

# NEBRASKA CHILD DEATH REVIEW REPORT

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FOR 2007 AND 2008

THE SEVENTH REPORT OF THE NEBRASKA CHILD DEATH REVIEW TEAM

OCTOBER 2011

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THE HONORABLE DAVE HEINEMAN

GOVERNOR, STATE OF NEBRASKA

Honorable Members of the Nebraska State Legislature:

This is the seventh report on child deaths in Nebraska in accordance with Nebraska Revised Statute §71-3404. The report presents the Child Death Review Team's findings on 551 child deaths that occurred in 2007 and 2008.

The top five causes of death among children 0 to 17 years old were:

- Pregnancy-related – premature birth remains the leading cause of death of babies in Nebraska.
- Birth defects
- Motor vehicle-related incidents
- Unintentional injuries
- General medical conditions

The Child Death Review Team found that at least 20% of the deaths reviewed in this report were preventable. You will also find recommendations included that will help protect Nebraska's children and save lives.

Nebraska has certainly made progress since Child Death Reviews started in 1993. We've seen a 24 percent decrease in the number of child deaths. This decline was seen in all racial/ethnic groups. However, the long-term trend is only statistically significant for White children due to the larger number of deaths in that particular group. Regardless, disparities continue to exist and improvements related to health care and education have not reached all families. There is undoubtedly more work to be done.

This state review process can identify systemic programs and policy issues, but it's not a substitute for local action taken by families, communities and policymakers at the state and local levels.

Please note the views and recommendations in this report are those of the Child Death Review Team and aren't necessarily those of the Nebraska Department of Health and Human Services.

We thank you for your support and look forward to working with you on continuing efforts to enhance the safety and well-being of Nebraska's children.

Sincerely,

JOSEPH ACIERNO, M.D., J.D., DEPUTY CHIEF MEDICAL OFFICER

Chair, Nebraska Child Death Review Team

Nebraska Department of Health and Human Services

# MEMBERS OF THE NEBRASKA CHILD DEATH REVIEW TEAM, 2010 – 2014

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THE CHILD DEATH REVIEW TEAM WOULD LIKE TO THANK the County Attorneys and their staff, hospital Medical Records Departments, Tribal Authorities, State agencies, DHHS staff, family members and other individuals who graciously provided the information that made this report possible.

THE FOLLOWING INDIVIDUALS also provided invaluable assistance in interpreting the information:

Ms. Carrie Strovers, Douglas County Attorney's office  
Mr. Don Belau, Youth Rehabilitation and Treatment Center (Geneva)  
Ms. Chris Baker  
Dr. John Schmidt, Creighton University Medical Center

THIS REPORT WAS DESIGNED to provide useful information for evaluation, planning and prevention purposes. Any questions or comments regarding the report or the Nebraska Child Death Review Team should be directed to:

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THIS REPORT IS AVAILABLE at [dhhs.ne.gov/CDRteam](http://dhhs.ne.gov/CDRteam) and [www.dhhs.ne.gov/srd/srdindex.htm](http://www.dhhs.ne.gov/srd/srdindex.htm).

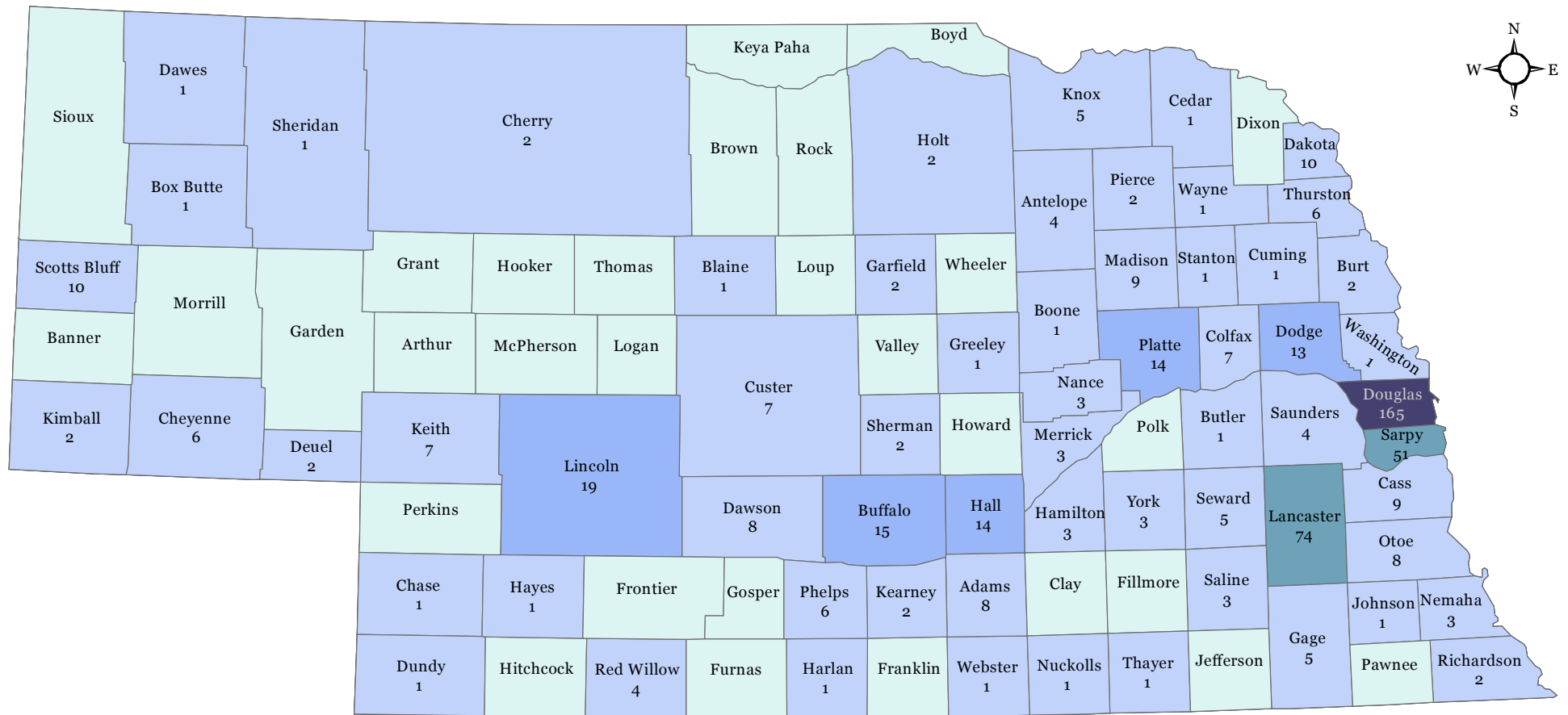
# MEMBERS OF THE NEBRASKA CHILD DEATH REVIEW TEAM, 2010 – 2014

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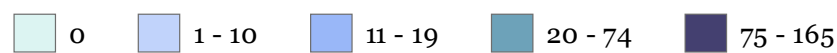
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# INFANT AND CHILD DEATHS (0-17) BY COUNTY OF RESIDENCE (N=551)

NEBRASKA 2007-2008



## LEGEND Infant and Child Deaths, by county



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# EXECUTIVE SUMMARY

Systematic study of the causes and patterns of child death provides crucial data for the prevention of future deaths. A total of 551 Nebraska children ages 0 to 17 died during 2007 and 2008, representing a significant decrease in both the number (-24%) and rate (-25%) of deaths since child death reviews began in 1993. This decline was seen to varying degrees in each of five racial/ethnic groups. However, the long-term trend was statistically significant only for white children due to the larger size of that group.

Top causes of death were conditions related to pregnancy, birth defects, and motor vehicle-related incidents. Of the total 551 deaths, at least 22.9% were considered to be either somewhat or strongly preventable.

TOP FIVE CAUSES OF DEATH FOR CHILDREN IN NEBRASKA, 2007 and 2008, and Key Recommendations for Future Prevention

## 1. PREGNANCY-RELATED – 176 DEATHS

Premature birth remains a leading cause of infant death in Nebraska. However, although nearly all (91.5%) children and infants whose underlying cause of death originated in the perinatal period were born prematurely, nearly one-half (46.6%) had an identifiable cause for their prematurity. Of the 95 infants without an identifiable cause, over half (57.4%) were from multiple gestation pregnancies.

RECOMMENDATIONS: Pregnant women, providers and communities must engage in a comprehensive approach to prevent preterm delivery.

- A. Nebraska hospitals' outreach programs should work directly with local March of Dimes chapters on their "Healthy Babies are Worth the Wait" initiatives to promote community education on the importance of babies being born at term.
- B. The Nebraska Medical Association should encourage all prenatal care providers to document prematurity education occurring during prenatal care visits.

## 2. BIRTH DEFECTS – 118 DEATHS

Three specific chromosomal anomalies – Trisomies 13 (Patau Syndrome), 18 (Edwards' Syndrome) and 21 (Down Syndrome) – accounted for nearly one-quarter (22.9%) of birth defect-related deaths. Increasing maternal age is the only commonly accepted risk factor for most trisomies, although the majority of affected births actually occur to younger women. Risk factors for the second largest group, congenital heart defects (16.9%), include rubella (German measles), diabetes, and first trimester cigarette use.

### RECOMMENDATIONS:

- A. Investments in decreasing maternal smoking have at least a 5:1 cost benefit in decreasing neonatal health care costs. The Nebraska legislature should increase funding to Tobacco Free Nebraska, including the Tobacco Free Nebraska Quitline which has tailored cessation counseling protocols for pregnant women and women considering pregnancy.
- B. All medical and human service providers should be aware of the hidden potential for abuse and neglect of children with disabilities.

### 3. MOTOR VEHICLE-RELATED INCIDENTS – 59 DEATHS

Most motor vehicle-related deaths (91.5%) involved a motor vehicle crash; others involved collision with a bicycle, scooter or sled, or an all-terrain vehicle (ATV). Teens ages 15-17 accounted for two-thirds (67.3%) of all deaths. Child safety restraint use has increased significantly since 1999; however, none of the eight children under the age of 12 killed in 2007 and 2008 were properly restrained. Alcohol was known to be involved in at least 12 of these fatal crashes.

#### RECOMMENDATIONS:

- A. Communities, law enforcement personnel and legislative bodies need to work together to improve proper seat belt usage.
- B. Recommendations from ATV manufacturers and the US Consumer Product Safety Commission that children and young teens be restricted to ATVs with engine sizes of 90 cc or below should be adopted in Nebraska.

### 4. UNINTENTIONAL INJURIES – 43 DEATHS

The largest single type of unintentional injury was sleep-related suffocation or strangulation of infants (12 cases). Four additional suffocation or strangulation deaths were not sleep-related.

Three toddlers drowned in home swimming pools. The lack of supervision in these cases was not felt to rise to the level of neglect; a more blatant case is included in the Neglect section of this report. Four older children drowned in open water while swimming, boating or after falling from a spillway. Six children died in four separate house fires. In three of these incidents, it

is known that there was a working smoke detector, yet various factors prevented the caregivers from rescuing the children.

#### RECOMMENDATIONS:

- A. Local Safe Kids chapters and health departments should ensure continuing inspections of public pools and spas, handling fencing and barrier issues and sharing key information with parents and families about water safety.
- B. The Nebraska Department of Health and Human Services, Environmental Health Section should distribute family-oriented education materials during pool inspections.
- C. All Nebraska state government-sponsored drowning prevention materials should be available and distributed in Spanish.

### 5. GENERAL MEDICAL CONDITIONS – 37 DEATHS

Forty-three percent (16 cases) of medical deaths were due to acute respiratory diseases, including three cases of respiratory syncytial virus (RSV) pneumonia and four cases of asthma. All children who died of asthma appeared to have been receiving medical care. Four children died from bacterial meningitis.

RECOMMENDATION: The Nebraska Medical Association, the Nebraska Chapter of the American Academy of Pediatrics and their members should take the lead on dispelling myths about vaccine safety and promoting infant and child vaccinations.



# REVIEW OF 2007 AND 2008 NEBRASKA CHILD DEATHS

The Legislature finds and declares that it is in the best interests of the state, its citizens and especially the children of this state that the number and causes of death of children in this state be examined. There is a need for a comprehensive integrated review of all child deaths in Nebraska and a system for statewide retrospective review of existing records relating to each child death. §71-3404 Neb. Rev. Stat.

This report presents the findings and recommendations of the Nebraska Child Death Review Team, based on the review and tabulation of the 551 deaths of Nebraska resident children (newborns through age 17) known to have occurred during 2007 and 2008. The traditional belief that “things will happen” ignores the reality that many of these deaths could have been prevented.

## BACKGROUND

The Nebraska Child Death Review Team (CDRT) was established by the Nebraska Legislature in 1993 and charged with undertaking a comprehensive, integrated review of existing records and other information regarding each child death. At that time, the Nebraska Commission for the Protection of Children had found that about 300 children died each year in the state, but that there was no systematic process in place for consistent review of those deaths to determine contributing circumstances.

