

2005 Report on Injury Related Morbidity and Mortality in Los Angeles County: Prevalence and Prevention



Injury and Violence Prevention Program
Office of Health Assessment and Epidemiology
Department of Health Services/Public Health
Los Angeles County



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November 21, 2005

Dear Colleague:

The Injury and Violence Prevention Program (IVPP) of the Los Angeles County Department of Public Health is pleased to distribute the enclosed 2005 issue of the Report on Injury Morbidity and Mortality in Los Angeles County. This report includes data for the years 1999-2002. While injuries are the 4th leading cause of death overall in Los Angeles County, Injuries are the *leading* cause of death for 1-44 year olds.

In this report you will find an overview of Injury in Los Angeles County. For community based organizations and Public Health practitioners interested in specific regions of Los Angeles County, we have also presented the data specifically looking at injury by Service Planning Area (SPA) as well as by the 5 leading causes of Injury Mortality by age, gender and race/ethnicity as these variables vary by injury type. In addition to providing statistics on injury mortality, we have incorporated Prevention Strategies for each leading cause of death. These strategies can be used for prevention efforts and as a guide for safety in our communities and homes.

You may submit Unintentional and Intentional Injury data requests by phone or by logging onto our website at <http://lapublichealth.org/ivpp/index.htm>. Injury and Violence Prevention (IVPP) staff is available during business hours to take phone requests at (213) 351-7888.

Sincerely,

Michelle T. Parra, Ph.D.
Director

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2005 Report on Injury Morbidity and Mortality in Los Angeles County: Prevalence and Prevention

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Definition of Terms

Average Mortality Rates: **Mortality rates** describe the occurrence of death over a period of time, in relation to the size of the population and the duration of the time period. In this report mortality rates were calculated for each year from 1999 through 2002, and then averaged.

Age-Specific Rates: **Age-specific rates** are calculated by dividing the total number of deaths in that age group by the total population for that age group, multiplied by 100,000.

Age-Adjusted Rates: Since age is strongly related to death rates, it is important to compensate for age differences between populations when comparing the rates between areas within the County, or when comparing Los Angeles to other counties. To calculate **age-adjusted rates**, weights from a standard population are applied to rates for each specific age group. For this report, the 2000 US population was used as the standard. The resulting weighted rates are added to create the **age-adjusted rate**. In this report, all rates that are not for specific age groups are age-adjusted.

Mortality Reporting: State law requires that a **certificate of death** be filed no more than eight days after a death occurs, and before the decedent has been buried or cremated. In addition to providing legal documentation of death, death certificates contain valuable information on the circumstances surrounding death and characteristics of the decedent. This information is useful for public health and medical research.

ICD Codes: The circumstances surrounding death that are listed on death certificates are coded using a standardized system called the International Classification of Diseases (ICD). These **ICD codes** are used to classify fatal injuries by mechanism and intent.

Mechanism: Injury deaths are classified by **mechanism**. Common **mechanisms** by which injury deaths occur are firearms and motor vehicle collisions.

Intent: **Intent** is often referred to as the 'mode' or 'manner' of injury death. Undetermined, unintentional, homicide/assault, suicide/self-inflicted, terrorism, legal intervention, and war are all manners by which non-fatal and fatal injuries occur.

Leading Causes of Death: To determine the **leading causes of death**, we counted the number of injury fatalities in each mechanism-intent category.

Motor Vehicle Traffic: In this report, **motor vehicle traffic** collisions include only those collisions involving a motor vehicle on public roads. Collisions involving a motor vehicle that take place in parking lots, driveways, and other non-public roadways are not included in this category.

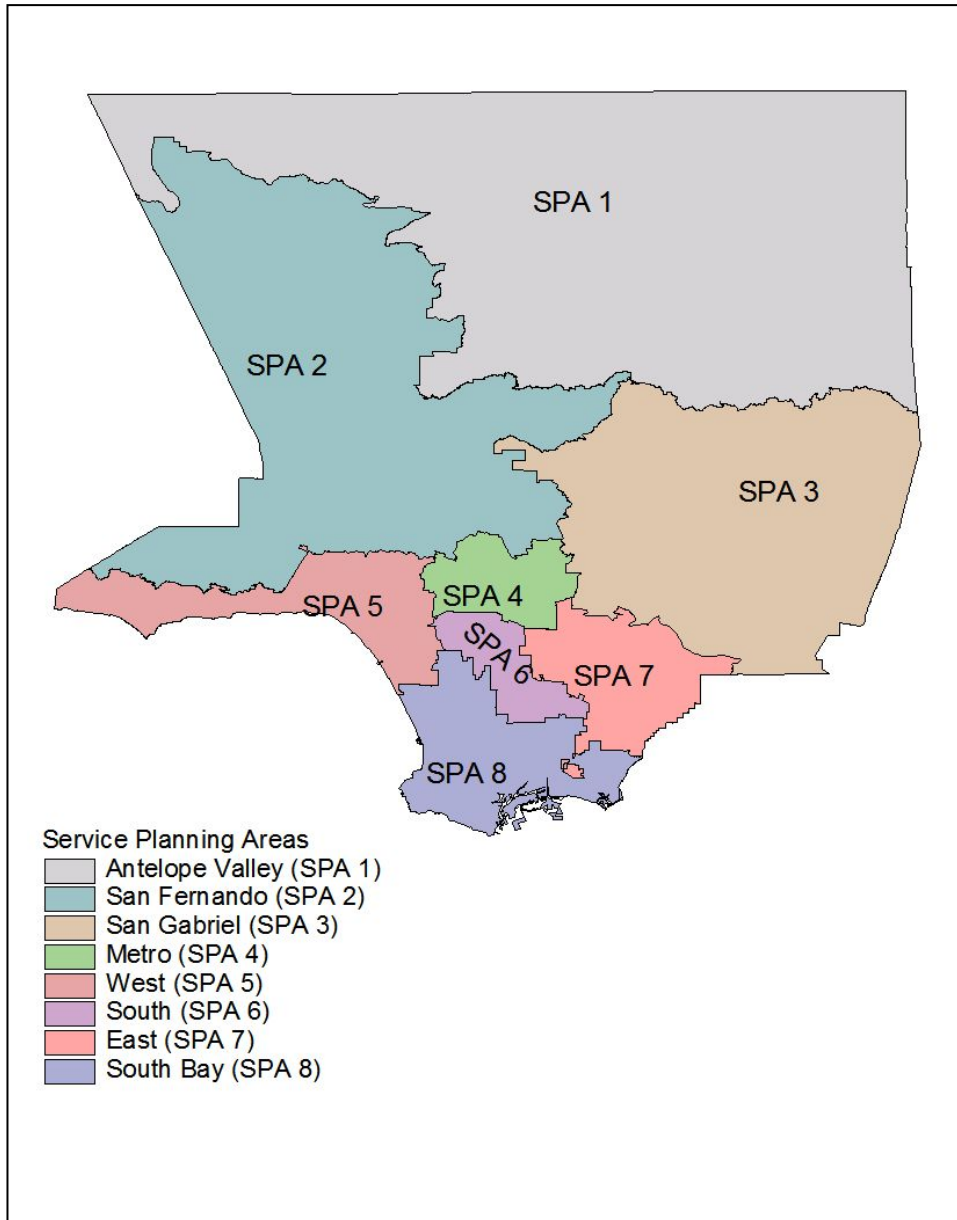
Poisoning and Drug Overdose: In this report, **poisoning and drug overdoses** are included in one category. This is consistent with the way the Centers for Disease Control and Prevention categorizes injuries. Unfortunately, due to the way injuries are coded, it is not possible to determine which deaths in this category were due to illicit drug use.

Primary Prevention: **Primary prevention** includes all prevention efforts designed to ensure an injury (or other negative health outcome) does not occur.

Secondary Prevention: After an injury has occurred, **secondary prevention** includes treating the injury and efforts to ensure the injury does not recur.

Service Planning Area (SPA): The Los Angeles County Department of Health has divided the county into 8 **service planning areas (SPAs)** to better provide local communities with public health services. Please see the next page for a map showing the location of each of the 8 **SPAs**.

Figure i: Map of Service Planning Areas in Los Angeles County



Injury in Los Angeles County, 1999-2002

- ◆ Injuries are the fourth leading cause of death in Los Angeles County.
- ◆ Injuries are the *leading* cause of death among 1 – 44 year olds.
- ◆ In 2002, 4,136 Los Angeles County residents died from injuries.
- ◆ In Los Angeles County, about half of all injury deaths are unintentional, one quarter are homicides, and one fifth are suicides.
- ◆ Over two thirds of all injury deaths in Los Angeles County are caused by firearms, motor vehicle traffic crashes, and poisonings/drug overdoses.
- ◆ Firearm homicides are the leading cause of injury death in Los Angeles.
- ◆ People who die from injuries are, on average, younger than those who die from other causes.
- ◆ Males account for three quarters of all injury deaths.
- ◆ Blacks account for 18% of injury deaths, but make up only 10% of the county's population.
- ◆ Injury mortality rates vary significantly from Service Planning Area (SPA) to SPA^α (see Table 1 on the next page).
- ◆ In 2002, there were 69,888 hospitalizations for non-fatal injuries in Los Angeles County.
- ◆ Unintentional falls are the leading cause of injury hospitalizations.
- ◆ Between 1999 and 2002, the total medical charges for injuries in Los Angeles County hospitals were almost \$7.5 billion.
- ◆ Insurance coverage varies by injury type (see Table 2 on the next page).

^α Leading causes of injury death are determined by the number of injuries in each mechanism-intent category. Because victims of MV Traffic collisions are, on average, older than victims of firearm homicides, the age-adjusted mortality rate for MV Traffic deaths is higher

Table 1: Age Adjusted Mortality Rate per 100,000 Population for Leading Causes of Injury Death by SPA, Los Angeles County, 1999 - 2002

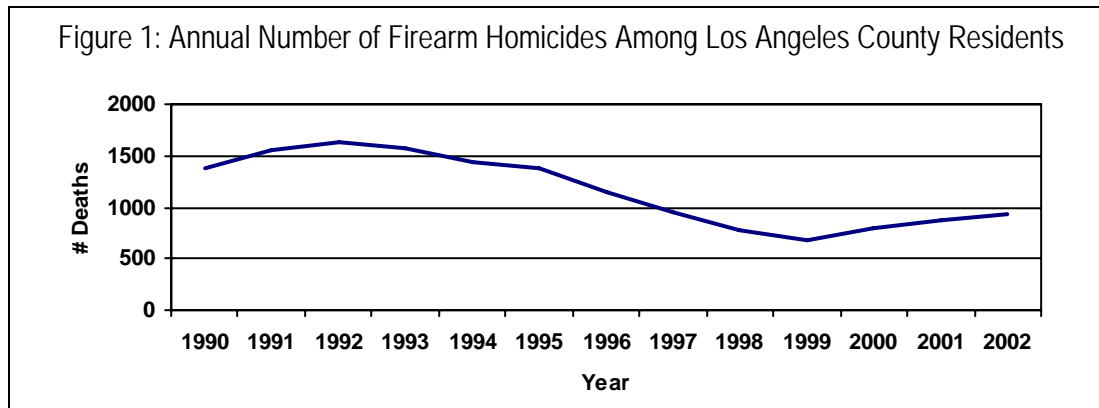
Ten Leading Causes of Injury Death	Antelope Valley (SPA 1)	San Fernando Valley (SPA 2)	San Gabriel (SPA 3)	Metro (SPA 4)	West (SPA 5)	South (SPA 6)	East (SPA 7)	South Bay (SPA 8)	Los Angeles County
1. Homicide – Firearm	4.3	4.2	4.4	8.1	3.2	27.0	6.3	7.9	7.9
2. Unintentional – MV Traffic	17.8	8.4	7.5	7.0	5.2	12.0	8.0	7.5	8.5
3. Unintentional – Poisoning/DO	6.5	4.9	4.3	7.0	5.7	7.8	5.6	5.7	6.0
4. Suicide – Firearm	6.6	4.3	3.2	3.2	4.2	2.9	2.9	4.4	3.8
5. Unintentional – Falls	3.0	3.4	3.4	3.8	3.2	3.1	3.6	3.7	3.5
6. Suicide – Suffocation	2.4	1.8	2.3	2.8	1.9	1.5	1.8	1.8	2.0
7. Suicide – Poisoning/DO	2.0	1.4	1.1	1.5	1.7	0.6	1.0	1.3	1.3
8. Homicide – Cut/Pierce	0.5	0.5	0.7	1.1	0.5	1.7	0.9	0.8	0.8
9. Unintentional Drowning	1.0	0.8	0.7	0.7	1.0	0.9	0.7	0.7	0.8
10. Unintentional – Fire/Burn	0.4	0.4	0.6	0.8	0.4	1.3	0.6	0.4	0.6
10. Unintentional – Other Transport	0.8	0.8	0.5	0.2	0.5	0.4	0.5	0.6	0.6

All rates are per 100,000 population and age adjusted to the 2000 US population.
 Green squares: SPA mortality rate is significantly less than the LA County rate.
 Pink squares: SPA mortality rate is significantly greater than the LA County rate.

