Clark County Vital Statistics Reports

Volume 2 July, 2013

Poisoning deaths in Southern Nevada

Abstract

Objective: This report examines the mortality burden from drug and non-drug poisonings as well as drug-induced causes in Clark County for available data years from 2000 through 2011.

Methods: Information reported on death certificates including causal mechanisms and injury intent is presented according to the external cause of injury mortality matrix for ICD–10. Contributing causes are evaluated using a taxonomy adapted from that developed by the Safe States Alliance Injury Surveillance Workshop. Demographic, temporal and geographic trends pertaining to poisoning mortality in Clark County are presented and interpreted where applicable.

Results: The number of fatal poisonings in Clark County nearly doubled over the past decade, from 692 deaths in 2000-2002 to 1,307 deaths in 2009-2011. Surpassing firearm injuries as the leading cause of injury deaths in the county, poisoning accounted for 38% of all injury deaths in 2009-2011, compared with 25% in 2000-2002. Accidental or unintentional poisonings accounted for more than 80% of poisoning deaths in 2009-2011, and more than half of the unintentional injury deaths in the same period. Significant increases over time in age-adjusted mortality rates (AjR) for drug-induced (DI) causes were observed for both males and females, with the highest rates occurring in 45 to 54-year-olds. In 2009-2011, White residents accounted for 80% of all DI deaths, and had 1.55 times (95% CI: 1.41-1.69) the AjR of the general resident population. Over the past decade, DI premature mortality rates also increased significantly for the White, Black and Hispanic populations. More than 8 out of 10 DI deaths involved opioids or other narcotics, and close to two-thirds of DI deaths involved opioid analgesics. Males comprised the majority of DI deaths involving selected substances in general; however, females comprised 56% of DI deaths involving synthetic narcotics (excluding methadone). Among other drugs contributing to overdose deaths, sedatives in the benzodiazepine family were involved in 24% of DI deaths, and psychostimulants with abuse potential in 13%. Drug combinations such as opioids or other narcotics and benzodiazepines were mentioned in 22% of DI deaths, and concomitant use of other CNS depressants besides benzodiazepines, like alcohol, was mentioned in 9% of DI deaths. Compared with the nation, age-adjusted drug poisoning (DP) death rates were about 70% higher in the county, and higher mortality risks from DP were observed across all age-gender subgroups. In addition, the mortality burden from non-DP increased in recent years. While the highest mortality rates from non-DP causes occurred among those aged 45-54 in the nation, rates tended to be higher among residents aged 35-44 than other age groups in the county, particularly for deaths from exposure to toxic gases/vapors.

Data sources

This report examined the Nevada State Health Division vital records systems' mortality files (i.e. death certificates) to present current patterns in fatal poisonings among Clark County residents. At the time the report was prepared, mortality data for Clark County residents (at time of death) that incorporated late and out-of-state registrations and were complete with resolved cause of death information were available for deaths that occurred in years prior to 2011. Mortality statistics included in this report for deaths that occurred in 2011 were based on preliminary vital registration files, at the close of which causes of death requiring lengthy investigations (e.g. poisoning) typically remain pending/unavailable. Where applicable, contemporary national trends in poisoning burden were presented to provide contextual information. National findings were derived from aggregate data obtained from the Underlying and Multiple Cause of Death Files (UMCDF) 1999-2010, using the CDC WONDER Online Database (released 2012). Mortality rates at both the county and national-level were calculated using population denominator data from the post-censal bridged-race vintage series 2010 and 2011 (released 5/31/2012 and 7/18/2012 by the National Center for Health Statistics [NCHS]). Zip code (residence) level rate computations used Las Vegas Perspective 2010-2011 population estimates.

Methods

Algorithms for identifying poisoning and drug-induced deaths

Poisoning deaths include injury deaths resulting from unintentional or intentional overdose of legal or illegal drugs as well as those due to exposure to other toxic substances (e.g. alcohol), gases or vapors. Deaths attributed to medical conditions (excluding acute intoxication) caused by dependent and nondependent use of drugs, alcohol, and/or by exposure to other substances were not considered poisoning in this analysis. This conceptual framework is consistent with that adopted by the NCHS for examining external causes of injury mortality.[1] Determination of poisoning deaths was based on the underlying cause of death (UCD), defined by the World Health Organization (WHO) as "the disease or injury that initiated the train of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury."[2] Cause-of-death coding including UCD selection was implemented by computerized procedures developed by the NCHS in accordance with the WHO rules. When more than one cause or condition is entered by the certifying physician in the cause-of-death section (Part I) of the death certificate, underlying cause is determined by the sequence of conditions on the certificate.[3] Classification of poisoning deaths into drug/non-drug and intent subcategories employed algorithms illustrated in Table 1.

Table 1. ICD-10 coded poisoning death subcategories

Underlying Cause Codes* by injury intent and type of poison†	Unintent-ional	Self harm/ suicide	Assault/ homicide	Legal Interventi-on/ Operation of War	Undeter-mined Intent	Contributing Cause Codes**: Drug and Other Non-venom, Non-foodborne Poisoning
DRUG	X40-X44	X60-X64	X85	…	Y10-Y14	*T36-T50.9*
Nonopioid analgesics	X40	X60	…	…	Y10	*T39*
4-Aminophenol derivatives	…	…	…	…	…	*T39.1*
Antiepileptic, sedative-hypnotic, anti-Parkinsonism, antidepressant, and other psychotropic drugs, not elsewhere classified	X41	X61	…	…	Y11	*T42, T43*
Benzodiazepines	…	…	…	…	…	*T42.4*
Methamphetamines and other psychostimulants with abuse potential	…	…	…	…	…	*T43.6*
Anticoagulants	…	…	…	…	…	*T45.5*
Narcotics and psychodysleptics not elsewhere classified	X42	X62	…	…	Y12	*T36-T38.9, T40 (.0-.9), T41, T44, T45 (.0-.4), T45 (.6-.9), T46-T50.8*
Opiates/opioids	…	…	…	…	…	*T40(.0-.4)*
Heroin	…	…	…	…	…	*T40.1*
Pharmaceutical opioids	…	…	…	…	…	*T40.0, T40 (.2-.4)*
Methadone	…	…	…	…	…	*T40.3*
Cocaine	…	…	…	…	…	*T40.5*
Other and unspecified narcotics	…	…	…	…	…	*T40.6*
Other drugs acting on the autonomic nervous system	X43	X63	…	…	Y13	…
Drugs not elsewhere classified or unspecified	X44	X64	X85	…	Y14	*T50.9*
NON-DRUG	X45-X49	X65-X69	X86-X90	…	Y15-Y19	*T51-T60, T65*
Alcohol	X45	X65	…	…	Y15	*T51*
Ethanol	…	…	…	…	…	*T51.0*
Organic solvents, and halogen derivatives of aliphatic and aromatic hydrocarbons	X46	X66	…	…	Y16	*T52, T53*
Other gases and vapors (including carbon monoxide)	X47	X67	…	…	Y17	*T58, T59*
Carbon monoxide	…	…	…	…	…	*T58*
Other specified non-drugs	X48	X68	X86-X89	…	Y18	*T54-T57,T60, T65(.0-.8)*
Other nondrugs not elsewhere classified or unspecified	X49	X69	X90	…	Y19	*T65.9*
UNSPECIFIC TYPE OF POISON	…	…	*U01(.6-.7)	Y35.2	…	
ALL TYPES OF POISON	X40-X49	X60-X69	X85-X90, *U01(.6-.7)	Y35.2	Y10-Y19	*T36-T60, T65*

Source: Adapted from the Safe States Alliance Injury Surveillance Workshop Poisoning Matrix for ICD-10 Coded Mortality Data. Available from http://safestates.org/associations/5805/files/ISW7 Appendix B1.pdf

* This set of columns includes the ICD-10 codes that are used to code the underlying cause of death.

† Only selected classes of drugs and nondrugs are shown in the table. Classes were chosen based on their public health importance. For example, 4-aminophenol derivatives such as acetaminophen are not the only class of nonopioid analgesics in use, but the other classes are involved in fatal poisonings less frequently. Similarly, many classes of gases and vapors are involved in poisoning deaths, but none as frequently as carbon monoxide. ICD codes associated with radiation exposure and disease are not included as they lack information as to whether the source of the radiation is incorporated into the body.

** Codes selected to indicate contributing causes included on death certificates. Codes in this column are used to identify the type of poison involved but not the intent of the poisoning. They cannot be used to identify the underlying cause of death.

To fully capture the mortality burden from drug overdoses including those attributed to drug dependence/addiction, a broader category of drug-induced deaths was also examined. Drug-induced causes encompass drug poisoning as well as medical conditions caused by dependent and nondependent use of medically prescribed and other drugs (e.g. drug dependence or psychoses and other mental or behavioral disorder). Excluded from this category are injury deaths indirectly related to drug use, as well as newborn deaths due to the mother's drug use. Identification of drug-induced deaths was based on the most recent list of ICD codes comprising drug-induced causes adopted by the NCHS (the list of ICD codes included in drug-induced causes was expanded in data year 2003 and 2006 by the NCHS to be more comprehensive[4]). Full codes and terms for drug-induced causes are provided in Appendix A.

Of note is that the discontinuation of acute intoxication codes used for mental and behavioral disorders due to psychoactive substance use, i.e. ICD-10 codes [F10-F19](.0), may have caused these deaths to be increasingly assigned poisoning by drugs or non-drugs as the UCD from 2007 onwards

(these rule changes were implemented by the NCHS in 2007 and 2009[5,6]). However, given the small number of deaths from acute mental/behavioral disorder-related intoxications in Clark County prior to 2007 (data not shown), the increase in poisoning deaths that resulted from such coding changes was likely small. This suggests that the temporal trends in poisoning deaths were genuine and not simply an artifact of the coding changes.

Multiple causes of death classification

Medical information pertaining to substance(s) that were present at the time of death, the determination of which often requires toxicological lab tests at autopsy (autopsy was performed in more than 90% of poisoning deaths in Clark County), is reported on the significant-conditions-contributing-to-death section (Part II) of the death certificate. Given that substances reflected in the contributing causes may not be directly related to the UCD, the contributing causes data as reported here were based solely on deaths with poisoning or drug-induced cause coded as the UCD. Type of substance(s) involved in these fatalities was classified according to the contributing cause codes structure outlined in Table 1. Up to 20 multiple causes (including both UCD and contributing causes) are allowed on each death certificate; as such, deaths grouped by contributing causes (i.e. specific substances or classes of substances involved) may yield a summary total greater than the actual number of deaths.

Statistical methods and other considerations

Statistical methods were primarily descriptive and consisted of calculations of frequencies and rates. To facilitate comparisons of various indicator estimates over time and between groups, 95% confidence intervals (CI) were calculated and presented, which express the precision of point estimates (or the uncertainty around estimates). As an informal statistical test, the difference between two point estimates is considered significant at the 5% level of statistical significance if their respective CIs do not overlap. Results based on rare events were suppressed due to reliability and/or confidentiality constraints. Methods specific to selected indicators are described in Box 1.

In keeping with traditions in the epidemiologic and surveillance literature, age-adjusted or standardized rates were provided where applicable to aid comparisons of mortality risks across groups and over time. Since these artificial rates assume a hypothetical age structure (that of the standard population), they do not represent the actual mortality experience of the study population. As such, crude rates (CdR) were also presented and examined for age-specific trends. Other subpopulations considered in this analysis include those defined by gender, race/ethnicity (non-Hispanic White [NHW], non-Hispanic Black [NHB], non-Hispanic American Indian or Alaskan Native [NHAIAN], non-

Hispanic Asian or Pacific Islander [NHAPI], and Hispanic [HISP]) and geographic stratum (zip code of residence).

It is worth noting that the UMCDF (in aggregate form) is an additional source of information on poisoning and drug-related deaths in the county. While there is a close correspondence between the national UMCDF and state mortality databases, there is no complete correspondence in death counts based on the two databases. The discrepancy is mainly due to the state vital records systems having an earlier closing date than the national systems, so that the state systems are no longer updated following the completion of normal processing of vital records registered in a particular calendar year, whereas subsequent registration amendments including late/delayed registrations are still allowed in the national systems. Because the report primarily used mortality files from the state vital records systems, and a small portion of delayed or amended registrations are routinely omitted from these files while still being captured in the national databases, the disparities in poisoning-related deaths between the county and the nation are probably greater than reported here.

Box 1. Methods for selected indicators

Age-specific mortality rate — computed as the number of deaths among persons in a specific age group and time period divided by the population of all residents in that same age group and time period.

Age-adjusted mortality rate (AjR) — an artificial measurement computed as the weighted average of the age-specific death rates where the weights are the standard population proportions by age. This direct adjustment method removes the potential confounding of mortality risks due to age heterogeneity across groups and over time. Calculation of the standard error of the AjR was based on Chiang's formula: [7,8]

$$\sqrt{\sum_{i=1}^{10}\left(\frac{P_i}{\sum_i P_i}\right)^2 * \frac{d_i}{{P_i}^2}}$$

where index i represents 10 age groups ranging from ages 0 to 85+ years and d_i is the number of deaths for the ith age group in the study population; P_i is the number of persons in age group i in the standard or reference population. The reference population adopted in this analysis was the July 1, 2000 bridged-race intercensal national population estimates (population distributions by age provided in Appendix B).

Standardized mortality rate ratio (SMRR) — computed as the ratio between two directly age-adjusted mortality rates. It represents the relative mortality risk across comparison groups. Calculation of the CI of the SMRR was based on Smith's formula:[9]

$$(AjR_1/AjR_2)^{1\pm\left({}^{z_{\alpha/2}}/_{X}\right)}$$

where $X = \frac{(AjR_1 - AjR_2)}{\sqrt{(s.e.(AjR_1)^2 + s.e.(AjR_2)^2}}$, $s.e. = standard\ error$, and $z_{\alpha/2} = 1.96$ (at the 95% level).

Years of potential life lost (YPLL) rate — calculated as person-years lost for a given time period divided by the total population for that period in which these deaths occurred. The YPLL rate (per population or person-years) illustrates premature mortality, i.e. life lost when death occurs before the predicted life expectancy (life expectancy was estimated from two-year aggregated population and mortality data for each race/ethnicity, using the Chiang methodology[10]). The standard error of YPLL was calculated as:

$$\frac{\sqrt{\sum_{i=1}^{10} {d_i}^2 * var.(e_i)}}{\sum_{i=1}^{10} p_i}$$

where index i represents 10 age groups ranging from ages 0 to 85+ years and d_i is the number of deaths (from all causes or a specific cause) for the ith age group in the study population; $var.(e_i)$ is the variance of the predicted life expectancy for persons in age group i; p_i is the number of persons in age group i in the study population.

Results and discussion

Poisoning deaths

The number of fatal poisonings in Clark County nearly doubled over the past decade, from 692 deaths in 2000-2002 to 1,307 deaths in 2009-2011 (4,041 poisoning deaths registered in 2000-2011). Surpassing firearm injuries as the leading cause of injury deaths in the county, poisoning accounted for 38% of all injury deaths in 2009-2011, compared with 25% in 2000-2002; whereas those due to firearm injuries fell from 27% to 22% over the same period. At a crude rate of 22.4 deaths per 100,000 person-years in 2009-2011, poisoning mortality (1,307 deaths) was nearly twice the mortality from firearm injuries (775 deaths; 13.3 per 100,000) and more than three times that from motor vehicle traffic accidents (425 deaths; 7.3 per 100,000). Whereas the majority of firearm deaths comprised suicides, accidental or unintentional poisonings accounted for more than 80% (1,051 deaths) of poisoning deaths in 2009-2011, and more than half of the unintentional injury deaths in the same period (2,051 accident deaths in 2009-2011 compared with 1,482 deaths in 2000-2002).

Poisoning is a known cause of premature mortality, accounting for nearly one in four deaths among residents aged 25-34 years in 2007-2011 (Figure 1). The median/mean age among male poisonings at time of death was 44/42.5 years respectively in 2010-2011 (533 deaths), compared with 45/45.2 years among female poisonings in the same period (357 deaths). Males and females aged 25-54 accounted for more than two thirds of gender-specific poisoning deaths in 2010-2011, but only 17% and 12% of all-cause gender-specific deaths respectively.

Poisoning generally accounted for higher proportions of mortality among NHWs than other racial and ethnic groups, with one in three deaths among NHWs aged 25-34 attributed to poisoning in 2007-2011. At the population level, years of potential life lost (YPLL) from poisoning were significantly higher for NHWs and NHAIANs than other race/ethnicities—estimated at 14.1 and 15 per 1,000 in 2010-2011 respectively; the YPLL rates have also risen steadily for most racial/ethnic groups over the past decade (Figure 2). Relative to NHWs and NHBs and on average, poisoning death tended to occur at an earlier age among HISPs (Figure 3) and other racial minorities (data not shown). In 2010-2011, the median/mean age at time of poisoning death was 45/44.6, 44/41.8 and 35/38.7 years among NHWs (690 deaths), NHBs (80) and HISPs (95) respectively.

The largest proportions of poisoning deaths were accidental poisonings for both males and females, at 82% (622 deaths in 2009-2011) of all poisoning deaths in males (763) and 79% (429) in females (544).

In the same period, suicides accounted for 17% (129) of poisoning deaths in males and 20% (110) in females. Among racial/ethnic groups, 79% (813) of poisoning deaths in NHWs (1030), 89% (101) in NHBs (113), and 87% (111) in HISPs (127) were accidental, whereas 20% (203), 9% (10), and 12% (15) in NHWs, NHBs and HISPs were suicides respectively. The most common subtypes of fatal poisoning were unintentional drug poisonings (DP) involving opioid analgesics (accounting for the majority of poisoning deaths), followed by unintentional DPs involving drugs other than opioid analgesics, suicide/self-harm DPs, and non-drug poisonings (Figure 4).

