

Violent Death in New Mexico: Utilizing the New Mexico Violent Death Reporting System

The New Mexico Violent Death Reporting System (NM-VDRS), the New Mexico implementation of the National Violent Death Reporting System (NVDRS), is an active, population-based, surveillance system designed to monitor trends in violent deaths. Recognizing the need for standardized data regarding violent deaths, the Centers for Disease Control and Prevention (CDC) instituted NVDRS in 2002, expanding the network to 17 states by 2004, the year that New Mexico joined. The NM-VDRS collects detailed information on all violent deaths (suicides, homicides, legal intervention deaths, deaths having undetermined intent, unintentional firearm deaths, and terrorism-related deaths) occurring within New Mexico from several data sources, including death certificates, medical examiner reports, law enforcement investigations, and the state crime lab and combines them into a single record. For each violent death incident, more than 250 unique variables are collected for all victims, suspects, circumstances, relationships, and weapons involved. The purpose of this surveillance system is to increase the understanding of the populations at risk, and the circumstances that contribute to violent deaths to encourage development and implementation of more effective prevention strategies¹. This report focuses on findings from 2005 and 2006.

Methods

The New Mexico Department of Health (NMDOH) collaborates with the Office of the Medical Investigator (OMI) to operate NM-VDRS. OMI is the statewide, centralized medical examiner agency for New Mexico authorized to investigate any deaths within the state that are sudden, violent, unexpected, or unattended by a physician on non-federal lands, and is often called to investigate violent deaths occurring on federal military and tribal lands. The Bureau of Vital Records and Health Statistics at the NMDOH uses an electronic system to issue death certificates for all deaths in the state, and queries this system to identify any deaths of interest to NM-VDRS not investigated by OMI.

The NM-VDRS cases in this report were classified into one of five types of violent death; no terrorism-related

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deaths have occurred during the reporting period. The determination of the manner of death, such as suicide, was "abstractor defined". Since the abstractor has the advantage of reviewing several source documents and often has knowledge of the circumstances, or precipitating events, surrounding the fatal injury this was felt to be more accurate than a determination of manner by a single document. Circumstances regarding suicides were collected from OMI field investigator and law enforcement reports.

Case ascertainment and data entry occur at OMI, where NM-VDRS is housed. Data were entered into CDC-provided NVDRS software then extracted from the NM-VDRS database for analysis. For this review, instead of presenting rates, occurrent ratios are shown, which provides a measure of burden of violent death in New Mexico. An occurrent ratio is the total number of violent deaths for residents and non-residents that occurred in New Mexico for a given category over the combined 2005 and 2006 population for that category in New Mexico. New Mexico resident deaths occurring in other states were excluded. The population estimates for 2005 and 2006 are from the University of New Mexico Bureau of Business and Economic Research².

Results

NM-VDRS collected data on a total of 1,127 violent deaths for 2005-2006 (Table 1), of which 68 were not New Mexico residents. The majority of violent deaths were suicides (61%), followed by homicides (25%) and deaths of undetermined intent (10.9%). For every homicide in New Mexico, there were 2.5 suicides. The majority of suicides occurred in adults ages 25-54 years (Figure) and the number of homicides peaked in the 25-34 year age group. The pattern of undetermined intent

deaths by age group paralleled suicides and was highest for ages 35-54 years. Only 2% of deaths were classified as legal interventions or unintentional firearm injuries.

Suicide. As there is no limit to the number of circumstances that can be reported for a decedent, at least one circumstance was identified for 97.4% of suicide decedents with a similar proportion for males and females. The modal number of reported circumstances was four, but for two-thirds of decedents, four or more circumstances were reported. Males were four times more likely than females to commit suicide, and subsequently the most commonly reported circumstances differed by sex (Table 2). “Current depressed mood” was most frequently identified for both males (51.2 %) and females (71.2%). Other circumstances reported most frequently for females were all related to mental health; a current mental health problem (64.0%), and ever been treated for a mental illness (62.6%). Both men and women were commonly found to have a history of intimate partner problems (40.2% and 36.7%, respectively) and history of alcohol abuse (33.0% and 26.6%, respectively).

When examining suicidal forethought, compared to an impulsive act, females were more likely to leave a suicide note and to have experienced the death of a friend or family member in the past five years compared to males. Over 42% of both sexes had disclosed their suicidal intent with enough time for someone to intervene and more than 40% of females left a suicide note, and/or had a history of suicide attempts. Males were about half as likely as females to leave a suicide note or have prior suicide attempts. Other proximal stressors, such as job and financial problems were reported more often for males (14.5% and 16.3%, respectively), whereas a higher proportion of females were reported to have experienced a crisis in the two weeks prior to the suicide and physical health problems (26.6% and 33.8%, respectively).

