

# **INJURY PREVENTION**

## **Injury Prevention**

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## HIGHLIGHTS FROM INJURY PREVENTION

- ❖ According to the California Department of Health Services, firearm injuries are a leading cause of death and disability in California. In 1995 and 1996 it was the leading preventable cause of death for young people under age 21, higher than that of motor vehicle traffic injuries. According to the OCHNA survey 22.9% of respondents kept guns in their homes. Of those, 72.3% stated their primary reason for keeping a handgun in the home was for safety or self-protection; 18.4% engaged in unsafe practices, keeping a gun loaded and unlocked.
- ❖ Drowning is the third most common cause of injury death among children younger than 4 years in the United States. It is also the leading cause of injury death in children under 5 years in California, Arizona, and Florida. It is the leading cause of death in Orange County in children aged 1 through 4. In California and Orange County, the majority of childhood drownings and near drownings occur in residential swimming pools or spas located at the residence of the child, relative, or friend.
- ❖ In 1996, 10 people died from bicycle-related injuries in Orange County and 17 died in 1997. Bicycle helmets are 85% to 88% effective in mitigating head and brain injuries in all types of bicycle incidents. Reported helmet use among California and Orange County children is higher than the national rate, possibly due to the helmet law. However, despite the law's adoption in 1995, usage is still low. In Orange County, according to the OCHNA survey 21.1% of respondents reported their children never wear helmets.
- ❖ Statewide, 2,444 vehicle occupants were killed and 242,215 vehicle occupants were injured in collisions on public roadways in 1997. Research has shown that lap/shoulder safety belts reduce the risk of fatal injury to front-seat passenger car occupants by 45%. Child safety seat restraints reduce the risks by 69%. According to OCHNA survey results, 88.8% of all respondents indicated they always use seatbelts; 1.1% stated they never use restraints when driving or riding in a car.
- ❖ Nationally, fire is the leading cause of death in the home. Approximately 90% of fire related deaths among children less than 5 years occur in homes without functioning smoke alarms. Only 26.6% of OCHNA respondents met the standard of monthly smoke detector testing, while 18.8% (3,53,716 Orange County residents) had never tested their smoke detector.

### Focus Group Comments

One immigrant made the following statement relating the concept of good health to injury prevention.

*...Good health is...knowing whether you can lift a heavy can or if you need to wear a back support. If you don't have one then you should ask because you should be able to know before you lift anything if you might get injured. (2:8)*

## FIREARMS SUMMARY

- ❖ Firearm injuries are a leading cause of death and disability in California. In California, more young people under age 21 die from firearm injuries than from motor vehicle traffic injuries. In Orange County 213 young people under age 21 die from firearm injuries each year.
- ❖ Research has shown that the risk of domestic homicide is 3 times greater and the risk of suicide is 5 times greater if there is a gun in the home. The OCHNA survey shows 449,910 Orange County residents own firearms.
- ❖ Despite the risk associated with having firearms in the home, it is estimated that 41% of U.S. households have firearms. Data from the 1994-1996 California Behavioral Risk Factor Survey indicated approximately 30% of California adults have at least 1 firearm (handgun or long gun) in the home.
- ❖ Nationally, people with children were as likely to have guns in the home as people without children.
- ❖ More than 18% (82,947 firearm owners in Orange County) engage in unsafe practices by keeping their guns loaded and unlocked.