Drug-induced deaths

There were 3,856 drug-induced (DI) deaths in Clark County from 2000-2011, including 3,790 DPs (98%) and 66 drug abuse and/or dependence deaths (2%). Males comprised the majority of fatal drug overdoses, with the number of male deaths increasing by 68% from 418 in 2000-2002 to 704 in 2009-2011, whereas the equivalent number of female deaths more than doubled over the same period, from

Box 2. Drug categories commonly associated with fatal poisonings or drug-induced deaths

Narcotics — opioid analgesics and related compounds including both licit pharmaceutical substances and illicit drugs (e.g. heroin, opium, cocaine), which in moderate doses dull the senses, induce drowsiness and relieve pain but may cause coma, hallucinations, convulsions or death if doses are excessive.

Opiates/opioids — compounds or drugs that bind to receptors in the brain involved in the control of pain and other functions, including opium-derived or semi-synthetic analgesics such as morphine, codeine, hydrocodone (Vicodin®), and oxycodone (OxyContin®, Percocet®); synthetic narcotics such as methadone (a legal substitute for heroin in opioid addiction treatment programs), fentanyl, propoxyphene, and meperidine; and related narcotics such as heroin. Serious health risks including overdose may result from opioid misuse. While opioids are typically abused due to their euphoria-producing property, misuse can also include taking opioid drugs concomitantly with substances that depress the central nervous system (CNS) (e.g. barbiturates, benzodiazepines, alcohol, antihistamines, or general anesthetics), which increases the risk of life-threatening respiratory depression.

Sedatives/hypnotics — CNS depressants that slow CNS function, suppress anxiety, and promote sleep, including benzodiazepines (e.g. diazepam [Valium®], alprazolam [Xanax®] , triazolam and estazolam), barbiturates, and other types of CNS depressants (e.g. non-benzodiazepine sedatives such as zolpidem [Ambien®], eszopiclone [Lunesta®] and zalepon [Sonata®]). Adverse effects associated with sedative use and abuse may include physical dependence and withdrawal, which can lead to life-threatening complications. Typically, depressants should not be combined with other substances that depress the CNS (e.g. opioid analgesics, alcohol, antihistamines, and certain OTC cough suppressants), given the potential health risks posed including suppression of brain activities and respiration as well as cardiovascular failure.

Stimulants — psychotropic drugs that facilitate the activity of the central or peripheral nervous systems (e.g. through enhancing the effects of key brain neurotransmitters such as monoamines), thereby increasing alertness, attention, and endurance, as well as elevating respiration, heart rate and blood pressure. When used appropriately in medical treatment, stimulants increase mental and/or physical functions. However, some stimulants with abuse potential (e.g. amphetamines) are known to cause elevated mood and euphoria, as well as rebound fatigue, anxiety and depression. Whereas dependence/addiction often leads to psychiatric and psychosocial deterioration, excessive doses can affect body temperature, heart rhythm, and cause cardiovascular complications such as heart failure or seizures.

234 to 522. Significant increases over time in age-adjusted mortality rates (AjR) were observed for both males and females, with the highest DI mortality rate occurring in 45 to 54-year-olds. In 2009-2011, NHW residents accounted for 80% of all DI deaths, and had 1.55 times (95% CI: 1.41-1.69) the AjR of the general resident population; NHW males also had the highest DI mortality rate of all race-gender subgroups not affected by data suppression rules, followed by NHW/NHB females and NHB/HISP males (Table 2). As with poisonings, rates of premature mortality from drug overdoses tended to be higher among NHWs and NHAIANs (at 13.3 and 12.3 YPLL per 1,000 respectively in 2010-2011, compared to 7 and 3.8 YPLL per 1,000 among NHBs and HISPs respectively during the same period); DI premature mortality rates also increased significantly for NHW, NHB and HISP residents between 2000-2001 and 2010-2011 (data not shown).

Table 2. DI deaths by selected characteristics, Clark County-NV, 2000-2011

	2000-2002					2003-2005					2006-2008					2009-2011				
Characteristics	**N**	**CdR**	**AjR**	**95% CI***	**%**	**N**	**CdR**	**AjR**	**95% CI***	**%**	**N**	**CdR**	**AjR**	**95% CI***	**%**	**N**	**CdR**	**AjR**	**95% CI***	**%**
All	652	14.93	14.95	13.79-16.1		889	18.04	18.16	16.96-19.36		1,089	19.83	19.81	18.63-20.99		1,226	21.05	20.76	19.59-21.94	
Age groups (15+ years)																				
15-24	39	6.95	--	4.77-9.13	6.0%	84	13.40	--	10.53-16.26	9.4%	114	16.13	--	13.17-19.09	10.5%	128	16.79	--	13.88-19.7	10.4%
25-34	103	14.77	--	11.92-17.62	15.8%	147	19.01	--	15.93-22.08	16.5%	194	22.41	--	19.26-25.56	17.8%	204	22.99	--	19.84-26.15	16.6%
35-44	209	30.24	--	26.14-34.33	32.1%	253	33.37	--	29.26-37.48	28.5%	250	30.27	--	26.52-34.03	23.0%	269	31.57	--	27.8-35.34	21.9%
45-54	209	36.54	--	31.58-41.49	32.1%	270	41.90	--	36.9-46.9	30.4%	330	45.76	--	40.82-50.7	30.3%	360	46.06	--	41.3-50.81	29.4%
55-64	50	11.92	--	8.61-15.22	7.7%	90	17.68	--	14.03-21.34	10.1%	141	24.53	--	20.48-28.57	12.9%	196	30.56	--	26.28-34.84	16.0%
65+	40	8.58	--	5.92-11.24	6.1%	38	7.26	--	4.95-9.57	4.3%	56	9.80	--	7.23-12.37	5.1%	65	9.87	--	7.47-12.27	5.3%
Gender																				
Male	418	18.84	18.88	17.05-20.72	64.1%	540	21.57	21.56	19.73-23.4	60.7%	676	24.16	23.94	22.12-25.75	62.1%	704	23.92	23.41	21.67-25.15	57.4%
Female	234	10.90	10.94	9.54-12.35	35.9%	349	14.41	14.55	13.01-16.08	39.3%	413	15.34	15.41	13.92-16.91	37.9%	522	18.12	17.97	16.42-19.53	42.6%
Race/ethnicity																				
White(NHW)	551	20.90	19.79	18.13-21.46	84.5%	730	25.95	25.06	23.22-26.91	82.1%	881	30.17	28.88	26.94-30.82	80.9%	981	33.77	32.09	30.03-34.15	80.0%
Black(NHB)	56	13.60	14.75	10.86-18.63	8.6%	77	16.31	16.79	13.03-20.55	8.7%	103	18.95	19.59	15.8-23.39	9.5%	107	17.29	17.68	14.31-21.05	8.7%
Native(NHAIAN)	7	23.33	21.00	5.39-36.61	1.1%	11	31.25	29.23	11.9-46.56	1.2%	9	21.96	21.16	7.28-35.05	0.8%	8	22.25	20.41	6.16-34.66	0.7%
Asian(NHAPI)	X	X	X	X-X	0.3%	12	3.31	3.10	1.33-4.86	1.3%	14	3.09	2.87	1.33-4.4	1.3%	21	3.79	3.44	1.96-4.93	1.7%
Hispanic(HISP)	33	3.29	3.98	2.48-5.49	5.1%	57	4.58	5.00	3.62-6.38	6.4%	76	4.96	5.80	4.4-7.19	7.0%	109	6.37	7.05	5.64-8.46	8.9%
Age or race within gender																				
Male																				
15-24	26	8.92	--	5.49-12.35	6.2%	54	16.52	--	12.12-20.93	10.0%	89	23.94	--	18.97-28.92	13.2%	92	23.31	--	18.54-28.07	13.1%
25-34	75	20.63	--	15.96-25.29	17.9%	102	25.36	--	20.44-30.28	18.9%	130	28.84	--	23.88-33.79	19.2%	128	28.10	--	23.23-32.97	18.2%
35-44	130	35.94	--	29.76-42.11	31.1%	160	40.32	--	34.07-46.57	29.6%	156	36.12	--	30.45-41.78	23.1%	147	33.42	--	28.02-38.82	20.9%
45-54	136	47.60	--	39.6-55.6	32.5%	153	47.30	--	39.8-54.79	28.3%	177	48.44	--	41.3-55.58	26.2%	196	49.21	--	42.32-56.1	27.8%
55-64	29	13.98	--	8.89-19.07	6.9%	51	20.48	--	14.86-26.1	9.4%	93	33.14	--	26.41-39.88	13.8%	115	36.83	--	30.1-43.57	16.3%
65+	22	10.12	--	5.89-14.35	5.3%	17	6.92	--	3.63-10.21	3.1%	30	11.21	--	7.2-15.22	4.4%	24	7.79	--	4.68-10.91	3.4%
White(NHW)	358	26.80	25.35	22.69-28	85.6%	438	30.75	29.67	26.85-32.48	81.1%	531	35.77	34.22	31.26-37.18	78.6%	561	37.91	35.86	32.81-38.91	79.7%
Black(NHB)	33	16.12	17.52	11.5-23.54	7.9%	44	18.79	19.52	13.73-25.32	8.1%	66	24.59	25.77	19.54-32.01	9.8%	53	17.24	17.11	12.48-21.73	7.5%
Native(NHAIAN)	X	X	X	X-X	X	10	58.64	55.30	20.95-89.64	1.9%	7	35.07	33.45	8.59-58.3	1.0%	X	X	X	X-X	X
Asian(NHAPI)	X	X	X	X-X	X	8	4.81	4.71	1.43-7.99	1.5%	10	4.80	4.59	1.71-7.47	1.5%	10	3.94	3.64	1.37-5.9	1.4%
Hispanic(HISP)	19	3.56	4.71	2.28-7.13	4.5%	38	5.74	6.26	4.11-8.41	7.0%	57	6.98	7.78	5.57-9.99	8.4%	76	8.59	8.59	6.58-10.59	10.8%
Female																				
15-24	13	4.82	--	2.2-7.45	5.6%	30	9.99	--	6.42-13.57	8.6%	25	7.46	--	4.54-10.39	6.1%	36	9.80	--	6.6-13	6.9%
25-34	28	8.39	--	5.28-11.49	12.0%	45	12.12	--	8.58-15.67	12.9%	64	15.42	--	11.65-19.2	15.5%	76	17.60	--	13.64-21.56	14.6%
35-44	79	23.98	--	18.69-29.26	33.8%	93	25.74	--	20.5-30.97	26.6%	94	23.87	--	19.04-28.69	22.8%	122	29.59	--	24.34-34.84	23.4%
45-54	73	25.50	--	19.65-31.34	31.2%	117	36.46	--	29.85-43.06	33.5%	153	43.01	--	36.19-49.82	37.0%	164	42.78	--	36.23-49.32	31.4%
55-64	21	9.90	--	5.67-14.14	9.0%	39	15.00	--	10.29-19.71	11.2%	48	16.31	--	11.7-20.92	11.6%	81	24.61	--	19.25-29.97	15.5%
65+	18	7.23	--	3.89-10.57	7.7%	21	7.56	--	4.33-10.79	6.0%	26	8.56	--	5.27-11.85	6.3%	41	11.70	--	8.12-15.28	7.9%
White(NHW)	193	14.83	14.07	12.07-16.08	82.5%	292	21.03	20.18	17.83-22.54	83.7%	350	24.39	23.22	20.74-25.69	84.7%	420	29.47	28.05	25.29-30.81	80.5%
Black(NHB)	23	11.12	12.02	7.09-16.94	9.8%	33	13.87	14.34	9.44-19.24	9.5%	37	13.45	13.84	9.37-18.31	9.0%	54	17.34	18.22	13.33-23.11	10.3%
Native(NHAIAN)	X	X	X	X-X	X	X	X	X	X-X	X	X	X	X	X-X	X	X	X	X	X-X	X
Asian(NHAPI)	X	X	X	X-X	X	X	X	X	X-X	X	X	X	X	X-X	X	11	3.66	3.24	1.3-5.19	2.1%
Hispanic(HISP)	14	2.98	3.31	1.47-5.15	6.0%	19	3.26	3.56	1.87-5.25	5.4%	19	2.65	3.48	1.85-5.12	4.6%	33	4.00	5.14	3.27-7.01	6.3%

Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Vintage 2010 for 2000-2009 and vintage 2011 for 2010-2011 bridged-race postcensal population estimates used as denominators.

Note: Data suppression applied if events<5 (denoted by X). Percentage breakdowns included records with key demographic information missing although their percentages were not displayed.

*Confidence intervals (CI) for age-specific rates or age-adjusted rates.

In 61% (40 deaths) of all drug abuse and/or dependence (i.e. non-poisoning) deaths registered in 2000-2011, only a general description was recorded on the death certificate (i.e. ICD-10 code F19 [.1-.9] assigned as UCD), indicating multiple drug toxicity and/or use of psychoactive substances not elsewhere classified or unspecified. Males accounted for the majority of these deaths (55%) as well as all DI non-poisoning deaths (56%).

According to available contributing cause-of-death data covering the 2007-2011 period, more than 8 out of 10 DI deaths involved opioids or other narcotics, and close to two-thirds of DI deaths involved opioid analgesics (Table 3). Males comprised the majority of DI deaths involving selected substances in general; however, females comprised 56% of DI deaths involving synthetic narcotics (excluding methadone). The proportion of DI deaths that involved opioid analgesics have tended to be higher

Table 3. DI deaths by select substances involved and characteristics, Clark County-NV, 2007-2011 combined

	Gender						Race/ethnicity (selected groups shown)									All	
	Male			Female			White(NHW)			Black(NHB)			Hispanic(HISP)				
Type of substance involved*	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col %	N	Row%	Col%	N	Col%
Natural and semi-synthetic opioid analgesics: No	625	60.0	53.7	417	40.0	51.6	812	77.9	51.4	108	10.4	61.0	93	8.9	55.7	1,042	52.9
Yes	**538**	**57.9**	**46.3**	**391**	**42.1**	**48.4**	**768**	**82.7**	**48.6**	**69**	**7.4**	**39.0**	**74**	**8.0**	**44.3**	**929**	**47.1**
Synthetic opioid analgesics excl. methadone: No	1,111	60.0	95.5	741	40.0	91.7	1,478	79.8	93.5	171	9.2	96.6	162	8.7	97.0	1,852	94.0
Yes	**52**	**43.7**	**4.5**	**67**	**56.3**	**8.3**	**102**	**85.7**	**6.5**	**6**	**5.0**	**3.4**	**5**	**4.2**	**3.0**	**119**	**6.0**
Methadone: No	945	59.0	81.3	656	41.0	81.2	1,273	79.5	80.6	148	9.2	83.6	138	8.6	82.6	1,601	81.2
Yes	**218**	**58.9**	**18.7**	**152**	**41.1**	**18.8**	**307**	**83.0**	**19.4**	**29**	**7.8**	**16.4**	**29**	**7.8**	**17.4**	**370**	**18.8**
***Opioid analgesics**: No*	*438*	*62.9*	*37.7*	*258*	*37.1*	*31.9*	*525*	*75.4*	*33.2*	*81*	*11.6*	*45.8*	*68*	*9.8*	*40.7*	*696*	*35.3*
Yes	***725***	***56.9***	***62.3***	***550***	***43.1***	***68.1***	***1,055***	***82.7***	***66.8***	***96***	***7.5***	***54.2***	***99***	***7.8***	***59.3***	***1,275***	***64.7***
Heroin: No	1,075	57.6	92.4	792	42.4	98.0	1,504	80.6	95.2	169	9.1	95.5	149	8.0	89.2	1,867	94.7
Yes	**88**	**84.6**	**7.6**	**16**	**15.4**	**2.0**	**76**	**73.1**	**4.8**	**8**	**7.7**	**4.5**	**18**	**17.3**	**10.8**	**104**	**5.3**
***Opiates/opioids**: No*	*362*	*59.4*	*31.1*	*247*	*40.6*	*30.6*	*463*	*76.0*	*29.3*	*75*	*12.3*	*42.4*	*51*	*8.4*	*30.5*	*609*	*30.9*
Yes	***801***	***58.8***	***68.9***	***561***	***41.2***	***69.4***	***1,117***	***82.0***	***70.7***	***102***	***7.5***	***57.6***	***116***	***8.5***	***69.5***	***1,362***	***69.1***
Cocaine: No	982	57.4	84.4	730	42.6	90.3	1,410	82.4	89.2	118	6.9	66.7	143	8.4	85.6	1,712	86.9
Yes	**181**	**69.9**	**15.6**	**78**	**30.1**	**9.7**	**170**	**65.6**	**10.8**	**59**	**22.8**	**33.3**	**24**	**9.3**	**14.4**	**259**	**13.1**
Other/unspecified narcotics: No	1,066	59.3	91.7	732	40.7	90.6	1,441	80.1	91.2	160	8.9	90.4	153	8.5	91.6	1,798	91.2
Yes	**97**	**56.1**	**8.3**	**76**	**43.9**	**9.4**	**139**	**80.3**	**8.8**	**17**	**9.8**	**9.6**	**14**	**8.1**	**8.4**	**173**	**8.8**
***Opioids/other narcotics**: No*	*214*	*58.8*	*18.4*	*150*	*41.2*	*18.6*	*291*	*79.9*	*18.4*	*28*	*7.7*	*15.8*	*33*	*9.1*	*19.8*	*364*	*18.5*
Yes	***949***	***59.1***	***81.6***	***658***	***40.9***	***81.4***	***1,289***	***80.2***	***81.6***	***149***	***9.3***	***84.2***	***134***	***8.3***	***80.2***	***1,607***	***81.5***
Benzodiazepines: No	897	60.2	77.1	594	39.8	73.5	1,188	79.7	75.2	142	9.5	80.2	121	8.1	72.5	1,491	75.6
Yes	**266**	**55.4**	**22.9**	**214**	**44.6**	**26.5**	**392**	**81.7**	**24.8**	**35**	**7.3**	**19.8**	**46**	**9.6**	**27.5**	**480**	**24.4**
Psychostimulants with abuse potential: No	999	58.4	85.9	712	41.6	88.1	1,370	80.1	86.7	164	9.6	92.7	137	8.0	82.0	1,711	86.8
Yes	**164**	**63.1**	**14.1**	**96**	**36.9**	**11.9**	**210**	**80.8**	**13.3**	**13**	**5.0**	**7.3**	**30**	**11.5**	**18.0**	**260**	**13.2**
Alcohol: No	1,026	58.1	88.2	739	41.9	91.5	1,411	79.9	89.3	159	9.0	89.8	149	8.4	89.2	1,765	89.5
Yes	**137**	**66.5**	**11.8**	**69**	**33.5**	**8.5**	**169**	**82.0**	**10.7**	**18**	**8.7**	**10.2**	**18**	**8.7**	**10.8**	**206**	**10.5**
***Opioids/other narcotics + benzodiazepines**: No*	*918*	*59.6*	*78.9*	*622*	*40.4*	*77.0*	*1,228*	*79.7*	*77.7*	*147*	*9.5*	*83.1*	*124*	*8.1*	*74.3*	*1,540*	*78.1*
Yes	***245***	***56.8***	***21.1***	***186***	***43.2***	***23.0***	***352***	***81.7***	***22.3***	***30***	***7.0***	***16.9***	***43***	***10.0***	***25.7***	***431***	***21.9***
***Opioids/other narcotics + psychostimulants**: No*	*1,086*	*59.3*	*93.4*	*746*	*40.7*	*92.3*	*1,465*	*80.0*	*92.7*	*170*	*9.3*	*96.0*	*154*	*8.4*	*92.2*	*1,832*	*92.9*
Yes	***77***	***55.4***	***6.6***	***62***	***44.6***	***7.7***	***115***	***82.7***	***7.3***	***7***	***5.0***	***4.0***	***13***	***9.4***	***7.8***	***139***	***7.1***
***Opioids/other narcotics + alcohol**: No*	*1,040*	*57.8*	*89.4*	*758*	*42.2*	*93.8*	*1,437*	*79.9*	*90.9*	*164*	*9.1*	*92.7*	*151*	*8.4*	*90.4*	*1,798*	*91.2*
Yes	***123***	***71.1***	***10.6***	***50***	***28.9***	***6.2***	***143***	***82.7***	***9.1***	***13***	***7.5***	***7.3***	***16***	***9.2***	***9.6***	***173***	***8.8***
All	1,163	59.0	100.0	808	41.0	100.0	1,580	80.2	100.0	177	9.0	100.0	167	8.5	100.0	1,971	100.0

Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Contributing cause codes specifying drugs and other toxic substances involved were not available prior to 2007 from the statewide vital records system.