The purpose of the CDRT includes developing an understanding of the number and causes of child deaths, and advising the Governor, Legislature, other policy makers and the public on

changes that might prevent them in the future. All child deaths are reviewed, not just “suspicious” or violent ones. The Team uses information in written records and the expertise of its members to identify situations where, in retrospect, reasonable intervention might have prevented a death. Members of the original Team determined that the specific goals of these reviews would be to:

- Identify patterns of preventable child deaths;
- Recommend changes in system responses to child deaths;
- Refer to law enforcement newly-suspected cases of abuse, malpractice, or homicide; and,
- Compile findings into reports designed to educate the public and state policy makers about child deaths.

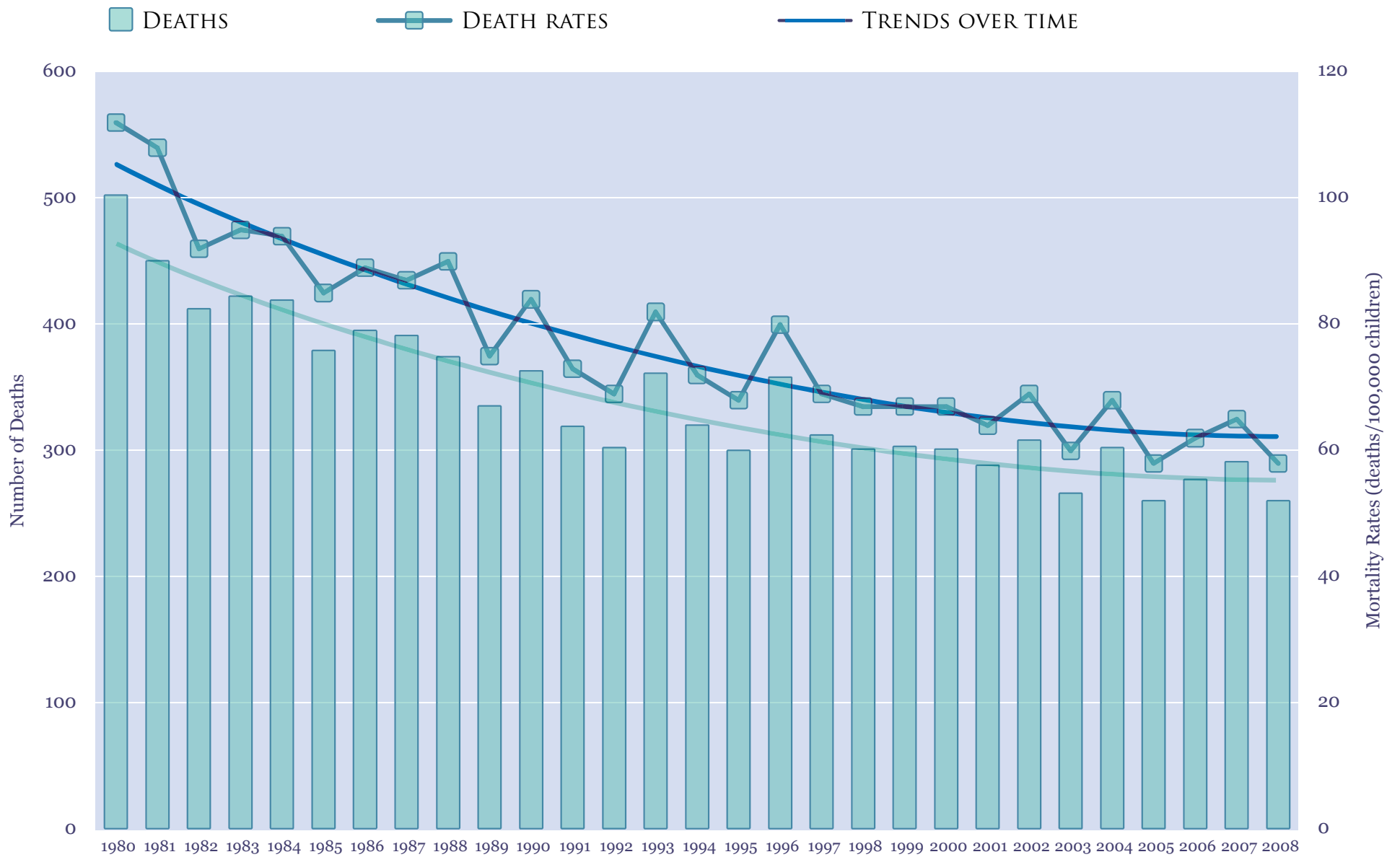
## FINDINGS

A total of 551 Nebraska children ages 0 to 17 died during 2007 and 2008 (Table 1). The average of those two years, 276 deaths, represents a 24% decrease in the number of deaths (from 361 deaths), and a 25% decrease in the rate of deaths (from 82.2 deaths per 100,000 children 0-17 to 61.4 deaths per 100,000) since child death reviews began in 1993. Although there is considerable year-to-year fluctuation, the overall trend since 2000 has been towards fewer deaths (Figure 1).

## DEMOGRAPHICS

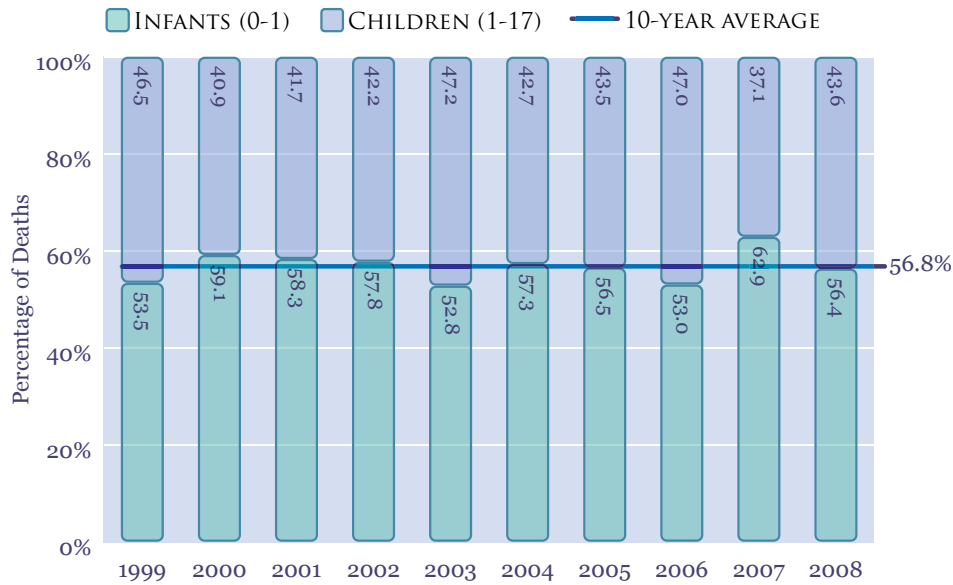
Infants continued to account for slightly over one-half of all child deaths (Figure 2). Approximately two-thirds of infants died within their first month (Figure 3). Among children over one year old, the largest proportion was for ages 14 to 17 (Figure

FIGURE 1 Child Deaths (0-17) and Mortality Rates Nebraska, 1980-2008



Curved lines represent 2nd degree polynomial trends over time. Prediction values = 89.3% (rates) and 89.2% (numbers of deaths).

FIGURE 2 Child Deaths (0-17), by Year  
Nebraska, 1999-2008



Curved lines represent 2nd degree polynomial trends over time. Prediction values = 89.3% (rates) and 89.2% (numbers of deaths).

FIGURE 4 Infant and Child Mortality Rates\*, by Year  
Nebraska, 1999-2008

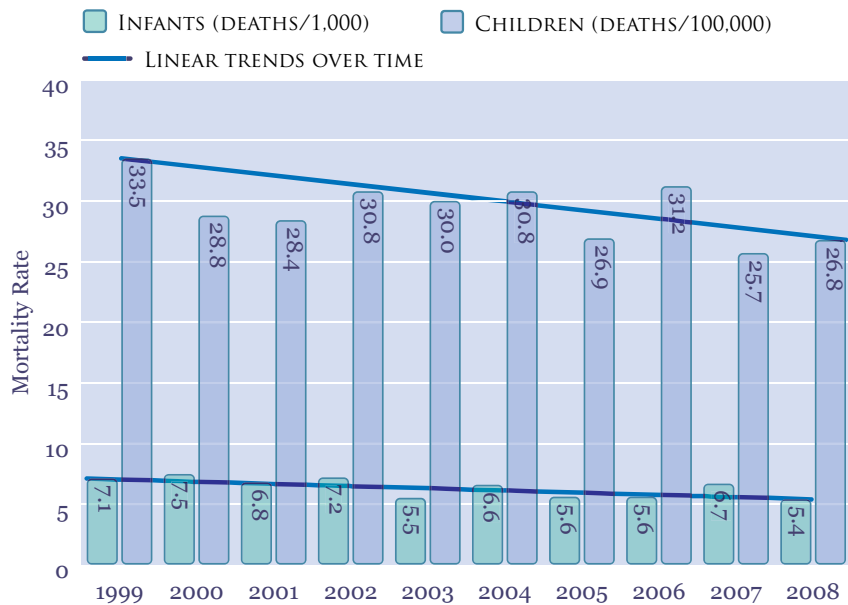
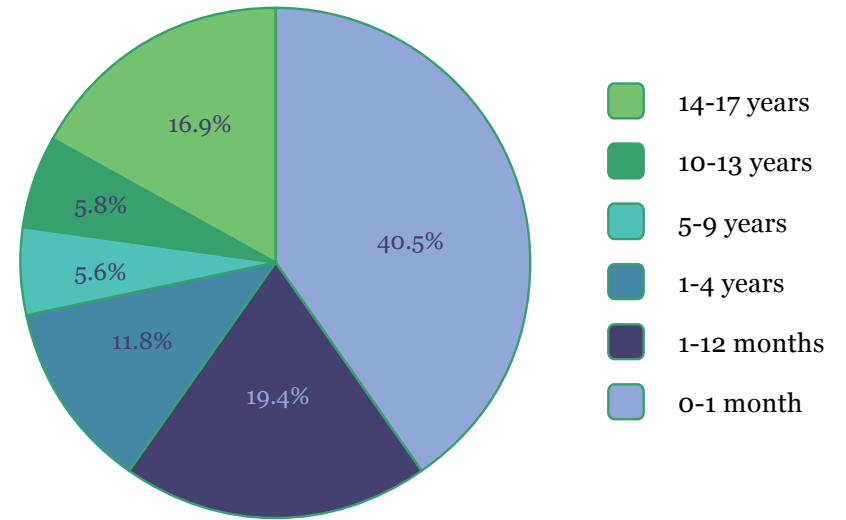
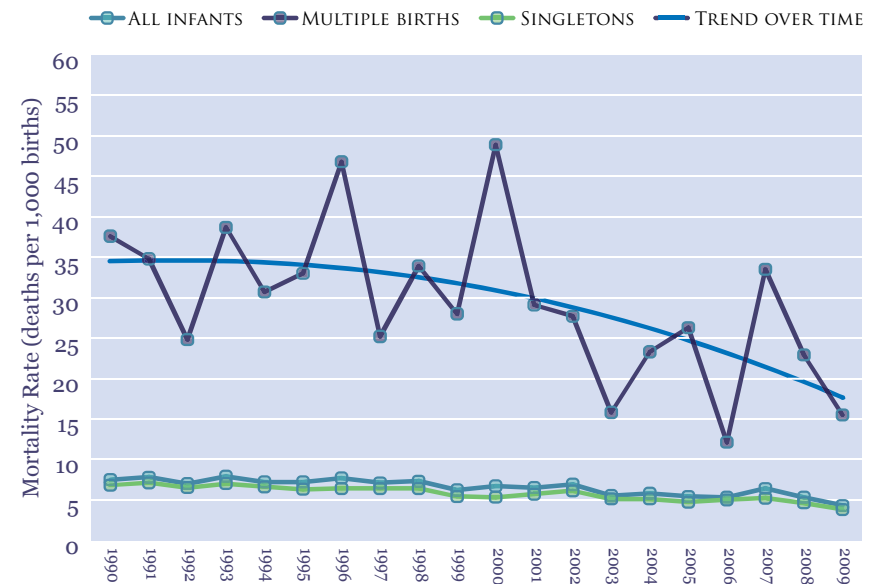


FIGURE 3 Child Deaths (0-17), by Age (N=551)  
Nebraska, 2007 and 2008



\*Infant rates are based on deaths/1,000 live births. Child rates are based on deaths/100,000 children 1-17. Prediction values for trends 35.9% (children) and 48.2% (infants).