## FIREARMS

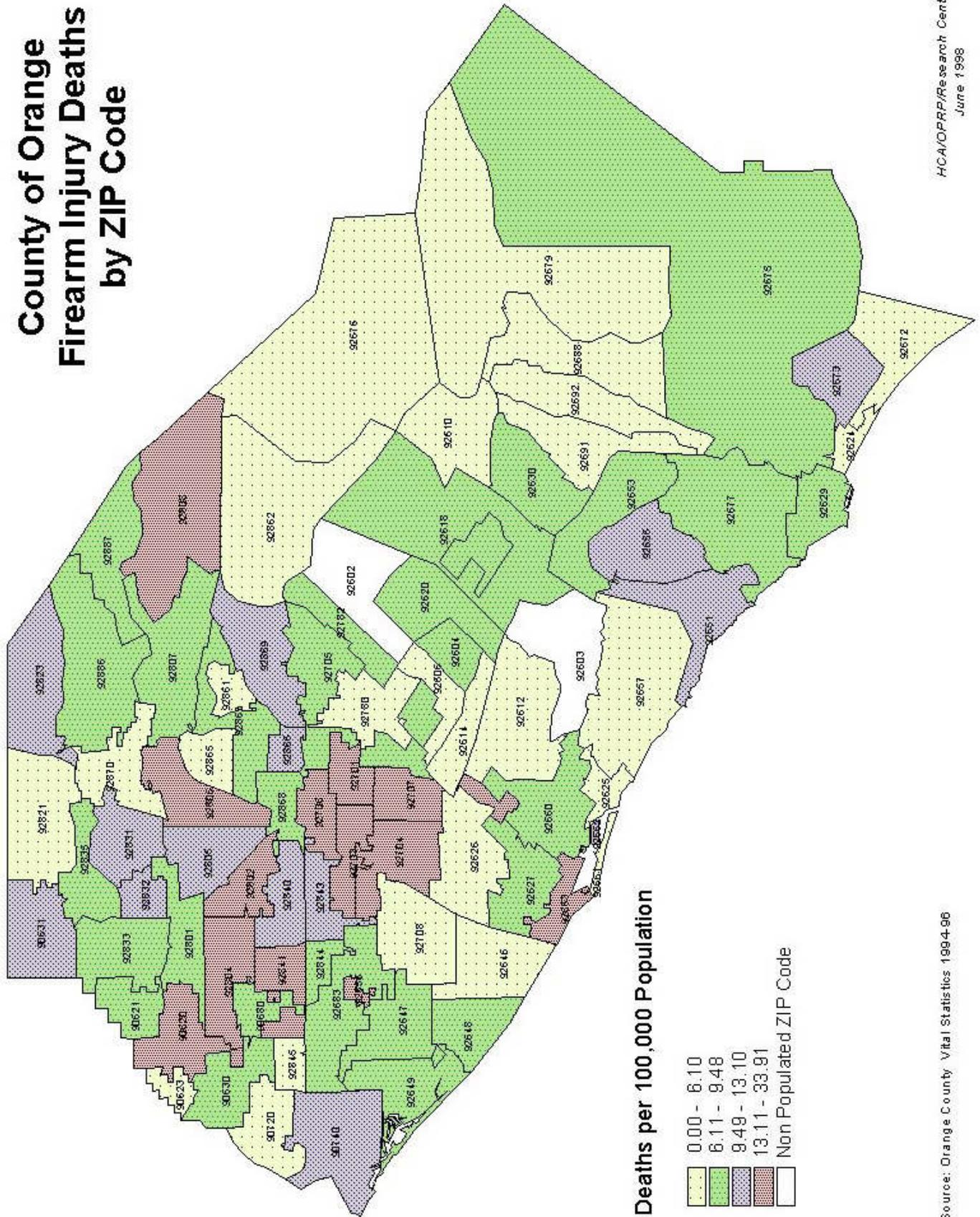
According to the California Department of Health Services, firearm injuries are a leading cause of death and disability statewide. In California, more young people under age 21 years die from firearm injuries than from motor vehicle traffic injuries. In 1996, there were 5,775 Californians hospitalized with firearm-related injuries and 267 hospitalizations due to firearm-related injuries in Orange County. In fact, of all injury deaths in Orange County in 1996, 20% were related to firearms. According to an Orange County Health Care Agency (HCA), the leading cause of death for 15- to 24-year-olds between 1995 and 1996 was firearm injuries. In 1997, there were 3,843 firearm-related deaths in California, and Orange County had 213 firearm-related injury deaths: 78 homicides, 129 suicides, 2 unintentional, and 2 of unspecified classification. Clearly, the numbers indicate a public health concern for Orange County and California.

Research has shown that the risk of domestic homicide is 3 times greater and the risk of suicide is 5 times greater if there is a gun in the home (Al Kellerman, F.P. Rivera, N.C. Rushforth, D.T. Reay and P. Cunningham and T.D. Koepsell). Despite the risk associated with having firearms in the home, it is estimated that 41% of U.S. households have firearms (R.J. Blendon, J.T. Young, and D. Hemenway). Data from the 1994-1996 California Behavioral Risk Factor Survey indicated that approximately 30% of California adults have at least 1 firearm (handgun or long gun) in the home. In addition, people with children were as likely to have guns in the home as people without children.