Note: Row percentage breakdowns included records with key demographic information missing although their percentages were not displayed.

*Substance categories are not mutually exclusive. Deaths involving more than one category are counted multiple times. Note that alcohol is not a drug category although DI deaths involving alcohol are reported here. Natural and semi-synthetic opioid analgesics i.e. T40.2 include drugs such as morphine, oxycodone and hydrocodone; and synthetic opioid analgesics (excluding methadone) i.e. T40.4 include drugs such as fentanyl, propoxyphene and meperidine. Drug categories shown may include representative drug classes, rather than the full range of agents.

among NHWs, at 67% over the period 2007-2011, compared to 54% among NHBs and 59% among HISPs. Among other drugs contributing to overdose deaths, sedatives in the benzodiazepine family were involved in 24% of DI deaths, and psychostimulants with abuse potential such as the amphetamine-class stimulants (e.g. methamphetamines) in 13%. The role of benzodiazepines in DI deaths is unclear from multiple causes of death information though, since 99% of fatal drug overdoses during this period that involved benzodiazepines also involved another drug (when more than one substance is mentioned on the death certificate, it is not possible to tell which was primarily responsible for the death). Drug combinations such as opioids or other narcotics and benzodiazepines were mentioned in 22% of DI deaths, and concomitant use of other CNS depressants besides benzodiazepines, like alcohol, was mentioned in 9% of DI deaths.

Drug poisoning deaths

Demographic patterns

DP accounted for more than 90% of all poisoning deaths among residents, with males comprising the majority of DPs: there were 702 male and 521 female DP deaths registered in 2009-2011, a 70% increase for males since 2000-2002 (413 deaths) and a more than twofold increase for females (225). The age-adjusted DP death rates increased significantly over the same period, from 14.6 deaths per 100,000 in 2000-2002 to 20.7 per 100,000 in 2009-2011 (Figure 5). The pace of rise for AjR has been faster for females than males: rates for females increased 70% from 10.5 to 17.9 per 100,000 between 2000-2002 and 2009-2011, compared to 25% from 18.6 to 23.3 per 100,000 for males (Figures 6-7).

A NHW predominance was found among DP deaths, with NHWs comprising 80% of DP decedents (559 male and 419 female deaths in 2009-2011), NHBs 8.7% (53 and 54), and HISPs 8.9% (76 and 33). Between 2000-2002 and 2009-2011, age-adjusted DP death rates increased significantly by 65% from 19.4 to 32 per 100,000 for NHWs, and by 77% from 4 to 7.1 per 100,000 for HISPs; a non-significant increase of 27% in AjR was also observed for NHBs, from 14 to 17.7 per 100,000 (Figure 5). Similarly, standardized mortality rate ratios (SMRR) (calculated in reference to the age-adjusted, period-specific population DP death rates) increased steadily for NHWs and HISPs over the same period (Figure 8). In 2009-2011, SMRRs ranged from a low of 0.17 (95% CI: 0.14-0.2) for NHAPIs to a high of 1.54 (95% CI: 1.41-1.69) for NHWs. Additionally, NHW females had the largest percent increase in AjR of all race-gender subgroups for which there were sufficient data to report DP death rates, from 13.6 per 100,000 in 2000-2002 to 28 per 100,000 in 2009-2011 (Figures 6-7).

The distributional pattern of DP deaths in terms of median/mean age-at-death by gender or race/ethnicity was broadly in line with that of poisoning deaths, which showed that on average, males tended to die at a younger age from DP than females, and HISPs than NHWs or NHBs. Nevertheless, the rate of premature mortality from DP (expressed as YPLL due to DP per person-years, a measure of both the rate and prematurity of deaths) was substantially higher for the NHW population (13.3 per 1,000 in 2010-2011) than the general resident population (8.8 per 1,000) (Figure 9).

The proportion of deaths attributed to DP versus other causes tended to be higher among those with 9-11, 12, and 13-15 years of education (equivalents of some high school education but no diploma, high school graduate or GED, and some college but no degree) than among college or university graduates (e.g. DP was the UCD in 5% of decedents with 9-11years of education in 2007-2011, compared with 2% of decedents with 16 years of education or more). Not surprisingly, decedents with 9-11, 12, and 13-15 years of education comprised higher proportions of DP mortality than of mortality from all causes combined (14%, 50%, 19% of DP deaths, and 9%, 46%, 17% of all deaths in 2007-2011 respectively) (Figure 10). Nevertheless, college or university graduates accounted for higher proportions of DP deaths than of all-cause deaths that occurred at ages 75 years and over, as well as higher proportions of suicide DP deaths when compared with all-cause deaths.

Age-adjusted DP death rates were about 70% higher in the county than in the nation, and a greater-than-the-nation mortality risk from DP was observed across all age-gender subgroups (Figures 11-12). For males, DP death rates were about twice as high in the county as in the nation for ages 15-24 and 55 years and over; for females, the widest county-nation disparity in rates occurred in the age group 65 and over (a threefold difference). Overall, DP death rates increased with age, peaking in the 45 to 54 year old age group, and generally declined with age thereafter (Figure 13). Compared with the gender and age-specific trends for deaths from all causes combined in the 2009-2011 period, DP death rates for males aged 15-54 and females aged 15-64 exceeded proportionally adjusted rates for all causes of death combined, after which point they decreased relative to all-cause deaths (due to increases in death from other important causes in old age such as heart disease, cancer, stroke, and chronic lower respiratory diseases). Relative to proportionally adjusted rates by race/ethnicity for all-cause deaths, age-specific DP death rates declined after age 64 for NHWs and after age 54 for NHBs and HISPs (Figure 13).

Unintentional and self-harm drug poisoning deaths

In males, 85% (597 deaths) of DPs were unintentional and 13% (94) suicides, whereas the equivalent rates in females were 80% (417) and 19% (100) respectively in 2009-2011. For most racial/ethnic

groups, unintentional DPs accounted for higher proportions of DPs in 2009-2011 than in 2000-2002, increasing from 64% (347 deaths) of DPs in 2000-2002 to 81% (796) in 2009-2011 among NHWs, from 74% (39) to 93% (99) among NHBs, and from 70% (23) to 89% (97) among HISPs. In contrast, self-harm (suicide) DPs decreased from 22% (120 deaths) of DPs in 2000-2002 to 17% (169) in 2009-2011 among NHWs, from 17% (9) to 7% (7) among NHBs, and from 15% (5) to 10% (11) among HISPs.

Age-adjusted unintentional DP death rates rose significantly for both sexes, from 12.8 per 100,000 males and 6.2 per 100,000 females in 2000-2002, to 19.8 and 14.5 per 100,000 in 2009-2011 respectively. In males, unintentional DP death rates increased more than fivefold for those aged 55-64 from 5.3 deaths in 2000-2002 to 28.8 in 2009-2011 per 100,000, and more than threefold for those aged 15-24 from 6.9 to 21.5 per 100,000 (Figure 14). In females, significant increases in unintentional DP death rates occurred for most age groups, with 55 to 64-year-olds experiencing the largest percent increase in rates from 3.8 to 17.6 per 100,000 (fivefold), followed by 25 to 34-year-olds from 4.8 to 13.9 per 100,000 (threefold) and 45 to 54-year-olds from 15.4 to 36.8 per 100,000 (twofold). While deaths due to unintentional DP among males generally exceeded those among females, this gender trend was reversed in 2009-2011 for those aged 65 years and over, with higher death rates observed among females than among males in this age group (6.6 and 3.6 per 100,000 respectively). On the other hand, age-adjusted suicide DP mortality rates remained generally stable over the past decade (3.3 in 2009-2011 compared with 3.2 in 2000-2002 per 100,000), with AjRs increasing albeit non-significantly from 2.7 to 3.4 per 100,000 for females, while decreasing marginally from 3.7 to 3.2 per 100,000 for males during this period. Among age-gender subgroups, non-significant increases in suicide DP death rates were observed for females aged 25-34 and 55 years and over, and for males aged 55-64 (Figure 14).

Age-specific death rates measured across race/ethnicities and for the time period 2000-2011 showed a significantly higher risk of suicide DP among NHWs relative to NHBs and HISPs in almost every age group (Figure 15). While NHWs also tended to experience excess mortality across age groups from unintentional DP, the NHW and NHB rates for unintentional DPs became comparable after age 44, whereas the rate gap between NHWs and HISPs narrowed after age 64 (Figure 15).

Drug poisoning deaths involving specific substances[a]

Mortality from non-methadone opioid analgesics-related DPs showed an increasing trend in recent years

---

[a] *When multiple substance categories are mentioned on a death certificate, the death will be counted in multiple categories. Therefore the numbers of deaths involving specific substances cannot be added together to give meaningful summary totals as deaths involving multiple substances are counted multiple times. Likewise, the percentages of deaths involving different study substances do not sum to 1.*

(Figure 16). In 2008-2009, 48% (359 deaths) of DP deaths involved natural and semi-synthetic opioid analgesics and 6% (48) involved synthetic opioid analgesics (excluding methadone), compared with 51% (425) and 7% (54) in 2010-2011 respectively. The proportions of DP deaths involving benzodiazepines and of those involving psychostimulants with abuse potential also increased during this period, from 20% (149) and 12% (94) to 33% (273) and 15% (123) respectively. Meanwhile opposite temporal trends were observed for deaths involving methadone (a synthetic opioid substitute used to treat opioid dependency as well as pain) and for those involving cocaine, from 19% (145) and 15% (110) of DP deaths in 2008-2009, to 16% (135) and 9% (78) in 2010-2011 respectively, whereas the proportion of DP deaths involving heroin remained generally stable, at 5% (38 deaths in 2008-2009 and 40 in 2010-2011).

For DPs involving opioids or other selected substances, except heroin, mortality rates for county residents greatly exceeded comparable national rates (Figure 17). According to multiple causes of death information since 2010, AjRs for DPs involving natural and semi-synthetic opioid analgesics and for those involving benzodiazepines were more than twice greater, and for those involving psychostimulants more than four times greater for the county than for the nation. Rate differentials between the county and the nation were also observed for DP deaths involving synthetic narcotics and for those involving cocaine, albeit to a lesser extent. Whereas male rates far exceeded female rates for heroin, cocaine or psychostimulants-related DP deaths, the gender differences in AjR were less pronounced for DP deaths involving opioid analgesics and for those involving benzodiazepines (Figure 18). As was generally the case in poisoning deaths, NHW residents had the highest AjRs for DP deaths where selected substances were mentioned; a notable exception to the rule, however, was for cocaine-related DP deaths, which occurred almost twice as frequently among NHBs as among NHWs in recent years. Among age groups, fatal DPs involving opioids or other selected substances peaked in the 45-54 age group, with age-specific death rates declining after age 64 for DPs involving non-methadone synthetic narcotics, and after age 54 for those involving other drug types (that is, natural and semi-synthetic opioid analgesics, methadone, heroin or cocaine, benzodiazepines, or psychostimulants), when compared with proportionally adjusted rates for deaths from all causes combined (Figure 19).

The vast majority (>90%) of methadone, heroin, cocaine or psychostimulants-related DP mortality were unintentional overdoses in 2007-2011; by comparison, suicide poisoning was slightly over-represented in DP mortality associated with natural and semi-synthetic opioid analgesics, non-methadone synthetic narcotics, or benzodiazepines, accounting for 15% (136 deaths), 22% (26), and 19% (90) of fatalities involving respective substances (Figure 20). During the same period, 68% (1,086) of unintentional DP deaths (1,604 in 2007-2011) involved opioid analgesics, as did 53% (174) of suicide

DP deaths (328). A male predominance was found among unintentional DP deaths across commonly associated substance categories with the exception of non-methadone synthetic narcotics; in contrast, the majority of suicide DP deaths involving non-methadone opioid analgesics, benzodiazepines, or psychostimulants were female (Figure 21). With few exceptions such as in heroin or cocaine-related fatal poisonings, NHWs accounted for more than 80% of deaths in both unintentional and suicide DPs involving selected substances; and where opioid analgesics were involved, the majority of DP decedents were 35 to 54-year olds and 45 to 64-year-olds for unintentional and suicide poisonings respectively.

Non-drug poisoning deaths

Gases and vapors were the most common substances involved in non-drug poisoning (non-DP) fatalities, and together with alcohol[b], they were responsible for 7% (62 deaths) of poisoning deaths in Clark County in 2010-2011, compared to 5% (42) in 2008-2009 (Figure 4). Among non-DP deaths reported in 2008-2011, 11% were attributed to poisoning by organic solvents including halogen derivatives of aliphatic and aromatic hydrocarbons, 56% to other gases and vapors including carbon monoxide, and 31% to alcohol. Over the same period, mortality from exposure to toxic gases and vapors increased at a faster pace relative to those from alcohol poisoning (Figure 22). Whereas the majority of non-DP deaths in 2008-2011 were of suicidal intent, the bulk (88%) of alcohol poisonings were unintentional, and close to three-quarters of gases/vapors poisonings were suicides.