Table 2: Number of Deaths, Non-Fatal Hospitalizations, and Hospital Charge Information, Ten Leading Causes of Injury Death, Los Angeles County, 1999-2002

Ten Leading Causes of Injury Death	Number of Deaths	Number of Hospitalizations	Average Charge per Hospitalization	Total Hospitalization Charges	Percent of Total Charges Covered by Each Insurance Type			
					Medicare/Medi-cal	Private Insurance	Self-Pay	Other
1. Assault – Firearm	3,260	7,613	\$51,397	\$391,286,210	49%	11%	17%	23%
2. Unintentional – MV Traffic	3,187	34,180	\$35,907	\$1,227,305,235	42%	30%	14%	14%
3. Unintentional – Poisoning	2,218	10,432	\$17,665	\$184,280,285	64%	22%	9%	5%
4. Sui Attempt – Firearm	1,362	130	\$73,291	\$9,527,780	33%	24%	24%	19%
5. Unintentional – Falls	1,151	111,353	\$26,213	\$2,918,851,401	75%	14%	4%	7%
6. Sui Attempt – Suffocation	762	183	\$29,949	\$5,480,732	44%	30%	13%	12%
7. Sui Attempt – Poisoning	467	12,654	\$12,921	\$163,505,452	47%	28%	17%	8%
8. Assault – Cut/Pierce	324	4,076	\$23,075	\$94,053,846	29%	13%	28%	30%
9. Unintentional Drowning	300	597	\$23,257	\$13,884,673	50%	41%	5%	4%
10. Unintentional – Fire/Burn	209	3,956	\$50,203	\$198,602,034	51%	22%	6%	21%
10. Unintentional – Other Transport	209	2,717	\$26,466	\$71,908,158	27%	48%	8%	16%

Firearm Homicides



Between 1999 and 2002, firearm homicides were the leading cause of injury death in Los Angeles County. This was not the case nationwide, where firearm homicides ranked as the 5th leading cause of injury death.¹ The effect of firearm homicides on Los Angeles County cannot be minimized. In the same time period, one out of every five injury deaths was caused by a firearm homicide.

The vast majority of homicides are caused by firearms. In Los Angeles County, more than three quarters of all homicides are due to firearms, but among 15-24 year olds, firearms cause more than 90% of all homicides.

Trends

The number of firearm homicides peaked in 1992, when 1,638 were reported. The annual number of firearm homicides then decreased until 1999. Since 2000, the number of firearm homicides has increased each year (Figure 1). Similar trends have been reported statewide and nationally, and other measures of crime and violence have showed the same patterns. The number of all

homicides decreased at the county, state, and national levels.¹ Both violent (homicide, robbery, etc.) and property (burglary, MV theft) crime arrests also decreased significantly during the 1990s.² Many factors may have contributed to this trend, including stronger police forces that incorporated more community policing, stricter laws regarding arrests for domestic violence, the death or imprisonment of many violent criminals, a booming economy, the declining use of crack cocaine, and stronger gun control laws^α.^{3,4} Similarly, the more recent increases in crime may be driven by factors such as the increasing use of illegal drugs controlled by gangs or other violent markets (potentially methamphetamine), the maturation of a new generation of violent criminals, and lack of jobs due to a poor economy.^{3,4}

Gender

Most victims of firearm homicide are male. For every female victim of

^α These are just a few of the many possible explanations for recent trends in crime statistics. For more information, please see reference #3, which is a detailed literature review of this topic.

firearm homicide, there are 8 male victims.

Race/Ethnicity

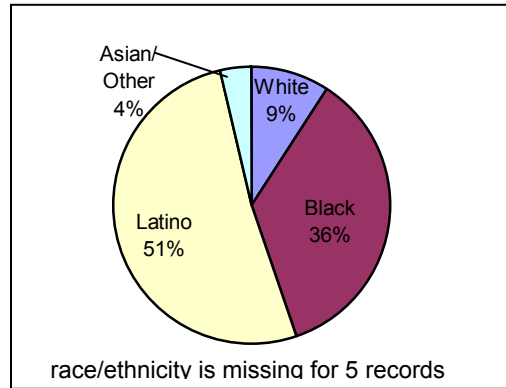
Over half of all firearm homicide victims are Latino, about one third are Black, and less than one in ten are White. As shown in Figures 2a and 2b, Blacks are severely overrepresented among victims of firearm homicide compared to their representation in the Los Angeles County population.

Age

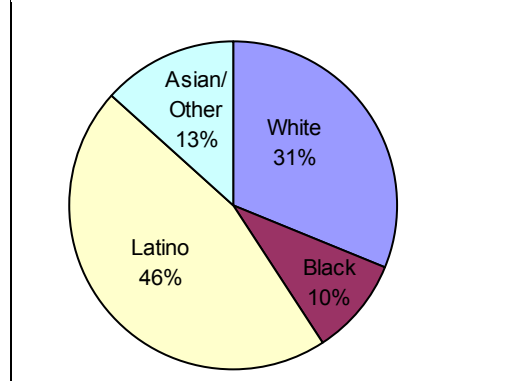
The average age of death from firearm homicide was just under 28 years. Victims of all other fatal injuries are much older, with an average age of over 45 years. Figure 3 shows the age distribution of firearm homicide victims by sex. Sixty seven percent of male firearm homicide victims are adolescents and young adults between the ages of 15 and 29. However, the age distribution for females is more spread out. Less than half of all firearm homicides among women occur among 15-29 year olds.

Figures 2a – 2b: Racial/Ethnic Distribution of Firearm Homicides and Los Angeles County Population

2a: Firearm Homicides, 1999-2002

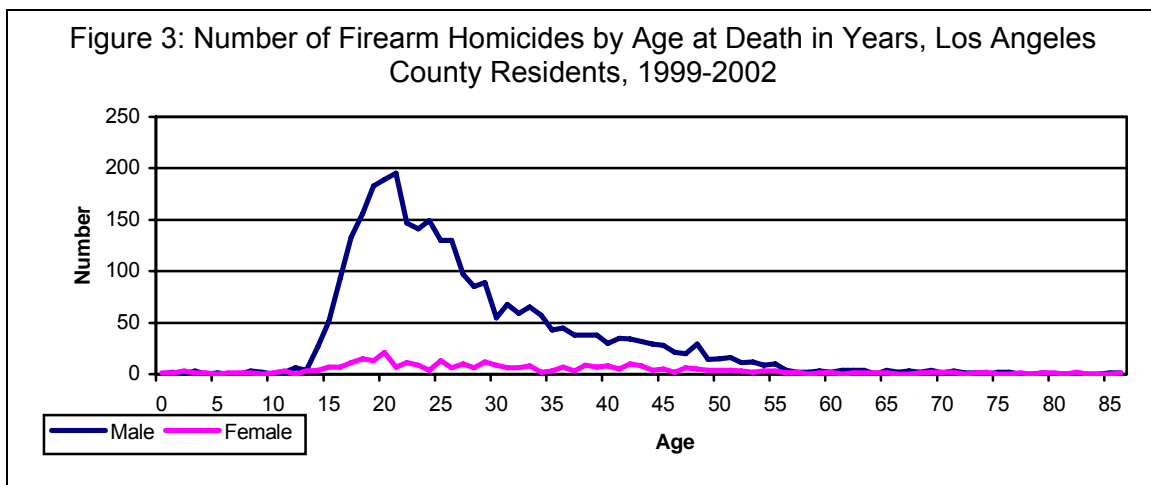


2b: LA County Population, 2002



Examining injury death rates further confirms that the majority of the burden of firearm homicides is borne

Figure 3: Number of Firearm Homicides by Age at Death in Years, Los Angeles County Residents, 1999-2002



by young men of color, particularly African Americans. While Latinos die in greater numbers than Blacks (see Figure 2a), the firearm homicide rate among Blacks (30.2/100,000) is almost four times that of Latinos (8.2/100,000) and over 10 times that of Whites (2.5/100,000) and Asians/Others (2.2/100,000). Firearm homicide rates among males peak among 20-24 year olds

for every racial/ethnic group. However, rates in this age group for Blacks (244/100,000) are overwhelmingly greater than those for Latinos (58/100,000), Whites (14/100,000) or Asians/Others (12/100,000). Overall, female firearm homicide rates are much lower. Rates peak among 15-19 year olds for Whites (2.2/100,000) and Latinos (3.1/100,000), among

Table 3: Firearm Homicide Rates by Demographic Subgroups and SPA, Los Angeles County Residents, 1999 - 2002

Demographic Category	Antelope Valley (SPA 1)	San Fernando Valley (SPA 2)	San Gabriel (SPA 3)	Metro (SPA 4)	West (SPA 5)	South (SPA 6)	East (SPA 7)	South Bay (SPA 8)	Los Angeles County
Age Group									
<1	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.2
1-4	0.0	0.4	0.5	0.0	0.0	1.6	0.6	0.0	0.5
5-9	0.0	0.2	0.0	0.0	0.0	1.2	0.0	0.6	0.3
10-14	0.8	0.2	0.9	3.3	0.0	4.7	1.3	1.9	1.7
15-19	7.1	11.2	9.8	29.1	9.0	74.1	19.7	24.7	23.6
20-24	21.2	18.1	16.1	29.2	8.4	93.6	27.3	31.2	31.1
25-29	4.4	11.3	10.5	16.4	10.4	64.8	15.1	19.2	18.9
30-34	6.0	4.7	6.6	9.0	2.5	39.0	8.9	10.4	10.4
35-44	5.9	2.8	5.5	6.4	2.2	29.9	3.6	6.6	7.0
45-54	3.1	2.6	2.7	5.5	3.2	16.2	3.3	4.4	4.5
55-64	0.0	1.1	0.4	2.5	2.7	5.1	1.4	1.3	1.6
65+	2.0	1.2	0.7	1.1	0.6	3.8	1.2	0.7	1.2
Race/Ethnicity									
White	2.5	2.2	2.4	3.4	1.2	7.6	3.2	3.2	2.5
Black	10.6	10.2	13.6	18.9	15.8	59.2	13.4	19.1	30.2
Asian/Other	0.0	1.8	1.7	2.3	1.0	5.1	2.7	3.9	2.2
Latino	4.3	5.9	5.9	10.1	5.9	14.6	7.1	7.8	8.2
Gender									
Male	7.0	7.2	7.5	13.7	5.3	50.1	11.3	14.1	14.1
Female	1.5	1.0	1.2	1.9	1.1	4.5	1.2	1.7	1.7
Overall	4.3	4.2	4.4	8.1	3.2	27.0	6.3	7.9	7.9

Age specific rates are per 100,000 population.

All other rates are per 100,000 population and age adjusted to the 2000 US population.

Green squares are those in which the SPA mortality rate is significantly less than the LA County rate.

Pink squares are those in which the SPA mortality rate is significantly greater than the LA County rate.

25-29 year olds for Asians/Others (2.8/100,000), and among 20-24 year olds for Blacks (16.0/100,000).

Geography

Between 1999 and 2002, SPA 6 residents accounted for more than one third of all firearm homicides, but only ten percent of the total population of Los Angeles County. The rate of firearm homicides in SPA 6 during this time was 27.0 per 100,000, more than three times that of SPA 4, which had the next highest rate.

The highest age-specific firearm homicide rates are consistently found among teenagers or young adults (Table 3). Firearm homicide rates are highest for Blacks, followed by Latinos, Whites and Asian/Others, except in SPA 8, where rates are lowest for Whites (Table 3). The male-to-female rate ratio ranges from 4.7 in SPA 1 to 11.1 in SPA 6 (Table 3).