OCHNA survey results indicate Orange County has a lower percentage (22.9%) of guns at home than California or the United States. The OCHNA survey indicated 72.3% of gun owners have handguns and the primary reason given was for safety or self-protection. This finding is consistent with other similar studies. However, research indicates that firearms are rarely used for self-protection during home invasion crimes (Al Kellerman, L. Westphal, L. Fisher and B. Harvard). When people kill someone in their own home, it is usually an intimate partner or family member (P. Cummings, T.D. Koepsell, D.C. Grossman).

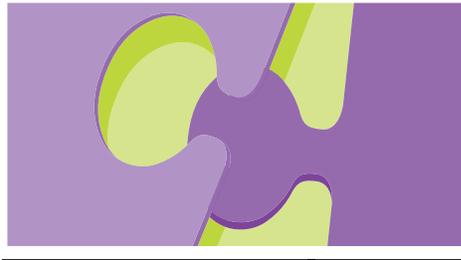
More than 18% of respondents who are firearm owners in Orange County engage in unsafe practices, keeping their guns loaded and unlocked. A recent national survey done by Peter Hart Research for the Center to Prevent Handgun Violence found that 2 out of 5 American households with children also have guns. A full 25% keep their guns loaded and/or unlocked. Even though the Orange County percentage rate for homes with loaded and unlocked guns is lower than the national rate, there is still a considerable health risk for children and their families. Even guns stored locked or separate from ammunition are associated with increased adolescent suicides by firearms (D.A. Brent, J.A. Perper, C.J. Allman). The national financial toll of firearm related deaths and injuries for 1994 was conservatively estimated at \$21.6 billion annually (W. Max and D.P. Rice).

# County of Orange Firearm Injury Deaths by ZIP Code



HCA/OPRP/Research Center  
June 1998

Source: Orange County Vital Statistics 1994-96



Community Health: Working the Puzzle

## BICYCLE SAFETY SUMMARY

- ❖ Nationally, approximately 80% to 90% of children own a bicycle by the time they are in second grade.
- ❖ Each year, nearly 1,000 people die from injuries caused by bicycle crashes and 555,000 people are treated in emergency rooms for bicycle injuries in the United States.
- ❖ In California, 22,411 people were severely injured and 643 people were killed in bicycle-related crashes between 1991 and 1995. Approximately 6% of bicyclists treated in emergency rooms require hospitalization.
- ❖ Children and adolescents are disproportionately represented among those injured or killed. Nationally, head injuries account for 62% of bicycle-related deaths, 33% of bicycle-related emergency room visits, and 67% of bicycle-related hospital admissions.
- ❖ Bicycle helmets are 85% to 88% effective in mitigating head and brain injuries in all types of bicycle incidents. Helmets are the single most effective preventive measure to reduce head injuries and fatalities resulting from bicycle crashes.
- ❖ Nationally as many as 155 deaths and 45,000 head injuries would be prevented each year if every child between the ages of 4 and 15 years wore a helmet.
- ❖ Helmet use among California (61.1%) and Orange County children (58.3% always wear a helmet) is higher than the national rate (32.2%). This occurrence may be due to California's helmet law.

## BICYCLE SAFETY

Nearly 30% of the people living in the United States own a bicycle and 45% of bicycle owners ride at least occasionally. Approximately 80% to 90% of children own a bicycle by the time they are in second grade. Californians are estimated to own 30% of the bicycles in the United States.

Each year, nearly 1,000 people die from injuries caused by bicycle crashes and 555,000 people are treated in emergency rooms for bicycle injuries in the United States. In California, 22,411 people were severely injured and 643 people were killed in bicycle-related crashes between 1991 and 1995. Nationally, approximately 6% of bicyclists treated in emergency rooms require hospitalization. Children and adolescents are disproportionately represented among those injured and killed. Head injuries account for 62% of bicycle-related deaths, 33% of bicycle-related emergency room visits, and 67% of bicycle-related hospital admissions.