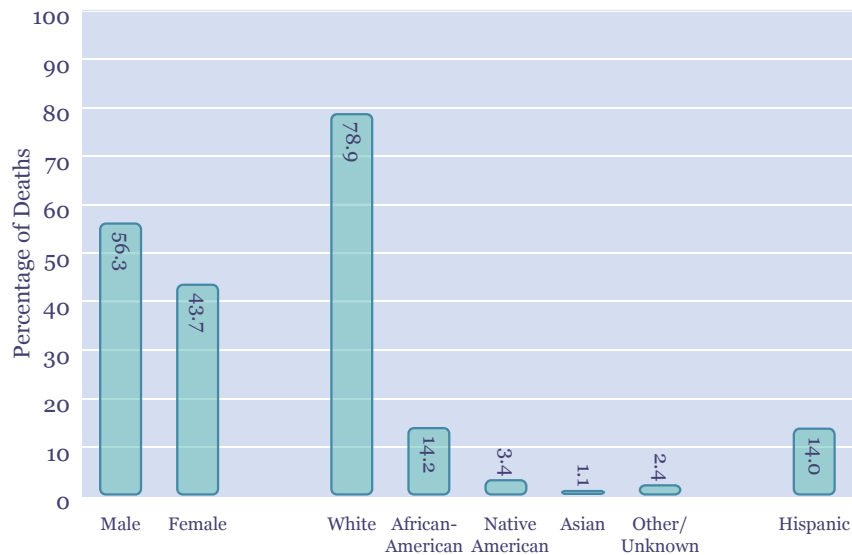
FIGURE 5 Infant Mortality Rates, by Plurality  
Nebraska, 1990 - 2008



3). Overall, mortality rates for both infants and children are declining over time (Figure 4), although among infants the decline is more pronounced among multiple gestation infants than among singletons (Figure 5).

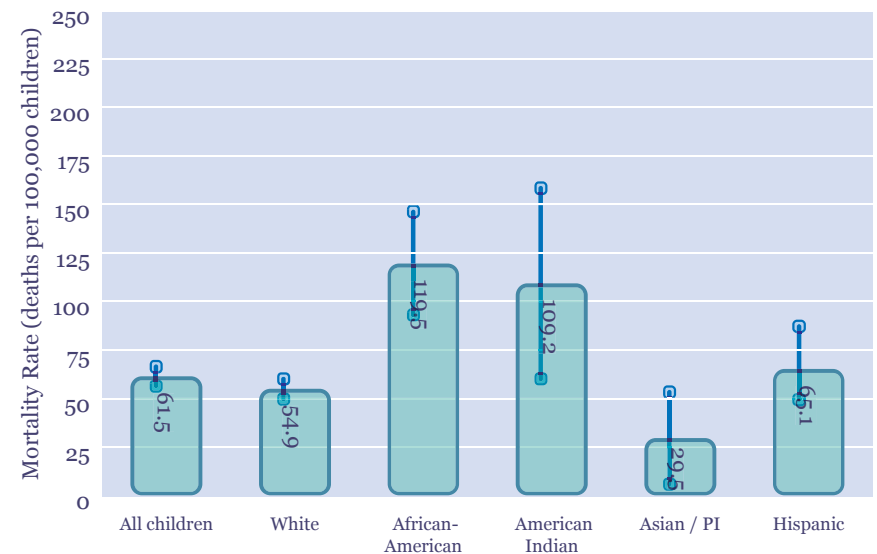
Slightly over one-half (56.3%) of all child deaths were to boys (Figure 6). Although the vast majority (78.9%) of deaths were of White children, the percentage representing Black children is increasing slowly over time - 10.9% in the 1996-2001 report to the current 14.2%. Hispanic children also represent an increasing percentage of all child deaths – from 8.7% in the 1996-2001 report to the current 14.0%.

FIGURE 6 Distribution of Child Deaths (0-17), by Sex, Race and Ethnicity (N=551) - Nebraska, 2007 and 2008



When calculated as rates of death per 100,000 children, African-American children had significantly higher rates than all other racial or ethnic groups except for American Indians (Figure 7). Although considerably higher than that of remaining groups, the American Indian rate was based on a relatively small number

FIGURE 7 Child (0-17) Mortality Rates\*, by Race/Ethnicity (N=551) Nebraska, 2007 and 2008



\*Vertical lines represent the 95% confidence intervals around the rates.

of children (19 deaths) and thus had a large confidence interval. Thus, the American Indian rate was significantly different only from that of Whites.

Over the past decade, White children were the only ones to have a statistically significant decline in mortality (Figures 8-11).

## CAUSES OF DEATH

### OVERVIEW

Nearly one-third (31.9%) of all child deaths during 2007 and 2008 were attributed to perinatal causes, a combined category of maternal complications during pregnancy, labor and delivery problems, and prematurity (Table 1, Figure 12). Some of these children survived into their teen years, yet the initiating problem was determined to have originated in the perinatal period. Birth

FIGURE 8 American Indian Child (0-17) Mortality Rates  
Nebraska, 1999 - 2008

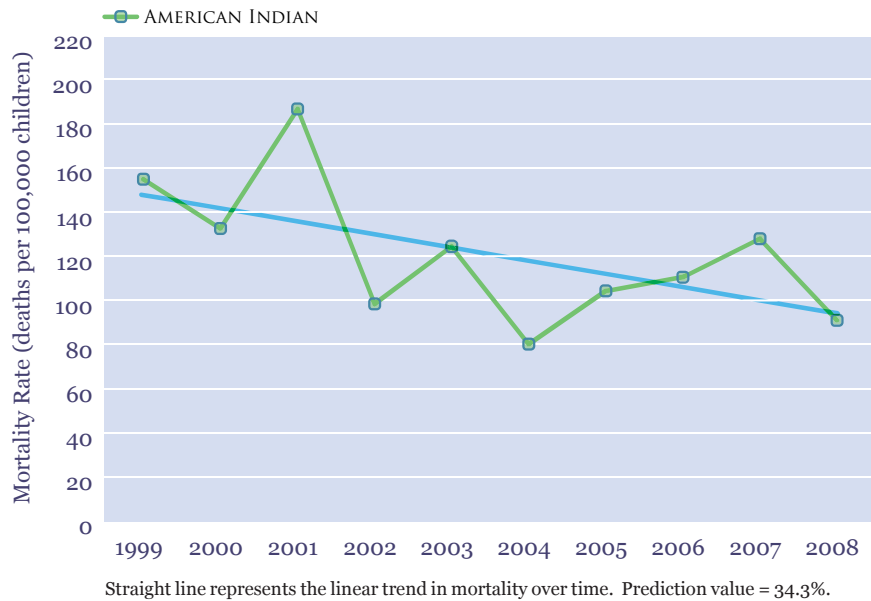


FIGURE 9 Asian / Pacific Islander Child (0-17) Mortality Rates  
Nebraska, 1999 - 2008

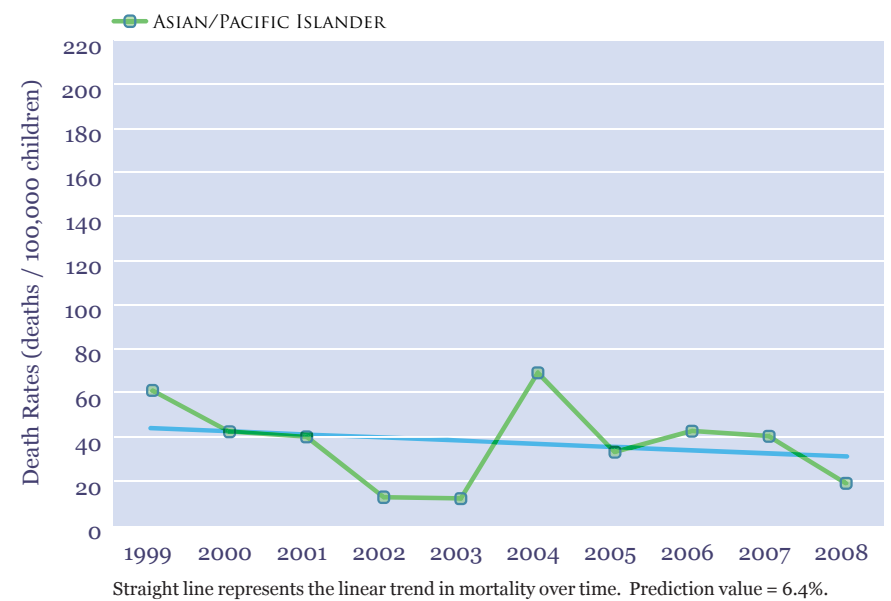


FIGURE 10 White and Hispanic Child (0-17) Mortality Rates  
Nebraska, 1999 - 2008

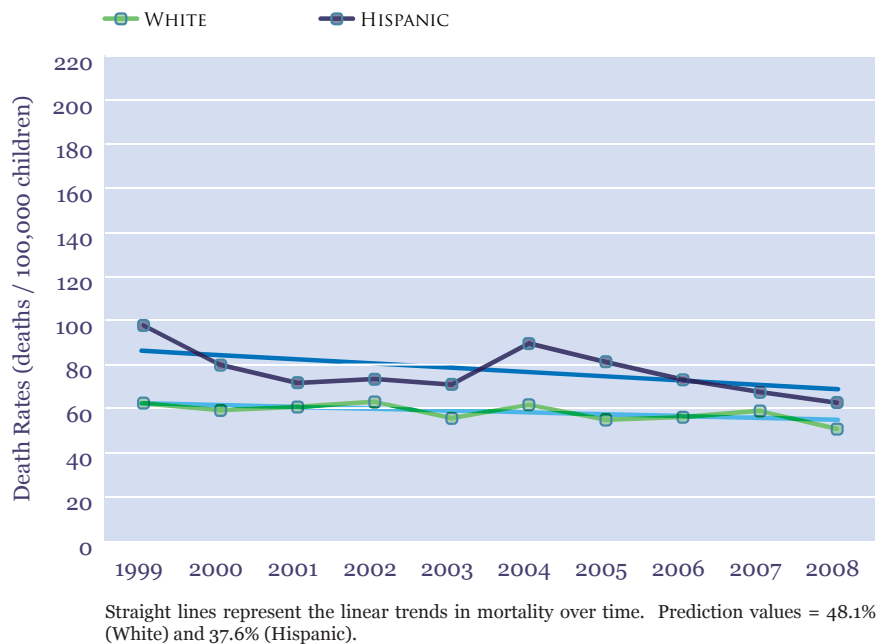
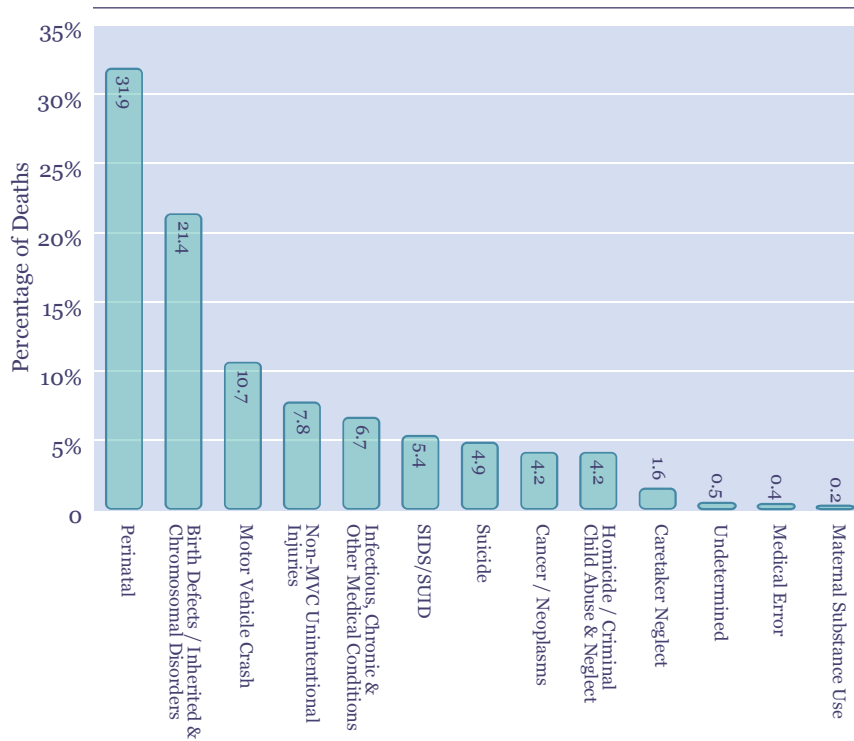


FIGURE 11 African-American Child (0-17) Mortality Rates  
Nebraska, 1999 - 2008



FIGURE 12 Child Deaths (0-17), by Cause of Death (N=551) Nebraska, 2007 and 2008



defects were the second most common underlying cause of death (21.4%), followed by motor vehicle crashes (10.7%).