Blacks are the only demographic subgroup in which firearm homicide rates for each SPA are different from

that of the county overall. For each demographic subgroup in which there was more than one death (all except <1 year olds), the highest rates of firearm homicide were found in SPA 6.

Non-Fatal Injury

According to the CDC, about 25% of all assaults with firearms result in death (a homicide).⁵ While this is substantially higher than other methods of assaults, there are a significant number of survivors of firearm assaults. During the same time period covered by this report, 7,614 patients with assaultive firearm injuries were discharged from Los Angeles County hospitals. Medical charges for treating these patients were nearly \$400 million, an average of more than \$50,000 per visit.

As this report shows, we can identify particular populations within the county that are at particularly high risk of firearm injury. The next section discusses effective firearm homicide prevention strategies.

Firearm Homicide Prevention Strategies

The prevention of firearm homicide, especially among youth and young adults, is the responsibility of all Los Angelenos. Communities, families, churches, schools, health and social services, the judicial system, policy makers, and law enforcement have a part in reducing violence.

- **Community-based education.** Violence is, to a large degree, a

learned behavior, and such behavior can be prevented and even 'unlearned'. On the next page are risk factors for youth violence.⁶

Community-based interventions can employ educational approaches to changing violent behavior and direct their messages towards at-risk youth and their families. Interventions may be conducted in a variety of settings,

such as at community sites, schools or churches, or among youth in the judicial system. The Centers for Disease Control and Prevention give recommendations for designing and implementing community-based behavioral interventions.⁶

Risk Factors for Youth Violence⁶

- Use of or selling alcohol or drugs
- Parental use of alcohol or drugs
- History of aggressive behavior
- Exposure to violence in the home, neighborhood or media
- Friends who engage in problem behavior
- Poor academic performance or dropping out of school
- Poverty
- Homelessness
- Family disruption
- Access to firearms
- Criminal activity
- Gang membership
- Recent immigration

➤ **Consumer advocacy for product safety.** Changing products to make them safer is frequently more successful at reducing injury and death than efforts to change behavior.⁷ Technology exists that can make firearms more difficult to use if obtained illegally. For instance,

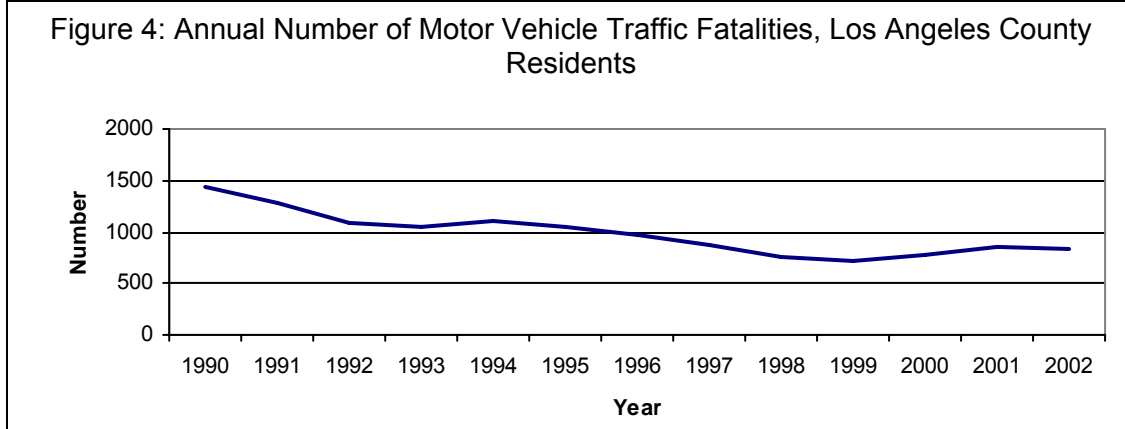
firearms can be personalized, requiring the identification of the legal buyer (e.g. a fingerprint or personal identification number) to be shot.⁷

➤ **Firearm Access.** Policy makers can play an important role by supporting legislation that prevents illegal gun acquisition and use. Tougher regulation of federally licensed firearm dealers, limiting handgun sales to 1 per month, and mandating background checks for purchasers, have reduced firearm violence.⁸

➤ **Screening & Referral for Treatment.** Health care practitioners are required by California law to report child abuse and to screen for and report intimate partner violence. Identifying violence early on is important for victims and perpetrators of violence to receive mental health and social services.

➤ **Policing.** Law enforcement initiatives to reduce violent crime have been shown to be effective. For instance, increased patrolling and police presence in 'hot spots' have been shown to decrease firearm-related crime.⁸

Unintentional Motor Vehicle Traffic (MVT) Fatalities

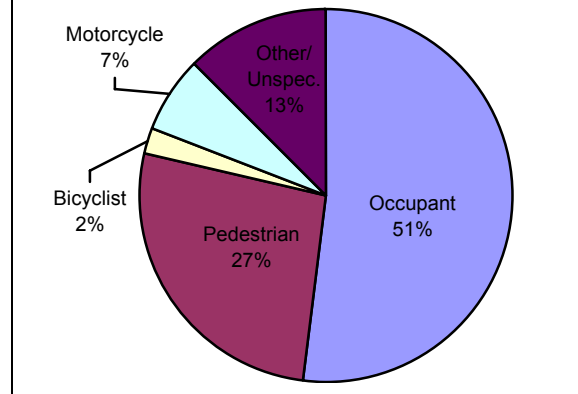


MVT collisions are the leading cause of injury death in the United States, and are the 2nd leading cause of injury death in Los Angeles County. Rates of mortality from MVT collisions are also higher nationally than in Los Angeles. In fact, nationwide, MVT collisions are the overall leading cause of death for 1-34 year olds.¹ This is in stark contrast to Los Angeles County, where MVT is not the leading cause of overall death for any age group. This is largely because the age groups in which MVT collisions are the leading cause of death nationally are the same age groups with high rates of firearm homicide in Los Angeles County.

Trends

Overall, MVT deaths decreased between 1990 and 2002 (Figure 4). In 2002 there were 832 MVT fatalities, 42% less than in 1990. During this same time period, MVT deaths decreased by 4% nationally.¹

Figure 5: Motor Vehicle Traffic Deaths by Victim Type, Los Angeles County Residents, 1999-2002



Victim Type

MVT deaths can be subdivided by the type of victim involved (Figure 5). In Los Angeles County, over half of all MVT fatalities involve vehicle occupants (either drivers or passengers). More than one quarter of fatalities are pedestrians. Among the remainder of MVT deaths, most (13%) are to other or unspecified persons. Motorcyclists (7%) and bicyclists (2%) each make up a small percentage of fatalities. Pedestrians accounted for a larger proportion of

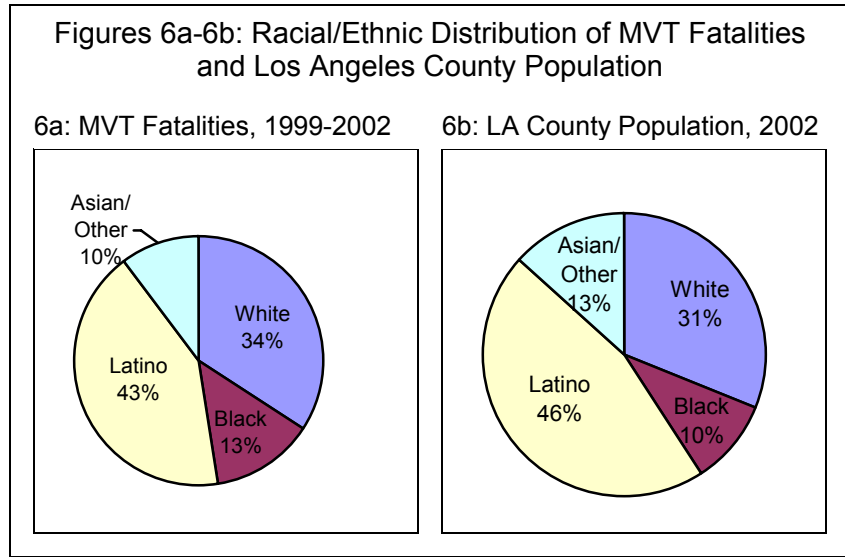
deaths in Los Angeles County (27%) than in the United States (11%).¹

Gender

Overall, 68% of MVT fatalities are male. Looking at victim type, about two thirds of occupant and pedestrian deaths are male, but more than 90% of bicyclist and motorcyclist deaths are male.

Race/Ethnicity

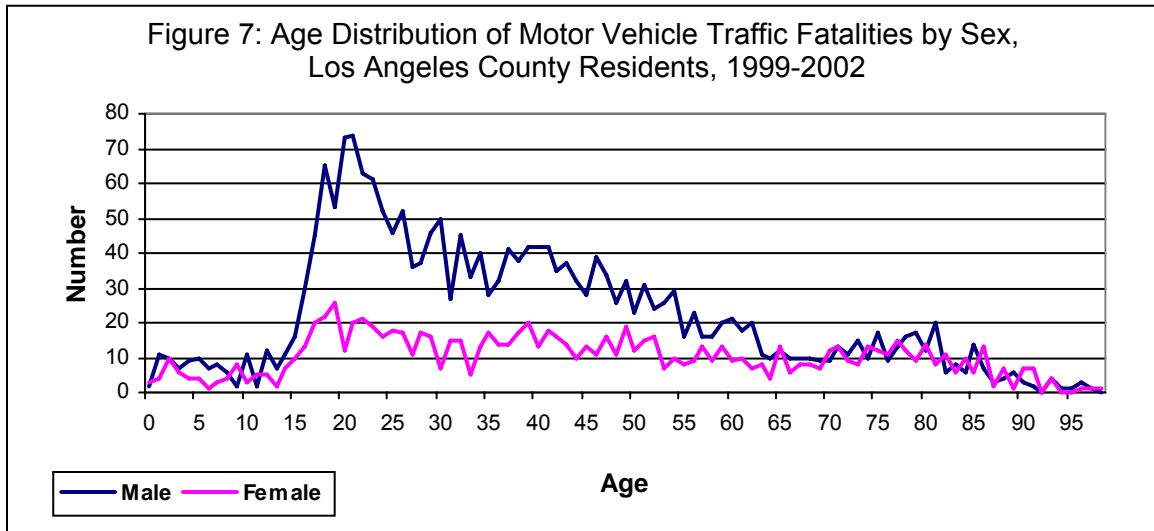
Figures 6a-6b show that the racial/ethnic distribution of MVT fatalities is very similar to the overall Los Angeles County population. Mortality rates are highest for Blacks (11.6 per 100,000), followed by Latinos (8.9 per 100,000), Whites



distribution of occupant and pedestrian injuries are similar, but bicyclist fatalities are more likely to be Latino and motorcyclist fatalities are more likely to be White.