In 1996, 10 people died from bicycle-related injuries in Orange County. The following hospital discharge data describes hospitalization rates for the same year.

Orange County Bicycle Related Hospitalization Rates Per 100,000 Population - 1996

	Motor vehicle related bicycle hospitalization rate	Non-motor vehicle related bicycle hospitalization rate
0-19 years	4.3	12.9
20+ years	4.2	10.9

Bicycle helmets are 85% to 88% effective in mitigating head and brain injuries in all types of bicycle incidents. Helmets are the single most effective preventive measure to reduce head injuries and fatalities resulting from bicycle crashes. Nationally as many as 155 deaths and 45,000 head injuries would be prevented each year if every child between the ages of 4 and 15 years wore helmets. Nationwide, only 18% of bicyclists wear helmets all or most of the time; approximately 15% of riders under age 15 wear helmets. Since January 1995, California law requires bicycle riders younger than 18 to wear helmets.

The following data was obtained from the Statewide Integrated Traffic Records System which includes reports from police, sheriffs, and the California Highway Patrol. This system tracks collisions that occur on public roadways.

Orange County Bicyclists Injured Indicating Helmet Usage – 1997

Total Bicyclists Injured	Helmets Used	Helmets Not Used
1,223	296 (24%)	927 (76%)

Orange County Bicyclists Killed Indicating Helmet Usage – 1997

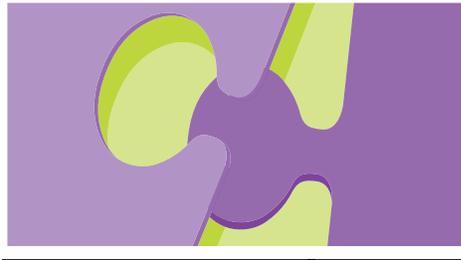
Total Bicyclists Killed	Helmets Used	Helmets Not Used
17	2 (12%)	15 (88%)

OCHNA survey respondents were asked how often their child wore a helmet when riding a bicycle during the year. Just over 58% indicated “always” and 21.1% indicated “never.” The following table compares helmet data from Orange County, California, and the nation.

	Always	Nearly Always	Sometimes	Seldom	Never
OCHNA 98*	58.3	9.6	7.6	3.4	21.1
US BRFSS 97	32.2	9.4	10.4	6.7	36.7
CA BRFSS 97	61.1	14.0	10.6	4.2	10.1

Helmet use among California and Orange County children is higher than the national rate. This occurrence may be due to California's helmet law. However, despite the inception of this law in 1995, reported helmet usage among children is still extremely low.

Additionally, community outreach education programs have found that many children do not wear helmets correctly, including leaving the straps and buckles loose or not buckling the straps at all. This, of course, renders the helmet useless.



Community Health: Working the Puzzle

## WATER SAFETY SUMMARY

- ❖ Drowning is the third most common cause of death among children younger than age 4 in the United States and the leading cause of injury death of children under age 5 in California, Arizona, and Florida.
- ❖ Drowning is also the leading cause of death for Orange County children between 1 and 4 years of age.
- ❖ Studies show that between 2 and 20 near-drownings occur for every drowning.
- ❖ In California and in Orange County specifically, the majority of childhood drownings and near-drownings occur in residential swimming pools and spas.
- ❖ Various types of barriers around swimming pools and spas help protect children and make it more difficult for them to reach the water without being noticed. These barriers include locked back doors, self-closing and self-latching sliding doors, door alarms, gate alarms, pool alarms, automatic pool covers, and isolation pool fences.
- ❖ Studies show that infants can drown in just a few inches of water.

## WATER SAFETY

Drowning is the third most common cause of injury death among children younger than 4 years old in the United States and the leading cause of injury death in children under 5 in California, Arizona, and Florida. Drowning is also the leading cause of injury death for Orange County children aged 1 through 4. Studies have found between 2 and 20 near-drownings for every drowning that occurs.

In California and in Orange County, the majority of childhood drownings and near-drownings occur in residential swimming pools or spas located at the residence of the child, relatives, or friends.