### PREVENTABILITY

As was begun with the previous (2005 and 2006) report, deaths were assessed individually as to the degree to which they were preventable. For each case, reviewers assessed whether they:

Strongly Disagreed	Somewhat Disagreed	Were Neutral or Undecided	Somewhat Agreed	Strongly Agreed
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with the statement:

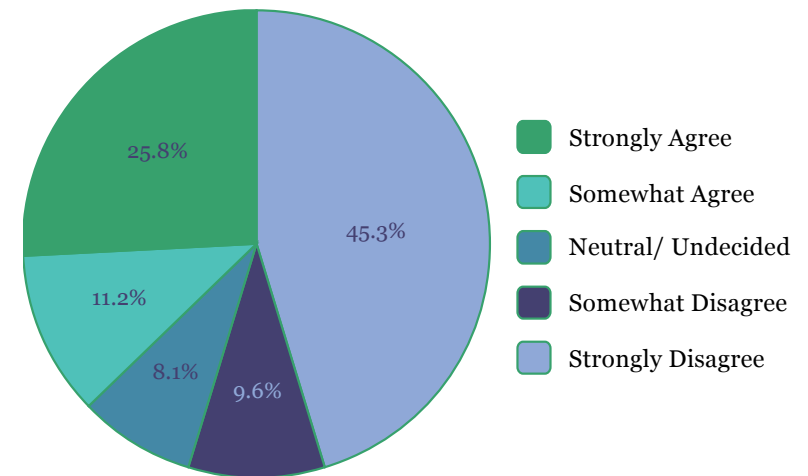
This death was preventable - standard-of-care medical management would have changed the circumstances that led to death. (Medical cases)

OR

This death was preventable - an individual or community could reasonably have done something that would have changed the circumstances that led to death. (Non-medical cases)

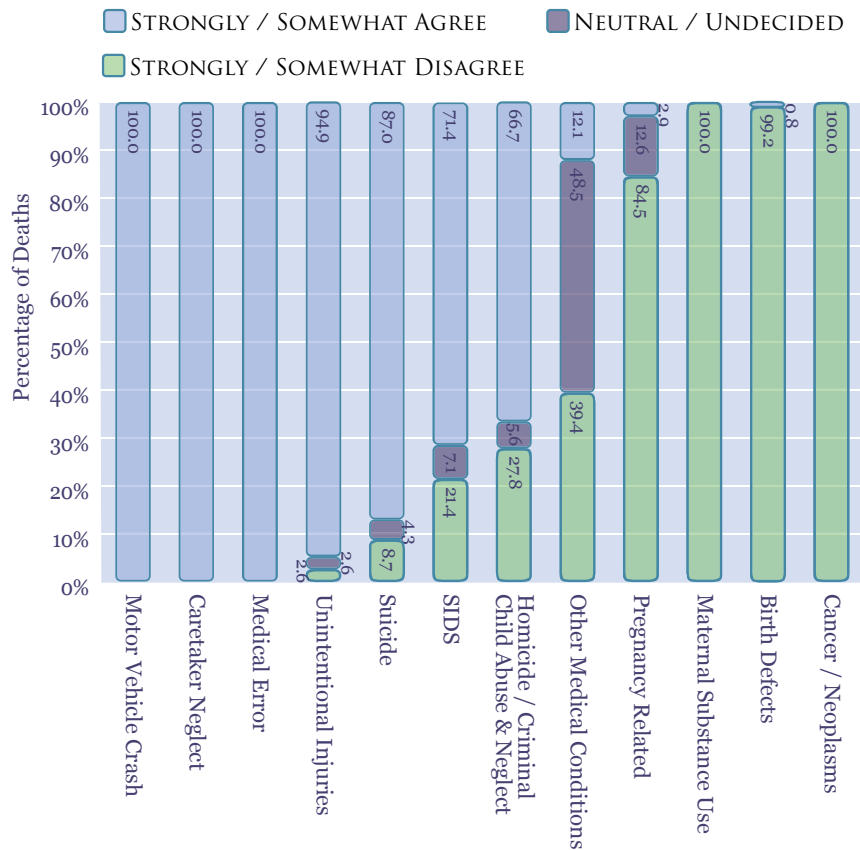
Approximately two-thirds (61.8%) of cases were individually assessed for preventability. The Team continues to work towards a goal of assessing 100% of each year's deaths. The deaths were determined to be somewhat or strongly preventable in 37.0% of the assessed cases, corresponding to at least 22.9% of all cases. Among assessed cases, preventability ("strongly agree" or "somewhat agree") ranged from 100% for Motor Vehicle crashes (59 deaths) to 0% for Cancer (23 deaths; Figure 13).

FIGURE 13A Preventability of Child Deaths Nebraska, 2007 and 2008



Preventability is determined for each case as a response to the statement : "This death was preventable – standard-of-care medical management would have, or an individual or community could reasonably have, changed the circumstances that lead to death."

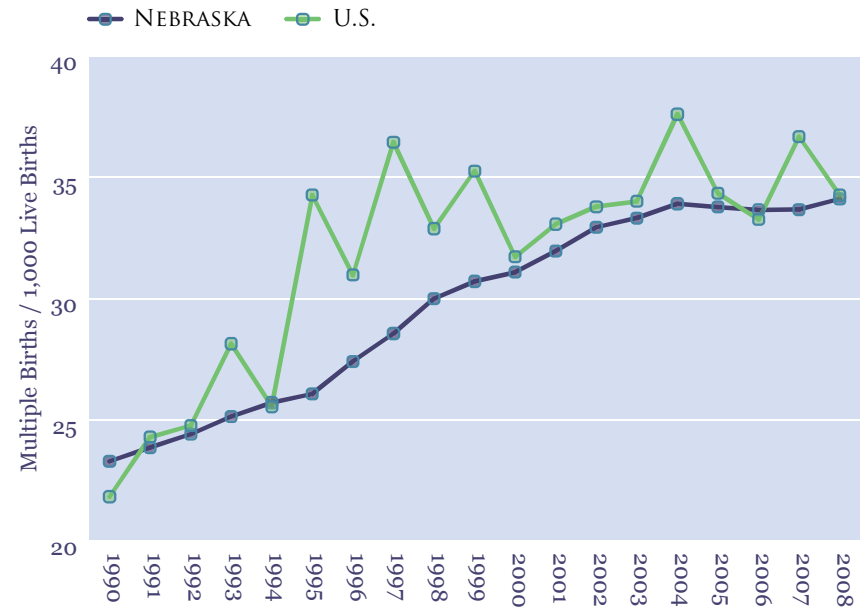
FIGURE 13B Preventability of Child Deaths, by Cause  
Nebraska, 2007 and 2008



**PERINATAL DEATHS – KEY FINDINGS**

Premature birth remains a leading cause of infant death in Nebraska. However, although nearly all (91.5%) children and infants whose underlying cause of death originated in the perinatal period were born prematurely, nearly one-half (46.0%) had an identifiable cause for their prematurity (Table 2). The most common maternal complication was placental abruption (27.9% of complications). Postgestational complications such as

FIGURE 14 Multiple Gestation Birth Rate, by Year  
U.S. and Nebraska, 1990-2008



obstructed labor or abdominal infections claimed the lives of 13 infants (7.3%) born at term but none of the preterm infants.

Multiple gestation pregnancies accounted for over half (56.8%) of the 95 infants with no other overt cause for their prematurity (Table 2). After rising steadily for several decades, the multiple gestation birth rate appeared to flatten in the late 2000s (Figure 14). However, the death rate of multiple gestation infants remains significantly higher than that of singleton infants (Figure 5).

ISSUES: Although for many women premature labor is unpreventable, timely interventions can often delay actual birth, giving the infant crucial extra days or even weeks of development. However, many pregnant women are not aware

of the signs of preterm labor. Medical records are generally not clear as to the teaching that goes on in prenatal visits.

**RECOMMENDATION:** Pregnant women, providers and communities must engage in a comprehensive approach to prevent preterm delivery.

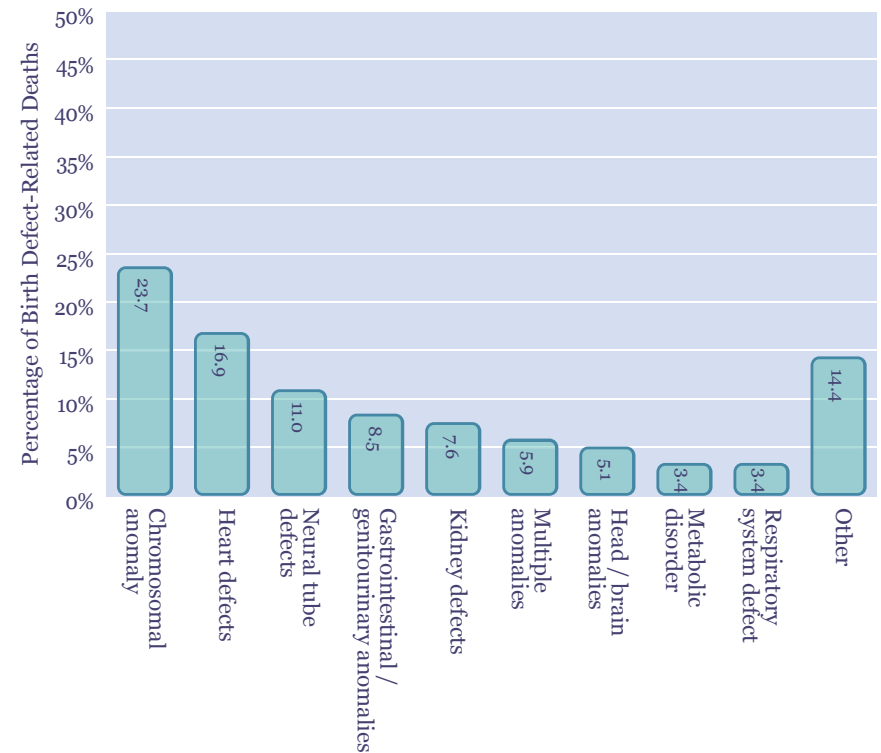
- A. The Nebraska Chapter of the March of Dimes and the Nebraska Medical Association should join with Nebraska hospitals and community organizations to promote and expand community education on signs and symptoms of preterm labor, and the importance of babies being born at term.
- B. The Nebraska Medical Association should encourage all prenatal care providers to accurately document prematurity education occurring during prenatal care visits.

**BIRTH DEFECTS – KEY FINDINGS**

Nationally, birth defects are the second leading category of death for infants, and the third largest for older children. In Nebraska, three specific chromosomal anomalies – Trisomies 13 (Patau Syndrome), 18 (Edwards’ Syndrome) and 21 (Down Syndrome) – accounted for about one-quarter (22.9%) of birth defect-related deaths (Figure 15, Table 3). Nebraska’s rate of Down’s syndrome among all live births from 2004 to 2008 was 1.43/1,000 live births, similar to the national estimate of 1.45 in 2007. Increasing maternal age is the only commonly accepted risk factor for most trisomies, although the majority of affected births actually occur to younger women.

Although congenital heart defects are among the most numerous defects at birth, many are successfully treated. Risk factors include rubella (German measles) during pregnancy, diabetes, certain medications and inherited conditions. There

**FIGURE 15** Birth Defects as the Underlying Cause of Child Deaths (0-17), by Type - Nebraska, 2007 and 2008



is also growing evidence of a role of first trimester maternal cigarette use.

Thirteen children (11%) suffered from a neural tube defect, generally felt preventable through prenatal intake of folic acid. The causes of most other birth defects, including other chromosomal anomalies, are unknown.

**ISSUE:** Prenatal cigarette use is among the few modifiable factors implicated in infant birth defects.

**RECOMMENDATION:** Investments in decreasing maternal smoking have at least a 5:1 cost benefit in decreasing neonatal



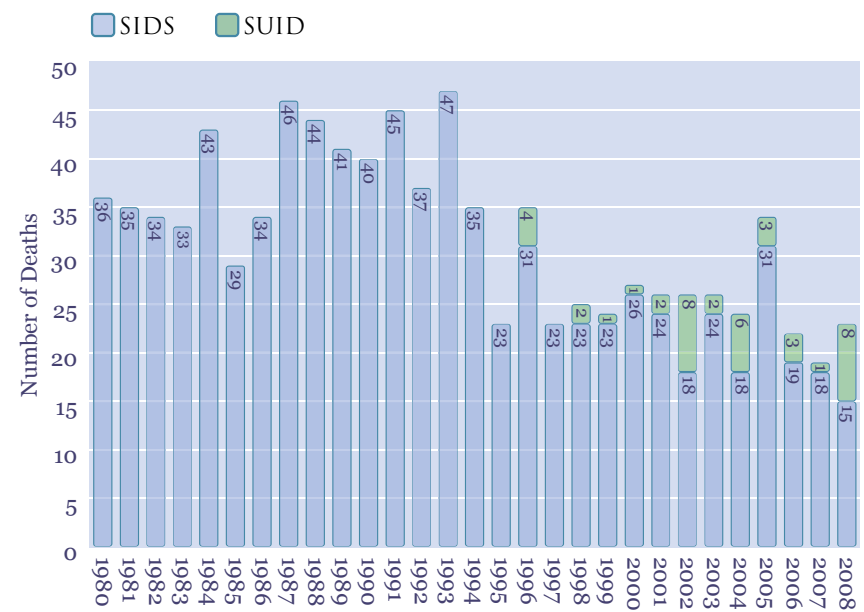
health care costs. The Nebraska Legislature should increase funding to Tobacco Free Nebraska, including the Tobacco Free Nebraska Quitline which serves adult Nebraskans and has tailored cessation counseling protocols for pregnant women and women considering pregnancy.

ISSUE: Children with disabilities are at higher risk of abuse or neglect. Parents often have difficulties in understanding and coping with what the various medical conditions mean on a day to day basis of caring for the child. In addition to the possibility of inflicted injury or unmet needs, abuse or neglect can compromise their receipt of timely and comprehensive medical care.

RECOMMENDATION: All medical and human service providers should be aware of the hidden potential for abuse and neglect of children with disabilities.

- A. The Nebraska Department of Health and Human Services, Division of Children and Family Services should provide all CFS staff with specialized training on the relationship between children’s disabilities and abuse and neglect. Emphasis should be placed on understanding how these disabilities impact the parents’ care of the child, the demands placed on the parent by the child’s special needs, and available community resources to assist the parent.
- B. Nebraska’s state and privately-funded home visitation programs should place increased priority on delivering appropriate services to families of children with severe disabilities.

