

## **Section 10: Injury and Violence Prevention**

The risk of injury is so great that most persons sustain a significant injury at some time during their lives. Nevertheless, this widespread human damage too often is taken for granted, in the erroneous belief that injuries happen by chance and are the result of unpreventable “accidents.” In fact, many injuries are not “accidents,” or random, uncontrollable acts of fate; rather, most injuries are predictable and preventable.

People die from injuries due to a variety of causes such as motor vehicle crashes, firearms, poisonings, suffocations, falls, fires, and drownings. In the United States, about 400 persons die from injuries each day, including 55 children and teenagers. One death out of every 17 in the United States results from injury. Of these deaths, 63 percent are classified as unintentional and 34 percent as intentional. Approximately 42,000 unintentional injury deaths result from motor vehicle crashes every year.

For ages 1 through 44 years, deaths from injuries far surpass those from cancer—the overall leading natural cause of death at these ages—by about three to one. Injuries cause more than two out of five deaths (43 percent) of children aged 1 through 4 years and result in four times the number of deaths due to birth defects, the second leading cause of death for this age group. For ages 15 to 24 years, injury deaths exceed deaths from all other causes and are the cause of nearly four out of five deaths. After age 44 years, injuries account for fewer deaths than other health problems, such as heart disease, cancer, and stroke. However, despite the decrease in the proportion of deaths due to injury, the death rate from injuries is actually higher among older persons than among younger persons.

### **Reduce deaths caused by unintentional injuries.**

**HP 2010 Objective:** 15-13

**National Target:** 17.5 deaths per 100,000 population.

**National Baseline:** 35.0 deaths per 100,000 population were caused by unintentional injuries in 1998 (age adjusted to the year 2000 standard population).

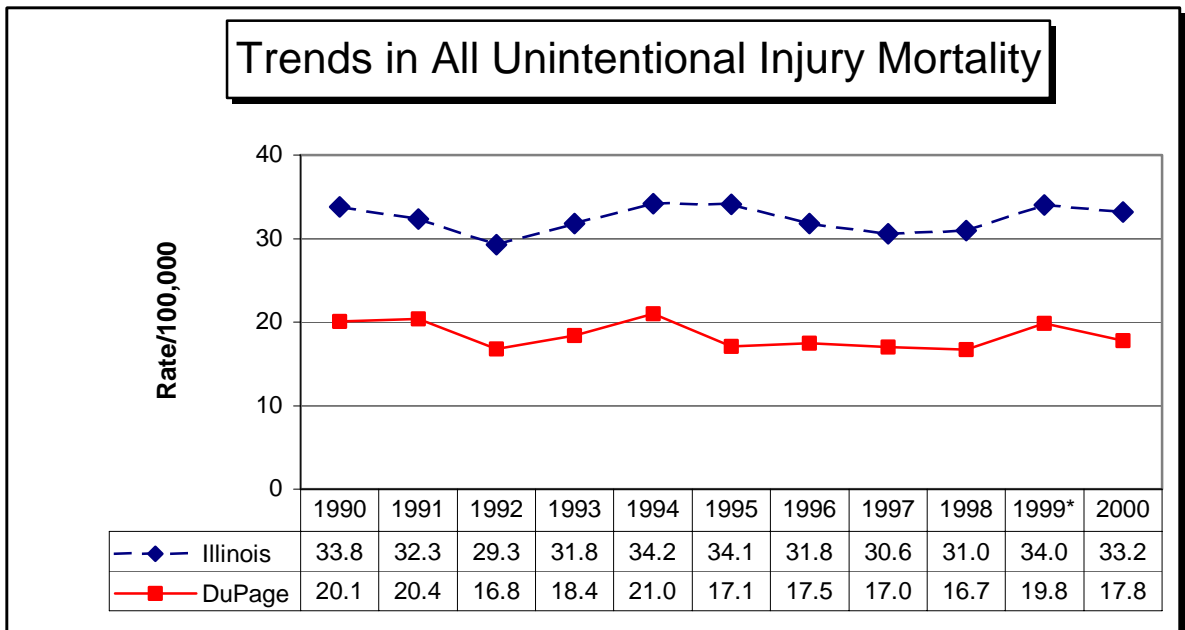
**Data source:** Illinois Department of Public Health Death Files, 1990 – 2000, DuPage County Health Department.