Isolation pool fences separate the residence from the pool and are built to be non-climbable and have self-closing, self-latching gates. Isolation fencing has been found to reduce swimming pool drownings and near-drownings by as much as 50% to 80%. Door alarms, automatic pool covers, and self-closing, self-latching sliding doors add extra layers of protection. Beginning in January 1998, all new and refurbished pools located at private, single-family homes requiring a building permit in California are subject to a building code requiring an isolation fence or other protective device. Isolation fencing or other protective devices are not required for existing pools located at private, single-family homes. In contrast, Orange County apartment pools built after 1982 are required to have isolation fencing.

According to the OCHNA survey, 22.1% (69,854) of respondents in single-family homes or apartments with pools say there is no barrier or fence between the house and the pool.

Although this figure implies a large number of Orange County pools are fenced, a more definitive study is warranted. Grouping single-family homes with apartments has the potential for providing a misleadingly high indication of barrier presence, because Orange County apartment pools built after 1982 are required to have isolation fencing. Additionally, it is important to ascertain whether respondents are familiar with what constitutes appropriate isolation fencing. This includes a minimum of 5 feet high or preferably higher, non-climbable fencing with a self-closing, self-latching gate that is kept locked.

Studies show that infants can drown in just a few inches of water. Infants tend to be top heavy; therefore, if they topple over into a container of liquid, they cannot pull themselves out.

The American Red Cross offers the following water safety tips.

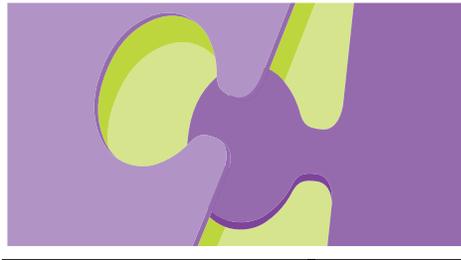
### Around Pools and Spas:

- ❖ Assign a responsible adult to stay poolside and closely watch children in the water. Never leave them unattended, even if a lifeguard is on duty. If you must leave even for a few seconds, take the children with you.
- ❖ Do not let children under age 14 supervise other children.
- ❖ Do not let children under age 5 use a spa more than 10 minutes; extreme heat could be fatal.
- ❖ Keep safety equipment, like ring buoys and a shepherd's crook, near the pool and easily accessible.
- ❖ Learn to perform CPR.
- ❖ Keep a cordless or cellular phone by the pool to dial 911 in an emergency.
- ❖ Post a sign by the pool that reads "Call 911," along with your address and cross streets, so they can be given to an emergency dispatcher in the event of an emergency.
- ❖ Store pool chemicals in childproof containers, up high and out of reach.
- ❖ Use a pool cover when you are away.
- ❖ Make sure all members of your family know how to swim. Community classes are offered, starting with infants and toddlers.

- ❖ Properly fence and secure your pool. The Red Cross recommends full 360-degree fencing and a self-locking gate with a latch at least 54” high.
- ❖ Keep outdoor furniture away from pool fences to discourage climbing into the pool area.
- ❖ Inform babysitters and others who watch your children about the “pool rules.”

Buckets and Tubs:

- ❖ Any water deep enough to cover the nose and mouth of a child can cause drowning.
- ❖ Empty cleaning buckets immediately after use.
- ❖ Never leave children unattended in a bathtub.
- ❖ Keep bathroom doors closed to prevent a toddler from reaching the toilet.



Community Health: Working the Puzzle

## AUTOMOBILE SAFETY SUMMARY

- ❖ In 1997, 41,967 people died in motor vehicle crashes in the United States and 2,444 vehicle occupants were killed and 242,215 were injured in collisions on public roadways in California. Eighty-seven vehicle occupants were killed and 19,637 were injured in collisions on public roadways in Orange County.
- ❖ Research has shown that lap/shoulder safety belts reduce the risk of fatal injury to front-seat passenger car occupants by 45% and the risk of moderate-to-critical injury by 50%. From 1975-1997, it is estimated that safety belts saved 100,998 lives nationwide.
- ❖ Research shows that child safety seats reduce fatal injuries by 69% for infants (less than 1 year old) and by 47% for toddlers (1- 4 years old). Nationally, it is estimated that 3,894 lives were saved by child restraints from 1975 to 1997.
- ❖ California law requires that children be restrained in child safety seats until they are at least 4 years old and weigh 40 pounds.
- ❖ California and Orange County reported greater seat belt use than the nation. The US Department of Transportation, through observation surveys, also confirmed nationwide seat belt use of approximately 69% for 1997.

