

# Method of Sampling Death Certificates for the Committee to Review Suicide Fatalities

## *white paper* 2012

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## purpose

The purpose of this white paper is to describe a method of sampling death certificates pursuant to sections 4(1)a and 9(3)c of [Assembly Bill \(AB\) 29](#), which passed as a result of the 77<sup>th</sup> Regular Legislative Session in 2013, and that created the Committee to Review Suicide Fatalities. The committee is charged with reviewing suicide fatalities to determine trends, risk factors, and preventive strategies and may accept or reject cases in accordance with a written protocol that it establishes. On behalf of the Division of Public and Behavioral Health and in support of the Statewide Program for Suicide Prevention, this white paper was prepared for the committee's consideration and potential adoption as its written protocol, or part thereof.

## sampling method

This section provides basic statistics about the number of suicides that occurred in Nevada or to Nevada residents during 2012, the latest complete calendar year of death data<sup>1</sup>, and suggests potential criteria for sampling the records to ensure that they are representative of various demographic groups. Because the work of the Committee to Review Suicide Fatalities (CRSF) is more qualitative than quantitative, *representativeness* is the motivating factor for sample selection rather than sample size for statistical power.

In advance of the June 3, 2014 meeting of the committee, a preliminary, random selection of 10 suicides that occurred in Clark County, Nevada in 2012 was furnished to the Clark County Coroner's Office. The committee was unsure about the number of cases that it could feasibly review over the course of a year, so the initial 10 cases served as a test of the committee's capacity. As a result, the committee could establish a reasonable case volume for its annual docket.

The number of cases that CRSF chooses will likely be a factor of the volume of cases that the committee can reasonably process and attentively review. Thus, what follows represents relevant considerations for case selection and establishes a bare minimum of cases necessary to ensure demographic representation.

With the goal of selecting a representative sample, the following demographic variables were considered:

- age group (0-17, 18-24, 25-64, 65+)
- sex (female, male)
- race (White; Black; American Indian, Eskimo, or Aleut; or Asian or Pacific Islander)
- ethnicity (Hispanic, non-Hispanic)
- residency (Nevada, out-of-state)
- county of death (Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine)
- military service (veteran, non-veteran)
- cause-of-death [international classification of diseases (ICD) code]

State of residency was used to establish the sampling frame. Age group, sex, race, and ethnicity comprise the primary demographics; county of death and military service comprise secondary demographic characteristics; and cause-of-death equates to the method-of-suicide.

## sampling frame

In 2012, 567 suicide fatalities occurred in Nevada or to Nevada residents; however, at the time that this document was prepared, no out-of-state deaths due to suicide for Nevada residents had been received from another jurisdiction. In time, some states, especially neighboring ones, may provide additional death records for Nevada residents that occurred in their jurisdictions. Table 1 shows suicide fatalities by state of residence and state of death.

**Table 1 – suicides by state of residence and death in 2012**

2012		state of residence*		total
state of death		Nevada	out-of-state	
	Nevada	515	52	567
	out-of-state†	0	NA	NA
	total	515	NA	NA

\* missing for 2 records

† no records received to-date from other jurisdictions

NA: not applicable as such deaths are outside the purview of the State of Nevada

The 52 suicide fatalities that occurred in Nevada to out-of-state residents were excluded from the sampling frame because it may be difficult to obtain necessary records for those persons or to interview their relatives or loved ones. Nevertheless, the committee may, in fact, decide that it would like to review a selection from among them in which case they could be added back to the sampling frame and cases drawn at random from the lot.

Likewise, out-of-state suicides among Nevada residents were excluded methodologically, despite there not being any at the time this document was prepared. If such cases are reported from other jurisdictions to Nevada in the future when the committee is ready to have its representative sample drawn from the 2012 data, the committee may choose to include them for review or continue to exclude them for the reasons previously mentioned.

As a result of the above considerations, 515 suicide fatalities were included in the sampling frame and were thus eligible for random selection.

## primary demographic profiles

The demographic characteristics of age group, sex, race, and ethnicity may be considered primary in that they are immutable and their various combinations form unique profiles that influence the experience a person has over the course of his or her life. Altogether, the 4 demographic characteristics listed constitute 64 distinct profiles. In theory, a representative sample would include at least one member of each primary demographic profile. However, in 2012, suicide fatalities occurred only among 33 of the 64 demographic profiles possible. Table 2 shows the specific profiles observed in 2012.

**Table 2 – suicides among the primary demographic profiles observed in 2012, Nevada residents, in-state occurrence**

ethnicity	race	sex	age group	total*
non-Hispanic	White	female	0-17	1
			18-24	3
			25-64	94
			65+	17
		male	0-17	2
			18-24	15
			25-64	227
			65+	54
	Black	female	18-24	1
			25-64	5
		male	0-17	1
			18-24	3
			25-64	11
			65+	3
	American Indian, Eskimo, or Aleut	female	18-24	2
			25-64	1
		male	25-64	6
			65+	1
	Asian or Pacific Islander	female	25-64	4
			65+	3
		male	0-17	1
			18-24	2
			25-64	12
			65+	1
Hispanic	White	female	25-64	3
			65+	1
		male	0-17	1
			18-24	6
			25-64	13
			65+	2
	Black	male	25-64	2
	Asian or Pacific Islander	female	25-64	1
		male	25-64	1

\* Totals exclude cases with an unknown value for one or more characteristic.

Unless the committee prefers to consider a different set of demographic characteristics to be primary, based on the 2012 data, the minimum sample size to ensure demographic representativeness would be 33, taken by randomly selecting one member from each of the unique profiles.