Age

The average age at death is somewhat higher for females (44.9 years) than for males (38.8 years). Among children and seniors, males



(8.4 per 100,000) and Asian/Others (6.7 per 100,000). The racial/ethnic

and females experience about the same number of MVT fatalities

(Figure 7). There is a sharp increase in the number of deaths during late adolescence for both genders, but the increase is much steeper among males. After the initial increase in

female deaths during late adolescence, the number of deaths remains relatively steady throughout most of the adult years. In contrast, MVT deaths among males drop off

Table 4: Unintentional Motor Vehicle Traffic Mortality Rates by Demographic Subgroups, Victim Type, and SPA, Los Angeles County Residents, 1999-2002

Demographic Category	Antelope Valley (SPA 1)	San Fernando Valley (SPA 2)	San Gabriel (SPA 3)	Metro (SPA 4)	West (SPA 5)	South (SPA 6)	East (SPA 7)	South Bay (SPA 8)	Los Angeles County
Age Group									
<1	0.0	1.8	0.0	1.5	0.0	0.0	1.1	1.1	0.9
1-4	4.8	1.5	2.7	1.5	0.0	7.8	2.2	0.8	2.6
5-9	3.3	1.9	1.1	1.8	1.7	2.7	1.4	1.0	1.7
10-14	3.9	2.8	1.3	1.6	0.8	2.1	2.4	2.1	2.1
15-19	31.2	13.7	8.9	8.1	7.0	10.4	8.3	8.0	10.6
20-24	31.9	17.4	14.3	10.2	7.9	14.2	16.0	13.9	14.7
25-29	11.6	8.9	9.3	7.3	9.1	13.7	10.5	8.7	9.7
30-34	19.3	8.9	7.5	4.9	4.1	10.8	7.2	6.1	7.8
35-44	16.8	8.0	7.6	6.7	4.8	16.7	6.1	6.5	8.6
45-54	24.8	7.0	7.9	7.7	4.3	15.1	7.2	8.5	9.0
55-64	21.8	9.2	7.3	7.9	6.2	14.8	5.9	8.9	9.1
65+	19.9	12.1	12.0	14.0	9.7	14.7	18.0	13.8	13.7
Race/Ethnicity									
White	17.8	8.6	7.7	7.1	4.8	10.1	7.4	8.2	8.4
Black	18.5	10.0	9.6	7.0	5.6	15.4	7.5	8.2	11.6
Asian/Other	21.4	4.7	5.1	7.9	5.4	8.2	10.6	6.9	6.7
Latino	16.1	9.7	9.0	6.8	6.1	11.4	7.9	8.0	8.9
Gender									
Male	25.7	11.6	10.5	9.1	6.9	16.8	11.8	10.8	11.8
Female	10.0	5.2	4.6	4.9	3.6	7.8	4.6	4.5	5.3
Victim Type									
Occupant	11.9	4.7	3.9	3.5	2.4	5.1	4.4	3.9	4.4
Pedestrian	1.8	1.9	1.9	2.6	1.8	4.7	2.1	1.9	2.4
Bicyclist	0.2	0.1	0.3	0.1	0.1	0.4	0.2	0.3	0.2
Motorcyclist	1.0	0.8	0.5	0.2	0.3	0.5	0.5	0.6	0.5
Other/Unspecified	2.9	1.0	1.0	0.7	0.5	1.4	0.8	0.9	1.1
Overall	17.8	8.4	7.5	7.0	5.2	12.0	8.0	7.5	8.5

Age specific rates are per 100,000 population.

All other rates are per 100,000 and age adjusted to the 2000 US population.

Green squares are those in which the SPA mortality rate is significantly less than the LA County rate.

Pink squares are those in which the SPA mortality rate is significantly greater than the LA County rate.

steadily throughout adulthood.

Geography

There is also significant variation in the geographic distribution of MVT fatalities. Overall MVT mortality is highest in SPAs 1 and 6, and lowest in SPA 5. Breaking down MVT rates by victim type shows a different picture. SPA 1 has the highest rate of occupant fatalities, with a rate more than double that of SPA 6, which has the next highest rate, but the lowest pedestrian mortality rate of any SPA. Pedestrian mortality is highest in SPA 6, where death rates are nearly double that of the SPA with the next highest rate. SPA 5 has the lowest rate of occupant injuries and the second lowest rate of pedestrian injuries.

Much of the area with high occupant death rates is more suburban and spread out. These areas may be characterized by long commutes, meaning residents spend more time traveling by car. The exception to this is SPA 6, which is centrally located and yet has the second highest rate of occupant injuries of any SPA. By contrast, areas with high rates of pedestrian fatalities tend to be more centrally located and urban.

Demographics also vary significantly with geography (Table 4). MVT death rates in SPAs 1 and 6 are most often higher and rates in SPAs 4 and 5 are most often lower than the county overall. SPA 1, in addition to the previously discussed

high rate of occupant injuries, also has a significantly high rate of injuries to other/unspecified victims.

Blacks have the highest rate of MVT injuries countywide, but their rates in three SPAs are better than the county overall. By contrast, countywide, Asians/Others have the lowest MVT death rate, but SPA-specific rates for Asians/Others are never lower than the overall county rate. Asians/Others also have the highest SPA-specific rate of any racial/ethnic group (21.4/100,000 in SPA 1).

Non-Fatal Injury

Only a small percentage of all injuries from motor vehicle traffic crashes result in death. A study from the Centers for Disease Control and Prevention found that 0.2% of bicyclist, 1.1% of occupant, 2.4 % of motorcyclist, and 3.5% of pedestrian injuries were fatal.⁵ Between 1999 and 2002, there were 34,184 inpatient hospital visits in Los Angeles County for non-fatal injuries sustained in MVT crashes. These hospitalizations resulted in more than \$1.2 billion of medical charges, or more than \$35,000 per visit.

The demographic and geographic information presented in this report clearly identifies certain populations that are at high risk for experiencing MVT fatalities. The following section discusses prevention strategies that can reduce the risk of MVT injuries and deaths.

Unintentional MVT Injury Prevention Strategies

Despite an increase in MV traffic this century, the rate of MV collision deaths has decreased.⁹

Nevertheless, MV collisions are a leading cause of injury death in the United States. Prevention efforts are wide ranging, including education, safety equipment distribution, legislation, and law enforcement initiatives. Strategies that reduce MV injury must be expanded and new programs must be developed to combat emerging problems.

Occupant Injury Prevention

Occupants account for over half of all fatalities from MV crashes. A wide range of prevention efforts to reduce occupant injuries exist.

- **Child Passenger Safety.** Using child passenger safety seats reduces infant and toddler fatalities by 71% and 54%, respectively.¹¹ The box to the right provides recent recommendations on child restraint use. Interventions to increase safety seat use (in the box on the next page) include legislation, education, equipment distribution, incentives, media campaigns, and increased law enforcement. These measures, alone and in combination, have been shown to increase restraint use.¹²
- **Safety Belts.** Wearing seat belts greatly enhances the survival rate of occupants in MV crashes.¹³ While safety belt laws have increased belt use, these laws can be expanded and improved. Forty-nine states (all except New Hampshire) require that vehicle occupants wear

seat belts; however, only 22 (including California) have primary prevention laws, allowing police to stop vehicles for seat belt violations alone.¹⁴ “Enhanced enforcement” may also be effective, combining public awareness campaigns with increased citations for belt violations.

NHTSA Child Passenger Safety Recommendations¹⁰

- **All children** should be restrained in an appropriate car seat at least until the *age of 8*
- **Infants** should ride in a rear-facing car seat until they are at least *1 year old* and weigh at least *20 pounds*.
- **Toddlers** should ride in forward-facing car seats until they are *4 years old* and weigh approximately *40 pounds*.
- **Older children** should be restrained in booster seats until they are at least *8 years old*
- **All children** under the *age of 13* should ride in the back seat

- **Alcohol or Other Impaired Driving.** Alcohol was involved in 40% of all fatal crashes and 7% of all crashes in the US during 2003.¹⁵ The box on the next page summarizes programs to reduce impaired driving. Legislation establishing 0.08 as the legal limit for blood alcohol content (BAC) and 21 years as the legal drinking age reduced MV crashes and fatalities.¹² Other interventions include special drinking and driving laws for drivers less than 21 years, mass media campaigns, and

Evidence for Effectiveness	Child Passenger Safety Interventions	Safety Belt Use Interventions	Programs to Reduce Impaired Driving
Strong	<ul style="list-style-type: none"> ○ Child Safety Seat Use Laws ○ Distribution + Education 	<ul style="list-style-type: none"> ○ Safety Belt Use Laws ○ Primary Enforcement Laws ○ Enhanced Enforcement Programs 	<ul style="list-style-type: none"> ○ .08 BAC Laws ○ Minimum Legal Drinking Age ○ Sobriety Checkpoints ○ Mass Media Campaigns
Sufficient	<ul style="list-style-type: none"> ○ Community-wide Information + Enhanced Enforcement ○ Incentives + Education 	---	<ul style="list-style-type: none"> ○ Lower BAC Laws for Younger Drivers ○ Training for Servers of Alcoholic Beverages
Insufficient	<ul style="list-style-type: none"> ○ Education Only Programs 	---	---

sobriety checkpoints.¹² Training food industry employees who serve alcohol to recognize and refuse service to intoxicated customers has also reduced drunk driving.¹²

- **Young Drivers.** Nationally, MV crashes are the leading cause of death for adolescents.¹ Graduated licensing prohibits risky driving at night or with other teenaged passengers, and provisional licensing mandates that a licensed driver accompany a young driver. These methods, allowing young drivers to gain experience in low-risk conditions, have reduced MV crashes among teen drivers.^{16,17}
- **Older Adult Drivers.** Excluding teenaged drivers, the highest MVT death rate is among older adults. Older adults are more likely to use safety belts and drive in safe conditions, and less likely to drive drunk than younger drivers. They are however, faced with hearing, vision and physical impairments that may affect their driving ability.¹⁸ There are programs for older adults that reinforce safe driving behaviors and discuss modifying driving to adjust for age-related changes.¹⁹

- **Distracted Driving.** Distracted driving encompasses a wide range of activities, including talking with a passenger, eating, changing radio stations, and talking on cell phones. In the past 5 years, 14% of drivers in crashes reported that distracted driving caused the crash.²⁰ New York became the first state in the country to ban hand-held cell phones while driving. While such laws do reduce cell phone use while driving, studies have not determined how cell phone bans affect crash rates.²¹

Pedestrian Injury Prevention

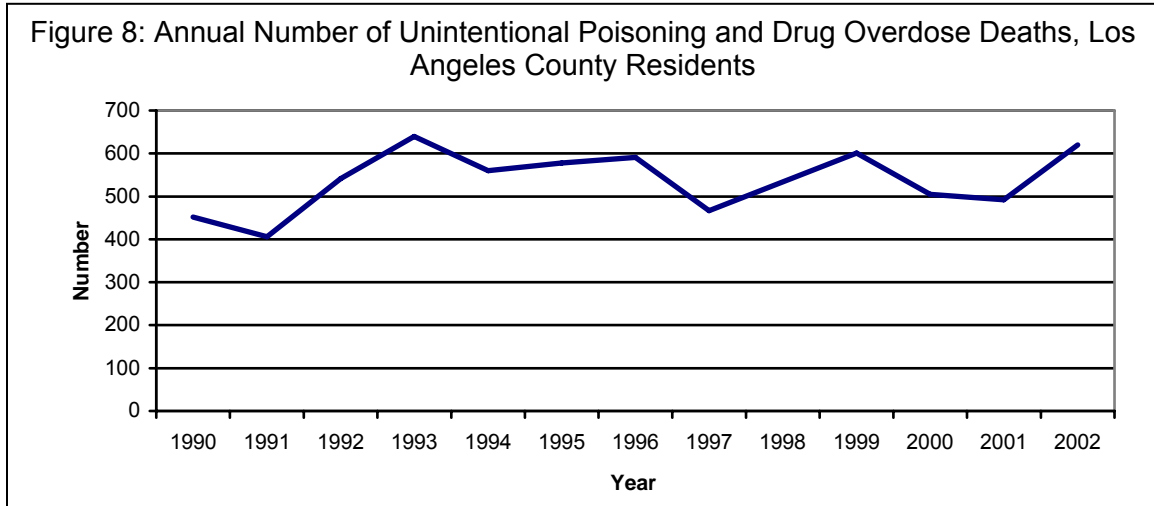
The Insurance Institute for Highway Safety suggests the following roadway modifications to reduce pedestrian injuries: 1) separation of pedestrians and vehicles, 2) increasing the visibility of pedestrians, and 3) reducing vehicular speed.²² Some have also suggested that scheduling daylight savings time year round would reduce pedestrian fatalities by increasing their visibility.²³ Finally, educational programs have reduced MV-pedestrian collisions among children.²²

Bicyclist & Motorcyclist Injury Prevention

Seventy percent of fatal bicyclist crashes involve head injuries, yet only 20%-25% of all bicyclists wear helmets.²⁴ Helmet laws have increased helmet use, which if worn properly are more than 85% effective at reducing the impact of head injuries. However, only

20 states have implemented bicycle helmet laws and only 20 have laws requiring their use when riding a motorcycle.^{24,25} The Department of Transportation promotes helmet use in addition to driver and cyclist education, strengthening the legal system's support of bicycling, and creating safer roads and paths for bicycling.²⁶

Unintentional Poisoning & Drug Overdoses (PDO)



From 1999 to 2002, unintentional PDO was the third leading cause of injury death in Los Angeles County and the fourth leading cause of injury death in the United States.¹

Trends

Since 1993, the annual number of unintentional PDO fatalities has ranged from approximately five to six hundred (Figure 8). Nationwide, the annual number of unintentional PDO deaths more than doubled from 1993 to 2002¹.