According to the OCHNA survey:

- ❖ The percentage of respondents reporting they always use seat belts (88.8%) exceeds the Healthy People 2000 objective of increasing use of occupant protection systems to at least 85% of motor vehicle occupants.
- ❖ The percentage of respondents reporting their oldest children always use seat belts (95.2%) exceeds the Healthy People 2000 objective of increasing use of occupant protection systems to at least 85% of motor vehicle occupants.
- ❖ The percentage of respondents reporting their oldest children always use car seats (85.5%) exceeds the Healthy People 2000 objective of increasing use of occupant protection systems to at least 85% of motor vehicle occupants. The 1997 Office of Traffic Safety observation surveys reported 89.6% restraint use for infants/toddlers statewide.

## AUTOMOBILE SAFETY

In 1997, 41,967 people died in motor vehicle crashes in the United States which was a 0.2% decrease from 1996. The 1997 fatality rate of 1.7 per 100 million vehicle miles traveled was 134 which was a decrease from 141 in 1996 and 143 in 1995. This fatality rate has remained constant since 1992. In 1997, 2,444 vehicle occupants were killed and 242,215 were injured in collisions on public roadways in California.

Orange County's motor vehicle occupant death rates by age for 1996 are as follows:

Orange County Motor Vehicle Occupant Death Rates per 100,000 Population – 1996

Age	Mortality Rate/100,000
0-4	2.2
5-9	0.0
10-14	0.0
15-19	13.6
20-24	14.2
25-34	5.7
35-44	4.5
45-54	3.8
55-64	4.2
65-74	3.7
75+	12.3
Total	5.4

The table below gives hospital discharge data for motor vehicle accidents. Patients with injuries who were taken to emergency rooms but not admitted, or transferred to a hospital outside Orange County, did not appear in this data. Admissions to long-term care facilities were not included, nor were outpatient, physician, physical therapy, or rehabilitation visits or outpatient procedures.

Orange County Motor Vehicle Occupant Hospitalization Rates per 100,000 Population–1996

Age	Hospitalization Rate/100,000
0-4	19.4
5-9	23.9
10-14	18.9
15-19	119.2
20-24	142.0
25-34	84.8
35-44	66.8
45-54	67.3
55-64	67.3
65-74	101.9
75+	121.9
Total	72.5

Research has shown that lap/shoulder safety belts reduce the risk of fatal injury to front-seat passenger car occupants by 45% and the risk of moderate-to-critical injury by 50%. From 1975 to 1997, it is estimated that safety belts saved 100,998 lives nationwide. In 1997, 49 states had safety belt use laws in effect. The laws vary according to the type and age of the vehicle, occupant seating position, etc. In 36 of these states,

police officers can write seat belt citations only after a vehicle has been stopped for some other traffic infraction (secondary enforcement). Thirteen states, including California, allow police officers to stop vehicles and write citations whenever they observe violations of the safety belt law (primary enforcement).

In 1997, the average observed seat belt use rate reported by secondary enforcement states was 62%, compared to 79% in states with primary enforcement laws. Annual observation surveys conducted by the California Office of Traffic Safety found that driver seat belt use statewide rose from 67.6% in November 1992, before adoption of the primary safety belt use law, to 90.3% in June 1998. During the same period, passenger restraint use increased from 66.7% to 86.2%, and restraint use for infants/toddlers rose from 59.3% to 85.8%. According to the California Office of Traffic Safety, California has the highest restraint use in the nation.

The following data was obtained from the Statewide Integrated Traffic Records System which includes reports from police, sheriffs, and the California Highway Patrol. This system tracks collisions that occur on public roadways.

Orange County Vehicle Occupants Injured Indicating Seat Belt Usage – 1997

Total Vehicle Occupants Injured	Seat Belts Used	Seat Belts Not Used
19,637	17,654 (90%)	1,983 (10%)

Orange County Vehicle Occupants Killed Indicating Seat Belt Usage – 1997

Total Vehicle Occupants Killed	Seat Belts Used	Seat Belts Not Used
87	51 (59%)	15 (41%)

In 1997, 44% of passenger car occupants and 49% of light truck occupants involved in fatal crashes in the U.S. were unrestrained.