As was the case in the nation, age-adjusted non-DP death rates were considerably higher for male than female residents in the county across the mechanism of non-DP subcategories (Figure 23). While the highest mortality rates from non-DP causes occurred among those aged 45-54 in the nation, rates tended to be higher among residents aged 35-44 than other age groups in the county, particularly for deaths from exposure to toxic gases/vapors (Figure 23). Males accounted for three-quarters of non-DP deaths in Clark County in 2008-2011, although females comprised the majority of decedents aged 65 and over. In both males and females, the majority of non-DP deaths in this period occurred among 35 to 54-year-olds. In turn, non-DP was associated with a greater premature mortality burden than poisoning in general: the median/mean age was 39/42.5 years among non-DP decedents in 2010-2011 (38/40.3 and 41/48.1 years among male [45 deaths] and female [17] decedents respectively), compared with 44/43.6 years among all poisoning decedents. Over the period 2008-2011, 27% and 71% of non-DP deaths in

[b] *Alcohol poisoning data as presented here use the narrow definition of poisoning as an injury. This conceptual framework utilizes the external cause of injury mortality matrix for ICD–10 as discussed in the methods section. It does not encompass deaths from dependent and nondependent use of alcohol which fall into a broader category of alcohol-induced mortality.*

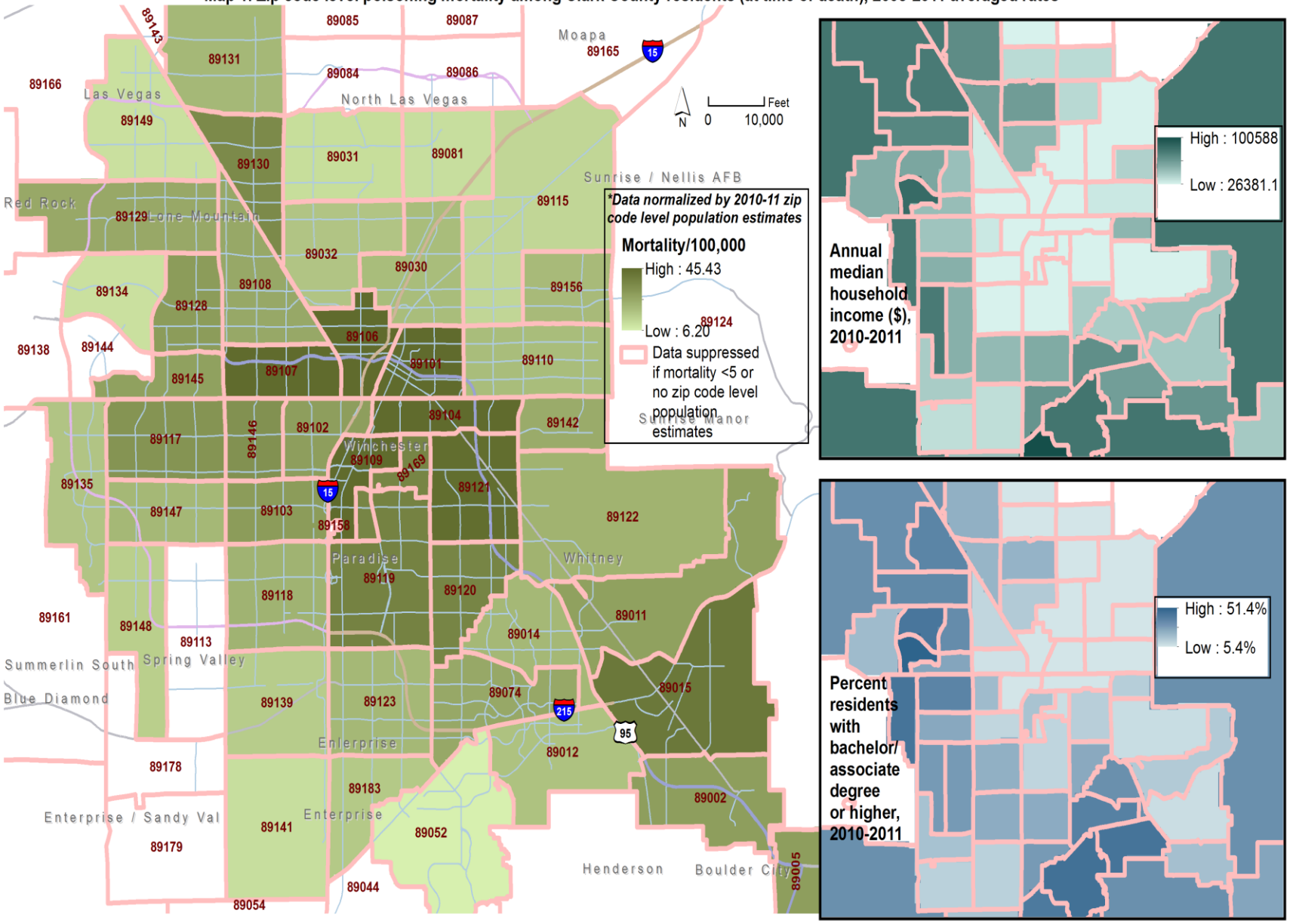
males were from alcohol and gases/vapors poisonings respectively, compared to 42% and 54% in females. Suicides accounted for over half of non-DP deaths in males, as opposed to unintentional poisoning in females.

NHW and HISP residents accounted for higher proportions of non-DP deaths (65% and 21% respectively in 2008-2011), and also had higher AjRs due to non-DP than other racial/ethnic groups (data not shown). The median/mean age at time of non-DP death was 42/44.1 years among NHW decedents in 2010-2011 (38 deaths), compared with 35/43.3 years among HISP decedents (13). Alcohol and gases/vapors poisonings accounted for 22% and 76% of non-DP deaths among NHWs in 2008-2011, compared to 64% and 32% of those among HISPs. At the same time, 34% and 65% of non-DP deaths in NHWs were of unintentional and suicidal intent respectively, compared to 77% and 18% in HISPs.

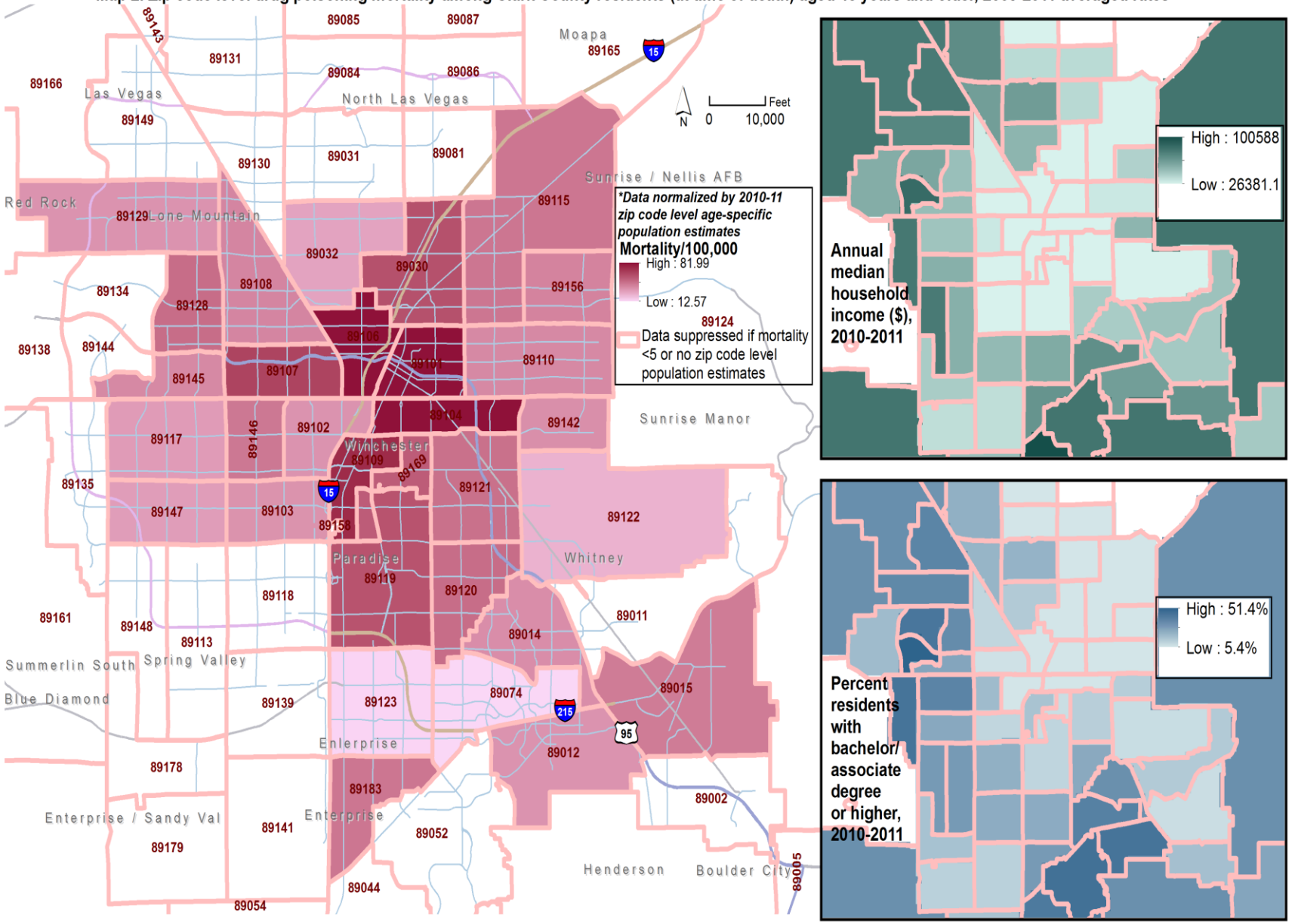
Geographic variations in poisoning deaths

As with most population health indicators, mortality outcomes need to be considered in their socio-economic and environmental settings which are often spatially structured. To this end, data on poisoning deaths and drug poisoning deaths (among those aged 45 years and over) were examined for spatial patterns using zip code as the enumeration area. The geographic breakdowns of these deaths are presented in maps 1-2.

Map 1. Zip code level poisoning mortality among Clark County residents (at time of death), 2008-2011 averaged rates*



Map 2. Zip code level drug poisoning mortality among Clark County residents (at time of death) aged 45 years and older, 2008-2011 averaged rates*



References:

1. NCHS. ICD–10: External cause of injury mortality matrix [online]. Available from: http://www.cdc.gov/nchs/injury/injury_matrices.htm

2. WHO. 2004. International statistical classification of diseases and related health problems, 10th rev. 2nd edition. Geneva: WHO.

3. NCHS. 2011. Deaths: Final data for 2008. National Vital Statistics Reports. 59(10). Available from http://www.cdc.gov/nchs/products/nvsr.htm.

4. NCHS. 2012. Deaths: Preliminary data for 2011. National Vital Statistics Reports. 61(6). Available from http://www.cdc.gov/nchs/products/nvsr.htm.

5. NCHS. 2011. Deaths: Leading causes for 2007. National Vital Statistics Reports. 59(8). Available from http://www.cdc.gov/nchs/products/nvsr.htm.

6. NCHS. 2011. Deaths: Final data for 2009. National Vital Statistics Reports. 60(3). Available from http://www.cdc.gov/nchs/products/nvsr.htm.

7. Keyfitz, N. 1966. Sampling variance of standardized mortality rates. Human Biology. 38: 309-17.

8. Chiang, CL. 1961. Standard error of the age-adjusted rate. Vital Statistics Special Reports. 47(9).

9. Smith, P. 1987. Comparison between registries: age-standardized rates. In: Muir, et al. Cancer incidence in five continents, vol. V. IARC Scientific Publication no 88. Lyon: IARC.

10. Chiang, CL. 1972. On constructing current life tables. Journal of the American Statistical Association. 67: 538-41.

Authors

Jing Feng, MS, Ph.Dc, John Middaugh, MD

Acknowledgements

The Community Health Division of the Southern Nevada Health District (SNHD) would like to thank the Nevada State Health Division for their management and maintenance of the vital records datasets used in this report. The report was prepared under the general direction of John Middaugh, Chief Health Officer of the SNHD, Tom Coleman, Director of the Community Health Division of the SNHD, and Nancy Williams, Medical Epidemiologist of the Office of Epidemiology of the SNHD.

Appendix A – List of ICD-10 codes comprising the drug-induced death category

D52.1 (drug-induced folate deficiency anemia); D59.0 (drug-induced hemolytic anemia); D59.2 (drug-induced nonautoimmune hemolytic anemia); D61.1 (drug-induced aplastic anemia); D64.2 (secondary sideroblastic anemia due to drugs and toxins); E06.4 (drug-induced thyroiditis); E16.0 (drug-induced hypoglycemia without coma); E23.1 (drug-induced hypopituitarism); E24.2 (drug-induced Cushing's syndrome); E27.3 (drug-induced adrenocortical insufficiency); E66.1 (drug-induced obesity); F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-18.9, F19.0-F19.5, F19.7-F19.9 (mental and behavioral disorders due to psychoactive substance use); G21.1 (other drug-induced secondary parkinsonism); G24.0 (drug-induced dystonia); G25.1 (drug-induced tremor); G25.4 (drug-induced chorea); G25.6 (drug-induced tics and other tics of organic origin); G44.4 (drug-induced headache, NEC); G62.0 (drug-induced polyneuropathy); G72.0 (drug-induced myopathy); I95.2 (hypotension due to drugs); J70.2-J70.4 (drug-induced interstitial lung disorders); K85.3 (drug-induced acute pancreatitis); L10.5 (drug-induced pemphigus); L27.0-L27.1 (skin eruption due to drugs and medicaments); M10.2 (drug-induced gout); M32.0 (drug-induced systemic lupus erythematosus); M80.4 (drug-induced osteoporosis with pathological fracture); M81.4 (drug-induced osteoporosis); M83.5 (other drug-induced osteomalacia in adults); M87.1 (osteonecrosis due to drugs); R50.2 (drug-induced fever); R78.1-R78.5 (finding of opiate drug / cocaine / hallucinogen / other drugs of addictive potential / psychotropic drug in blood); X40–X44 (accidental poisoning by and exposure to drugs, medicaments and biological substances); X60–X64 (intentional self-poisoning or suicide by and exposure to drugs, medicaments and biological substances); X85 (assault or homicide by drugs, medicaments and biological substances; and Y10–Y14 (poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent).

Appendix B – The standard population distributions

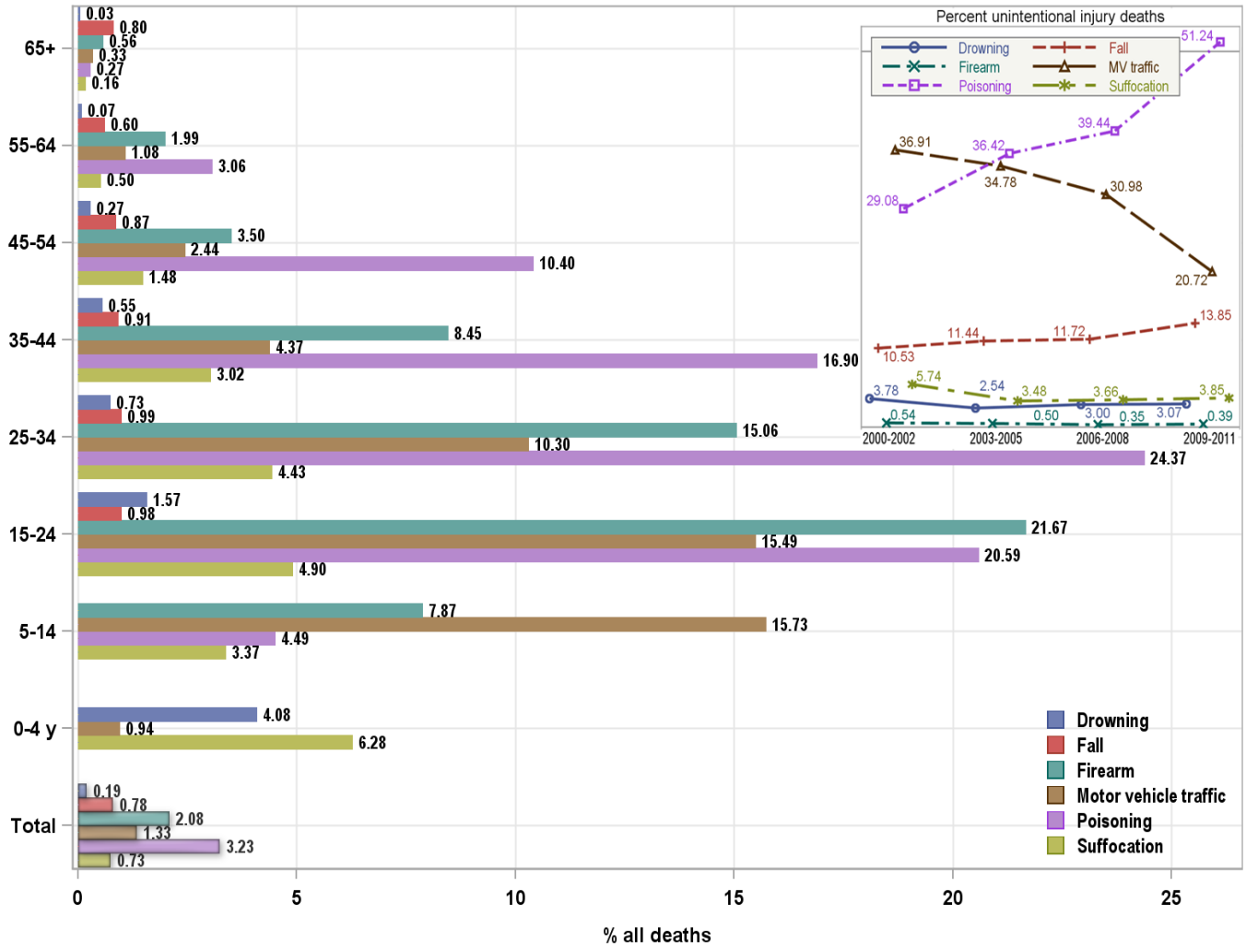
July 1, 2000 U.S. intercensal population estimates

Age group	Population estimates	Proportions
<5 years	19,178,293	0.067969
5-14	41,101,548	0.145666
15-24	39,411,622	0.139677
25-34	39,804,497	0.141069
35-44	45,168,843	0.160081
45-54	37,998,974	0.134671
55-64	24,429,066	0.086578
65-74	18,383,937	0.065154
75-84	12,423,159	0.044028
85+	4,262,472	0.015106
Total	**282,162,411**	**1**

Source: U.S. Census Bureau. National intercensal estimates (2000). Available from http://www.census.gov/popest/data/intercensal/national/nat2010.html

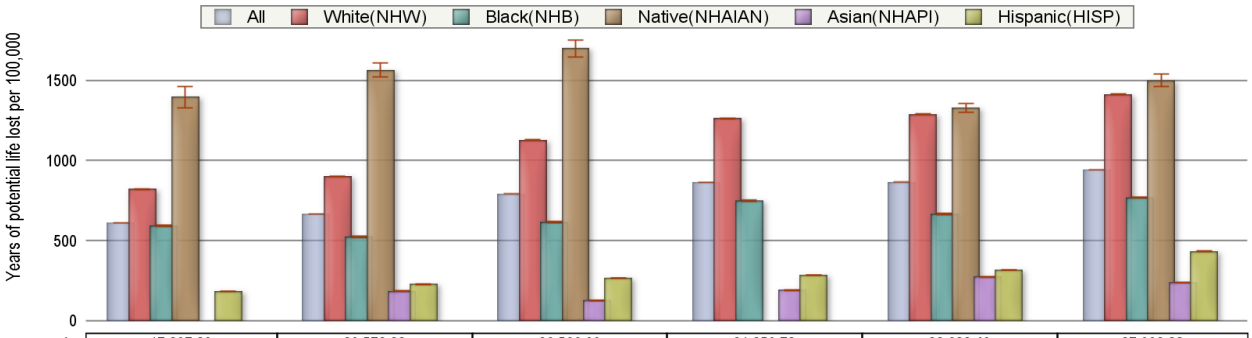
Appendix C – Figures

1) Percent deaths by select injury mechanism and age, Clark County-NV, 2007-2011 combined



Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death.
Note: Data suppression applied if events<5.