FIGURE 16 Sudden Infant Death Syndrome (SIDS) / Sudden Unexpected Infant Death (SUID) - Nebraska, 1980-2008



Source: Nebraska Vital Statistics

### SUDDEN INFANT DEATH SYNDROME (SIDS) / SUDDEN UNEXPECTED INFANT DEATH (SUID) – KEY FINDINGS

Thirty-three Nebraska infants were officially diagnosed as dying from Sudden Infant Death Syndrome (SIDS) during 2007 and 2008; the 2008 value of 15 is the lowest number since 1980 (Figure 16). “SIDS,” though, is not an actual cause of death but rather a convenient way to express that the actual cause is unknown. Death scene investigators are increasingly looking more carefully for external causes of death, and in recent years a growing number of cases that previously would have been labeled SIDS are more accurately being considered unintentional suffocations. As a result, many pathologists, law enforcement investigators and child death experts now use the more general term “Sudden Unexpected Infant Death” (SUID),

with SIDS being used only for deaths where no plausible cause can be identified.

In addition to the 33 infants with an official SIDS diagnosis, CDRT reviews identified nine more infants with sleep-associated deaths, but official causes of death of suffocation or “unspecified threat to breathing” (seven infants), “respiratory arrest” (one infant) and pneumonia (one infant; Table 4). Two additional infants were reported to have died from a physical assault, determinations that were later overturned in favor of a SUID designation but not changed on their death certificates. Thus, records on 44 infants were considered for this category. Reviewers felt that of these, two should more properly be included under Caretaker Neglect section. This section discusses the remaining 42 sleep-associated deaths (Table 4).

Of these, 12 were felt to have clearly resulted from unintentional suffocation (mostly related to excessive or improper bedding) and while profiled here are actually counted as part of the Unintentional Injury section. The decline in SIDS/SUID deaths since the mid 1990s is less pronounced when such deaths are included (Figure 16).

Overall, the majority of the 42 SUID and suffocation victims were White (66.7%) and male (64.3%; Figure 17). Notably, however, the 26.2% of deaths that were of African-American infants was considerably higher than would be expected based on their percentage of the birth population (6.7%). Similarly, male deaths (64.3%) were also disproportionate to their share of births (51.2%). Most deaths (81.0%) occurred while the infant was in the care of a parent or adult family member.

FIGURE 17 Characteristics of Sudden Unexpected Infant Deaths (N=42) - Nebraska, 2007 and 2008

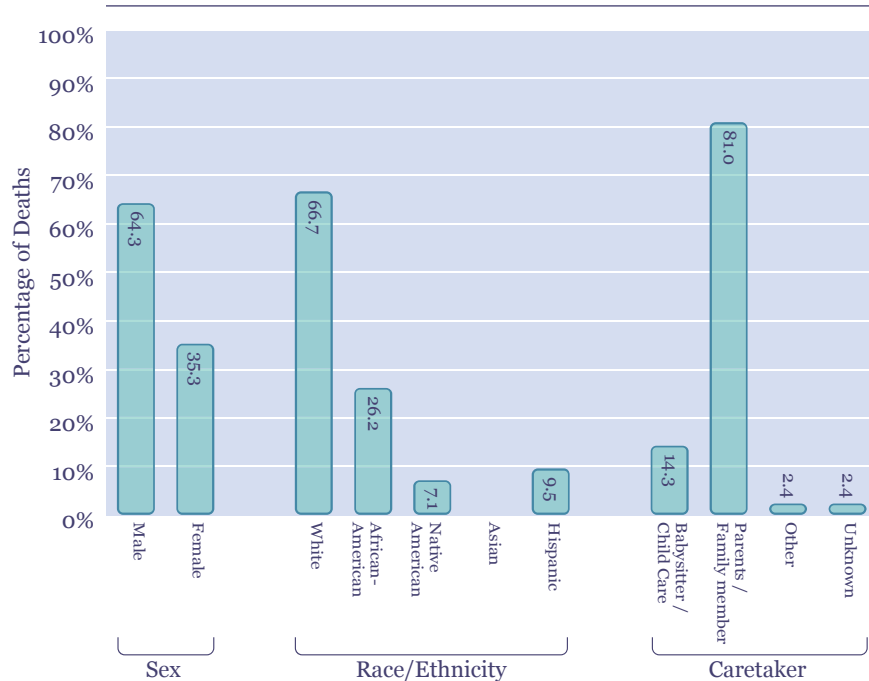
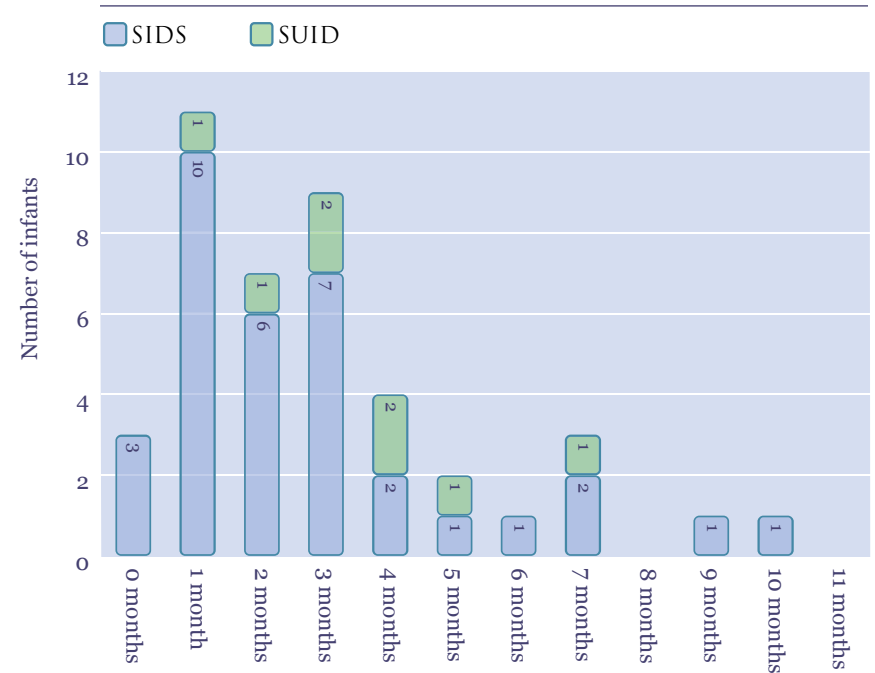


FIGURE 18 Age Distribution of Infants with Sudden Unexpected Death (N=42) - Nebraska, 2007 and 2008



The mean age at death was 3.0 months, with exactly one-half (50.0%) occurring before that age (Figure 18). Nearly all (95.2%) had one or more risk factors commonly associated with impaired breathing in infants (Table 5). Children had an average of 2.7 risk factors, the most common being tobacco smoke exposure (52.4%), bed-sharing with an adult or sibling (45.2%), and/or sleeping on an inappropriate surface such as a couch or adult bed (52.4%).

ISSUE: A high percentage of the cases reviewed involved one of the three commonly identified risk factors for impaired breathing in infants: bed sharing with an adult or sibling, tobacco smoke exposure, and/or sleeping on an inappropriate surface.

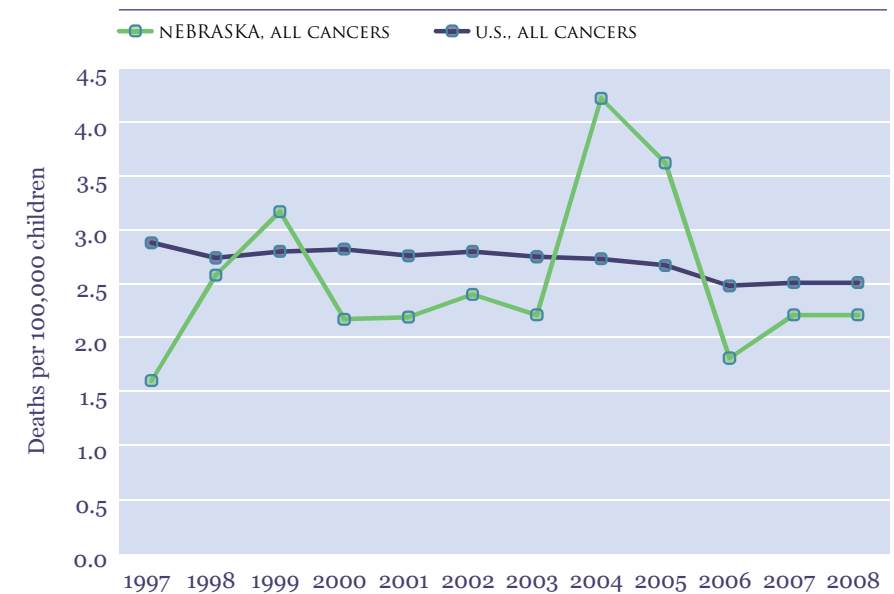
RECOMMENDATIONS: Communities around the state need to expand and intensify their efforts to convince parents of the dangers of unsafe sleeping environments for infants.

- A. DHHS should promulgate regulations for licensed child care facilities that include putting all infants to sleep on their back in the absence of a medical waiver, removing stuffed toys from cribs, and repealing requirements for crib “bumper pads.”
- B. Investments in decreasing maternal smoking have at least a 5:1 cost benefit in decreasing neonatal health care costs. The Nebraska legislature should increase funding to Tobacco-Free Nebraska, including the Tobacco Free Nebraska Quitline which serves adult Nebraskans and has tailored cessation counseling protocols for pregnant women and women considering pregnancy.

**CANCER / MALIGNANT NEOPLASMS – KEY FINDINGS**

Nationally, cancer is the second leading cause of death for children ages five to 19. Childhood cancer is not one disease,

FIGURE 19 Cancer Mortality Rates, Children Ages 0-19 US and Nebraska, 1997-2007



Source: US Centers for Disease Control and Prevention

but rather a spectrum of different types of tumors with different causes. Among the major types of childhood cancers, leukemias (blood cell cancers), brain and other central nervous system (CNS) tumors account for over half of new cases.

Deaths from childhood cancer in Nebraska have largely followed national trends over time, with a notable exception being a significant increase in brain cancer deaths in 2004 and 2005 (Figure 19, Table 6). This spike was unexplained by any known factors, and had subsided by 2006. In 2008, the number of leukemia deaths climbed to six cases from three the previous year. These cases were from five different counties and had no notable commonalities.

ISSUE: There is no clear approach to the prevention of childhood cancer. However, appropriate treatment as

recommended by pediatric hematologist/oncologists can often lead to improved survival and quality of life.

**RECOMMENDATIONS:** All children diagnosed with cancer should receive access to the newest treatments.

- A. Local providers should promptly refer cases to specialized cancer treatment centers.
- B. The Nebraska Child Death Review Team will continue to track and publicize the occurrence of childhood cancers, and promote related research.

### GENERAL MEDICAL CONDITIONS – KEY FINDINGS

Forty-three percent (16 cases) of medical deaths were due to acute respiratory diseases, including three cases of respiratory syncytial virus (RSV) pneumonia and four cases of asthma (Table 7). All children who died of asthma appeared to have been receiving medical care. Four children between the ages of one month and 11 years died from bacterial meningitis; one of these children also had co-occurring RSV.

**ISSUE:** At least nine children died from diseases that are potentially vaccine-preventable, notably bacterial meningitis and RSV.

**RECOMMENDATION:** Parents need to receive accurate information about vaccine safety and the risks related to their children not being vaccinated.

The Nebraska Medical Association, the Nebraska Chapter of the American Academy of Pediatrics and their members should take the lead on

dispelling myths about vaccine safety and promoting infant and child vaccinations.

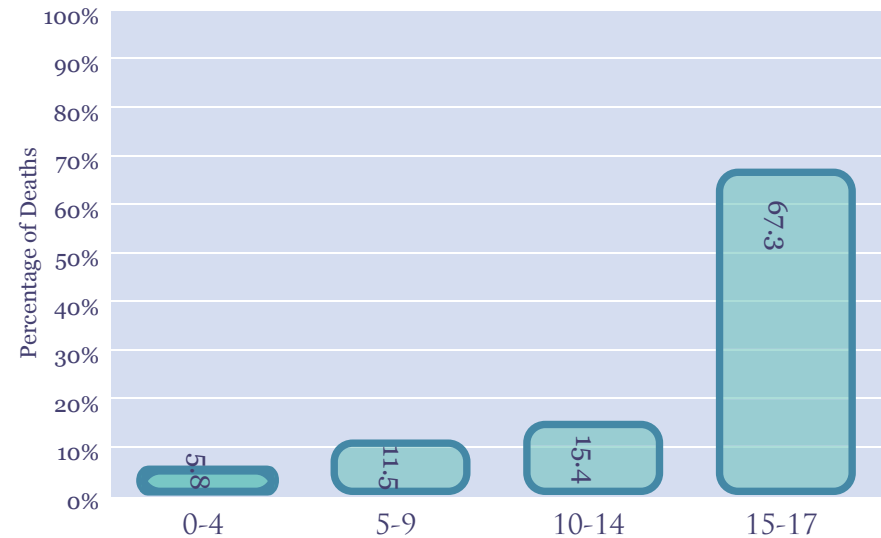
**ISSUE:** Children continue to die from asthma. Parents and the medical community need to stay vigilant regarding the potential severity of this chronic illness, and ensure that children are receiving and adhering to optimal treatment.