Poisonous Substance

Unintentional PDOs can be further subdivided by the type of substance involved (Table 5)^α. Over

Table 5: Substance Involved in Unintentional PDO Deaths, Los Angeles County Residents, 1999-2002

Substance	Number (%)
Nonopioid analgesics, antipyretics and antirheumatics	28 (1%)
Antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs, NEC	130 (6%)
Narcotics and psychodysleptics [hallucinogens], NEC	1261 (57%)
Other and unspecified drugs, medicaments, and biological substances	734 (33%)
Alcohol	29 (1%)
Organic solvents and halogenated hydrocarbons and their vapors	1 (<1%)
Other gasses and vapors	27 (1%)
Pesticides	2 (<1%)
Other and unspecified chemicals and noxious substances	6 (<1%)

half of all unintentional PDO fatalities involve narcotics and psychodysleptics. This category includes illicit drugs such as cannabis, cocaine, heroin and LSD, as well as prescription drugs such as codeine and morphine. One third of unintentional PDO deaths were caused by other and unspecified drugs. This is a broad category that

^α Please see the technical notes for a detailed description of substances in each category.

encompasses numerous drugs including anaesthetics, topical preparations, and vaccines.

Gender

Overall, three quarters of all fatal unintentional PDOs are male. Males account for 83% of fatalities from narcotics and psychodysleptics, but for only 63% of deaths due to other and unspecified drugs.

Race/Ethnicity

The racial/ethnic distribution of unintentional PDOs is quite different from that of Los Angeles County's overall population (Figures 9a-b). Among Whites, about half of all fatalities were caused by narcotics and psychodysleptics and 40% by other or unspecified drugs. For Latinos and Blacks, almost two thirds of deaths were caused by

narcotics and psychodysleptics and just one quarter by other/unspecified drugs.

Age

The age distribution of fatal unintentional PDOs is very similar for both males and females (Figure 10). There are very few PDO fatalities among children and the elderly. The number of unintentional PDO deaths gradually increases from late adolescence until peaking among people in their early 40s. The age

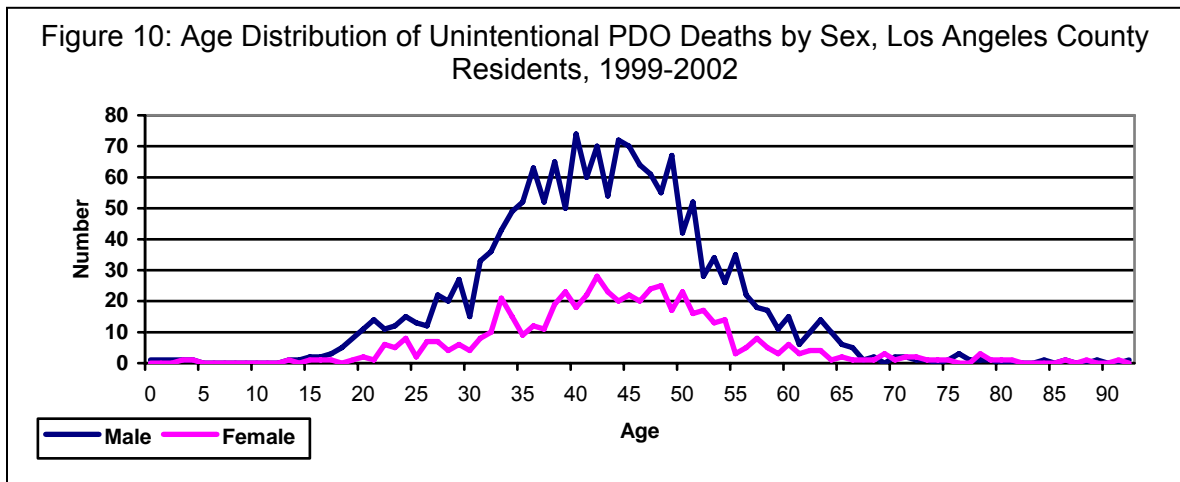
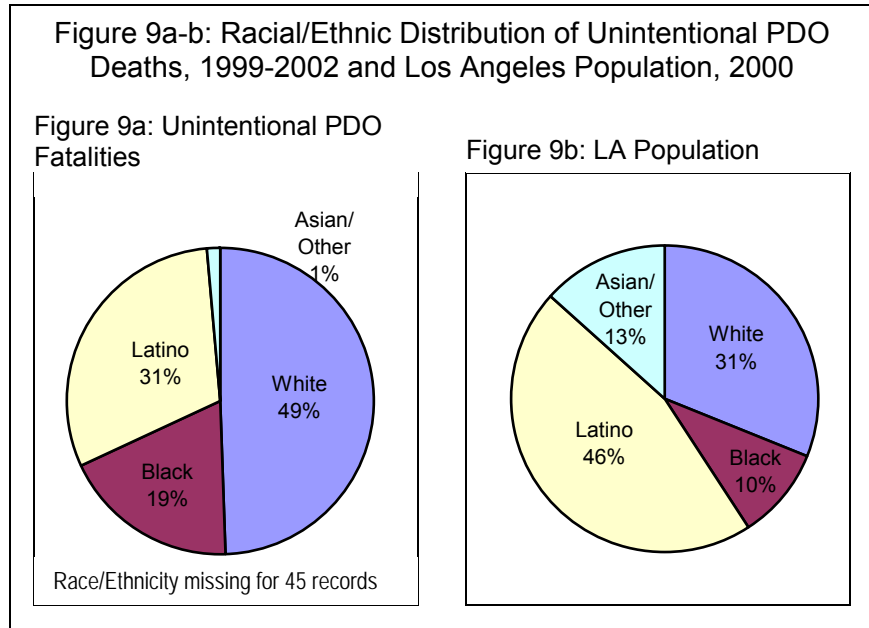


Table 6: Unintentional PDO Fatality Rates by Demographic Subgroups and SPA, Los Angeles County Residents, 1999-2002

Demographic Category	Antelope Valley (SPA 1)	San Fernando Valley (SPA 2)	San Gabriel (SPA 3)	Metro (SPA 4)	West (SPA 5)	South (SPA 6)	East (SPA 7)	South Bay (SPA 8)	Los Angeles County
Age Group									
<1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1-4	0.0	0.2	0.0	0.0	0.0	0.3	0.3	0.8	0.3
5-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.2	0.1
15-19	0.0	0.7	0.6	0.7	0.7	0.6	1.4	0.9	0.9
20-24	1.3	4.2	1.4	4.1	4.2	2.1	3.3	2.0	3.0
25-29	2.9	4.0	2.8	5.2	4.8	3.3	3.6	3.2	3.9
30-34	6.0	6.3	6.9	7.5	9.0	6.7	7.5	6.3	7.3
35-44	20.9	10.9	10.7	13.4	12.0	13.8	13.1	12.6	13.1
45-54	14.3	11.0	10.0	17.7	13.6	21.9	14.0	13.5	14.7
55-64	3.4	5.1	3.2	12.0	5.8	14.8	3.1	7.8	7.0
65+	1.0	0.8	0.8	1.7	0.9	3.1	1.6	2.0	1.4
Race/Ethnicity									
White	8.0	6.7	6.7	10.7	6.8	12.0	10.1	8.6	8.2
Black	7.1	6.0	8.4	16.2	7.1	13.7	7.3	7.6	11.1
Asian/Other	0.0	0.3	0.3	0.8	0.7	1.9	0.8	0.4	0.5
Latino	3.9	3.2	5.1	5.6	4.2	3.0	4.9	3.9	4.6
Gender									
Male	6.4	7.2	6.5	11.0	8.5	12.1	9.1	8.3	9.1
Female	6.5	2.5	2.3	2.8	3.0	4.1	2.2	3.2	3.0
Overall	6.5	4.9	4.3	7.0	5.7	7.8	5.6	5.7	6.0

Age specific rates are per 100,000 population.

All other rates are per 100,000 and age adjusted to the 2000 US population.

Green squares are those in which the SPA mortality rate is significantly less than the LA County rate.

Pink squares are those in which the SPA mortality rate is significantly greater than the LA County rate.

distributions for the narcotics/psychodysleptics and other/unspecified drug categories both also follow this pattern.

Geography

SPA 6 has the highest rate of unintentional PDO fatalities in the county and SPA 3 has the lowest. The geographic distribution of PDO

mortality rates varies depending on the substance involved. High mortality rates from narcotics and psychodysleptics are concentrated in the center of the county (SPAs 4 and 6). SPAs 1 and 5 have the highest rates of PDO fatalities from other and unspecified drugs. SPAs 4 and 6 have the highest population density and the largest proportion of the population

living in poverty of any SPA. SPAs 1 and 5, on the other hand, have the lowest percentage of the population living in poverty and rank 1st and 3rd, respectively, in lowest population density.

Table 6 shows mortality rates by SPA for demographic subgroups. The most surprising results in this table are the rates by gender for SPA 1. Countywide, males account for the vast majority of unintentional PDO deaths, but in SPA 1, the mortality rate is higher for females than for males. In the other SPAs, male mortality rates range from 2.6 to 4.1 times higher than those for females.

Non-Fatal Injury

Nationally, only about 2.6% of PDO incidents result in death.⁵ Between 1999 and 2002 in Los Angeles County, there were 10,422 hospital discharges for unintentional PDO incidents. The medical charges for these visits were more than \$184 million, an average of \$17,652 per visit.

The data presented in this report clearly identify specific demographic and geographic groups that are affected by high rates of unintentional PDOs. The following section highlights successful strategies for reducing deaths from unintentional PDOs and provides contact information for local poisoning and drug prevention resources.

Unintentional PDO Prevention Strategies

Preventing PDO fatalities involves both preventing poisonings from occurring and effectively responding to those that do occur. In addition, drug treatment programs will also reduce the number of fatal drug overdoses.

- ***Address the use of illicit drugs***
Over half of all fatal unintentional PDOs in Los Angeles County during 1999-2002 involved the use of narcotics or other illicit drugs. Therefore, prevention strategies should target drug users as a high-risk group. This can be done in conjunction with various community programs that work with alcohol and drug abusers. The Los Angeles County Alcohol and Drug Program Administration (ADPA) contracts with

community based organizations to provide drug treatment and prevention services and is an excellent channel to provide outreach to high-risk individuals. Contact information for the ADPA is available on page 32 in the Resource section of this report.

- ***Education.*** Poisoning prevention education should be included in school curricula and should also be extended to parents in collaboration with childhood health education, home safety education, and/or immunization programs. In addition, educational programs addressing poisoning prevention should include a component discussing drug abuse.

Poisoning Prevention in the Home

- Post the poison control number near every phone in your home: **1-800-222-1222**
- Keep all medicines, personal-care products, and household products in locked cabinets out of the reach of small children
- Identify poisonous plants in and around your home and keep them out of the reach of children or remove them entirely.
- Visitors may bring medicines into your home. Never leave medicines in unattended purses or suitcases where small children may find them.
- Install carbon monoxide detectors in your house.
- Fuel burning appliances should be professionally installed and inspected each year.
- Check your house for lead based paints. Call 1-800-424-LEAD for more information.

Source: Centers for Disease Control and Prevention²⁷

The box above lists some basic poisoning prevention strategies that parents and caretakers can implement in their homes.

Childhood poisonings are very common, yet are rarely fatal.²⁹ Poisoning prevention education should include information about the appropriate response once a poisoning has occurred. The box to the right describes what steps to take once a poisoning has occurred.

- **Community Collaboration**
Conducting safety fairs and health events with local and national injury prevention chapters can promote public awareness of and provide

What to do if a poisoning occurs...

1. Stay calm
2. Immediately call your poison control center at **1-800-222-1222** and have the following information ready:
 - a. Victim's condition, age and weight
 - b. Product containers or bottles
 - c. Time the poisoning occurred
 - d. Your name and phone number
3. Follow the instructions that the poison center gives you.