Nationally, more persons aged 1 to 34 years die as a result of unintentional injuries than any other cause of death. Across all ages, 92,353 persons died in 1997 as a result of unintentional injuries. Additional millions of persons are incapacitated by unintentional injuries, with many suffering lifelong disabilities. These events occur disproportionately among young and elderly persons. In 1995, 29 million persons visited emergency departments as a result of unintentional injuries.

Although the greatest impact of injury is in human suffering and loss of life, the financial cost is staggering. Included in the costs associated with injuries are the costs of direct medical care and rehabilitation as well as lost income and productivity. By the late 1990s, injury costs were estimated at more than \$441 billion annually, an increase of 42 percent over the 1980s. As with other health problems, it costs far less to prevent injuries than to treat them.

The HP 2010 target rate for unintentional injury mortality is 17.5 deaths per 100,000 population. **In 2000, the DuPage County injury mortality was 17.8, very close to meeting the HP 2010 Target Objective.** The Illinois mortality rate at 33.2 is almost twice the HP 2010 target.

Graph 10.1



\*ICD-10 codes were implemented effective 1999.

**Reduce deaths caused by motor vehicle crashes.**

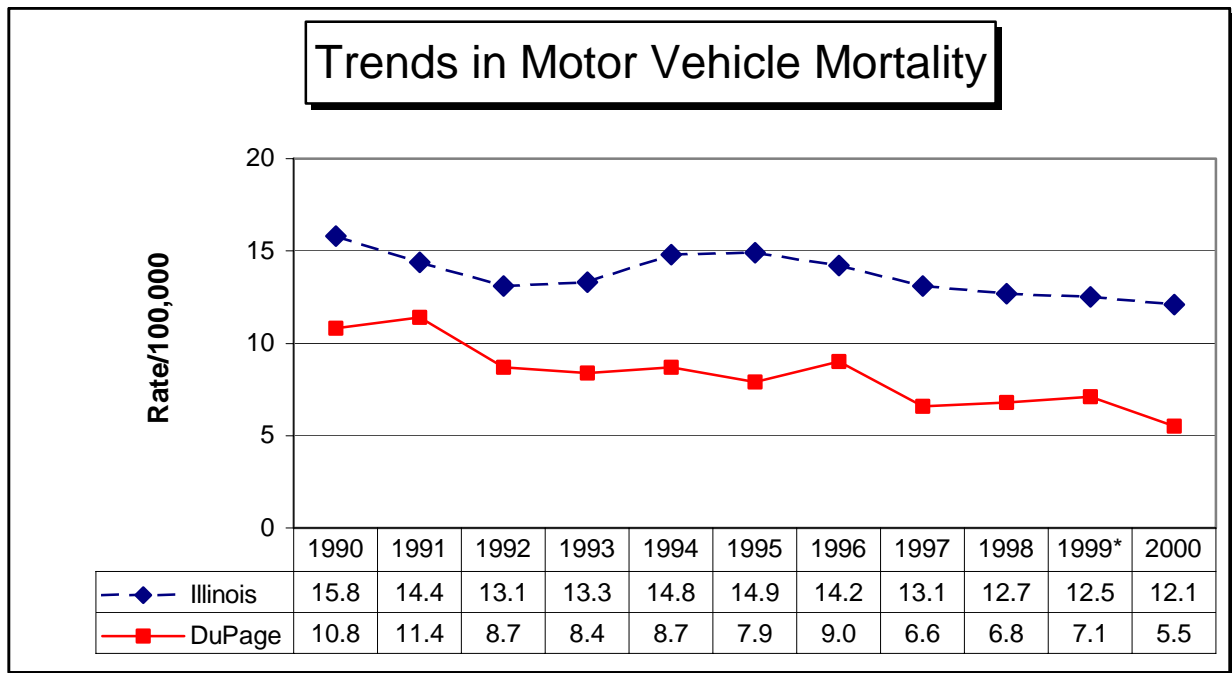
**HP 2010 Objective:** 15-15

**National Target and baseline:**

| Objective      | Reduction in Deaths Caused by Motor Vehicle Crashes | 1998 Baseline | 2010 Target |
|----------------|---|---------------|-------------|
| <b>15-15a.</b> | Deaths per 100,000 population                       | 15.6*         | 9.2         |

**Data sources:** Illinois Department of Public Health Death Files, 1990 – 2000, DuPage County Health Department.

Graph 10.2



\*ICD-10 codes were implemented effective 1999.

