	30.9	131	22.5	19.0	25.9
25-34	2,008	22.3	1,881	22.4	21.5	23.3	127	21.8	18.3	25.2
35-44	2,101	23.4	1,911	22.7	21.8	23.6	190	32.6	28.7	36.5
45-64	1,513	16.8	1,413	16.8	16.0	17.6	100	17.2	14.0	20.3
65+	297	3.3	284	3.4	3.0	3.8	13	2.2	0.9	3.5
Sex										
Male	3,619	40.2	3,356	39.9	38.8	41.0	263	45.1	41.0	49.2
Female	5,375	59.8	5,055	60.1	59.0	61.2	320	54.9	50.8	59.0
Region of residence										
Denver CMSA	4,927	54.8	4,617	54.9	53.8	56.0	310	53.2	49.0	57.3
Other MSA	2,837	31.5	2,622	31.2	30.2	32.2	215	36.9	32.9	40.9
Rural Nonremote	1,077	12.0	1,024	12.2	11.5	12.9	53	9.1	6.7	11.5
Rural/Remote	153	1.7	148	1.8	1.5	2.0	5	0.9	0.0	1.7
Expected source of payment										
Private insurance/HMO	4,433	49.3	4,142	49.2	48.2	50.3	291	49.9	45.8	54.1
Medicare/Medicaid/Other Gov.	2,074	23.1	1,899	22.6	21.7	23.5	175	30.0	26.2	33.8
Self pay	2,487	27.7	2,370	28.2	27.2	29.1	117	20.1	16.7	23.4
Discharge status										
Home/self care	5,175	57.5	4,881	58.0	57.0	59.1	294	50.4	46.3	54.6
Other	3,819	42.5	3,530	42.0	40.9	43.0	289	49.6	45.4	53.7

Characteristics	Total		Single Attempter*				Multiple Attempter**			
	N	%	N	%	Lower Limit	Upper Limit	N	%	Lower Limit	Upper Limit
Length of stay										
1 day	4,359	48.5	4,085	48.6	47.5	49.6	274	47.0	42.9	51.1
2 days	1,776	19.7	1,674	19.9	19.0	20.8	102	17.5	14.3	20.7
3 days	1,079	12.0	1,019	12.1	11.4	12.8	60	10.3	7.7	12.8
4 days	509	5.7	472	5.6	5.1	6.1	37	6.3	4.3	8.4
5+ days	1,271	14.1	1,161	13.8	13.1	14.5	110	18.9	15.6	22.1
Method										
Solid/liquid poisoning	7,256	80.7	6,814	81.0	80.2	81.9	442	75.8	72.3	79.4
Gas	122	1.4	116	1.4	1.1	1.6	6	1.0	0.1	1.9
Hanging/suffocation	125	1.4	118	1.4	1.1	1.7	7	1.2	0.2	2.2
Drowning	4	0.0	4	0.0	0.0	0.1	0	0.0	0.0	0.0
Firearms/airguns	114	1.3	106	1.3	1.0	1.5	8	1.4	0.3	2.4
Cutting/piercing	1,220	13.6	1,112	13.2	12.5	14.0	108	18.5	15.3	21.8
Jumping from high place	61	0.7	56	0.7	0.5	0.8	5	0.9	0.0	1.7
Other/unspecified	326	3.6	303	3.6	3.2	4.0	23	3.9	2.3	5.6
Diagnosis any mentioned										
Psychoses (N290-N299)	3,551	39.5	3,261	38.8	37.7	39.8	290	49.7	45.6	53.9
Neurotic/personality and other nonpsychotic mental disorders (N300-N316)	6,665	74.1	6,206	73.8	72.8	74.7	459	78.7	75.3	82.1
N290-N299 or N300-N316	7,822	87.0	7,280	86.6	85.8	87.3	542	93.0	90.8	95.1

Source: Colorado Health and Hospital Association. Prepared by the Injury Epidemiology Program, Colorado Department of Public Health and Environment 5/20/05.

Note: Sums may not add to total due to cases with more than one mechanism mentioned. Also, Records with only E959 mentioned were excluded.

* Single attempters include those individuals with only one hospitalized suicide attempt who were alive within one year after the attempt and those individuals with two or more hospitalized suicide attempts but more than one year elapsed between the attempts. Hospital deaths were excluded from the "Single attempter" category.

** Multiple attempters include those individuals with two or more hospitalized suicide attempts within one year and those individuals who died from suicide within one year of their first hospitalized suicide attempt.