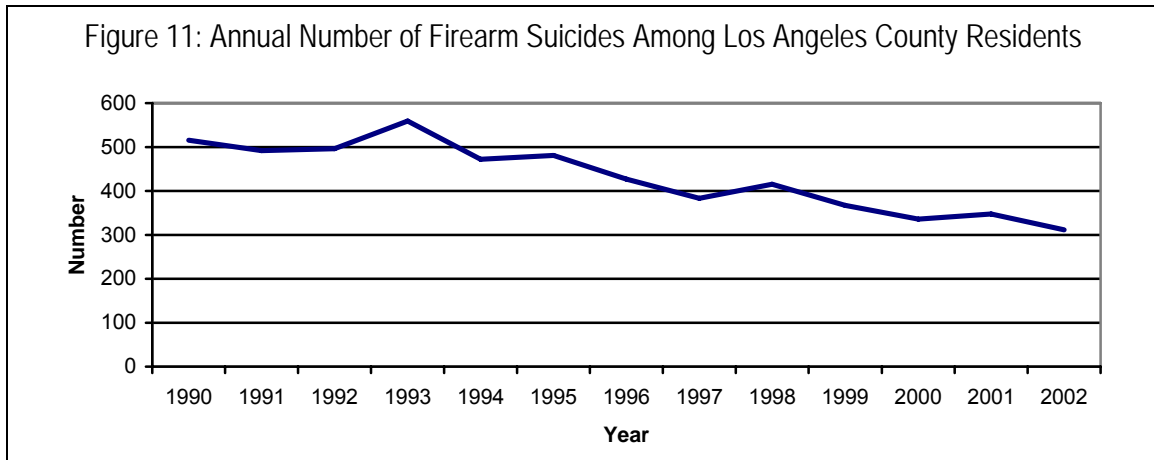
First-aid steps

1. Swallowed poisons: do not give the victim anything to eat or drink before calling the Poison Center or a doctor. Do not induce vomiting or give ipecac syrup unless instructed to do so by your doctor or the Poison Center
2. Inhaled poisons: Get the victim to fresh air right away.
3. Poisons on the Skin: Remove contaminated clothing and rinse the victim's skin with water for 10 minutes.
4. Poisons in the Eye: Flush the victim's eye for 15 minutes using a large cup filled with lukewarm water held 2-4 inches from the eye.

Source: American Association of Poison Control Centers²⁸

education about poisoning prevention. The CDC recommends that all communities observe National Poison Prevention Week, which occurs annually during the third week of March. Organizing such events also facilitates the sharing of community resources and strengthens collaborative efforts in poisoning prevention.

Firearm Suicides



Between 1999 and 2002, firearm suicides were the fourth leading of cause of injury death in Los Angeles County and the second leading cause of injury death nationwide.¹ In the United States, most suicides are committed with firearms, while in Los Angeles County just under half of all suicides involve firearms.¹

every ten firearm suicides. Looking at all suicides (firearm and non-firearm) in the United States, four times as many males as females commit suicide, but females are three times as likely to make an unsuccessful suicide attempt.³⁰

Trends

By 2002, the annual number of firearm suicides in Los Angeles County decreased 44% from 1993 (Figure 11). During the same time period, firearm suicides decreased by 27% in California and did not change significantly nationwide.¹

Race/Ethnicity

Three out of every five victims of firearm suicide are White (Figure 12a), Whites are dramatically overrepresented among firearm

Figures 12a-12b: Racial/Ethnic Distribution of Firearm Suicides, 1999-2002 and Los Angeles County Population, 2002

Figure 12a: Firearm Suicides

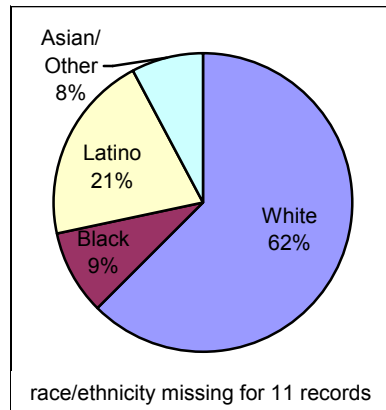
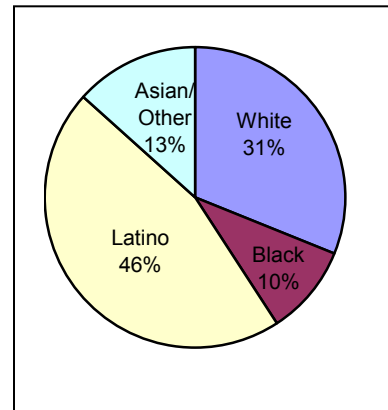


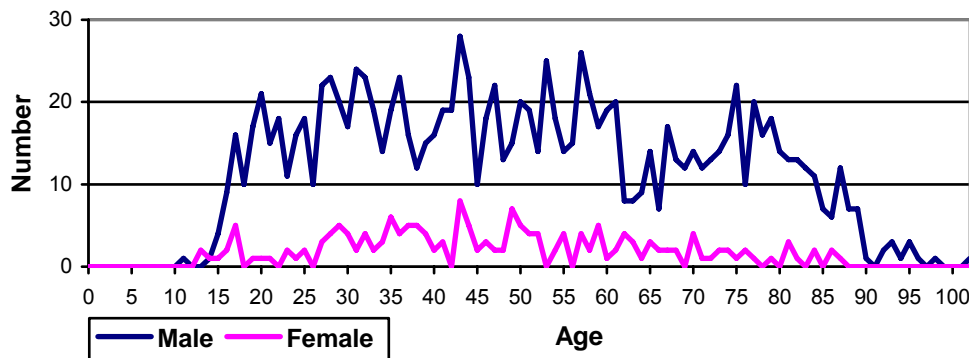
Figure 12b: LA Population



Gender

Males account for nearly nine out of

Figure 13: Age Distribution of Firearm Suicides, Los Angeles County Residents, 1999-2002



suicide victims compared to their representation in the overall county population, while Latinos are significantly underrepresented (Figures 12a-12b). Whites have the highest rate of firearm suicides, with 5.9 deaths per 100,000 population. Blacks have the next highest rate, with 3.4 firearm suicides per 100,000. Latinos and Asians/Other have the lowest rate, each with about 2 deaths per 100,000.

Age

The average age of death for victims of firearm suicides is 49.8 years. This is older than the average age of death for all other types of injury (41.0 years). The age distribution of firearm suicides (Figure 13) shows that there are no victims under the age of 10, and very few over the age of 90. Just over half of all firearm suicide victims are between the ages of 30 and 64. Though there are more firearm suicides among younger individuals, the rate of firearm suicides increases with age (Table 7).

Table 7: Firearm Suicide Rate by Age, Los Angeles County, 1999-2002

Age Group	Number of Deaths	Rate per 100,000
<1 year	0	0
1-4 years	0	0
5-9 years	0	0
10-14 years	5	0.2
15-19 years	65	2.3
20-24 years	86	3.1
25-30 years	107	3.5
30-34 years	112	3.5
35-44 years	232	3.8
45-54 years	205	4.4
55-64 years	183	6.4
65+ years	366	9.3

Geography

SPA 1 has the highest overall rate of firearm suicide, while SPAs 6 and 7 have the lowest. Table 8 shows rates of firearm suicide by demographic groups for each SPA. The highest mortality rate for any group is 21.8 per 100,000, found among 65+ year olds males living in Antelope Valley. This rate is more than double that of the countywide rate for 65+ year olds. In Antelope

Table 8: Firearm Suicide Rates by Demographic Subgroups and SPA, Los Angeles County Residents, 1999-2002

Demographic Category	Antelope Valley (SPA 1)	San Fernando Valley (SPA 2)	San Gabriel (SPA 3)	Metro (SPA 4)	West (SPA 5)	South (SPA 6)	East (SPA 7)	South Bay (SPA 8)	Los Angeles County
Age Group									
<1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	0.0	0.0	0.2	0.3	0.8	0.0	0.2	0.2	0.2
15-19	8.0	2.4	1.3	1.7	0.0	3.8	2.6	1.6	2.3
20-24	5.3	2.6	3.0	3.6	2.1	3.5	2.8	3.2	3.1
25-29	7.3	3.6	3.2	2.8	3.9	3.3	2.4	4.1	3.5
30-34	2.4	3.5	3.2	3.6	3.3	3.7	3.1	3.7	3.5
35-44	4.5	5.3	3.5	3.1	2.4	3.2	2.7	4.0	3.8
45-54	4.4	5.4	4.3	4.0	4.6	2.2	2.5	4.8	4.4
55-64	10.3	7.7	5.3	5.1	9.7	4.6	3.7	6.8	6.4
65+	21.8	9.5	6.4	6.9	13.3	5.1	8.0	13.1	9.3
Race/Ethnicity									
White	8.1	5.9	5.5	5.8	4.9	2.3	5.0	6.4	5.9
Black	3.3	3.0	3.1	3.2	2.8	4.4	1.6	2.9	3.4
Asian/Other	2.9	1.9	1.3	2.3	1.4	0.0	1.6	2.8	1.9
Latino	4.3	1.9	1.8	1.5	1.9	1.9	2.0	2.4	1.9
Gender									
Male	12.4	7.6	6.2	5.7	7.5	5.6	5.5	8.5	7.1
Female	1.4	1.3	0.5	0.9	1.5	0.5	0.7	1.0	0.9
Overall	6.6	4.3	3.2	3.2	4.2	2.9	2.9	4.4	3.8

Age specific rates are per 100,000 population.

All other rates are per 100,000 and age adjusted to the 2000 US population.

Green squares are those in which the SPA mortality rate is significantly less than the LA County rate.

Pink squares are those in which the SPA mortality rate is significantly greater than the LA County rate.

Valley, the firearm suicide rate among males is also significantly higher than that of the county as a whole. For the entire county, the male firearm suicide rate is 7.9 times greater than the female rate. For individual SPAs, the male-to-female

ratio varies from 5.0 in SPA 5 to 12.4 in SPA 3.

National surveys have found that White male respondents most often report owning a gun. The National Survey of Private Ownership of Firearms found that while over one quarter of Whites were gun owners, Blacks (16%) and Latinos (11%)

were much less likely to own a gun.³¹ Males (42%) were much more likely than females (9%) to report owning a gun. Survey results are not necessarily accurate measures of total gun ownership, but the results are more likely to reflect legal ownership of guns.

Non-Fatal Injury

Between 1999 and 2002, there were just 130 hospital discharges for suicide attempts with firearms. The small number of non-fatal injuries is

due to the high lethality of firearms. Almost 85% of all suicides attempted with firearms are fatal.⁵ These injuries were very costly. The total charges were just \$9 million, but the average charge per visit was \$73,291.

To reduce the incidence firearm suicides, the high risk populations described in this report must be offered effective prevention programs. The following section includes information on effective suicide prevention programs.

Firearm Suicide Prevention Strategies

In collaboration with suicide advocates, clinicians, researchers, and survivors from around the United States, the Center for Mental Health Services created a National Strategy for Suicide Prevention (NSSP). The strategy outlines a multi-dimensional approach to the prevention of suicide among people of all ages.³² In this section these prevention strategies are discussed, specifically focusing on reducing firearm suicides.