Motor vehicle crashes account for approximately half the deaths from unintentional injuries and remain a major public health problem. They are the leading cause of death for persons in the United States aged 5 to 29 years. In 1998, 41,471 persons died in motor vehicle crashes. Thirty-eight percent of these deaths occurred in alcohol-related crashes.

In DuPage County in 2000, there were 50 motor vehicle accident deaths, which was 0.9 percent of all DuPage County deaths. When calculating age adjusted (2000 U.S. standard population) death rates, we find that 5.5 deaths occur from motor vehicle crashes per 100,000 persons. While these numbers may seem small, in 2000 motor vehicle accident deaths accounted for 1,496 years of potential life lost (YPLL) due to premature death.

Motor vehicle crashes are often predictable and preventable. Increased use of safety belts and reductions in driving while impaired are two of the most effective means to reduce the risk of death and serious injury of occupants in motor vehicle crashes.

The HP 2010 target rate for motor vehicle mortality is 9.2 deaths per 100,000 population. **In 2000, the DuPage County injury mortality was 5.5, well below the HP 2010 Target.** The Illinois mortality rate, however, was 12.1 and not within the target rate.

**Reduce nonfatal injuries caused by motor vehicle crashes.**

**HP 2010 Objective:** 15-17

**National Target:** 933 nonfatal injuries per 100,000 population.

**National Baseline:** 1,181 nonfatal injuries per 100,000 population were caused by motor vehicle crashes in 1998.

**Data source:** Trauma Registry Data, 2000.

Table 10.1

| Total DuPage Population | Motor Vehicle Accidents<br>Nonfatal Injuries |
|-------------------------|--|
|                         | Number                                       |
| 2000                    | 393  |

Many diving-related incidents result in debilitating injuries. Diving-related injury first becomes an issue during adolescence. Injuries to males outnumber injuries to females. Diving injuries account for one of eight spinal cord injuries, with half of those injuries resulting in quadriplegia.

The HP 2010 target rate for nonfatal injuries is 993 injuries per 100,000 population. 2000 Trauma Registry data provides us with the number of motor vehicle trauma injuries. **While the exact rate per 100,000 was not calculated, we can estimate the rate to be approximately 44 deaths per 100,000 population, well below the HP 2010 Target Objective.**

## Reduce deaths from falls.

**HP 2010 Objective:** 15-27

**National Target:** 3.0 deaths per 100,000 population.

**National Baseline:** 4.7 deaths per 100,000 population were caused by falls in 1998 (age adjusted to the year 2000 standard population).

**Data source:** IPLAN Data System, Illinois Department of Public Health Death Files, 1999 and 2000.

Falls rank number three as a cause of unintentional injury deaths. Falls account for 87 percent of all fractures among adults aged 65 years and older and are the second leading cause of both spinal cord injury and brain injury for this age group. Falls also cause the majority of deaths and severe injuries from head trauma among children under age 14 years. Falls account for 90 percent of the most severe playground-related injuries treated in hospital emergency departments (mostly head injuries and fractures) and one-third of reported fatalities. Head injuries are involved in about 75 percent of all reported fall-related deaths associated with playground equipment.

Table 10.2

| Number of Deaths from Falls |      |          |      |
|-----------------------------|------|----------|------|
| DuPage County               |      | Illinois |      |
| 1999                        | 2000 | 1999     | 2000 |
| 23                          | 25   | 546      | 511  |

In 1995, falls became the leading cause of injury deaths among adults aged 65 years and older. In 1997, 9,023 adults over age 65 years died as a result of falls. Falls are the most common cause of injuries and hospital admissions for trauma among elderly persons. Since most fractures are the result of falls, understanding factors that contribute to falling is essential to designing effective intervention strategies.