Research shows child safety seats reduce fatal injuries by 69% for infants (less than 1 year old) and by 47% for toddlers (1- 4 years old). Nationally, it is estimated 3,894 lives were saved by child restraints from 1975-1997. California law requires children be restrained in child safety seats until they are at least 4 years old and weigh 40 pounds. This is a primary enforcement law. Child safety seats are often improperly installed and secured, reducing their effectiveness. Failure to read and follow child safety seat instructions and vehicle owner manual instructions regarding safety belts can result in serious injury or death.

OCHNA survey results indicated that 88.8% of the respondents always wear seatbelts and 1.1% never wear seatbelts. The table below compares the Orange County seatbelt use rate with the state and national rates.

	Always	Nearly Always	Sometimes	Seldom	Never
OCHNA 98	88.8	6.1	2.6	1.3	1.1
US BRFSS 97	69.3	14.2	7.8	4.0	3.8
CA BRFSS 97	87.2	8.0	2.2	1.4	1.2



## SMOKE DETECTOR SUMMARY

- ❖ Only 26.6% of respondents met the recommended standard of monthly smoke detector testing. This was slightly lower than the monthly testing reported by Californians in 1997, and about 10 percentage points lower than the monthly testing reported nationally in 1997.
- ❖ Fire is the second leading cause of accidental death in the home in the U.S. Each year, more than 3,500 people die in home fires, and more than 400,000 residential fires are reported to fire departments.
- ❖ About 12,000 children, 14 years of age and under, are injured in residential fires annually.
- ❖ The most common cause of residential fires is cooking and heating equipment (39%), followed by smoking (23%), and children playing with ignition sources (10%).
- ❖ In 1995, the highest fatality rates were for children younger than 5 years and adults older than 62 years. About 90% of fire related deaths among children under 5 occur in homes without functioning smoke alarms.
- ❖ About 92% of U.S. households have smoke detectors installed, but nearly one third of them do not work or are missing batteries.
- ❖ Smoke detectors should meet the requirements of the Underwriters Laboratories standard, and be placed outside bedrooms and on each level of multi-story homes.
- ❖ Smoke detectors should be tested monthly, and the batteries should be replaced at least once a year or when they make a chirping sound.

## SMOKE DETECTORS

Fire is the second leading cause of accidental death in the home in the U.S. Each year, more than 3,500 people die in home fires, and more than 400,000 residential fires are reported to fire departments. About 12,000 children, 14 years of age and under are injured in residential fires annually. The most common cause of residential fires is cooking and heating equipment (39%), followed by smoking (23%), and children playing with ignition sources (10%). In 1995, the highest fatality rates were for children younger than 5 years and adults older than 62 years. About 90% of fire related deaths among children under 5 occur in homes without functioning smoke alarms. In 1996, 0.7% of all injury-related deaths and 0.4% of all injury-related hospitalizations were due to fires. The hospitalization rate for persons injured by fires in private residences was 1.06 per 100,000.