- ***Community-based education.*** NSSP recommends that school districts and private school associations implement evidence-based educational programs on suicide that address serious child and adolescent distress, and provide appropriate referral services for treatment. Similar educational and referral programs should also be conducted among college students at universities, institutionalized

persons in correctional facilities, the elderly at senior organizations and nursing homes, and among employed persons on-the-job.³²

- ***Firearm Access.*** Individuals who live in homes where a firearm is kept are at increased risk for suicide.³³⁻³⁵ Risk of committing suicide with a firearm is also highest in the week after firearm purchase.³⁶ One strategy to prevent firearm suicide is to implement a waiting period between the time of firearm purchase and when the gun is received. Another strategy, particularly among youth, is to increase safe storage of firearms in the home.^{37,38} Safe storage strategies include storing guns unloaded, in locked conditions, and keeping ammunition in a separate location.
- ***Screening & Referral for Treatment.*** Training on suicide

identification and treatment could be institutionalized in the curriculum of certification programs for professionals who frequently encounter persons at-risk for suicide, such as health care providers, clinical social workers, counselors, psychologists, clergy members, educators, correctional workers, and divorce, family law and criminal defense attorneys. These professions must also expand community linkages with mental health and substance abuse services to provide appropriate referrals for treatment.³²

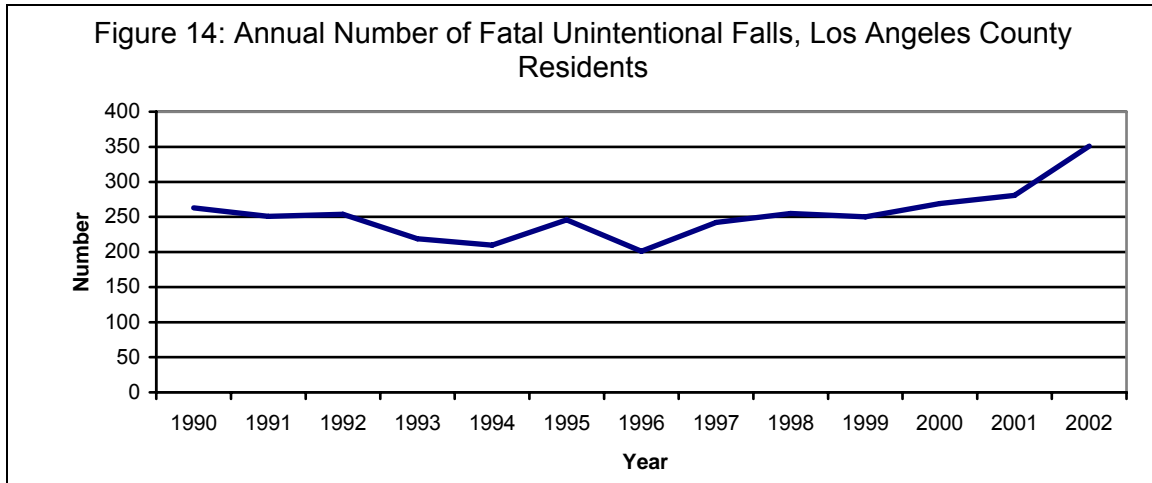
➤ **Media literacy.** One risk factor for suicide is unwillingness to seek help because of the stigma attached to mental health. Improving reporting and portrayals of suicidal behavior, mental illness and substance abuse in the entertainment and news media

will affect how mental health is perceived and decrease the stigma associated with it.^{32,39}

Risk Factors for Suicide^{32,40}

- Previous suicide attempt(s)
- History of mental disorders, specifically depression
- History of alcohol and substance abuse
- Family history of suicide
- Family history of child maltreatment
- Feelings of hopelessness
- Impulsive or aggressive tendencies
- Barriers mental health treatment
- Loss (relational, social, work, or financial)
- Physical illness
- Easy access to lethal methods, such as a firearm
- Unwillingness to seek help because of the stigma attached to mental health
- Cultural and religious beliefs
- Local epidemics of suicide
- Isolation

Unintentional Falls



Between 1999 and 2002, unintentional falls were the fifth leading cause of injury death in Los Angeles County and the third leading cause of injury fatality in the United States.¹

Trends

In recent years, the annual number of unintentional fall fatalities has increased in Los Angeles County (Figure 14). The 351 deaths reported in 2002 represent an increase of 75% from 1996. During the same time period, fatal unintentional falls increased by 44% nationwide.¹

Unintentional falls are often categorized according to how the fall occurred (Table 9); however, for about 70% of all falls, no specific information is available. The

Table 9: Unintentional Falls by Type, Los Angeles County Residents, 1999-2002

Type of Fall	Number	Average Age at Death (Years)
Fall on same level slipping/tripping/stumbling	54	80
Fall ice-skates/skis/rollerskates/skateboard	9	56
Fall involving wheelchair	13	70
Fall involving bed	33	78
Fall involving chair	12	77
Fall involving other furniture	1	81
Fall on and from steps and stairs	56	69
Fall on and from ladder	45	66
Fall on and from scaffolding	8	42
Fall from, out of, or through building or structure	68	44
Fall from tree	6	48
Fall from cliff	13	50
Diving/jumping into water causing injury other than drowning	8	69
Other fall from one level to another	42	41
Other fall on same level	191	77
Unspecified fall	592	72

remaining deaths are grouped into one of the more specific categories, such as falls from buildings or steps.

Gender

Most (62%) people who die from unintentional falls are male. Females account for a greater percentage of falls among the elderly; only 53% of deaths from falls among 65+ year olds are male.

Race/Ethnicity

Whites are overrepresented among unintentional fall deaths compared to their proportion in the general population, particularly among women, while Latinos are underrepresented (Figures 15a-b). Unintentional fall-related mortality rates are highest for Whites (4.0/100,000), followed by Latinos (3.1/100,000) and Blacks and Asians/Others (both 2.6/100,000).

Age

The age distribution of unintentional fall deaths shows that after a small peak in deaths among 1 year olds,

Figure 15a-b: Racial/Ethnic Distribution of Fatal Unintentional Falls. 1999-2002 and Los Angeles Population, 2000

Figure 15a: Unintentional Falls Fatalities

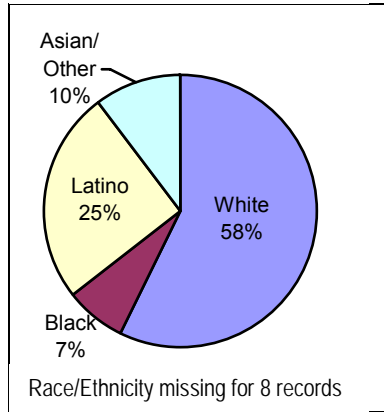
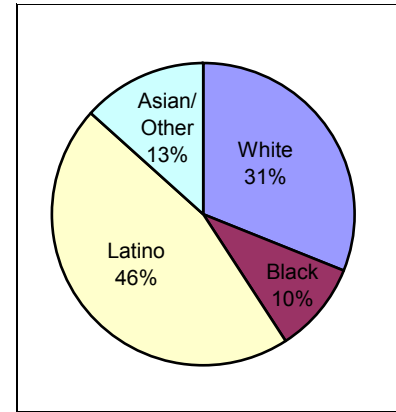


Figure 15b: LA Population



the number of fatalities remains very low throughout childhood. During late adolescence, the number of deaths gradually begins to rise, and this gradual increase continues throughout much of adulthood. After the age of 65, the increase becomes sharper, peaking among people in their early 80s.

The average age of death varies by the type of fall (Table 9). Falls in the home (from furniture, for example) tend to involve older people. On the other hand, falls from places like buildings and scaffolding tend to involve younger people.

Figure 16: Age Distribution of Fatal Unintentional Falls, Los Angeles County Residents, 1999-2002

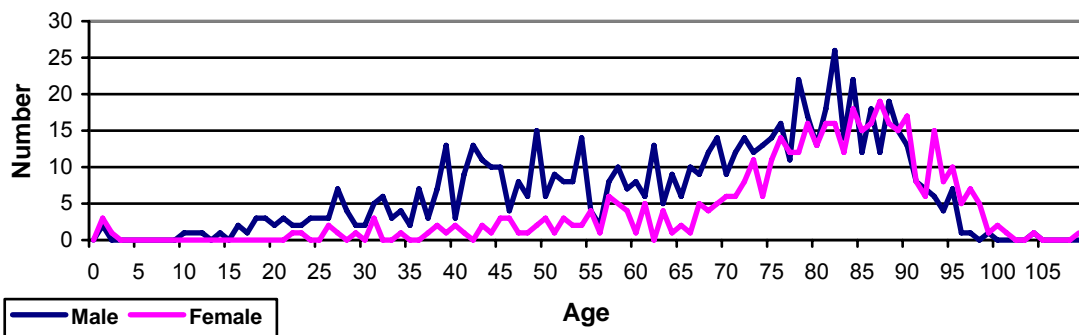


Table 10: Unintentional Fall Fatality Rates by Demographic Subgroups and SPA, Los Angeles County Residents, 1999-2002

Demographic Category	Antelope Valley (SPA 1)	San Fernando Valley (SPA 2)	San Gabriel (SPA 3)	Metro (SPA 4)	West (SPA 5)	South (SPA 6)	East (SPA 7)	South Bay (SPA 8)	Los Angeles County
Age Group									
<1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-4	0.0	0.7	0.2	0.4	0.0	0.3	0.0	0.0	0.3
5-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	0.8	0.2	0.0	0.3	0.0	0.3	0.0	0.0	0.1
15-19	0.0	0.2	0.0	0.7	0.0	0.3	0.2	0.9	0.3
20-24	1.3	0.4	0.2	0.6	0.5	1.2	0.3	0.5	0.5
25-29	1.5	0.5	0.6	1.7	0.4	0.3	1.2	0.0	0.8
30-34	1.2	0.5	0.4	1.3	0.8	1.0	0.7	0.6	0.8
35-44	0.0	1.4	1.9	1.9	1.0	2.1	0.9	0.8	1.5
45-54	1.9	1.7	2.3	2.5	2.0	2.7	2.6	2.4	2.3
55-64	4.6	2.1	2.7	3.5	1.3	9.2	4.2	3.0	3.6
65+	15.9	20.6	19.4	20.1	20.3	10.9	19.8	22.2	19.7
Race/Ethnicity									
White	3.7	3.5	4.4	4.6	3.3	5.7	4.2	4.1	4.0
Black	0.0	2.1	3.8	1.5	2.2	3.0	5.7	2.4	2.6
Asian/Other	2.9	3.2	2.2	2.9	3.7	4.6	2.6	2.5	2.6
Latino	0.5	3.0	2.8	3.5	2.1	2.8	2.9	3.5	3.1
Gender									
Male	4.2	4.3	4.7	5.4	4.7	4.3	5.0	5.1	4.9
Female	1.9	2.7	2.3	2.4	2.0	2.2	2.3	2.5	2.4
Overall	3.0	3.4	3.4	3.8	3.2	3.1	3.6	3.7	3.5

Age specific rates are per 100,000 population.

All other rates are per 100,000 and age adjusted to the 2000 US population.

Green squares are those in which the SPA mortality rate is significantly less than the LA County rate.

Pink squares are those in which the SPA mortality rate is significantly greater than the LA County rate.

Geography

Clearly, the majority of deaths from unintentional falls occur among the White, elderly population. In fact, Whites over the age of 64 account for 45% of all unintentional fall fatalities, but only 6% of the Los Angeles County population.

There is not much geographic variation in fall related deaths. Mortality rates range from 3.0 per 100,000 in SPA 1 to 3.8 per 100,000 in SPA 4. No SPA has a mortality rate significantly different from the overall county rate of 3.5 per 100,000. Demographic-specific

mortality rates by SPA are also very similar to rates for the county as a whole (Table 10). Curiously, in SPA 6, the mortality rate for 55-64 year olds is significantly higher than the rate for the entire county, but among 65+ year olds, mortality rates in SPA 6 are significantly less than the countywide rate. Whites have the highest mortality rates countywide and in every SPA but SPA 5, where mortality rates are highest among Asians/Others. The ratio of male mortality rates to female mortality rates ranges from 1.6 in SPA 2 to 2.4 in SPA 5.

Non-Fatal Injury

Nationwide, less than 1% of all

injuries from falls were fatal.⁵ In addition to the fatal cases described here, there were 111,391 inpatient hospitalizations for fall-related injuries in Los Angeles County between 1999 and 2002. Medical charges for these hospitalizations were more than \$2 billion dollars, or \$26,217 per visit.

This report identifies particular demographic groups that are at increased risk of fall-related death. The following section discusses prevention strategies and provides contact information that can be useful in developing and targeting fall-prevention programs to appropriate populations.

Unintentional Fall Prevention Strategies

In this section, we focus on prevention strategies that older adults can use to decrease their risk for being injured in a fall. There are at least three categories of factors that put older adults at risk for fall-related injuries: 1) limited body strength and mechanics, 2) side effects from medication, and 3) the home environment. The box to the right elaborates on these risk factors. The good news is that elderly persons, their families, and their doctors can modify these risk factors and reduce their chance for being injured in a fall.

- ***Regular Physical Activity.*** Regular physical activity has been shown to increase lower body strength and improve balance. Exercise programs implemented at home have been shown to prevent falls.⁴⁴

Additionally, Tai Chi is a type of exercise that has been proven to reduce falls among older adults.⁴⁵ Tai Chi classes are often offered at community recreation centers (Please see *Resources* for a list of Tai Chi programs in Los Angeles County).