**RECOMMENDATION:** The Nebraska Medical Association and pediatric providers need to review and strengthen their communication strategies with parents of asthmatic children.

### MOTOR VEHICLE-RELATED INCIDENTS – KEY FINDINGS

Motor vehicle-related incidents were the third most frequent cause of death, accounting for 10.7% of all child deaths. Most (91.5%) incidents involved a motor vehicle crash; other incidents

**FIGURE 20** Motor Vehicle Crash\* Deaths of Children (0-17; N=52) Nebraska, 2007 and 2008



\*Only includes cases where the child was in the motor vehicle.

FIGURE 21 Motor Vehicle Crash Deaths to Children (0-17), by Restraint Use - Nebraska, 1997-2006

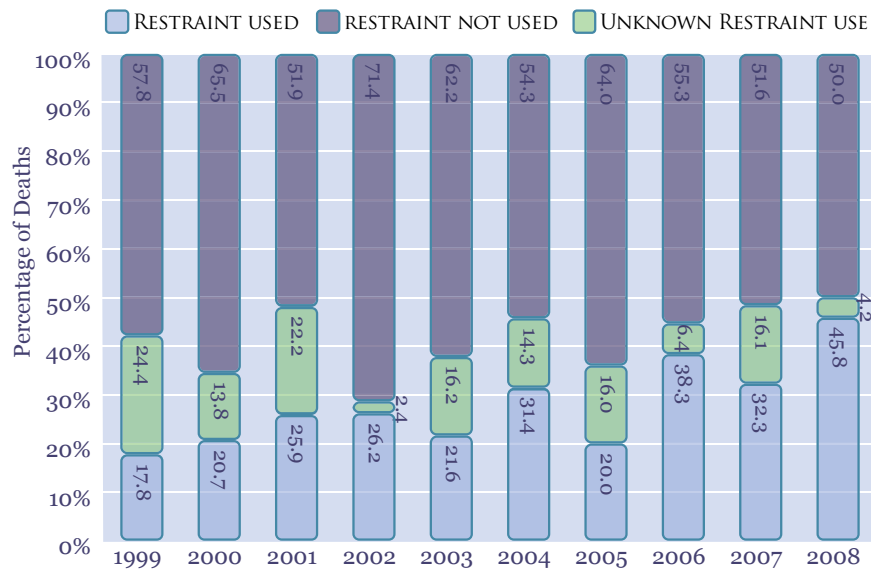
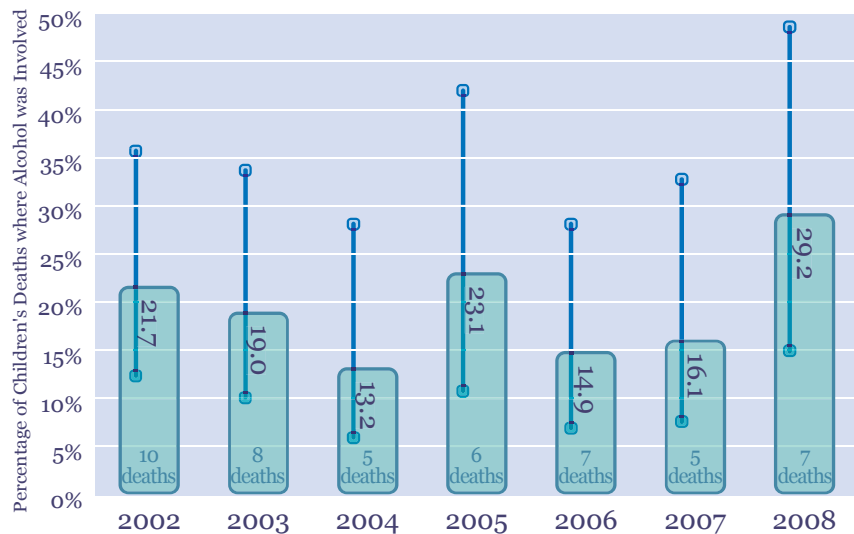


FIGURE 22 Involvement of Alcohol in Motor Vehicle Crashes where Children (0-17) were Killed - Nebraska, 2002-2008



\*Alcohol involvement is 'Yes' if a driver's or pedestrian's blood alcohol content (BAC) was greater than 0.01. The 95% confidence intervals around each year's value show no significant change over time. Source: Nebraska Motor Vehicle Crash Data

involved collision with a bicycle, scooter or sled, or an all-terrain vehicle (ATV) crash (Table 8). Teens ages 15-17 accounted for two-thirds (67.3%) of all deaths (Figure 20). Although child restraint and safety belt use has increased over time, at least half (50.0%) of children killed in crashes were unrestrained (Figure 21). This rate is significantly higher than Nebraska Department of Roads (NDOR) estimates of 3 to 21% over this period. NDOR reports also show that alcohol was involved in at least 12 (21.8%) of these fatal crashes (Figure 22).

ISSUE: Motor vehicle crashes are the leading cause of death for children over the age of 4 both in Nebraska and nationally. Studies show that drivers who use seat belts are more likely to buckle up the children they transport. However, adult lap and shoulder safety belts do not fit children correctly until they are approximately 4'9" and 80-100 pounds, usually between ages 8 and 12 years.

RECOMMENDATIONS: Communities, law enforcement personnel and legislative bodies need to work together to improve proper seat belt usage.

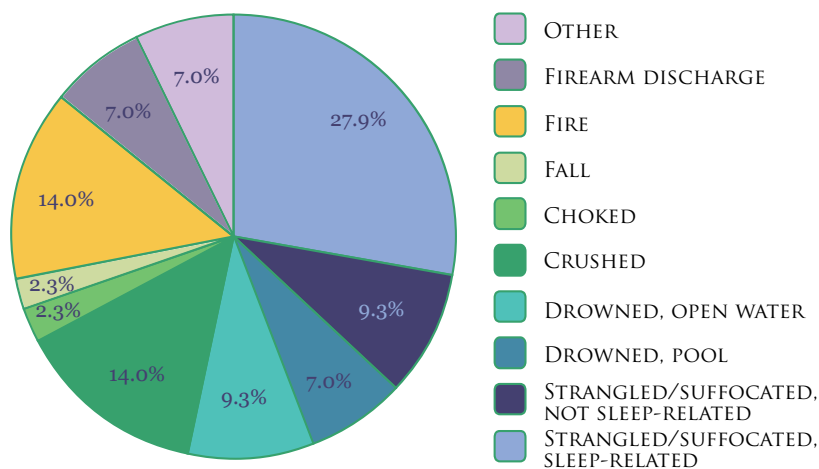
- A. The Nebraska Safety Council, Safe Kids chapters and other community partners should work to upgrade Nebraska's child safety seat law to include children up to a minimum of age 8.
- B. The Nebraska Safety Council, Safe Kids chapters and other community partners should work to upgrade Nebraska's safety belt law to primary (standard) enforcement.
- C. Pediatricians should consider dissemination of information on proper child safety seat and seat belt usage to their clients as standard of care.

**ISSUE:** At least 19 Nebraska children have been killed on ATVs since 1996. Children under 16 typically lack the developmental skills to safely drive adult ATVs. Younger children lack the physical ability and mental skills to safely maneuver any motorized vehicle with multiple speeds and controls.

**RECOMMENDATIONS:** Recommendations from ATV manufacturers and the US Consumer Product Safety Commission that children and young teens be restricted to ATVs with engine sizes of 90 cc or below should be adopted in Nebraska.

- A. The Nebraska Safety Council should work with partners and the Legislature to restrict ATV use by children and young teens to those with engine sizes of 90 cc or below.
- B. Nebraska’s county extension offices should expand their dissemination of materials on ATV safety and use.

FIGURE 23 Unintentional Injury Deaths to Children (0-17), by Type (N=43) - Nebraska, 2007 and 2008



UNINTENTIONAL INJURIES – KEY FINDINGS

By far, the largest single type of unintentional injury was sleep-related suffocation or strangulation of infants (27.9%; Figure 23, Table 9); these cases are also discussed in the SIDS/SUID section. Four similar cases that were not sleep-related involved the strangulation of a 1-year-old by a blind cord, suffocation of a 6 year old playing in a microwave oven, strangulation of a 9-year-old in a tire swing and the suffocation of a 15-year-old while “huffing” fumes in a plastic bag.

Three toddlers drowned in home swimming pools. The lack of supervision in these cases was not felt to rise to the level of neglect; a more egregious case is included in the Neglect section of this report. Four older children drowned in open water while swimming, boating or after falling from a spillway.

Four separate house fires claimed the lives of six children ages five months to four years. In three of these incidents, it is known that there was a working smoke detector, yet various factors prevented the caregivers from rescuing the children.

**ISSUE:** Drowning - These cases follow the observed trend where young children drown in swimming pools and older children die in open water. Water safety considerations should include the water environment and child’s skill level, not just their age. Drowning experts recommend that one adult at a time take responsibility for maintaining constant visual supervision of all children in or near the water. When supervision fails, only layers of protection (pool safety features such as pool fencing and other barriers) can guard against such moments.

**RECOMMENDATIONS:** Greater public acknowledgment is needed of the risk of child drowning, and the importance of active supervision of children around water.

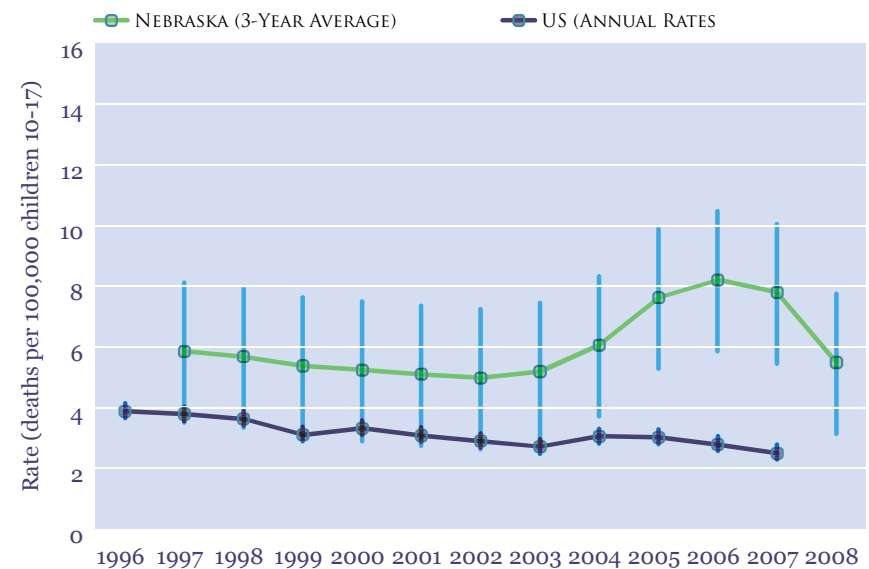
- A. Local Safe Kids chapters and health departments should ensure continuing inspections of public pools and spas, promote local ordinances on pool fencing and barriers, and disseminate key information to parents and families about water safety.
- B. The Nebraska Department of Health and Human Services, Environmental Health Section should distribute family-oriented education materials during pool inspections.
- C. All Nebraska state government-sponsored drowning prevention materials should be available and distributed in Spanish.

ISSUE: Fire - Smoke detectors are effective, reliable and inexpensive early warning devices which reduce injuries in residential fires. However, they do not replace parental vigilance.

RECOMMENDATIONS: Increase the numbers of residential dwellings with properly maintained smoke detectors.

- A. Local Safe Kids chapters, local fire departments, and health departments should work together to obtain and distribute home smoke detectors in their communities.
- B. All Nebraska state government-sponsored fire prevention materials should be available and distributed in Spanish.
- C. Local Safe Kids chapters, local fire departments, and health departments should work together to promote proper use and maintenance of smoke detectors, fire prevention education, and home fire escape plans.

FIGURE 24 Suicide Rates, Children Ages 10-17 US and Nebraska, 1996-2008\*



\*Nebraska rates are three year averages; 2008 value is provisional. The 95% confidence intervals around each point are also shown. Nebraska rates are significantly higher than US rates for 2004-2007 (confidence intervals do not overlap).

Source: Centers for Disease Control and Prevention.

### SUICIDE – KEY FINDINGS

The 27 teen suicides occurring during 2007 and 2008 are down appreciably from the 2005-2006 period (36 deaths), but remain significantly higher than the national rate (Figure 24, Table 10). The youngest victim was nine years old; the majority were male (Figure 25). The percentage of deaths involving a firearm dropped dramatically after 2001, but has not changed consistently since that time (Figure 26).

Six youth had been prescribed mood stabilizing medication. Three situations were noted which may have played a role in their decision to kill themselves: 1) running out of medication (abrupt discontinuation), 2) receiving a new prescription within days of death and not being adequately assessed for

increase in suicide ideation, and 3) not having adequate ongoing assessment by mental health or physician.

**ISSUE:** Some providers who engage with troubled youth may be unaware of the range of factors and circumstances associated with suicide. At the same time, many high risk youth are not receiving adequate and ongoing assessments by mental health specialists.