For all ages combined, alcohol use has been implicated in 35 to 63 percent of deaths from falls. For persons aged 65 years and older, 60 percent of fatal falls occur in the home, 30 percent occur in public places, and 10 percent occur in health care institutions.

The most serious fall-related injury is hip fracture. Approximately 212,000 hip fractures occur each year in the United States among adults aged 65 years and older; 75 to 80 percent of all hip fractures are sustained by females. The impact of these injuries on the quality of life is enormous. Half of all elderly adults hospitalized for hip fracture cannot return home or live independently after the fracture. The total direct cost of all fall injuries for adults aged 65 years and older in 1994 was \$20.2 billion.

Factors that contribute to falls include difficulties in gait and balance, neurological and musculoskeletal disabilities, psychoactive medications, dementia, and visual impairment. Environmental hazards such as slippery surfaces, uneven floors, poor lighting on stairs, loose rugs, unstable furniture, grab bars in bathrooms, and objects on floors also may play a role.

The HP 2010 target rate for deaths from falls is 3.0 per 100,000 population. The Illinois Department of Public Health death file provides us with the number of fall deaths, however the exact rate per 100,000 was not calculated. **We can estimate the rate to be approximately 2.5 deaths per 100,000 population, which is below the HP 2010 Target of 3.0 deaths per 100,000 population.**

### Reduce drownings.

**HP 2010 Objective:** 15-29

**National Target:** 0.9 drownings per 100,000 population.

**National Baseline:** 1.6 drownings per 100,000 population occurred in 1998 (age adjusted to the year 2000 standard population).

**Data source:** IPLAN Data System, Illinois Department of Public Health Death Files, 1999 and 2000.

Table 10.3

| Number of Deaths from Drownings |      |          |      |
|---------------------------------|------|----------|------|
| DuPage County                   |      | Illinois |      |
| 1999                            | 2000 | 1999     | 2000 |
| 5                               | 6    | 154      | 147  |

In 1997, drownings accounted for over 4,000 deaths in the United States. In 1998, 8,061 crashes involving recreational boats resulted in 4,612 injuries and 815 (574 drownings) deaths. Drowning is the second leading cause of injury-related death for children and adolescents aged 1 to 19 years, accounting for 1,502 deaths in 1995.

Most deaths involving diving occur among persons aged 15 to 39 years, with the largest proportion (14.8 percent) occurring among persons aged 30 to 39 years. Many diving-related incidents result in spinal cord injury. Alcohol use is involved in about 50 percent of deaths associated with water recreation.

Backyard swimming pools and spas represent the greatest risk to preschoolers, particularly those 18 to 30 months of age. Of the 600 annual drowning deaths of children from birth to 5 years of age, more than 300 occur in residential swimming pools. Annually, approximately 2,300 nonfatal injuries sustained in residential swimming pools occur in this age group.

In every age group, drowning rates are almost two to four times greater for males than for females. In 1997, the overall drowning rate for African Americans was 50 percent greater than that for whites; however, the rate was not higher for all age groups. For example, among children aged 1 through 4 years, the drowning rate for whites was slightly higher than the rate for African Americans. For children aged 5 to 19 years, African American children are twice as likely to drown as white children.

The HP 2010 target rate for deaths from drownings is 0.9 per 100,000 population. The Illinois Department of Public Health deaths file provides us with the number of drowning deaths, however the number of DuPage County drownings is so low that a rate per 100,000 cannot be calculated.

### **Reduce firearm-related deaths.**

**HP 2010 Objective:** 15-3

**National Target:** 4.1 deaths per 100,000 population.

**National Baseline:** 11.3 deaths per 100,000 population were related to firearm injuries in 1998 (age adjusted to the year 2000 standard population).