Homicide. For homicides at least one circumstance was recorded for 82.6% of decedents with no difference between males and females. The modal number of circumstances was one and over 35% of incidents reported two or more circumstances. As seen in Table 2, the leading circumstance reported among males (79% of victims) was an argument or other interpersonal conflict that was *not* about money, property, or an intimate partner, termed “other argument, abuse or conflict” (44.4%). Intimate partner violence-related was the leading circumstance for female homicides (37.3%), followed by “other argument, abuse, or conflict” (32.2%). Homicides reported as precipitated by another crime ranked third for both sexes (15.2% of males and 16.9% of females), and frequently

this first crime was in progress (9.0% of males and 10.2% of females). A homicide in which drugs or drug dealing was involved was nearly three times more likely for males compared to females (17.0% and 6.8%, respectively). Additionally, brawls ending in homicide were more commonly reported for males than females (6.3% and 5.1%, respectively) and homicides reported to be gang related were only reported for males (10.8%).

Table 1: Violent Deaths in New Mexico 2005-2006

<u>Type of Death</u>	<u>Number</u>	<u>Percent</u>	<u>Occurrent Ratio*</u>
Suicide	696	61.8	20.2
Homicide	282	25.0	7.1
Unintentional Firearm	12	1.1	0.3
Legal Intervention	14	1.2	0.4
Undetermined Intent	123	10.9	3.1
Total	1127	100.0	28.3

* Per 100,000 population

Discussion

Considering only 49% of the New Mexico population is male, they are over-represented as decedents as they comprise 80% of violent deaths. Female decedents were twice as likely to die by suicide versus homicide. These findings are consistent with both national statistics^{3,4} and previous studies of suicide in New Mexico⁵. When examining violent death type by age groups, the highest numbers of suicides occur in adults 25-54 years and peak in the 45-54 year age group. Although many prevention strategies rightfully focus on the problem of youth suicides, higher proportions and ratios are observed in the adult population, indicating the need for prevention in this group. The number of homicides was less than half the number of suicides over this two year period, but a different age distribution was observed. The number of homicides rose steadily in youth to peak in the 25-34 year age group then fell steadily in the elder adult age groups. Nearly 11% of decedents were classified as having a death of undetermined intent, meaning that the available information was insufficient to designate the manner of death. The number of reported circumstances for undetermined intent decedents, which uses the same circumstance categories as suicides, is low (over 50% have zero or one circumstance reported), which supports the claim that there was not enough evidence to determine intent.

When considering circumstances and precipitating factors for suicide by sex, a current depressed mood was the most commonly reported event preceding the suicide for both sexes (71.2% of females, 51.2% of males). This is similar to previous findings that up to 90% of adult suicides have a psychiatric diagnosis, and among these, de-

pression is the most highly predictive of suicide^{3,6}. An intimate partner problem was reported for nearly 37% of females included in this analysis, which is 15 percentage points higher than what was reported in a previous study of female suicide victims in New Mexico⁷. Comparatively, 40% of men had a reported intimate partner problem, confirming findings suggesting that people are at higher risk for suicide when they struggle with interpersonal relationships³. In addition to relationship problems, more than 25% of both sexes had a problem with alcohol and/or other substances. Numerous studies have described the association between alcohol/substance abuse and suicide, noting that 18% of alcoholics die by suicide, and that 50% of suicide victims are intoxicated at the time of death^{3,8}.

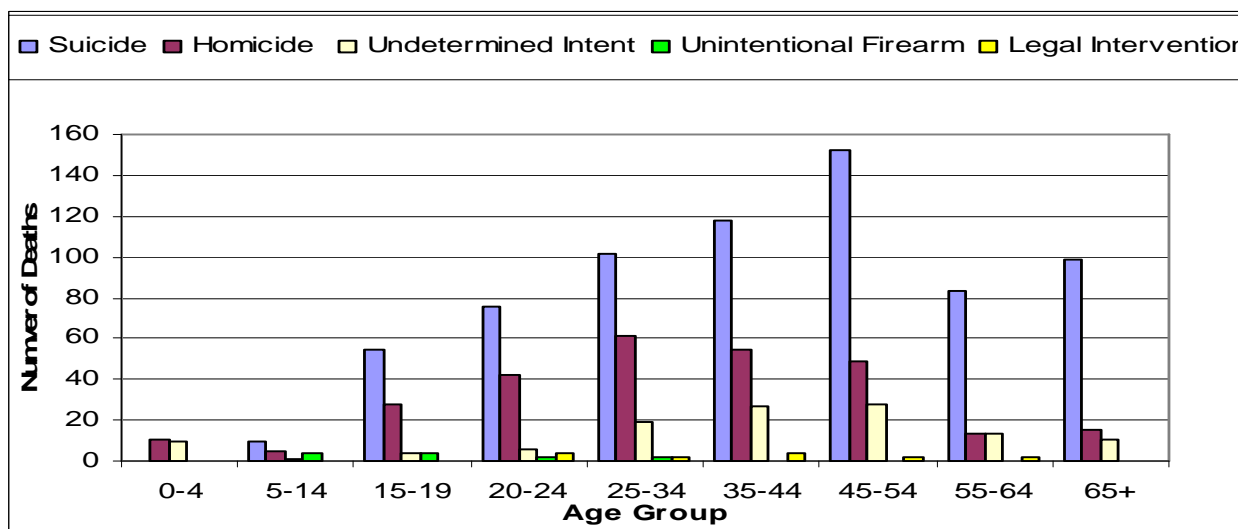
Circumstances collected for homicide incidents are different from those collected for suicides. In those homicide incidents in which the circumstances were known (82%), the most commonly reported precipitating event for males was an argument, abuse or conflict that did not concern money, property, or an intimate partner (44.4%) and for females, the homicide was most often related to intimate partner violence (37.3%). The vast majority of homicides appeared to be impulsive acts of violence, in which a crime was already in progress or an argument escalated to violence. Use of alcohol and other drugs were also associated with these events. Alcohol use may increase risk-taking and provocative behaviors, such as persons who become argumentative after imbibing. Evidence of this type of behavior is found in several studies in which a high proportion of homicide victims have alcohol in their blood at the time of death⁹. Other activities such as drug dealing and gang involvement also increase the risk of becoming a victim of homicide.