**RECOMMENDATIONS:** All Nebraska children should have access to effective mental health support and suicide prevention information.

- A. The Nebraska Departments of Education and Health and Human Services should partner to locate and train Suicide Prevention Specialists in schools and Educational Service Units.
- B. The DHHS Divisions of Behavioral Health and Public Health should provide financial and other support to the Nebraska State Suicide Prevention Coalition in implementing its federal SAMHSA (Substance Abuse and Mental Health Services Administration) grant for child and youth suicide prevention.
- C. Medical personnel prescribing mood stabilizing medications must closely monitor their effects on teens.
- D. Suicide risk assessments (formal or informal) by schools, mental health and chemical dependency providers, law enforcement and pediatricians should include inquiries about teens' postings on social networking sites regarding suicide ideation, etc.

FIGURE 25 Suicide Deaths to Children (0-17), by Age and Sex (N=27) Nebraska, 2007 and 2008

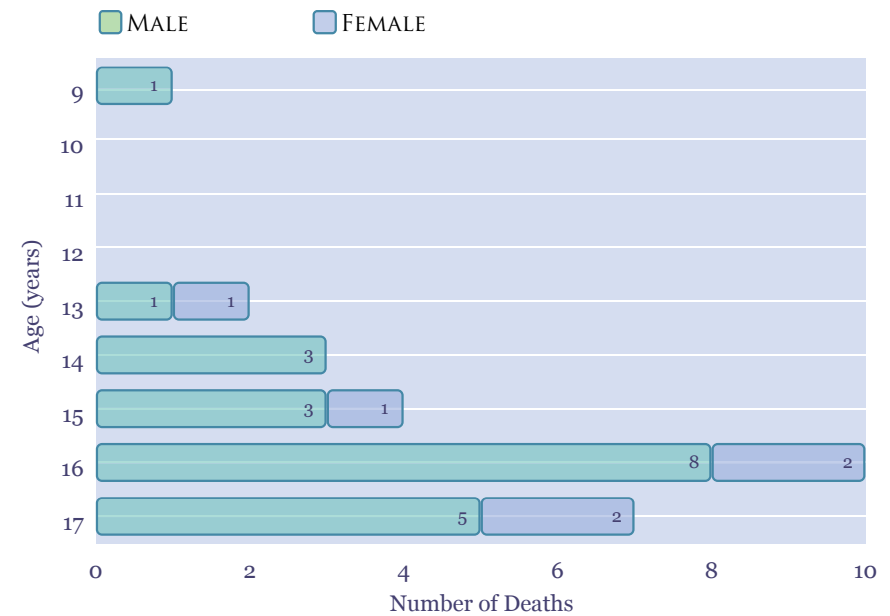
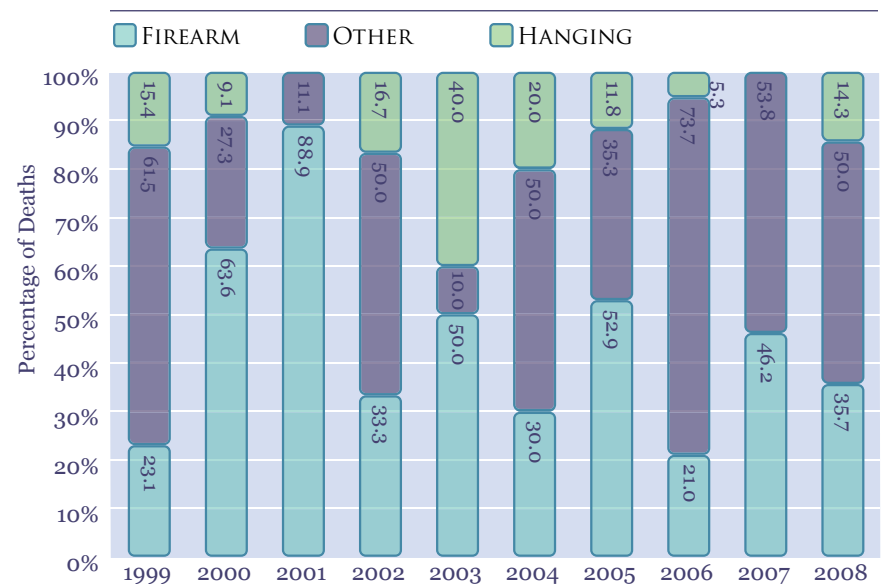


FIGURE 26 Suicide Deaths to Children (0-17), by Method Nebraska, 1999-2008





ISSUE: Children continue to access firearms for their suicides.

RECOMMENDATION: Simple precautionary gun and ammunition storage in the home will decrease the risk of intentional shooting.

The Nebraska County Attorneys Association should work with their local law enforcement agencies to conduct local media campaigns promoting secure, locked storage of firearms.

ISSUE: Seven (25.9%) of the youth had documented involvement with the Child Protection unit of the Nebraska Department of Health and Human Services prior to their death, either because of their own actions or those of a family member.

RECOMMENDATIONS: Child abuse and neglect investigations should include assessments of suicide history and risk.

- A. The training modules for Nebraska Department of Health and Human Services Child Protective Services staff and contractors should include how to assess a youth's level of depression and suicide ideation.
- B. DHHS Child Protective Services should modify current assessment protocols to include teens' level of depression and suicide ideation, document existing mental health referrals and contact, and make additional referrals as indicated.

**INTENTIONAL INJURIES / CRIMINAL CHILD ABUSE & NEGLECT – KEY FINDINGS**

Twenty-three children died from injuries intentionally inflicted by an adult or peer during 2007 and 2008. In this report, intentional injuries that were inflicted by the child's caregiver are considered child abuse, otherwise they are classified as

FIGURE 27 Violent Deaths of Children, by Perpetrator and Method (N=23) Nebraska, 2007 and 2008

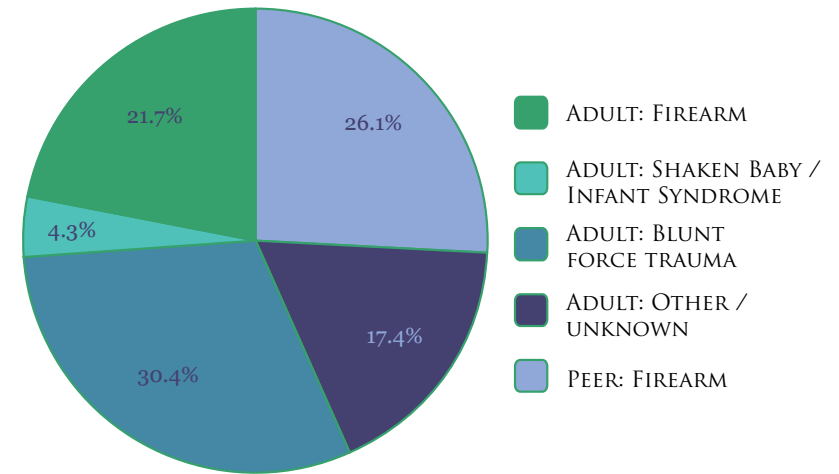
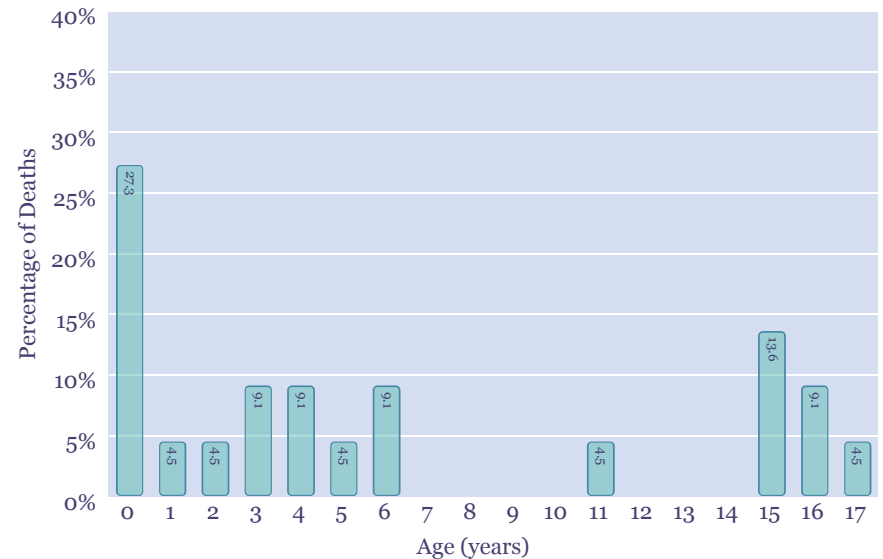


FIGURE 28 Violent Deaths to Children (0-17), by Age (N=23) Nebraska, 2007 and 2008



homicide. Nearly 48% of deaths were committed using a firearm (Figure 27). Two-thirds of the children were under the age of seven years (Figure 28, Table 11). One of the teens was shot by local law enforcement during the commission of a crime.

Of the 11 firearm deaths, six (54.6%) were committed by someone in the victim's age group. Although it cannot be stated definitively how many of these were related to involvement in a criminal youth gang, gang-related activity has been documented in several communities around the state.

Several commonalities were identified in the families of children dying as a result of abuse or neglect, including:

- Teen parent(s)
- Previous family history with Child Protective Services
- Parent's involvement in child welfare system as a child
- Domestic violence
- Substance use/abuse by parents
- Combination of co-sleeping and alcohol use
- Parental mental health issues
- Family financial problems

ISSUE: Gun violence - Local law enforcement agencies have documented the rise of gang-related killings.

RECOMMENDATIONS: Youth who are at risk of becoming involved in gang violence need to be exposed to constructive alternatives at early ages.

- A. School districts, local Child Abuse Task Forces, state-mandated local 1184 teams, and local County Attorneys should promote community-based recreation and violence prevention programs in their communities.
- B. Civic leaders, including Chambers of Commerce, should lead fundraising campaigns to finance community violence prevention programs.

ISSUE: Criminal child abuse and neglect - Parents who abuse or neglect their children were often in the child welfare system themselves as a child. The cycle of abuse becomes evident in these cases.

RECOMMENDATIONS: Parents with young children, especially parents who were previously in the child welfare system, may need special assistance with the responsibilities of parenting.

- A. The Prevention Partnership and organizations involved with Project Everlast should work together to develop plans focusing on young adults who were previously in foster care to help them prepare for the responsibilities of parenting.
- B. The Nebraska Department of Health and Human Services, Division of Children and Family Services and lead agencies should work with service providers to implement these plans in communities across the state.

ISSUES: Child death scene investigations in rural areas of the state are often inadequate, affecting the CDRT's ability to understand the factors involved. Investigators in rural areas are often lacking in both training and experience in these types of cases.

RECOMMENDATIONS: Training of local law enforcement personnel on the State’s child death scene investigation protocol should be a priority.

- A. The Nebraska Law Enforcement Training Center should work with the Nebraska Attorney General’s Office and the Nebraska County Attorneys Association to actively promote the existing protocol on child death scene investigations.
- B. The Nebraska Attorney General should provide continuing education credits for death scene investigation training of local law enforcement personnel, and track participation.
- C. The Nebraska Law Enforcement Training Center should work with the Nebraska Attorney General’s Office and the Nebraska County Attorneys Association to develop a regional system of experts in child death scene investigations.

#### CARETAKER NEGLECT – KEY FINDINGS

Deaths are attributed to caretaker neglect when a child’s caretaker(s) knowingly does something that places the child’s life in danger or does not remove the child from a dangerous situation. The National Center for Child Death Review recognizes five types of supervisory neglect:

- Failure to protect from hazard
- Failure to provide necessities (food, shelter, other)
- Failure to seek medical care / follow treatment
- Emotional neglect
- Abandonment

Deaths where a caretaker was convicted of child abuse or neglect, or likely would have been if identified, are reported in the category of Criminal Child Abuse / Neglect. CDRT child protection specialists individually reviewed all remaining injury deaths for a possible fit with the categories of neglect listed above. This process identified eight cases where the parent/ caretaker was not charged with a crime, whereas the Team felt that substantial neglect led to the death (Table 12). Four of these were children who died in house fires; either the fire or the actual deaths were felt to result from substandard parenting. Two infants smothered while sleeping in clearly hazardous conditions: one bed-sharing with a substance-impaired adult, and one close to a plastic bag. One young child drowned in a home pool during the prolonged inattention of the adult caretaker.

ISSUE: Easily avoidable deaths occurred in situations where apparently caretakers were unaware of risks created by their supervision or care-giving practices, or from potentially dangerous situations.

RECOMMENDATION: Local communities and civic organizations should ensure that parenting classes are available and accessible to all parents in their community.

#### MEDICAL ERROR – KEY FINDINGS

Two cases during this time period were attributed to medical error. One of the facilities recognized the problem and revised its protocol to prevent a future occurrence.

ISSUES: The vast majority of children received appropriate medical care from their medical providers. However, among the small number of medical “accidents” that occur are

avoidable errors. Additionally, smaller institutions may not always recognize or acknowledge the intensity of care that rare conditions require.