**Data source:** IPLAN Data System, Illinois Department of Public Health Death Files, 1999 and 2000.

Table 10.4

| <b>Number of Firearm Related Deaths</b> |             |                 |             |
|---|-------------|-----------------|-------------|
| <b>DuPage County</b>                    |             | <b>Illinois</b> |             |
| <b>1999</b>                             | <b>2000</b> | <b>1999</b>     | <b>2000</b> |
| 16                                      | 26          | 1,109           | 1,175       |

The number of DuPage County firearm related deaths is too low to calculate an accurate rate per 100,000 population. With 26 deaths in 2000, it is clear that DuPage County is well below the National Target of 4.1 deaths per 100,000 population.

## Reduce nonfatal firearm-related injuries.

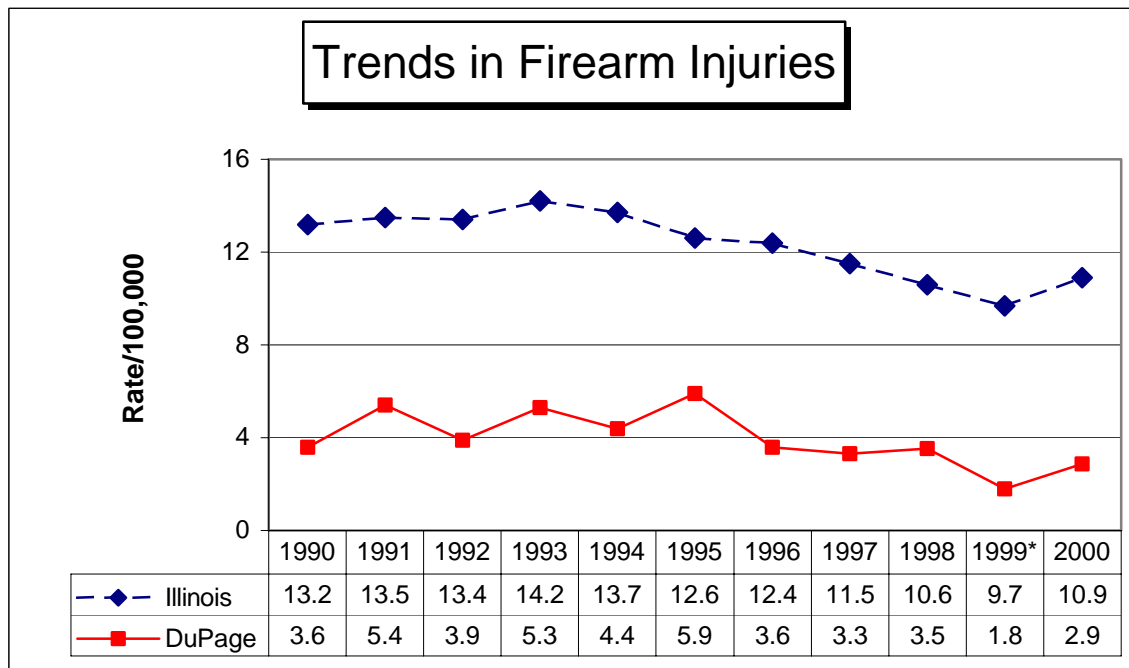
**HP 2010 Objective:** 15-5

**National Target:** 8.6 injuries per 100,000 population.

**National Baseline:** 24.0 nonfatal firearm-related injuries per 100,000 population occurred in 1997.

**Data source:** IPLAN Data System, Illinois Department of Public Health Death Files, 1990 – 2000, DuPage County Health Department

Graph 10.3



\*ICD-10 codes were implemented effective 1999.

The HP 2010 target for non-fatal firearm-related injuries is 8.6 injuries per 100,000 population. **In 2000, DuPage County non-fatal firearm-related injuries were well below the Target, with 2.9 injuries per 100,000 population.** The Illinois rate, however, was 10.9, exceeding the HP 2010 target.