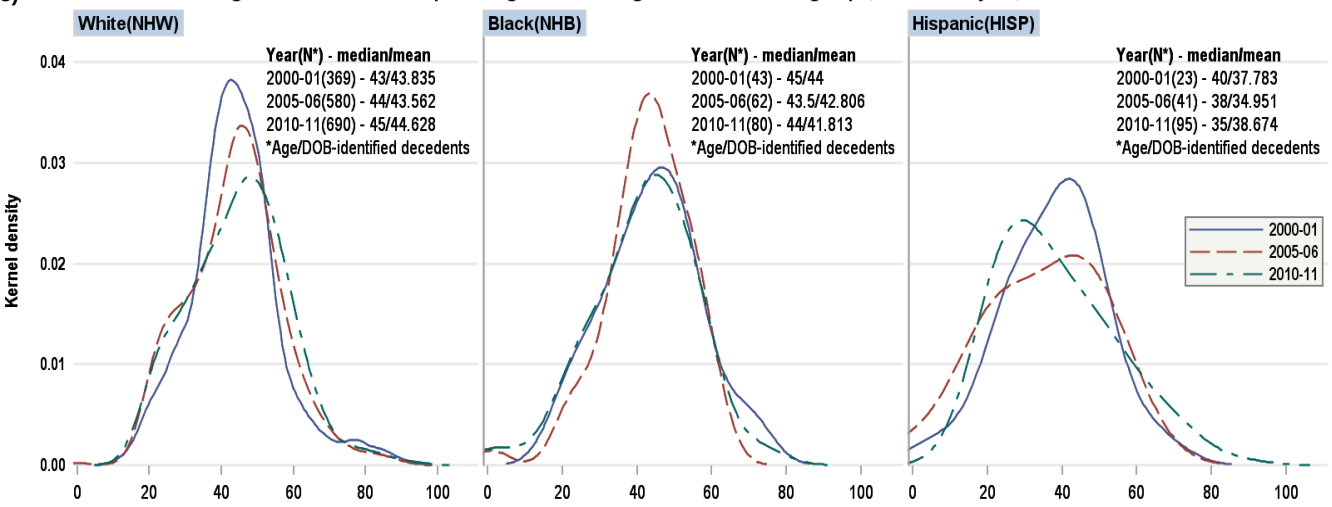
2) Years of potential life lost (YPLL) per 100,000 population from poisoning (X40–X49, X60–X69, X85–X90, Y10–Y19, Y35.2, U01[.6–.7]) by race/ethnicity, Clark County-NV, 2000-2011



	2000-2001	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011
YPLL(person-years)	17,397.89	20,572.28	26,566.09	31,250.78	32,683.49	37,002.88
Population*	2,850,204	3,088,156	3,354,076	3,613,525	3,777,174	3,923,902
YPLL per 100,000	610.41	666.17	792.05	864.83	865.29	943.01
95% LCL for YPLL rate	609.27	665.03	790.84	863.56	864.03	941.74
95% UCL for YPLL rate	611.55	667.30	793.26	866.09	866.55	944.28
YPLL-NHW	14,264.09	16,354.46	21,378.49	24,501.06	25,224.07	27,222.36
Population-NHW*	1,738,801	1,815,184	1,895,576	1,940,676	1,956,365	1,927,717
YPLL per 100,000	820.34	900.98	1,127.81	1,262.50	1,289.33	1,412.16
95% LCL for YPLL rate	818.51	899.12	1,125.70	1,260.20	1,287.01	1,409.63
95% UCL for YPLL rate	822.17	902.84	1,129.92	1,264.80	1,291.66	1,414.68
YPLL-NHB	1,587.00	1,529.75	1,985.68	2,669.96	2,517.48	3,295.14
Population-NHB*	268,299	292,425	323,001	356,308	377,709	428,429
YPLL per 100,000	591.51	523.13	614.76	749.34	666.51	769.12
95% LCL for YPLL rate	587.33	519.26	611.24	744.98	662.11	765.34
95% UCL for YPLL rate	595.68	527.00	618.28	753.70	670.91	772.90
YPLL-NHAIAN	270.67	339.03	410.54	X	377.21	325.32
Population-NHAIAN*	19,387	21,663	24,153	26,907	28,351	21,669
YPLL per 100,000	1,396.16	1,565.03	1,699.75	X	1,330.51	1,501.33
95% LCL for YPLL rate	1,328.43	1,520.24	1,646.71	X	1,302.78	1,463.78
95% UCL for YPLL rate	1,463.89	1,609.81	1,752.79	X	1,358.24	1,538.89
YPLL-NHAPI	X	394.30	315.41	557.74	881.98	933.71
Population-NHAPI*	181,280	213,923	251,381	294,127	323,327	390,548
YPLL per 100,000	X	184.32	125.47	189.63	272.78	239.08
95% LCL for YPLL rate	X	183.13	124.43	188.63	271.16	238.11
95% UCL for YPLL rate	X	185.51	126.51	190.63	274.40	240.04
YPLL-HISP	1,175.61	1,690.42	2,277.78	2,818.32	3,453.40	4,995.18
Population-HISP*	642,437	744,961	859,965	995,507	1,091,422	1,155,539
YPLL per 100,000	182.99	226.91	264.87	283.10	316.41	432.28
95% LCL for YPLL rate	181.92	225.77	263.73	281.89	315.04	430.82
95% UCL for YPLL rate	184.07	228.06	266.00	284.31	317.79	433.75

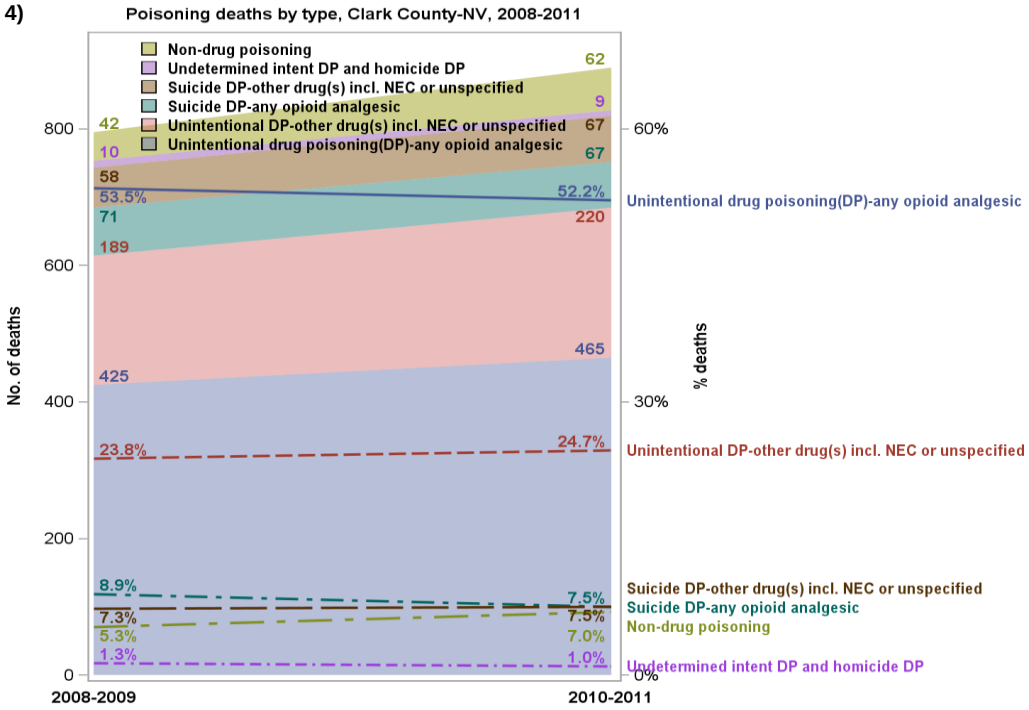
Note: Data suppression applied if age-identified deaths<5 (denoted by -X-).
Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death.
*Vintage 2010 for 2000-2009 and vintage 2011 for 2010-2011 bridged-race postcensal estimates used.

3) Age-at-death densities of poisoning deaths among select racial/ethnic groups, Clark County-NV, 2000-2010



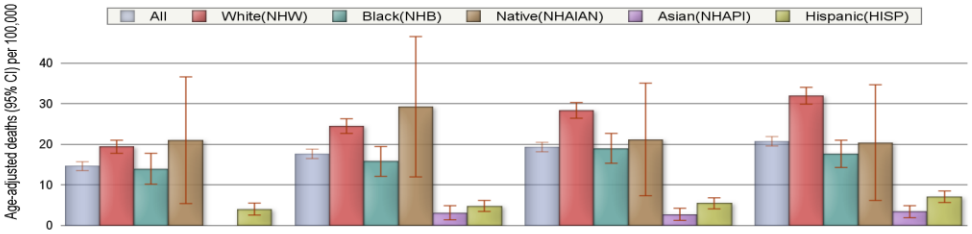
Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death.

4) Poisoning deaths by type, Clark County-NV, 2008-2011



Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Contributing cause codes specifying drugs and other toxic substances involved were not available prior to 2007 from the statewide vital records system.
Note: Poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X49, X60–X69, X85–X90, Y10–Y19, Y35.2, or U01(.6–.7). Categories as shown here are mutually exclusive.

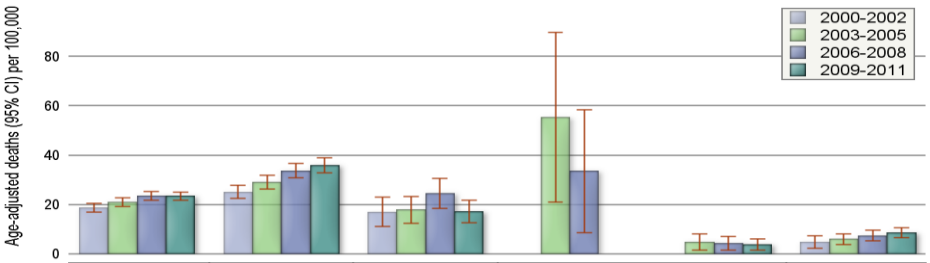
5) Age-adjusted 3-year aggregated mortality rates for drug poisoning (X40–X44, X60–X64, X85, Y10–Y14) by race/ethnicity, Clark County-NV, 2000-2011



	2000-2002	2003-2005	2006-2008	2009-2011
Deaths	638	864	1,065	1,223
Population*	4,365,742	4,926,694	5,490,635	5,823,966
Crude rate(per 100,000)	14.61	17.54	19.40	21.00
Age-adj. rate(AjR)**	14.63	17.61	19.37	20.71
95% LCL for AjR	13.49	16.43	18.20	19.55
95% UCL for AjR	15.77	18.79	20.53	21.88
Deaths-NHW	540	713	865	978
Population-NHW*	2,636,956	2,812,605	2,919,788	2,904,970
Crude rate(per 100,000)	20.48	25.35	29.63	33.67
Age-adj. rate(AjR)**	19.39	24.46	28.33	31.98
95% LCL for AjR	17.74	22.64	26.41	29.92
95% UCL for AjR	21.04	26.28	30.25	34.04
Deaths-NHB	53	72	100	107
Population-NHB*	411,654	472,071	543,486	618,960
Crude rate(per 100,000)	12.87	15.25	18.40	17.29
Age-adj. rate(AjR)**	13.95	15.78	18.99	17.68
95% LCL for AjR	10.17	12.12	15.26	14.31
95% UCL for AjR	17.72	19.43	22.72	21.05
Deaths-NHAIAN	7	11	9	8
Population-NHAIAN*	29,999	35,204	40,977	35,950
Crude rate(per 100,000)	23.33	31.25	21.96	22.25
Age-adj. rate(AjR)**	21.00	29.23	21.16	20.41
95% LCL for AjR	5.39	11.90	7.28	6.16
95% UCL for AjR	36.61	46.56	35.05	34.66
Deaths-NHAPI	X	12	13	21
Population-NHAPI*	284,207	362,377	453,739	554,263
Crude rate(per 100,000)	X	3.31	2.87	3.79
Age-adj. rate(AjR)**	X	3.10	2.69	3.44
95% LCL for AjR	X	1.33	1.20	1.96
95% UCL for AjR	X	4.86	4.18	4.93
Deaths-HISP	33	54	72	109
Population-HISP*	1,002,926	1,244,437	1,532,645	1,709,823
Crude rate(per 100,000)	3.29	4.34	4.70	6.37
Age-adj. rate(AjR)**	3.98	4.78	5.47	7.05
95% LCL for AjR	2.48	3.43	4.12	5.64
95% UCL for AjR	5.49	6.13	6.83	8.46

Note: Data suppression applied if number of events<5 (denoted by -X-).
Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death. Age-adjustment excludes those without identified age.
*Vintage 2010 for 2000-2009 and vintage 2011 for 2010-2011 bridged-race postcensal estimates used. **To remove potential confounding by age within race/ethnicity distributions or across time, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.

6) Age-adjusted mortality rates by race/ethnicity for drug poisoning (X40–X44, X60–X64, X85, Y10–Y14) among males, Clark County-NV, 2000-2011



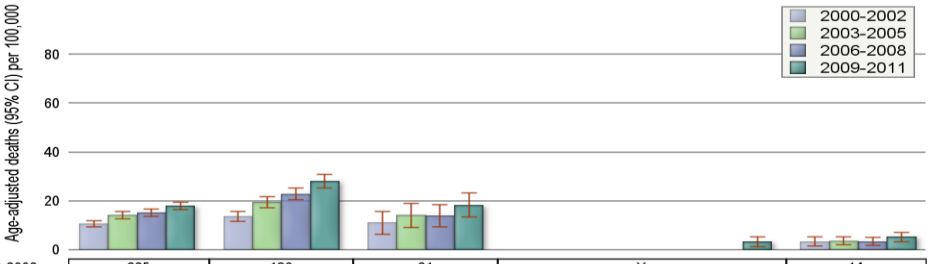
	All	White(NHW)	Black(NHB)	Native(NHAIAN)	Asian(NHAPI)	Hispanic(HISP)
Deaths,2000-2002	413	354	32	X		19
Population,2000-2002*	2,219,266	1,335,618	204,750	14,752	130,519	533,627
Crude rate(per 100,000)	18.61	26.50	15.63	X		3.56
Age-adj. rate(AjR)**	18.63	25.04	16.94	X		4.71
95% LCL for AjR	16.81	22.41	11.02	X		2.28
95% UCL for AjR	20.45	27.68	22.85	X		7.13
Deaths,2003-2005	526	431	40	10	8	35
Population,2003-2005*	2,504,052	1,424,379	234,131	17,052	166,285	662,205
Crude rate(per 100,000)	21.01	30.26	17.08	58.64	4.81	5.29
Age-adj. rate(AjR)**	20.92	29.12	17.76	55.30	4.71	5.86
95% LCL for AjR	19.12	26.34	12.24	20.95	1.43	3.76
95% UCL for AjR	22.72	31.91	23.27	89.64	7.99	7.96
Deaths,2006-2008	660	522	63	7	9	54
Population,2006-2008*	2,797,595	1,484,596	268,410	19,959	208,500	816,130
Crude rate(per 100,000)	23.59	35.16	23.47	35.07	4.32	6.62
Age-adj. rate(AjR)**	23.38	33.59	24.50	33.45	4.21	7.35
95% LCL for AjR	21.58	30.66	18.44	8.59	1.42	5.21
95% UCL for AjR	25.17	36.53	30.57	58.30	6.99	9.49
Deaths,2009-2011	702	559	53	X	10	76
Population,2009-2011*	2,943,422	1,479,718	307,506	17,315	253,739	885,144
Crude rate(per 100,000)	23.85	37.78	17.24	X	3.94	8.59
Age-adj. rate(AjR)**	23.34	35.75	17.11	X	3.64	8.59
95% LCL for AjR	21.61	32.70	12.48	X	1.37	6.58
95% UCL for AjR	25.08	38.79	21.73	X	5.90	10.59

Note: Data suppression applied if number of events<5 (denoted by -X-).

Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death. Age-adjustment excludes those without identified age.

*Vintage 2010 for 2000-2009 and vintage 2011 for 2010-2011 bridged-race postcensal estimates used. **To remove potential confounding by age within race/ethnicity or gender distributions or across time, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.