### secondary demographic characteristics

The designation of county of death and military service as secondary demographic characteristics is a matter of discussion; nevertheless, they were considered as such for the purpose of sampling for a few reasons:

1. They are more or less mutable because, unlike their primary demographic counterparts, they are influenced by the choices and life experiences that a person makes or faces over the course of his or her life;
2. They may not be fundamental to one's identity, thus not necessarily a determinant of suicide fatality; or
3. Though they may be an essential, acquired part of one's identity, such as veteran status, they may not, in conjunction with or to the same degree as the other primary demographic characteristics, form unique profiles that call for representation. In the case of veteran status, a significant number of veterans are likely to be selected by chance alone when drawing the sample for the primary demographic profiles; therefore, they are unlikely to be under-represented.

Tables Table 3 and Table 4 show the number of suicide fatalities for the demographic characteristics designated as secondary:

**Table 3 – suicide fatalities by county of death in 2012, Nevada residents, in-state occurrence**

<b>death county</b>	<b>total</b>
Carson City	9
Churchill	7
Clark	364
Douglas	4
Elko	9
Esmeralda	0
Eureka	0
Humboldt	6
Lander	1
Lincoln	3
Lyon	11
Mineral	1
Nye	12
Pershing	0
Storey	4
Washoe	81
White Pine	3

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In 2012, suicide fatalities occurred in 14 of the 17 counties.

**Table 4 – suicides by veteran status in 2012, Nevada residents, in-state occurrence**

<b>veteran</b>	<b>total*</b>
no	401
yes	100

\* Totals exclude cases with unknown veteran status.

After randomly drawing the sample for the primary demographic profiles, the committee may draw additional cases for any unrepresented county of death or to increase the number of cases reflecting military status at the committee's discretion.

## cause-of-death

Finally, it is likely of paramount importance that the committee reviews suicide fatalities caused by the full range of means observed in 2012 to gain insight into the risk factors that resulted in the deaths and to identify preventive strategies.

Of the numerous means that result in suicide fatality, between 21 and 28 specific causes were observed in 2012. Table 5 lists the codes and titles of the causes-of-death.

Table 5 – suicide fatalities by cause-of-death in 2012, Nevada residents, in-state occurrence

ICD-10 code <sup>2</sup>	title	total
<a href="#">W34</a>	<i>Discharge from other and unspecified firearms</i>	1
<a href="#">X42</a>	<i>Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified</i>	1
<a href="#">X44</a>	<i>Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances</i>	4
<a href="#">X60</a>	<i>Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics</i>	4
<a href="#">X61</a>	<i>Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified</i>	18
<a href="#">X62</a>	<i>Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified</i>	23
<a href="#">X63</a>	<i>Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system</i>	1
<a href="#">X64</a>	<i>Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances</i>	52
<a href="#">X65</a>	<i>Intentional self-poisoning by and exposure to alcohol</i>	1
<a href="#">X66</a>	<i>Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours</i>	5
<a href="#">X67</a>	<i>Intentional self-poisoning by and exposure to other gases and vapours</i>	17
<a href="#">X69</a>	<i>Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances</i>	2
<a href="#">X70</a>	<i>Intentional self-harm by hanging, strangulation and suffocation</i>	82
<a href="#">X71</a>	<i>Intentional self-harm by drowning and submersion</i>	1
<a href="#">X72</a>	<i>Intentional self-harm by handgun discharge</i>	12
<a href="#">X73</a>	<i>Intentional self-harm by rifle, shotgun and larger firearm discharge</i>	27
<a href="#">X74</a>	<i>Intentional self-harm by other and unspecified firearm discharge</i>	229
<a href="#">X76</a>	<i>Intentional self-harm by smoke, fire and flames</i>	2
<a href="#">X78</a>	<i>Intentional self-harm by sharp object</i>	8
<a href="#">X80</a>	<i>Intentional self-harm by jumping from a high place</i>	16
<a href="#">X84</a>	<i>Intentional self-harm by unspecified means</i>	2
<a href="#">F32.9</a>	<i>Depressive episode, unspecified</i>	1*
<a href="#">G40.9</a>	<i>Epilepsy, unspecified</i>	1*
<a href="#">I11.9</a>	<i>Hypertensive heart disease without (congestive) heart failure</i>	1*
<a href="#">I42.0</a>	<i>Dilated cardiomyopathy</i>	1*
<a href="#">J86.9</a>	<i>Pyothorax without fistula</i>	1*

<a href="#">R99</a>	<i>Other ill-defined and unspecified causes of mortality</i>	1*
	uncoded	1†

\* Although likely attributable to a coding error, the committee may want to review for any abnormality.

† Despite being uncoded, written cause-of-death is available should the committee wish to review any of these cases.

Based on the 2012 data, the minimum number of records that should be selected to account for the various causes-of-death is between 21, excluding implausibly coded cases, and 28 including both implausible and uncoded cases.

To ensure that each cause-of-death is represented, additional cases may be drawn for any unrepresented cause-of-death after randomly drawing the sample for the primary demographic profiles or until the committee is satisfied with the draw.

## technical notes

The Electronic Deaths Registry System (EDRS) is a component of the Web-Enabled Vital Records Registry System (WEVRRS) operated by the Division of Public and Behavioral Health (DPBH). It stores all death certificates issued in Nevada as well as those received from other states, districts, and territories for Nevada residents.

## citations

1. WEVRRS. DPBH. *EDRS*. Accessed on: 2014-06-05.
2. World Health Organization. *International Classification of Diseases*. r 10. v 2010. Available at: <http://apps.who.int/classifications/icd10/browse/2010/en>

## additional resources

Nevada Health Statistics Portal. Division of Public and Behavioral Health. *Death Statistics Query*.

Available at:

[http://statistics.health.nv.gov/queries/death\\_query.php](http://statistics.health.nv.gov/queries/death_query.php)



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