As more years of data are added to the NM-VDRS, more intensive analyses and trend analyses will be possible that permit discerning patterns in the circumstances surrounding specific types of violent death, changes regarding the types of weapons used, and the distribution of these deaths in communities throughout the state in order to better inform prevention activities.

References

- Centers for Disease Control and Prevention. Surveillance for Violent Deaths- National Violent Death Reporting System, 16 States, 2005. Surveillance Summaries, 2005. MMWR 2008; 57(No. SS-3).
- Bureau of Business and Economic Research: Population Estimates and Projections Program, University of New Mexico; 2005 and 2006 data. Available from URL: <http://www.unm.edu/~bber/demograp2.htm>.
- Maris RW. Suicide. The Lancet 2002 Jul;360(9329):319-26.
- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2005) [cited 2008 October 1]. Available from URL: www.cdc.gov/ncipc/wisqars.
- Sewell CM, Becker TM, Wiggins CL, Key CR, Hull HF, Samet JM. Injury mortality in New Mexico's American Indians, Hispanics, and Non-Hispanic Whites, 1958 to 1982. West J Med 1989 Jun;150:708-13.
- Moscicki E. Epidemiology of suicide. In: Goldsmith S, ed. Suicide prevention and intervention. Washington DC: National Academy Press, 2001: 1-4.
- Olson L, Huyler F, Lynch AW, Fullerton L, Werenko D, Sklar D, Zumwalt R. Guns, alcohol, and intimate partner violence: the epidemiology of female suicide in New Mexico. Crisis 1999;20 (3);121-6.
- Roy A, Linnoila M. Alcoholism and suicide. In: Maris RW. Biology of suicide. New York: Guilford, 1986:244-73.
- Goodman RA, Mercy JA, Loya, F et al. Alcohol use and interpersonal violence: alcohol detected in homicide victims. APHA 1986;76(2):144-9.

Figure. Number of violent deaths by type and age group, New Mexico, 2005-2006.



Source: NM-VDRS 2005-2006

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Table 2. Frequency of Selected Suicide and Homicide Circumstances by Sex, NM, 2005-2006

Suicide Circumstance	Male		Female	
	N	%	N	%
Total	557		139	
Current depressed mood	285	51.2	99	71.2
Current mental health problem	190	34.1	89	64.0
Ever treated for mental illness	180	32.3	87	62.6
Alcohol problem	184	33.0	37	26.6
Other substance problem	142	25.5	35	25.2
Person left a suicide note	134	24.1	61	43.9
Disclosed intent to commit suicide	235	42.2	59	42.4
History of suicide attempts	115	20.6	56	40.3
Intimate partner problem	224	40.2	51	36.7
Other relationship problem	89	16.0	30	21.6
Other death of friend or family	60	10.8	23	16.5
Perpetrator of interpersonal violence	61	11.0	2	1.4
Recent criminal or legal problem	118	21.2	13	9.3
Crisis in the past 2 weeks	117	21.0	37	26.6
Financial problem	91	16.3	14	10.1
Physical health problem	153	27.5	47	33.8
Job problem	81	14.5	15	10.8

Homicide Circumstance	Male		Female	
	N	%	N	%
Total	223		59	
Precipitated by another crime	34	15.2	10	16.9
First other crime in progress	20	9.0	6	10.2
Victim assisting a crime victim	6	2.7	1	1.7
Victim was a bystander	5	2.2	4	6.8
Argument over money/property	24	10.8	3	5.1
Other argument/abuse/conflict	99	44.4	19	32.2
Intimate partner violence	12	5.4	22	37.3
Jealousy	7	3.1	3	5.1
Drug involvement	38	17.0	4	6.8
Gang related	24	10.8	0	0.0
Brawl (mutual physical fight)	14	6.3	3	5.1