7) Age-adjusted mortality rates by race/ethnicity for drug poisoning (X40–X44, X60–X64, X85, Y10–Y14) among females, Clark County-NV, 2000-2011



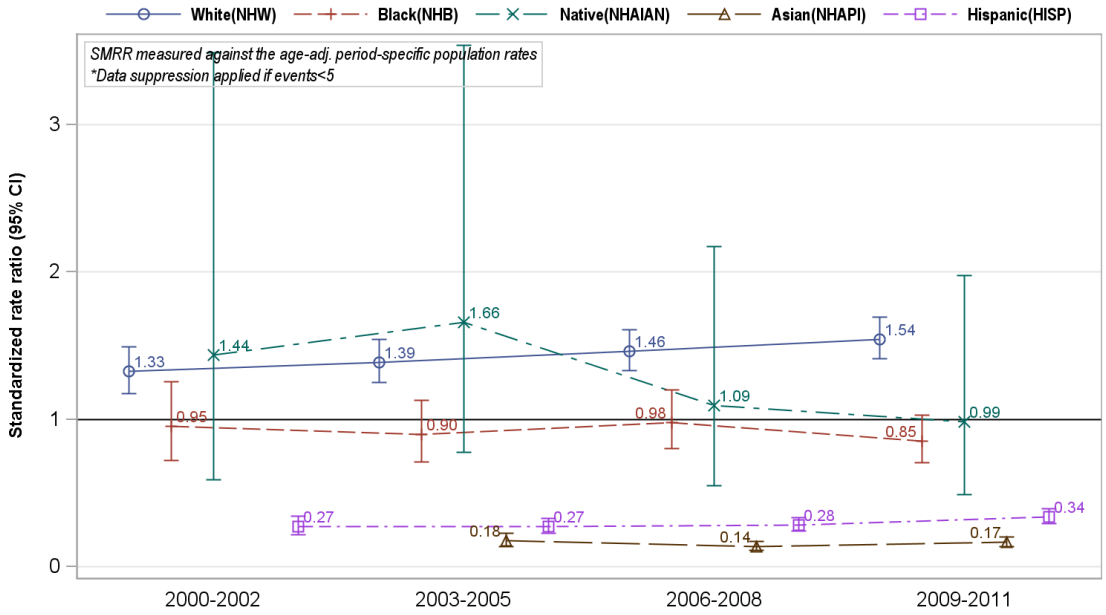
	All	White(NHW)	Black(NHB)	Native(NHAIAN)	Asian(NHAPI)	Hispanic(HISP)
Deaths,2000-2002	225	186	21	X		14
Population,2000-2002*	2,146,476	1,301,338	206,904	15,247	153,688	469,299
Crude rate(per 100,000)	10.48	14.29	10.15	X		2.98
Age-adj. rate(AjR)**	10.54	13.55	10.99	X		3.31
95% LCL for AjR	9.16	11.58	6.28	X		1.47
95% UCL for AjR	11.92	15.52	15.71	X		5.15
Deaths,2003-2005	338	282	32	X		19
Population,2003-2005*	2,422,642	1,388,226	237,940	18,152	196,092	582,232
Crude rate(per 100,000)	13.95	20.31	13.45	X		3.26
Age-adj. rate(AjR)**	14.08	19.48	13.99	X		3.56
95% LCL for AjR	12.57	17.17	9.14	X		1.87
95% UCL for AjR	15.59	21.79	18.85	X		5.25
Deaths,2006-2008	405	343	37	X		18
Population,2006-2008*	2,693,040	1,435,192	275,076	21,018	245,239	716,515
Crude rate(per 100,000)	15.04	23.90	13.45	X		2.51
Age-adj. rate(AjR)**	15.10	22.76	13.84	X		3.28
95% LCL for AjR	13.62	20.31	9.37	X		1.69
95% UCL for AjR	16.58	25.21	18.31	X		4.86
Deaths,2009-2011	521	419	54	X	11	33
Population,2009-2011*	2,880,544	1,425,252	311,454	18,635	300,524	824,679
Crude rate(per 100,000)	18.09	29.40	17.34	X	3.66	4.00
Age-adj. rate(AjR)**	17.93	27.96	18.22	X	3.24	5.14
95% LCL for AjR	16.38	25.21	13.33	X	1.30	3.27
95% UCL for AjR	19.49	30.71	23.11	X	5.19	7.01

Note: Data suppression applied if number of events<5 (denoted by -X-).

Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death. Age-adjustment excludes those without identified age.

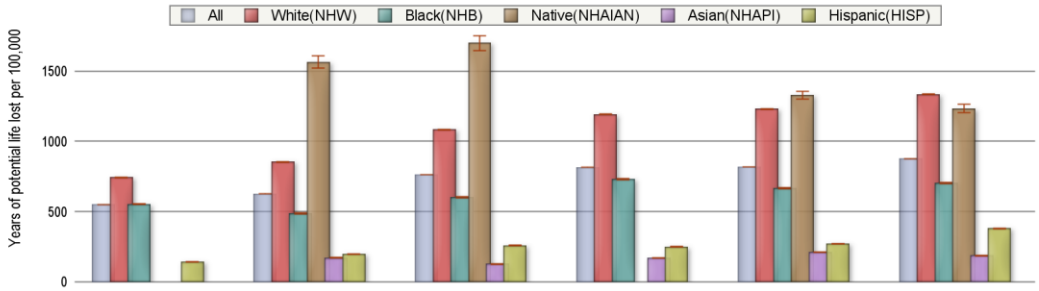
*Vintage 2010 for 2000-2009 and vintage 2011 for 2010-2011 bridged-race postcensal estimates used. **To remove potential confounding by age within race/ethnicity or gender distributions or across time, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.

8) Standardized mortality rate ratios (SMRR) for drug poisoning (X40–X44, X60–X64, X85, Y10–Y14) by race/ethnicity, Clark County-NV, 2000-2011



Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death. Age-adjustment excludes those without identified age.
Note: Crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.

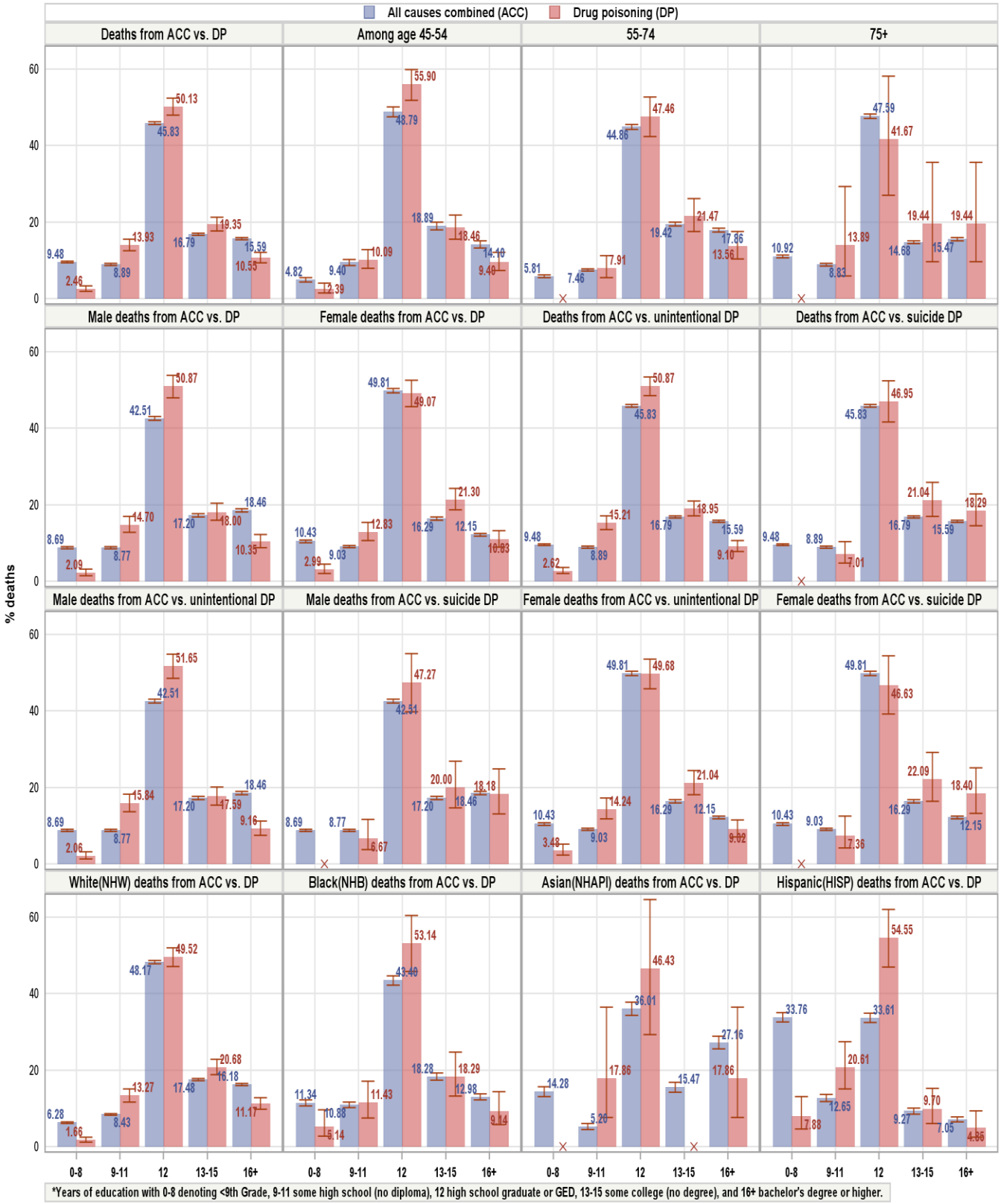
9) Years of potential life lost (YPLL) per 100,000 population from drug poisoning (X40–X44, X60–X64, X85, Y10–Y14) by race/ethnicity, Clark County-NV, 2000-2011



	2000-2001	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011
YPLL(person-years)	15,634.98	19,344.24	25,607.80	29,444.27	30,885.40	34,371.31
Population*	2,850,204	3,088,156	3,354,076	3,613,525	3,777,174	3,923,902
YPLL per 100,000	548.56	626.40	763.48	814.84	817.69	875.95
95% LCL for YPLL rate	547.52	625.34	762.32	813.64	816.49	874.76
95% UCL for YPLL rate	549.59	627.46	764.65	816.03	818.88	877.13
YPLL-NHW	12,910.76	15,496.79	20,533.15	23,145.03	24,065.94	25,708.38
Population-NHW*	1,738,801	1,815,184	1,895,576	1,940,676	1,956,365	1,927,717
YPLL per 100,000	742.51	853.73	1,083.21	1,192.63	1,230.14	1,333.62
95% LCL for YPLL rate	740.84	851.98	1,081.19	1,190.44	1,227.92	1,331.22
95% UCL for YPLL rate	744.18	855.48	1,085.24	1,194.82	1,232.35	1,336.01
YPLL-NHB	1,482.01	1,422.94	1,944.89	2,595.90	2,517.48	3,013.84
Population-NHB*	268,299	292,425	323,001	356,308	377,709	428,429
YPLL per 100,000	552.37	486.60	602.13	728.56	666.51	703.46
95% LCL for YPLL rate	548.58	482.87	598.70	724.35	662.11	699.90
95% UCL for YPLL rate	556.16	490.33	605.56	732.76	670.91	707.02
YPLL-NHAIAN	X	339.03	410.54	X	377.21	267.10
Population-NHAIAN*	19,387	21,663	24,153	26,907	28,351	21,669
YPLL per 100,000	X	1,565.03	1,699.75	X	1,330.51	1,232.63
95% LCL for YPLL rate	X	1,520.24	1,646.71	X	1,302.78	1,202.45
95% UCL for YPLL rate	X	1,609.81	1,752.79	X	1,358.24	1,262.80
YPLL-NHAPI	X	363.58	315.41	497.75	676.60	724.55
Population-NHAPI*	181,280	213,923	251,381	294,127	323,327	390,548
YPLL per 100,000	X	169.96	125.47	169.23	209.26	185.52
95% LCL for YPLL rate	X	168.80	124.43	168.27	207.90	184.78
95% UCL for YPLL rate	X	171.11	126.51	170.19	210.62	186.27
YPLL-HISP	914.69	1,472.69	2,218.36	2,471.31	2,954.09	4,375.13
Population-HISP*	642,437	744,961	859,965	995,507	1,091,422	1,155,539
YPLL per 100,000	142.38	197.69	257.96	248.25	270.66	378.62
95% LCL for YPLL rate	141.50	196.72	256.85	247.19	269.50	377.34
95% UCL for YPLL rate	143.25	198.65	259.07	249.31	271.83	379.91

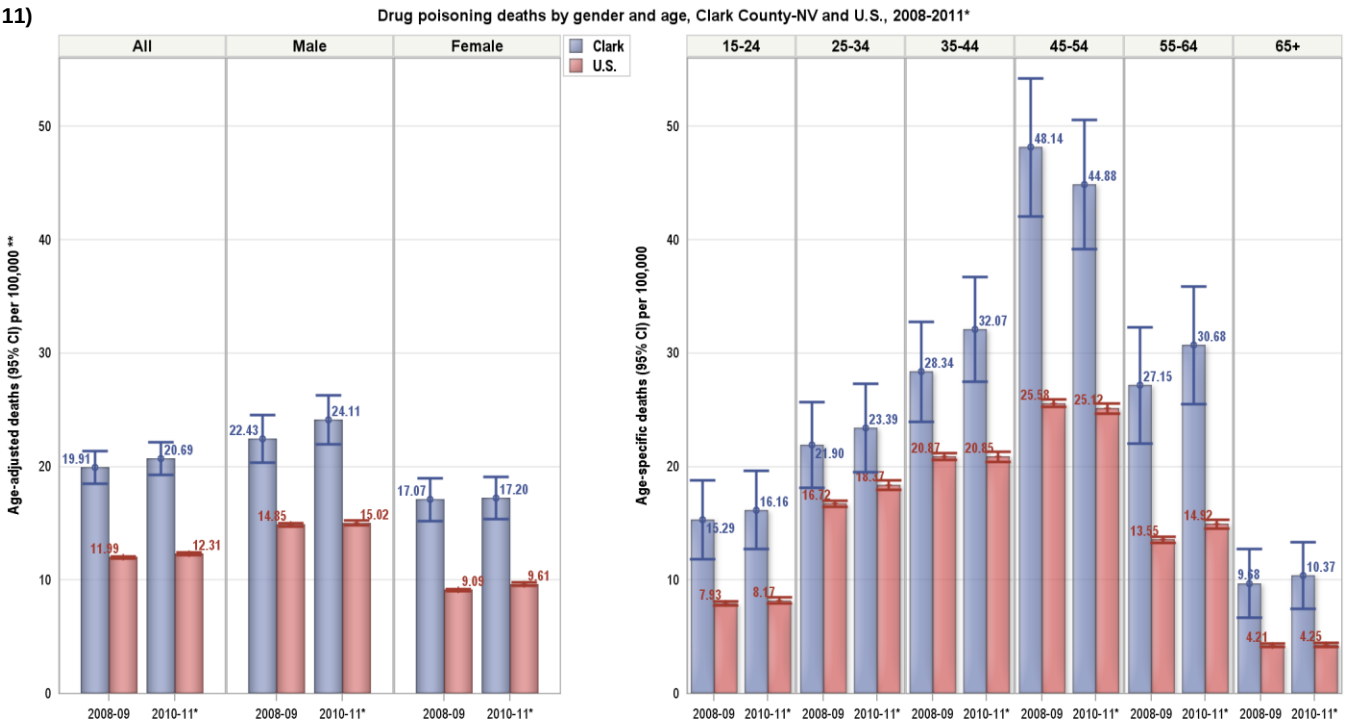
Note: Data suppression applied if age-identified deaths<5 (denoted by -X-).
Source: Death certificate files (final for 2000-2010 and preliminary for 2011); restricted to Clark County residents at time of death.
*Vintage 2010 for 2000-2009 and vintage 2011 for 2010-2011 bridged-race postcensal estimates used.

10) **Percent deaths by educational status (in years)* among select groups, Clark County-NV, 2007-2011 combined**



Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death.
Note: Percentage breakdowns included records with education information missing although their percentages were not displayed. Data suppression (denoted by X) applied if events<5.

11)



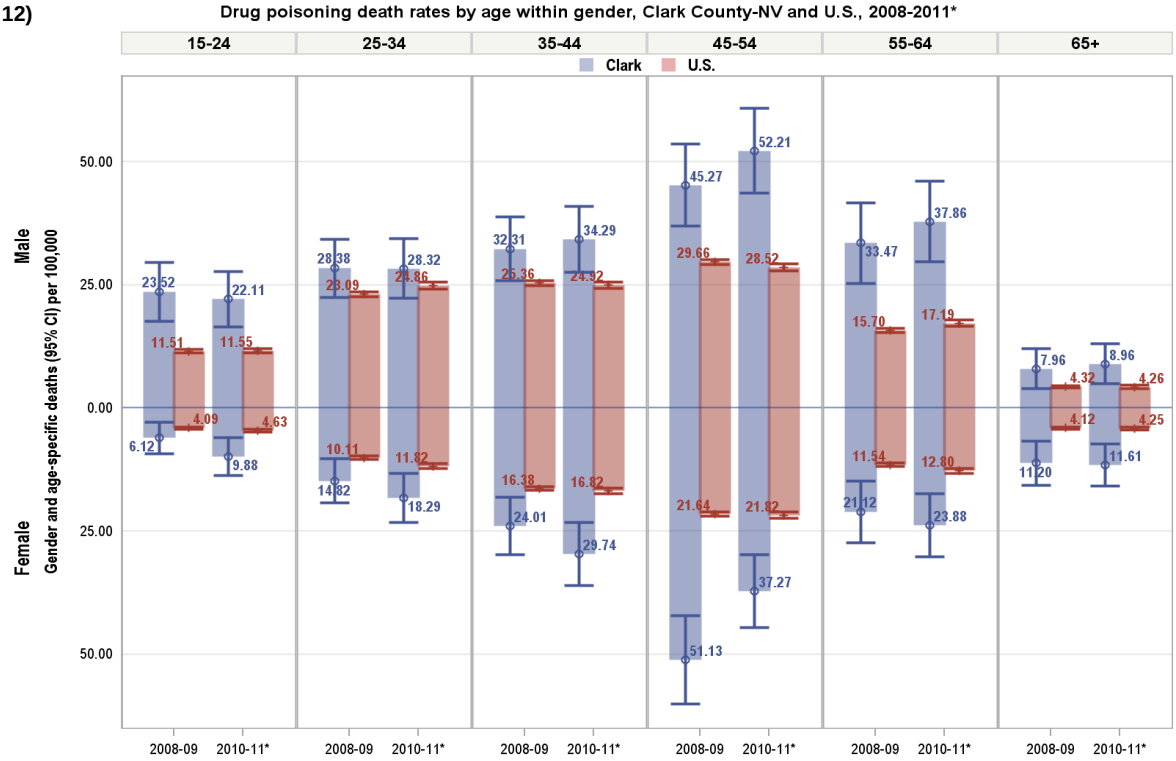
*As of this analysis the U.S. data for 2011 were not available for comparison; the final 2008-09 and 2010 U.S. data were used for national rate calculations and standardization.

**To remove potential confounding by age within gender distributions or across time/geography, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.

Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death and Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.

Note: Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.