Risks for Falling

1. Body Strength and Mechanics⁴¹
 - Lower body weakness
 - Problems with walking
 - Difficulty balancing
2. Medication Side Effects⁴²
 - Taking 4 or more medications
 - Taking any psychoactive drugs
3. The Home Environment⁴³
 - Tripping hazards
 - Lack of stair railings/grab bars
 - Slippery surfaces
 - Unstable furniture
 - Poor lighting

- **Discuss Medications with a Pharmacist or Doctor.** Medications can have side effects that affect body mechanics and seniors' ability to walk and balance. When taken together, medications can also interact and produce undesired side effects. It is important to review all prescription *and* over-the-counter medications, and at the same time discuss fall history with a pharmacist or doctor to assess how medication regimens may increase risk of fall-related injuries.⁴²
- **A Safe Home Environment.** Most falls occur in the home and environmental factors may contribute to almost half of all home falls.⁴³ Older adults and their families should be aware of hazards in the home and correct them to reduce risk for falling. To make living areas safer, remove throw rugs and obstacles in walkways that are tripping hazards, use non-slip mats and install grab bars in showers and bathtubs, make sure there are handrails on stairways, and improve lighting in the home.⁴⁶

Resources

All Injuries

Los Angeles County Dept of Health Services
Injury and Violence Prevention Program
213-351-7888
<http://lapublichealth.org/ivpp/index.htm>

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
www.cdc.gov/ncipc

American Academy of Pediatrics
Children's Health Topics – Safety & First Aid
<http://www.aap.org/healthtopics/safety.cfm>

Prevention Institute
1-510-444-7738
<http://www.preventioninstitute.org/home.html>

The Trauma Foundation
San Francisco General Hospital
415-821-8209
www.tf.org

Unintentional Injuries

National Safe Kids Campaign
202-662-0600 (National Organization)
323-226-7880 (Los Angeles Coalition)
www.safekids.org

National Safety Council
630-285-1121
www.nsc.org

Firearm Injuries

American College of Physicians
Firearm Injury Prevention Resource Center
<http://www.acponline.org/firearms/>

Women Against Gun Violence
310-204-2348
www.wagv.org

Million Mom March
888-989-MOMS
www.millionmommarch.com

Brady Campaign to Prevent Gun Violence
202-898-0792
www.bradycampaign.org

Brady Center to Prevent Gun Violence
202-289-7319
www.bradycenter.org/

Legal Community Against Violence
415-433-2062
www.lcav.org

Homicide and Assault

Substance Abuse and Mental Health Services
Administration – Center for Substance Abuse
Prevention – Prevention Pathways
<http://preventionpathways.samhsa.gov/default.cfm>

U.S. Dept of Justice, Office of Justice Programs
Office of Juvenile Justice and Delinquency
Prevention
202-307-5911
www.ojjdp.ncjrs.org

U.S. Dept of Justice, Office of Justice Programs
National Institute of Justice
202-307-6394
<http://www.ojp.usdoj.gov/nij/>

National Youth Violence Prevention Resource
Center 866-723-3968
www.safeyouth.org

Los Angeles Teens On Target.
562-244-7127
<http://www.youthalive.org/TNTLA.html>

Keeping Youth Safe
415-616-3930
www.preventviolence.org

University of California, San Diego
Academic Center of Excellence on Youth Violence
Prevention.
619-543-5340
www.sdhealth.org/youth

University of California, Riverside
Southern California Center of Excellence on Youth
Violence Prevention
909-827-4604
www.stopyouthviolence.ucr.edu

Community Wellness Partnership of Pomona
909-469-2299
www.pomonayouth.org

Suicide

***To get immediate help if you are contemplating
suicide, call 1-800-273-8255.***

Suicide Prevention Advocacy Network – California
760-753-4565
<http://www.span-california.org/>

Suicide Prevention Resource Center
877-438-7772
www.sprc.org

National Strategy for Suicide Prevention
www.mentalhealth.org/suicideprevention

American Association of Suicidology
202-237-2280
www.suicidology.org

Mental Health Association of California
916-557-1167
www.mhac.org

American Academy of Child and Adolescent
Psychiatry
202-966-7300
www.aacap.org

Motor Vehicle Traffic

National Highway Traffic Safety Administration
National Child Passenger Safety Week.
202-366-9550
<http://www.nhtsa.dot.gov/people/injury/childps/CPSWeekPlanner2005/pages/index.htm>

National Highway Traffic Safety Administration.
Traffic Safety Information.
888-327-4236
http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem_5928da45f99592381601031046108a0c/

National Highway Traffic Safety Administration
Walkability Checklist
<http://www.nhtsa.dot.gov/people/injury/pedbimot/ped/walk1.html>

Mothers Against Drunk Driving
800-438-6233
<http://www.madd.org/home/>

Students Against Destructive Decisions
(formerly Students Against Driving Drunk)
877-SADD-INC
<http://www.saddonline.com/>

Safety Belt Safe USA
<http://www.carseat.org/>

AARP – Information for older drivers.
<http://www.aarp.org/research/housing-mobility/transportation/aresearch-import-191-FS51R.html>

International Walk to School Week
<http://www.iwalktoschool.org/>

National Strategies for Advancing Child Pedestrian
Safety
<http://www.cdc.gov/ncipc/pedestrian/default.htm>

National Center for Bicycling and Walking
301-656-4220
<http://www.bikewalk.org/>

Poisoning/Drug Overdose

If you have a poisoning emergency, please call 1-800-222-1222. If the victim has collapsed or is not breathing, call 911.

LA County Alcohol and Drug Program Admin
626-299-4193
<http://lapublichealth.org/adpa/index.htm>

California Poison Control Center
800-876-4766
www.calpoison.org

American Association of Poison Control Centers
www.aapcc.org

National Poison Prevention Week Council
301-504-7908
www.poisonprevention.org

U.S. Consumer Product Safety Commission
800-638-2772 (Hotline)
301-504-7923 (Office)
www.cpsc.gov

U.S. Environmental Protection Agency
202-272-0167
www.epa.gov

Harm Reduction Coalition
Overdose Prevention, Intervention and Postvention
(212) 213 6376
<http://harmreduction.org>

National Institute on Drug Abuse
301-443-1124
<http://www.nida.nih.gov/>

Falls

The Patience Tai Chi Association
Tai Chi Instructors Referral Service
718-332-3477
<http://www.patienceaichi.com/referral.htm>

Tool Kit to Prevent Senior Falls
<http://www.cdc.gov/ncipc/pub-res/toolkit/toolkit.htm>

The American Geriatrics Society
The AGS Foundation for Health in Aging
212-755-6810
http://www.healthinaging.org/public_education/falls_index.php

Technical Notes & Definitions

Injury Mechanism and Intent Categories

In this report, the injury mechanism and intent were determined by International Classification of Disease (ICD) codes. In 1999, the 10th revision of ICD codes went into effect. Prior to that, the 9th revision was in use. ICD coded injuries were assigned to mechanism-intent categories based on CDC recommendations. For ICD 9th revision (ICD-9), the CDC's Recommended Framework for Presenting Injury Mortality Data⁴⁷ was used to assign codes to the proper mechanism-intent category. For ICD 10th revision (ICD-10), the National Center for Health Statistics has prepared the External Cause of Injury Mortality Matrix,⁴⁸ which was used to assign mechanism-intent categories.

Comparability of ICD 9th and 10th Revisions

To determine if the two most recent ICD revisions would produce similar results, the NCHS coded death data for 1999 with both systems. For the List of 113 Selected Causes of Death, the number of deaths in each of the 113 categories was computed for the ICD-9 coding and for the ICD-10 coding. A comparability ratio was then calculated for each cause of death by dividing the number of ICD-10 deaths by the number of ICD-9 deaths.⁴⁹ A comparability ratio of 1 would indicate that both coding systems produced the same number of deaths. For injuries, there are only slight differences between the two coding systems; the comparability ratios for the mechanism-intent categories in this report are as follows:⁴⁹

firearm homicide	0.9969
unintentional MVT	0.9754
unintentional poisoning	unavailable
firearm suicide	0.9982
unintentional falls	0.8409

The 16% decrease in unintentional fall deaths in ICD-10 compared to ICD-9 makes the increasing trend of fall-related deaths after 1999 (Figure 25) even more striking. If coding had been consistent during this time period, we would expect the increase to be even steeper.

Mortality Rates

All rates in this report are presented per 100,000 population.

Age-specific rates (those for a particular age group) are calculated by dividing the total number of deaths in that age group by the total population for that age group and multiplied by 100,000.

$$\text{rate} = \left(\frac{\text{deaths}}{\text{population}} * 100,000 \right)$$

All rates that aren't for specific age groups in this report are presented as age adjusted rates. Age adjusted rates allow for comparisons between populations that may have very different age-distributions. Since age is strongly related to death rates, it is important to compensate for differences between populations. The direct method of age adjustment is used to compute all age-adjusted rates in this report.⁵⁰ The 2000 US population was used as the standard population. A weight was calculated for each age group. The weight is equal to that age group's proportion of the entire 2000 US population. The age-specific injury rate was then calculated for each age group in the population of interest. Each age-specific rate was then multiplied by the weight for that age group. The weighted age-specific rates for all age groups were then added up to calculate the age-specific rate for that population.

$$\text{age adjusted rate} = \sum_{\text{all age groups}} \left(\left(\frac{\text{deaths}}{\text{population}} * 100,000 \right) * \text{weight} \right)$$

The age groups used to calculate age adjusted rates in this report are as follows:

<1 year, 1-4 years, 5-9 years, 10-14 years, 15-19 years, 20-24 years, 25-29 years, 30-34 years, 35-44 years, 45-54 years, 55-64 years, 65+ years.

Significance Testing with Confidence Intervals for Rates

In the final table in each section, SPAs in which the mortality rate for a particular demographic group is significantly different from the county overall are highlighted. To determine if a particular rate was significantly different from the county's overall rate, 95% confidence intervals were calculated for every rate. The error for each rate was calculated by the following formula:

$$\text{error} = (1.96 * (\text{rate})) / (\sqrt{\# \text{ of deaths}})$$

The error was then added and subtracted from the rate to create a 95% confidence interval around the rate. If the confidence interval for a particular SPA and LA County overlapped, then there was no significant difference between those rates. Otherwise, if no overlap was found, then the SPA rate was considered significantly different from that of the county overall.

Poisoning/Drug Overdose Substances ⁵¹

Nonopioid analgesics, antipyretics and antirheumatics

- 4-aminophenol derivatives (acetaminophen)
- nonsteroidal anti-inflammatory drugs (ibuprofen, naproxen, COX-2 inhibitors)
- pyrazolone derivatives
- salicylates (aspirin)

Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs

- antidepressants (ex: Prozac, Zoloft)
- barbiturates
- hydantoin derivatives (anti-convulsants ex: Dilantin)
- iminostilbenes (anti-convulsants)
- methaqualone compounds (depressant)
- neuroleptics (anti-psychotics ex: Thorazine, Haldol)
- psychostimulants (ex: Ritalin)
- succinimides and oxazolidinediones (anti-convulsants)
- tranquilizers

Narcotics and psychodysleptics [hallucinogens], Not Elsewhere Classified

- cannabis
- cocaine
- codeine
- heroin
- lysergide (LSD)
- mescaline
- methadone
- morphine
- opium

Other drugs acting on the autonomic nervous system

- parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics
- parasympathomimetics [cholinergics]
- sympatholytics [antiadrenergics]
- sympathomimetics [adrenergics]

Other and unspecified drugs, medicaments and biological substances

- agents primarily acting on smooth and skeletal muscles and the respiratory system
- anaesthetics (general, local)
- drugs affecting the cardiovascular system
- drugs affecting the gastrointestinal system
- hormones and synthetic substitutes
- systemic and haematological agents
- systemic antibiotics and other anti-infectives
- therapeutic gasses
- topical preparations
- vaccines
- water balance agents and drugs affecting mineral and uric acid metabolism

Alcohol

- Not Otherwise Specified
- butyl
- ethyl
- isopropyl
- methyl
- propyl
- fusel oil

Organic solvents and halogenated hydrocarbons and their vapors

benzene and homologues
carbon tetrachloride
chlorofluorocarbons
petroleum and derivatives

Other gases and vapors

carbon monoxide
lacrimogenic gas (tear gas)
motor vehicle exhaust
nitrogen oxides
sulfur dioxide
utility gas

Pesticides

fumigants
fungicides
herbicides
insecticides
rodenticides
wood preservatives

Other and unspecified chemicals and noxious substances

corrosive aromatics, acids, and caustic alkalis
glues and adhesives
metals including fumes and vapors
paints and dyes
plant foods and fertilizers
poisoning, not otherwise specified
poisonous foods and plants
soaps and detergents

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