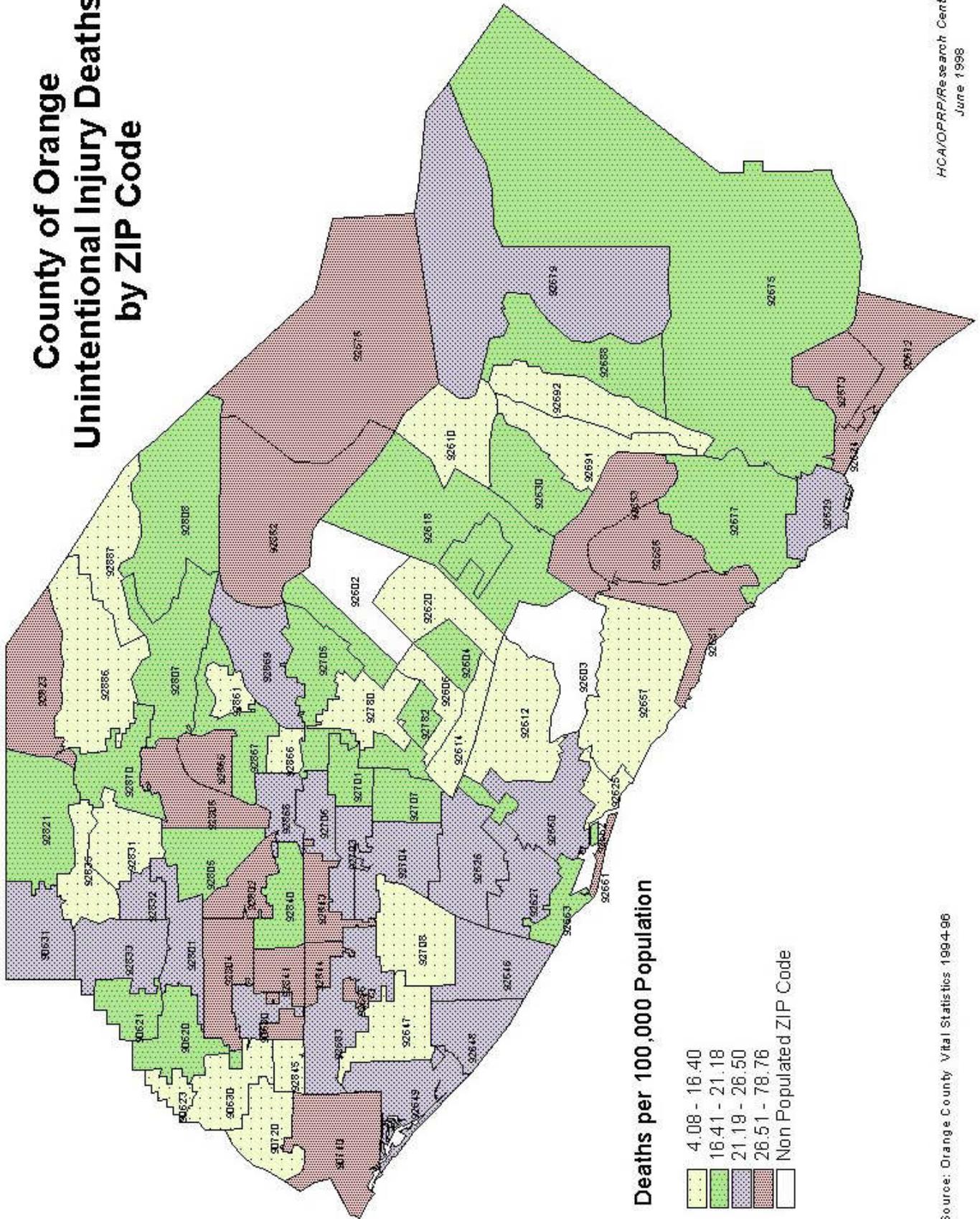
According to the Consumer Product Safety Commission (CPSC), about 92% of U.S. households have smoke detectors installed, but nearly one third of them do not work or are missing batteries. CPSC recommends smoke detectors that meet the requirements of Underwriters Laboratories standard be placed outside bedrooms and on each level of multi-story homes. Smoke detectors should be tested monthly, and the batteries should be replaced at least once a year or when they make a chirping sound. Ten-year smoke detectors with lithium batteries have been available to consumers since 1995. These long-life detectors should also be tested monthly.

OCHNA survey results indicate 26.6% of respondents had tested all the smoke alarms in their homes within the past month and 29% had tested their alarms in the past 6 months. The table below compares percentage rates for Orange County, California, and the nation.

	1998 OCHNA (%)	1997 CA BRFSS (%)	1997 US BRFSS (%)
Within past month	26.6	29.5	37.3
Within past 6 months	29.0	31.4	34.7
Within the past year	15.3	13.1	10.8
One or more years ago	10.3	11.0	6.8
Never	18.8	15.0	8.4

Only 26.6% of respondents met the recommended standard of monthly smoke detector testing. This was slightly lower than the monthly testing reported by Californians in 1997, and about 10 percentage points lower than the monthly testing reported nationally in 1997.

# County of Orange Unintentional Injury Deaths by ZIP Code



HCA/OPRP/Research Center  
June 1998

Source: Orange County Vital Statistics 1994-96