12)

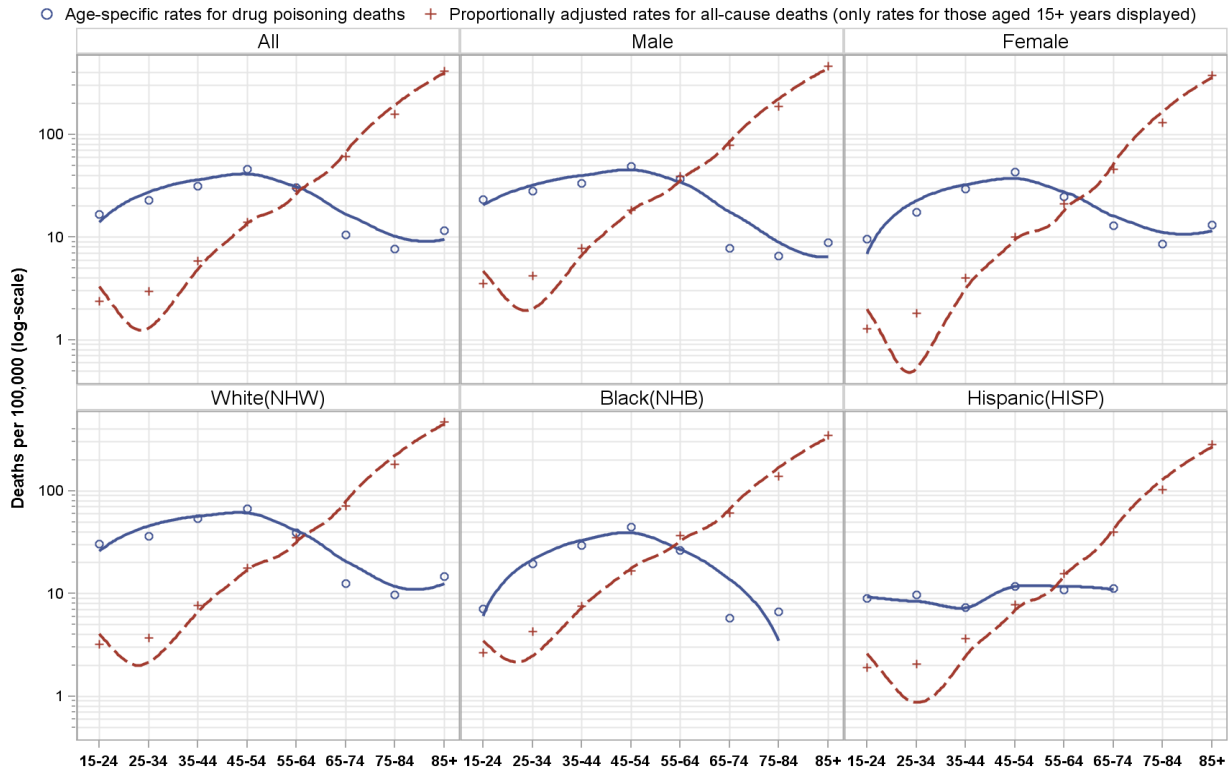


*As of this analysis the U.S. data for 2011 were not available for comparison; the final 2008-09 and 2010 U.S. data were used for national rate calculations.

Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death and Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.

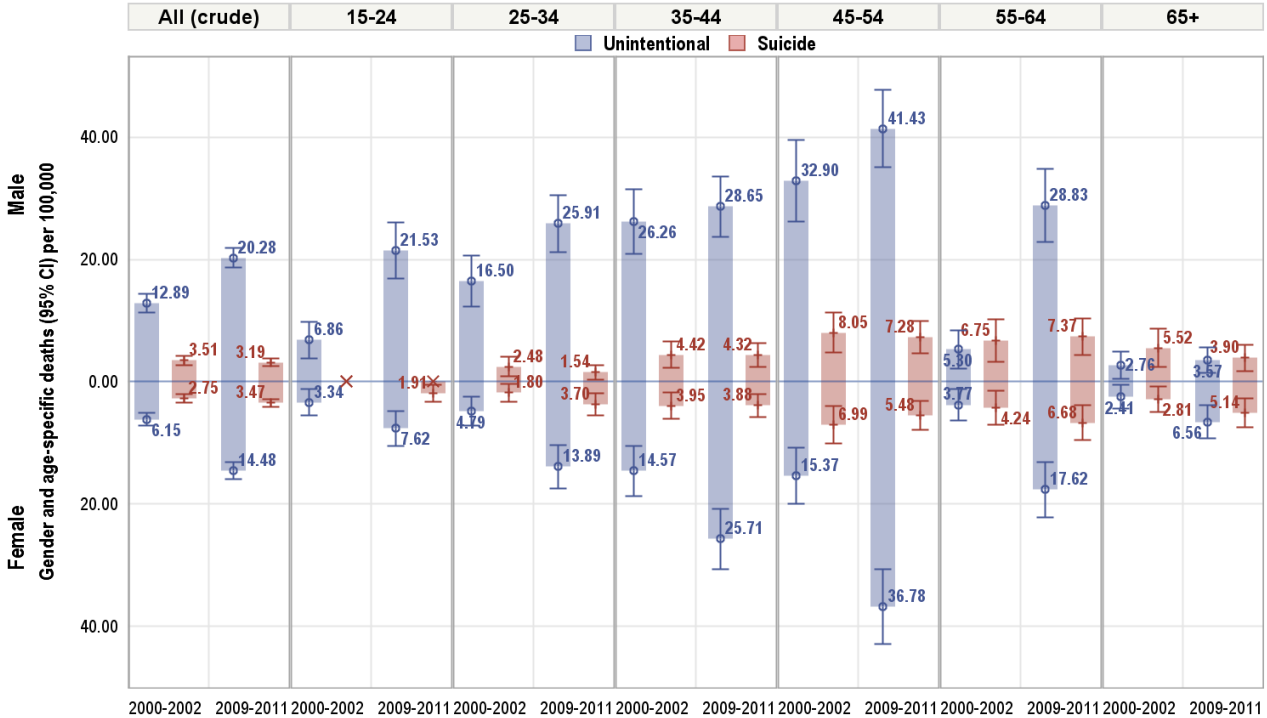
Note: Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.

13) Age-specific rates for drug poisoning deaths and proportionally adjusted rates for all-cause deaths, Clark County-NV, 2009-2011 combined



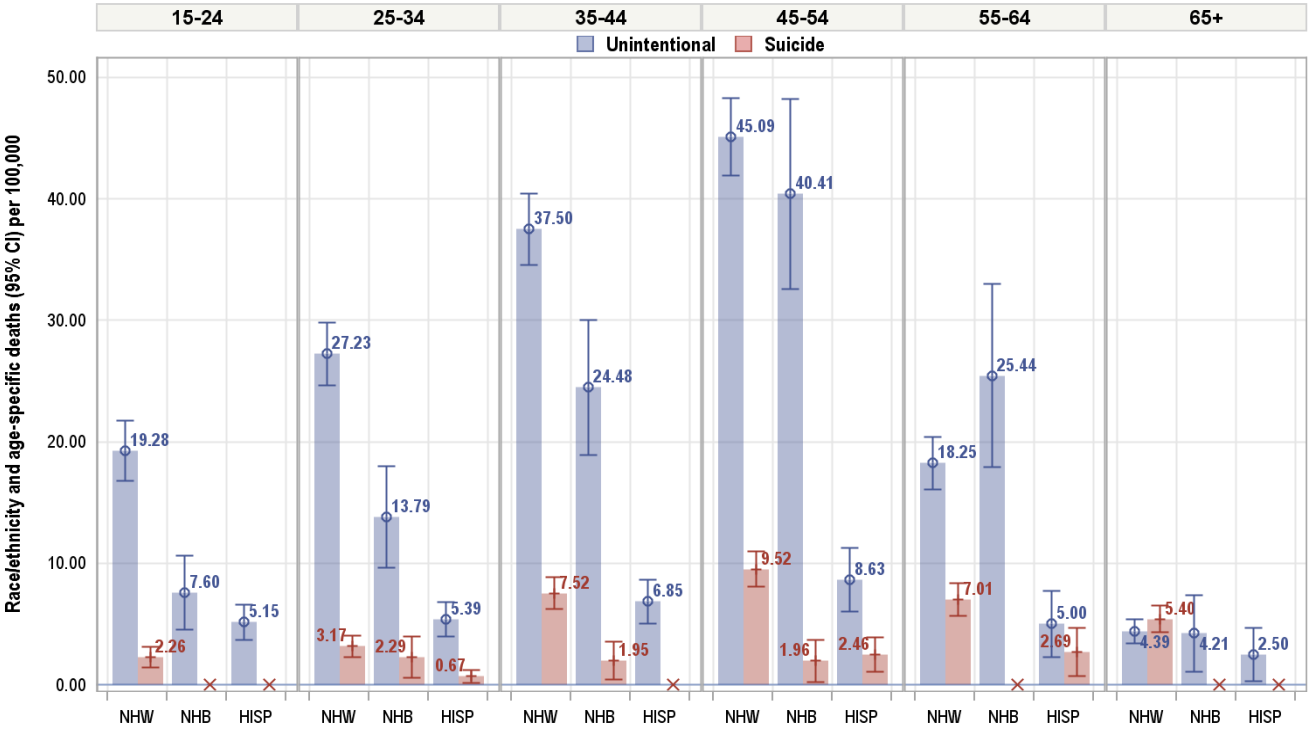
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death.
Note: Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.

14) Drug poisoning death rates by age within gender and select intent, Clark County-NV, 2000-2011



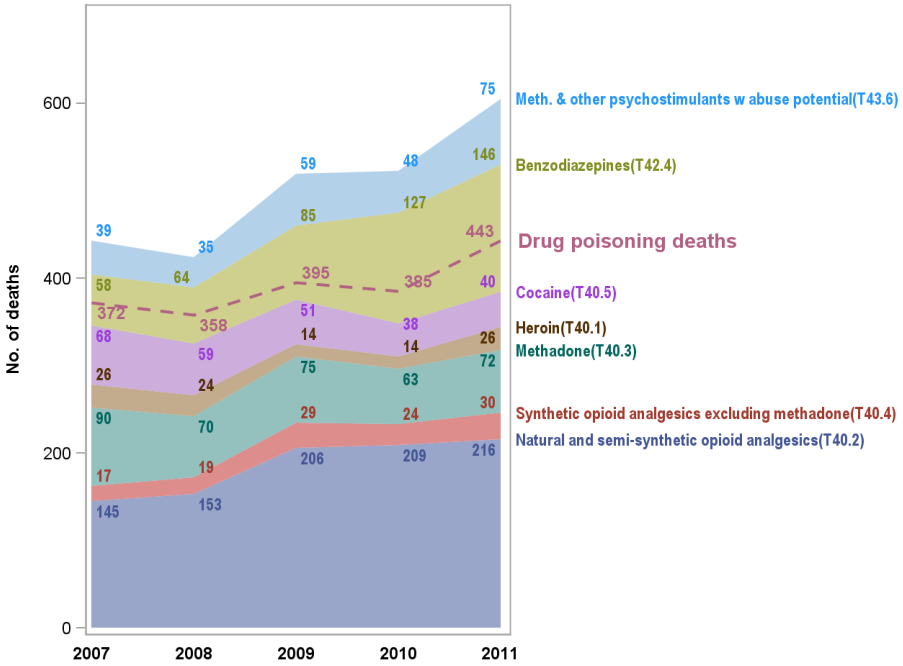
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.
Note: Selected age groups shown. Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14. Data suppression (denoted by X) applied if events<5.

15) Drug poisoning death rates by age within race/ethnicity and select intent, Clark County-NV, 2000-2011 combined



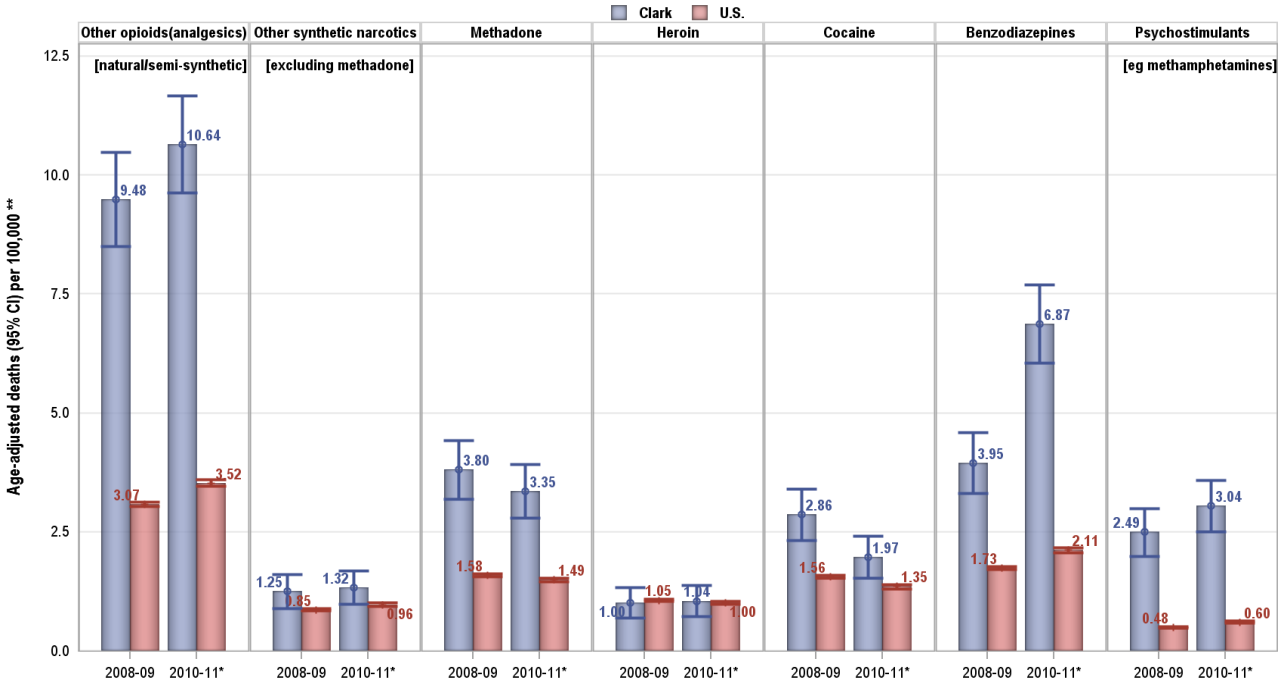
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.
Note: Selected age groups shown. Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14. Data suppression (denoted by X) applied if events<5.

16) Drug poisoning deaths by type of drug involved, Clark County-NV, 2007-2011



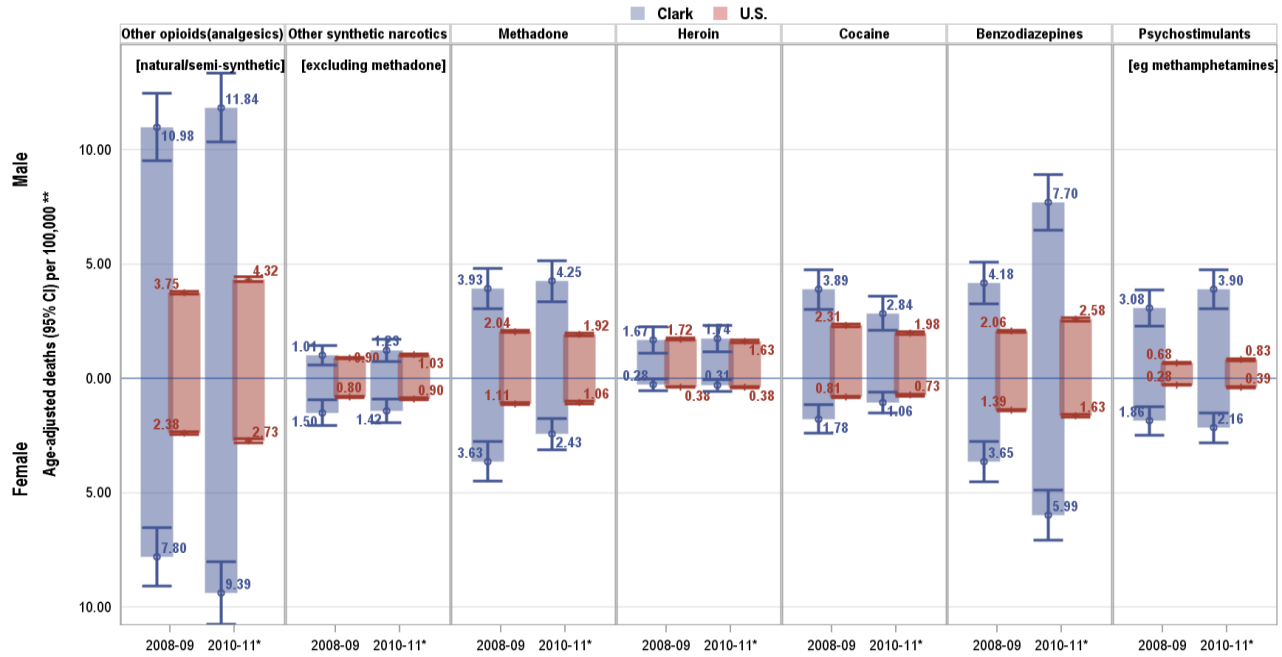
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Contributing cause codes specifying drugs and other toxic substances involved were not available prior to 2007 from the statewide vital records system.
Note1: Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.
Note2: Drug categories are not mutually exclusive. Deaths involving more than one drug category shown in this figure are counted multiple times. Natural and semi-synthetic opioid analgesics include drugs such as morphine, oxycodone and hydrocodone; and synthetic opioid analgesics (excluding methadone) include drugs such as fentanyl, propoxyphene and meperidine.