**Reduce homicides.**

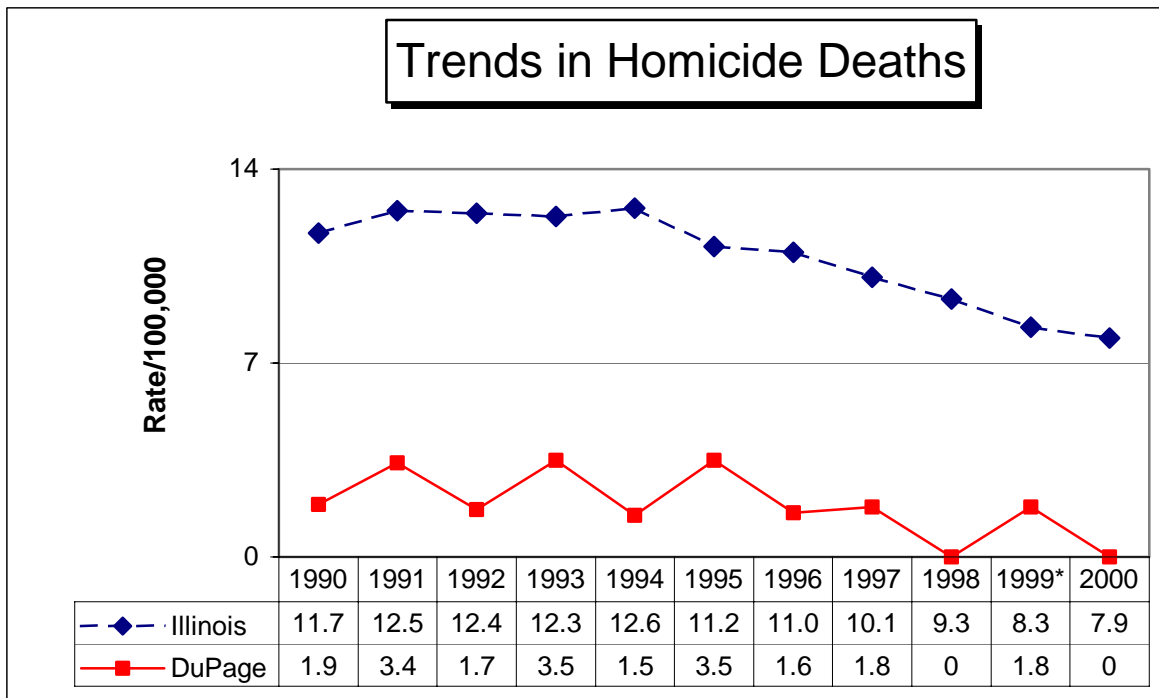
**HP 2010 Objective:** 15-32

**National Target:** 3.0 homicides per 100,000 population.

**National Baseline:** 6.5 homicides per 100,000 population occurred in 1998 (age adjusted to the year 2000 standard population).

**Data sources:** Illinois Department of Public Health Death Files, 1990 – 2000, DuPage County Health Department.

Graph 10.4



\* ICD-10 codes were implemented effective 1999.

Violence claims the lives of many of the Nation's young persons and threatens the health and well-being of many persons of all ages in the United States. On an average day in America, 53 persons die from homicide, and a minimum of 18,000 persons survive interpersonal assaults, 84 persons complete suicide, and as many as 3,000 persons attempt suicide.

Homicide was the cause of death for 19,491 persons in United States (7.2 per 100,000 population) in 1997. Homicide is the second leading cause of death for young persons aged 15 to 24 years and the leading cause of death for African Americans in this age group. Homicide rates are dropping among all groups, but the decreases are not as dramatic among youth, who already exhibit the highest rates. In 1997, 6,146 young persons aged 15 to 24 years were victims of homicide, amounting to almost 17 youth homicide victims per day in the United States. Of all homicide victims in 1997, 37 percent were under age 24 years. The homicide rate among males aged 15 to 24 years in the United States is 10 times higher than in Canada, 15 times higher than in Australia, and 28 times higher than in France or Germany.

The United States has the highest rates of lethal childhood violence than every other industrialized country. The increase in the total homicide rate from 1979 through 1993 resulted solely from increases in firearm-related homicides. Fatalities, however, are only part of the problem. For each of the 32,436 persons killed by a gunshot wound in the United States in 1997, approximately 2 more were treated for nonfatal wounds in hospital emergency departments.