17) Age-adjusted drug poisoning death rates by select type of drugs involved, Clark County-NV and U.S., 2008-2011*



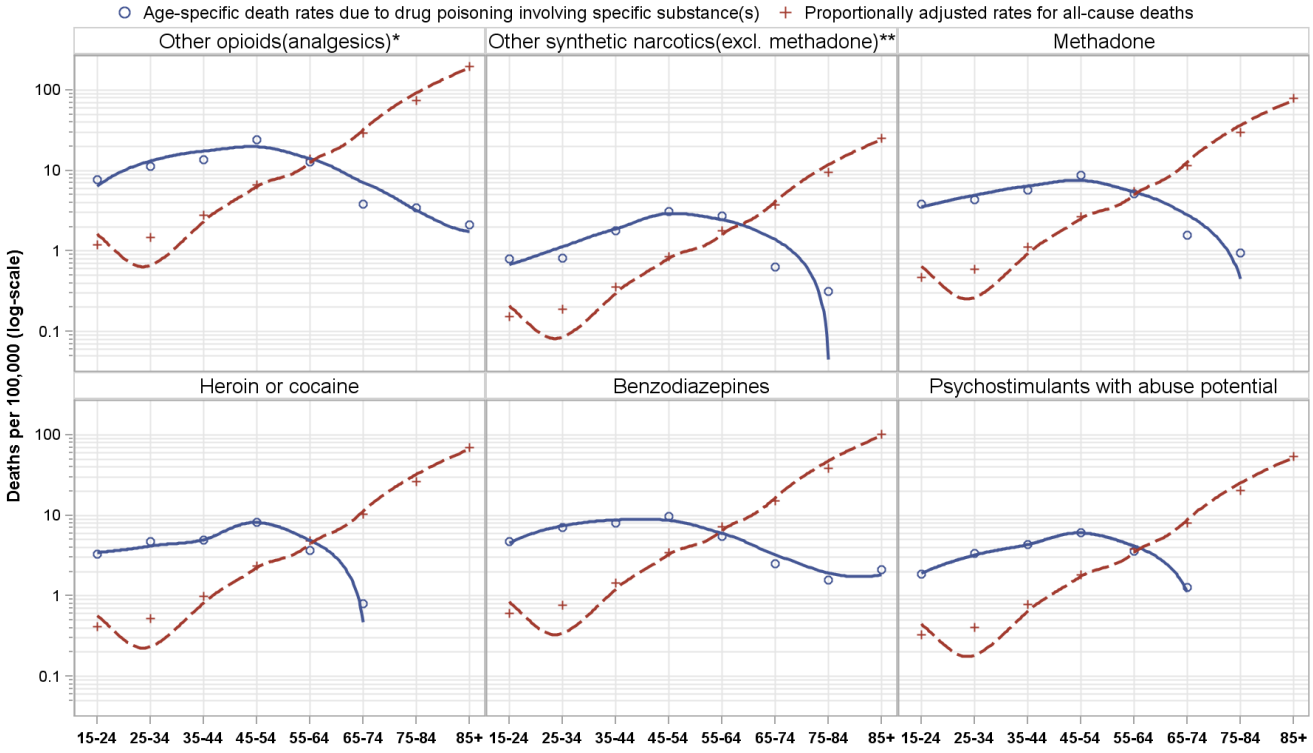
*As of this analysis the U.S. data for 2011 were not available for comparison; the final 2008-09 and 2010 U.S. data were used for national rate calculations and standardization.
**To remove potential confounding by age distributions across time or geography, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.
Note1: Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.
Note2: Drug categories are not mutually exclusive. Deaths involving more than one drug category shown in this figure are counted multiple times. Natural and semi-synthetic opioid analgesics include drugs such as morphine, oxycodone and hydrocodone; and synthetic opioid analgesics (excluding methadone) include drugs such as fentanyl, propoxyphene and meperidine.

18) Age-adjusted drug poisoning death rates by select type of drugs involved and gender, Clark County-NV and U.S., 2008-2011*



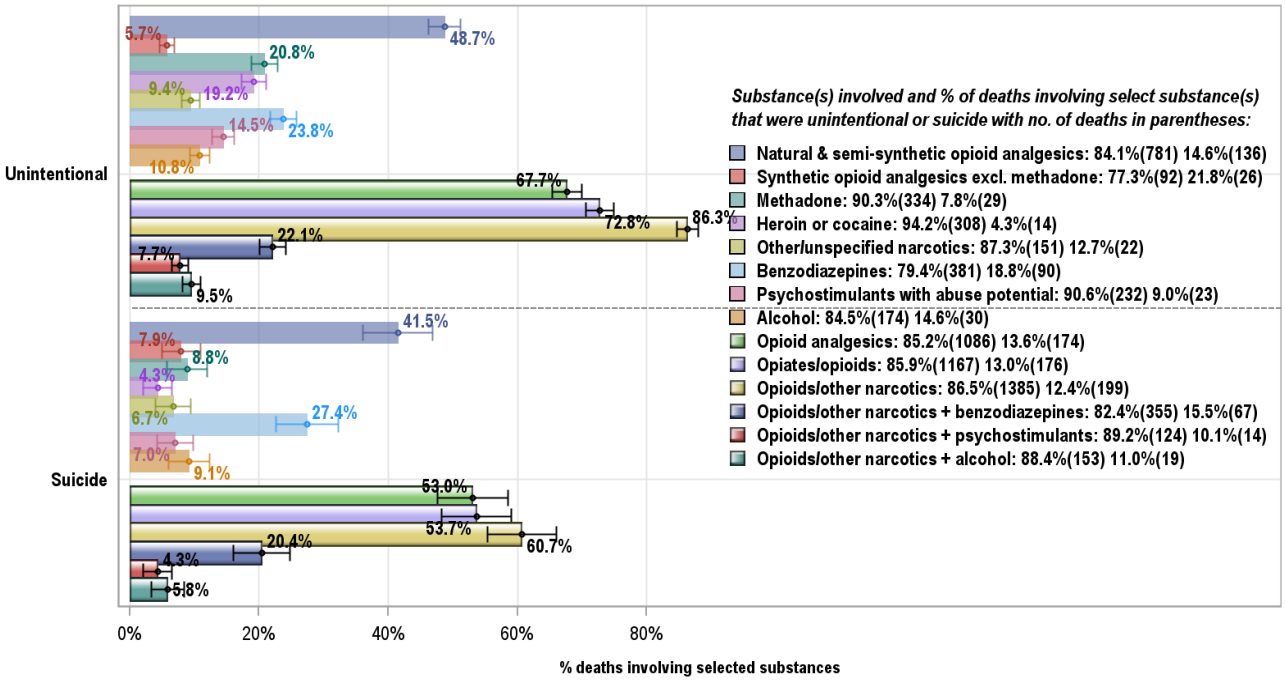
*As of this analysis the U.S. data for 2011 were not available for comparison; the final 2008-09 and 2010 U.S. data were used for national rate calculations and standardization.
**To remove potential confounding by age within gender distributions or across time/geography, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death and Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.
Note1: Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.
Note2: Drug categories are not mutually exclusive. Deaths involving more than one drug category shown in this figure are counted multiple times. Natural and semi-synthetic opioid analgesics include drugs such as morphine, oxycodone and hydrocodone; and synthetic opioid analgesics (excluding methadone) include drugs such as fentanyl, propoxyphene and meperidine.

19) Age-specific rates for drug poisoning deaths involving selected substances and proportionally adjusted rates for all-cause deaths, Clark County-NV, 2007-2011 combined



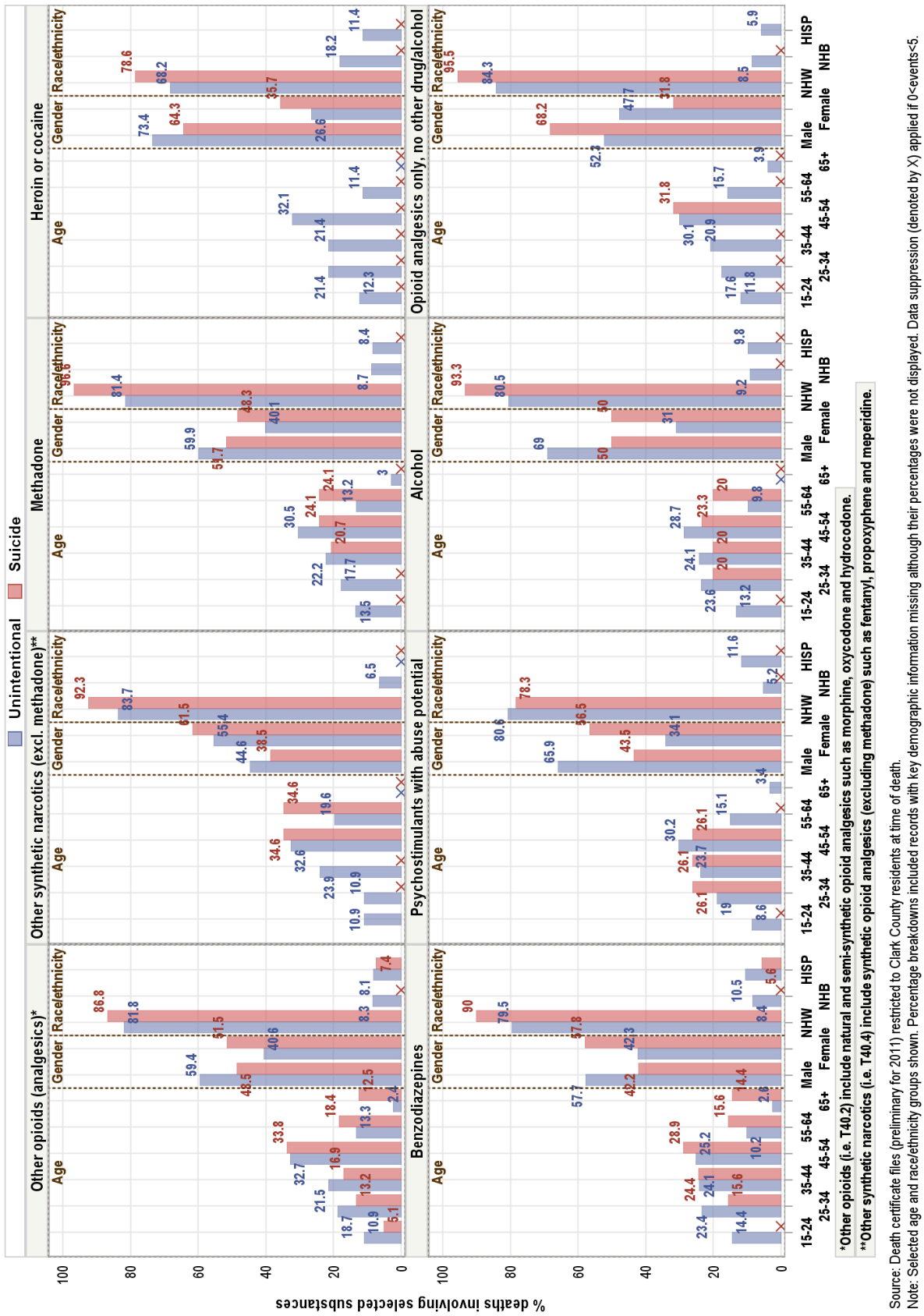
*Other opioids (i.e. T40.2) include natural and semi-synthetic opioid analgesics such as morphine, oxycodone and hydrocodone.
**Other synthetic narcotics (i.e. T40.4) include synthetic opioid analgesics (excluding methadone) such as fentanyl, propoxyphene and meperidine.
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death.
Note: Drug categories are not mutually exclusive. Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.

20) Percent drug-poisoning deaths by select substance involved and injury intent, Clark County-NV, 2007-2011 combined



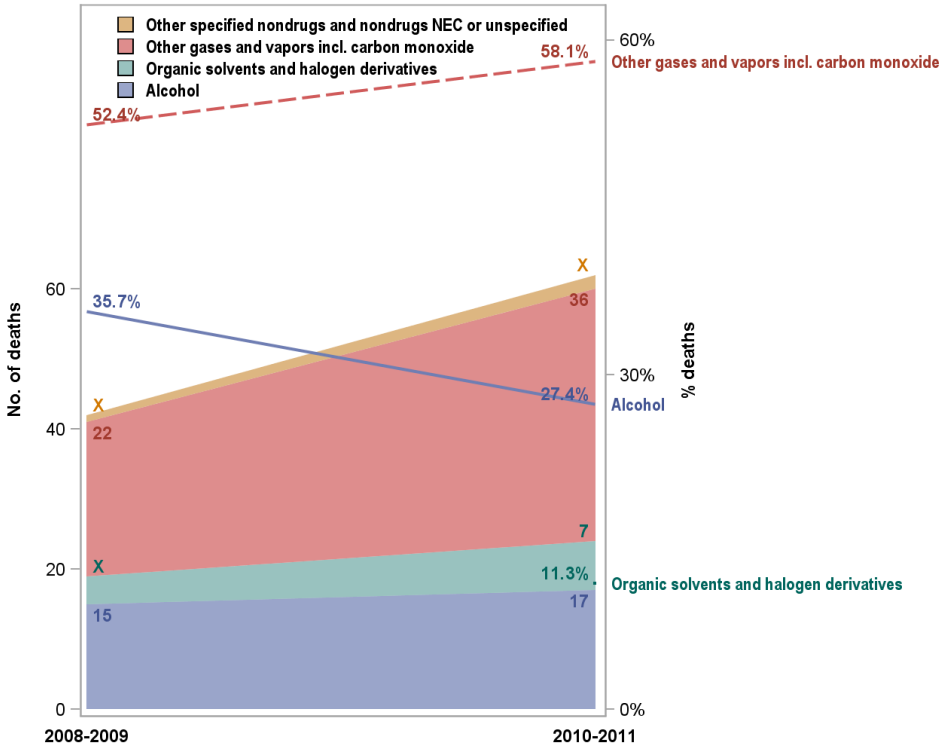
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death.
Note: Substance categories are not mutually exclusive. Drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 coded external cause of injury range: X40–X44, X60–X64, X85, Y10–Y14.

21)



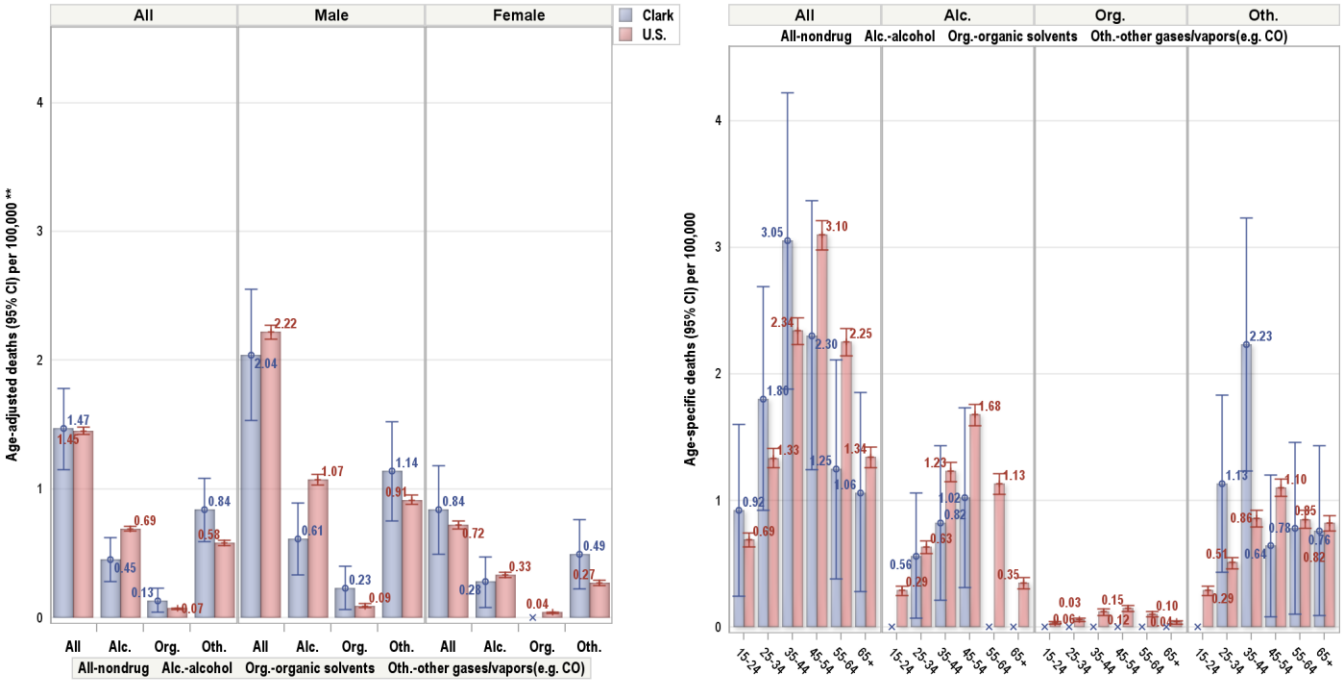
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death.
Note: Selected age and race/ethnicity groups shown. Percentage breakdowns included records with key demographic information missing although their percentages were not displayed. Data suppression (denoted by X) applied if 0<events<5.

22) Non-drug poisoning deaths by type, Clark County-NV, 2008-2011



Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death. Contributing cause codes specifying drugs and other toxic substances involved were not available prior to 2007 from the statewide vital records system.
Note1: Non-drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 range X45-X49, X65-X69, X86-X90, Y15-Y19, Y35.2, or U01(.6–.7). Data suppression (denoted by X) applied if events<5. Categories as shown here are mutually exclusive.
Note2: ICD-10 ranges for deaths due to diseases induced by non-drug substances (i.e. E24.4, F10[.1-.9], F17[.1-.9], F18[.1-.9], G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0) were not included in the poisoning codes.

23) Non-drug poisoning deaths by gender and age for select types, Clark County-NV and U.S., 2009-2011 combined*



*As of this analysis the U.S. data for 2011 were not available for comparison; the final 2009-10 U.S. data were used for national rate calculations and standardization.
**To remove potential confounding by age within gender distributions or across time/geography, crude rates were age-standardized to the 10-group age distribution of the July 1, 2000 bridged-race intercensal national population estimates.
Source: Death certificate files (preliminary for 2011) restricted to Clark County residents at time of death and Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Vintage 2010 for 2000-09 and vintage 2011 for 2010-11 bridged-race postcensal population estimates used in crude and age-specific rate calculations.
Note: Non-drug poisoning deaths were defined as those with an underlying cause of death in the ICD-10 range X45-X49, X65-X69, X86-X90, Y15-Y19, Y35.2, or U01(.6–.7). Data suppression (denoted by X) applied if events<5.