Homicide victimization is especially high among African American and Hispanic youth. In 1995, African American males and females aged 15 to 24 years had homicide rates (74.4 per 100,000) that were more than twice the rate of their Hispanic counterparts (34.1 per 100,000) and nearly 14 times the rate of their white non-Hispanic counterparts (5.4 per 100,000).

**The HP 2010 target for homicides is 3.0 per 100,000 population. In 2000, there were no homicides in DuPage County.** The Illinois rate, however, was 7.9, more than two and one half times the HP 2010 target.

## **Child Abuse and Neglect**

Statistics on rates of child abuse and neglect are controversial. Laws defining abuse and neglect vary among states, making it difficult to compile and compare U. S. statistics. Even when using state laws to determine if abuse or neglect has occurred, the final judgment is based on opinion and personal interpretation. In addition, the majority of cases of child abuse and neglect are never reported. This is particularly true for neglected and sexually abused children, who may have no physical signs of harm. In the case of sexual abuse, secrecy and intense feelings of shame may prevent children, and adults aware of the abuse, from seeking help. Given data collection obstacles, the information presented in this section is the best that can be obtained.

The U.S. Department of Health and Human Services, Administration on Children, Youth and Families, National Center on Child Abuse and Neglect (NCCAN) is the single most comprehensive source of information about the current incidence of child abuse and neglect in the U.S. NCCAN uses two sets of standardized definitions for abuse and neglect. Under the Harm Standard, children were considered to be maltreated only if they had already experienced harm from abuse or neglect. The Endangerment Standard included children who experienced abuse or neglect that put them at risk of harm.

Child abuse and neglect occurs in all segments of our society, but the risk factors are greater in families where parents:

- Seem to be having economic, housing or personal problems
- Are isolated from their family or community
- Have difficulty controlling anger or stress
- Are dealing with physical or mental health issues
- Abuse alcohol or drugs
- Appear uninterested in the care, nourishment or safety of their children.

The behavior of children may signal abuse or neglect long before any change in physical appearance. Some of the warning signs may include:

- Nervousness around adults
- Aggression toward adults or other children
- Inability to stay awake or to concentrate for extended periods
- Sudden, dramatic changes in personality or activities
- Unnatural interest in sex
- Frequent or unexplained bruises or injuries
- Low self-esteem
- Poor hygiene.

## **Reduce maltreatment and maltreatment fatalities of children.**

**HP 2010 Objective:** 15-33a

**Target:** 10.3 per 1,000 children under age 18 years.

**Baseline:** 12.9 child victims of maltreatment per 1,000 children under age 18 years were reported in 1998.

**Data source:** Healthy DuPage, Voices for Illinois Children.

Child abuse and neglect offenses are presented at a rate per 1,000 children age 16 and under. **In DuPage County in 2001, the child abuse and neglect offense rate was 1.9, well below the HP 2010 Target. The Illinois child abuse and neglect offense rate was 7.5 per 1,000 children.** For the years 1995-1998, the DuPage child death rate was 8.5 deaths per 10,000 children. However, we must assume the actual number of cases is underreported.

## **Domestic Violence**

Family violence is an important indicator of the health of families. The measure provides information about safety in the household, and a safe and secure family environment is a major contributor to a positive future for DuPage County children. **In 2001, there were approximately 285 episodes of family violence for every 100,000 residents of DuPage County.**

### **Reduce the rate of physical assault by current or former intimate partners.**

**HP 2010 Objective:** 15-34

**Target:** 3.3 physical assaults per 1,000 persons aged 12 years and older.

**Baseline:** 4.4 physical assaults per 1,000 persons aged 12 years and older by current or former intimate partners occurred in 1998.

**Data source:** Behavioral Risk Factor Survey, 2000.

Intimate partner violence and sexual assault threaten people in all walks of life. On an average day in the United States, a minimum of 18,000 persons survive interpersonal assaults.

In 2000, 91.6 percent of DuPage County adults felt safe in their current relationship. 3.4 percent of adults had hit, kicked, punched or otherwise hurt someone within the past year. 4.6 percent of adults had an act of violence committed against them in the past year.

Data for this HP 2010 is not directly comparable to DuPage County data.