#### RECOMMENDATIONS:

- A. Hospitals should reinforce the work of their quality control committees and peer reviews, and be proactive in establishing safeguards for the proper dispensing of medications.
- B. The Nebraska Hospital Association should work with its member institutions to develop and implement formal protocols for prompt transfer of children to a facility with appropriate level of care when needed.

#### SUBSTANCE USE DURING PREGNANCY – KEY FINDINGS

Although several women had documentation of substance use around the time of delivery, only one was clearly shown to have affected the infant survival.

ISSUE: Women abusing illicit substances are rarely identified at delivery, losing the opportunity to provide prompt interventions to the infant.

RECOMMENDATION: The Nebraska Hospital Association and its member institutions need to develop consensus guidelines on the identification of women who abuse substances during their pregnancy, and on treatment procedures for substance-affected newborns.

#### UNDETERMINED

There were three deaths where comprehensive medical and situational investigations were unable to conclusively determine a cause of death. Preventability was not assessed for these cases.

#### NO INFORMATION AVAILABLE

There were no deaths during 2007 and 2008 where the Team was unable to obtain at least minimal cause of death information.

TABLE 1. UNDERLYING CAUSE OF DEATH	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2007 and 2008 Sub-Total	1999-2008 TOTAL
	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
Preterm Birth	39	47	34	44	24	45	31	32	53	42	95	391
Maternal Complications	29	38	46	35	34	37	37	30	38	30	68	354
Complications of Labor & Delivery	9	4	5	7	1	2	1	0	7	1	8	37
Other Pregnancy & Neonatal-Related Conditions	4	1	5	0	0	3	0	3	3	2	5	21
<b>Total, Pregnancy-Related</b>	<b>81</b>	<b>90</b>	<b>90</b>	<b>86</b>	<b>59</b>	<b>87</b>	<b>69</b>	<b>65</b>	<b>101</b>	<b>75</b>	<b>176</b>	<b>803</b>
Pregnancy Related	81	90	90	86	59	87	69	65	101	75	176	803
Birth Defects / Inherited & Chromosomal Disorders	59	66	69	68	61	74	42	60	62	56	118	617
SIDS / SUID	24	27	26	19	23	18	33	20	17	13	30	220
Cancer / Neoplasms	11	11	8	12	9	19	18	7	10	13	23	118
Infectious, Chronic & Other Medical Conditions	29	20	22	27	17	17	19	18	22	15	37	206
Motor Vehicle Crash	47	36	38	44	48	40	33	44	35	24	59	389
Non-MVC Unintentional Injuries	19	19	11	17	15	22	13	21	11	32	43	180
Suicide	13	11	9	12	10	10	17	19	13	14	27	128
Homicide / Criminal Child Abuse & Neglect	8	14	7	13	15	13	10	19	12	11	23	122
Caretaker Neglect	8	6	3	4	3	0	3	2	5	4	9	38
Maternal Substance Use	0	0	1	0	2	0	2	0	1	0	1	6
Medical Error	2	0	2	1	0	0	0	1	1	1	2	8
Undetermined	1	0	0	0	0	1	1	2	1	2	3	8
No Information Available	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total (N)</b>	<b>302</b>	<b>300</b>	<b>286</b>	<b>303</b>	<b>262</b>	<b>301</b>	<b>260</b>	<b>278</b>	<b>291</b>	<b>260</b>	<b>551</b>	<b>2,843</b>
Percent (%)	10.6%	10.6%	10.1%	10.7%	9.2%	10.6%	9.1%	9.8%	10.2%	9.1%	19.4%	
Preterm Birth	48.1%	52.2%	37.8%	51.2%	40.7%	51.7%	44.9%	49.2%	52.5%	56.0%	54.0%	48.7%
Maternal Complications	35.8%	42.2%	51.1%	40.7%	57.6%	42.5%	53.6%	46.2%	37.6%	40.0%	38.6%	44.1%
Complications of Labor & Delivery	11.1%	4.4%	5.6%	8.1%	1.7%	2.3%	1.4%	0.0%	6.9%	1.3%	4.5%	4.6%
Other Pregnancy & Neonatal-Related Conditions	4.9%	1.1%	5.6%	0.0%	0.0%	3.4%	0.0%	4.6%	3.0%	2.7%	2.8%	2.6%
<b>Total, Pregnancy-Related</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Pregnancy Related	26.8%	30.0%	31.5%	28.4%	22.5%	28.9%	26.5%	23.4%	34.7%	28.8%	31.9%	28.2%
Birth Defects / Inherited & Chromosomal Disorders	19.5%	22.0%	24.1%	22.4%	23.3%	24.6%	16.2%	21.6%	21.3%	21.5%	21.4%	21.7%
SIDS / SUID	7.9%	9.0%	9.1%	6.3%	8.8%	6.0%	12.7%	7.2%	5.8%	5.0%	5.4%	7.7%
Cancer / Neoplasms	3.6%	3.7%	2.8%	4.0%	3.4%	6.3%	6.9%	2.5%	3.4%	5.0%	4.2%	4.2%
Infectious, Chronic & Other Medical Conditions	9.6%	6.7%	7.7%	8.9%	6.5%	5.6%	7.3%	6.5%	7.6%	5.8%	6.7%	7.2%
Motor Vehicle Crash	15.6%	12.0%	13.3%	14.5%	18.3%	13.3%	12.7%	15.8%	12.0%	9.2%	10.7%	13.7%
Non-MVC Unintentional Injuries	6.3%	6.3%	3.8%	5.6%	5.7%	7.3%	5.0%	7.6%	3.8%	12.3%	7.8%	6.3%
Suicide	4.3%	3.7%	3.1%	4.0%	3.8%	3.3%	6.5%	6.8%	4.5%	5.4%	4.9%	4.5%
Homicide / Criminal Child Abuse & Neglect	2.6%	4.7%	2.4%	4.3%	5.7%	4.3%	3.8%	6.8%	4.1%	4.2%	4.2%	4.3%
Caretaker Neglect	2.6%	2.0%	1.0%	1.3%	1.1%	0.0%	1.2%	0.7%	1.7%	1.5%	1.6%	1.3%
Maternal Substance Use	0.0%	0.0%	0.3%	0.0%	0.8%	0.0%	0.8%	0.0%	0.3%	0.0%	0.2%	0.2%
Medical Error	0.7%	0.0%	0.7%	0.3%	0.0%	0.0%	0.0%	0.4%	0.3%	0.4%	0.4%	0.3%
Undetermined	0.3%	0.0%	0.0%	0.0%	0.0%	0.3%	0.4%	0.7%	0.3%	0.8%	0.5%	0.3%
No Information Available	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total (N)</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

TABLE 2. PERINATAL CAUSES OF DEATH	2007 - 2008								Total	
	Preterm (< 37 wks)		Not Preterm (37+ wks)		Not an infant		Subtotal			
	(N)	(%)	(N)	(%)	(N)	(%)	(N)	(%)	(N)	(%)
Maternal Complications	66	97.1%	0	0.0%	2	2.9%	68	100%	68	38.6%
Diabetes, gestational	2	100.0%	0	0.0%	0	0.0%	2	2.9%		
Diabetes, IDDM	2	100.0%	0	0.0%	0	0.0%	2	2.9%		
HELLP Syndrome	2	100.0%	0	0.0%	0	0.0%	2	2.9%		
Hypertension, pregnancy-induced or chronic	2	100.0%	0	0.0%	0	0.0%	2	2.9%		
Incompetent cervix	9	100.0%	0	0.0%	0	0.0%	9	13.2%		
Infection / chorioamnionitis	13	100.0%	0	0.0%	0	0.0%	13	19.1%		
Infection, other*	2	66.7%	0	0.0%	1	33.3%	3	4.4%		
Placenta previa	2	100.0%	0	0.0%	0	0.0%	2	2.9%		
Placental abruption / separation / infarct	19	100.0%	0	0.0%	0	0.0%	19	27.9%		
Pre-eclampsia / eclampsia	6	100.0%	0	0.0%	0	0.0%	6	8.8%		
Uterine fibroids	1	50.0%	0	0.0%	1	50.0%	2	2.9%		
Other** / unknown	6	100.0%	0	0.0%	0	0.0%	6	8.8%		
Complications of Labor and Delivery***	0	0.0%	8	100.0%	0	0.0%	8	11.8%	8	4.5%
Other Perinatal Complications****	0	0.0%	5	100.0%	0	0.0%	5	7.4%	5	2.8%
Prematurity (no cause identified)	95	100.0%			0	0.0%	95	100%	95	54.0%
Singletons	41	100.0%			0	0.0%	41	43.2%		
Multiples	54	100.0%			0	0.0%	54	56.8%		
<b>Total (N)</b>	<b>161</b>	<b>91.5%</b>	<b>13</b>	<b>7.4%</b>	<b>2</b>	<b>1.1%</b>			<b>176</b>	<b>100.0%</b>

\*Cytomegalovirus, hepatitis, herpes.

\*\*Bicornate uterus, ruptured uterus, placental abnormalities, ruptured appendix, Crohn's disease, polycystic ovarian disease, obesity.

\*\*\*Hypoxic ischemic encephalopathy, meconium aspiration.

\*\*\*\*Necrotizing enterocolitis, sepsis.

TABLE 3. BIRTH DEFECTS / INHERITED & CHROMOSOMAL DISORDERS	2007 - 2008				Total	
	Preterm (< 37 wks)	Not Preterm (37+ wks)	Unknown gestational	Not an infant	(N)	(%)
Amniotic band syndrome	1	0	0	0	1	0.8%
Arteriovenous malformation	0	0	0	1	1	0.8%
Bone disorders	1	1	1	0	3	2.5%
Chromosomal anomaly, Trisomy 13 (Patau syndrome)	5	0	0	0	5	4.2%
Chromosomal anomaly, Trisomy 18 (Edwards syndrome)	7	6	0	0	13	11.0%
Chromosomal anomaly, Trisomy 21 (Down syndrome)	7	2	0	0	9	7.6%
Chromosomal anomaly, other	0	0	0	1	1	0.8%
Cystic Fibrosis	0	0	0	1	1	0.8%
Factor H mutation / hemolytic uremic syndrome	0	0	0	1	1	0.8%
Gastrointestinal / genitourinary malformations	4	2	0	4	10	8.5%
Head / brain anomalies, hydrocephaly	1	0	0	0	1	0.8%
Head / brain anomalies, other	3	2	0	0	5	4.2%
Heart disease, hypoplastic left	1	3	0	1	5	4.2%
Heart disease, other	3	10	0	2	15	12.7%
Hydrops, non-immune	1	0	0	0	1	0.8%
Kidney defect / anomaly	6	2	0	1	9	7.6%
Liver defect / anomaly	0	0	0	1	1	0.8%
Metabolic disorder	1	1	0	2	4	3.4%
Moyamoya disease	0	0	0	1	1	0.8%
Multiple congenital anomalies	2	2	0	3	7	5.9%
Muscular dystrophy	0	0	0	2	2	1.7%
Neural tube defect, anencephaly	8	3	0	1	12	10.2%
Neural tube defect, schizencephaly	1	0	0	0	1	0.8%
Neurologic / neuromuscular diseases	0	3	0	0	3	2.5%
Respiratory system defect	3	0	0	1	4	3.4%
Severe Combined Immunodeficiency Disease (SCID)	0	1	0	0	1	0.8%
Unspecified / unknown	1	0	0	0	1	0.8%
<b>Total (N)</b>	<b>56</b>	<b>38</b>	<b>1</b>	<b>23</b>	<b>118</b>	<b>100%</b>

TABLE 4. SLEEP-ASSOCIATED DEATH – DIAGNOSES	2007		2008		Total	
	Vital Records	CDRT	Vital Records	CDRT	Vital Records	CDRT
SIDS / SUID	18	17	15	13	33	30
Suffocation / Unspecified threat to breathing	1	2	6	10	7	12
Respiratory arrest	0	0	1	0	1	0
Pneumonia	0	0	1	0	1	0
Assault	1	0	1	0	2	0
Neglect	0	1	0	1	0	2
Undetermined	0	0	0	0	0	0
<b>Total (N)</b>	<b>20</b>	<b>20</b>	<b>24</b>	<b>24</b>	<b>44</b>	<b>44</b>

TABLE 5. SLEEP-ASSOCIATED DEATH – RISK FACTORS	2007 and 2008				Total	
	SIDS		SUID		(N)	(%)
	(N)	(%)	(N)	(%)		
Pre- or post-natal smoke exposure	17	53.1%	5	50.0%	22	52.4%
Age-inappropriate sleep surface	17	53.1%	5	50.0%	22	52.4%
Bed-sharing	14	43.8%	5	50.0%	19	45.2%
Found on side or stomach	15	46.9%	1	10.0%	16	38.1%
Current / recent respiratory infection	12	37.5%	2	20.0%	14	33.3%
Bedding-related issues	11	34.4%	2	20.0%	13	31.0%
Put to sleep on side or stomach	10	31.3%	2	20.0%	12	28.6%
No known risk factors	2	6.3%	0	0.0%	2	4.8%



TABLE 6. CANCER / NEOPLASMS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2007 and 2008 Total	
	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	Age (yrs)	(N)	(%)
Adrenal gland				9y	5y							0.0%
Blastoma, unspecified												0.0%
Bone, all sites		10				13						0.0%
Brain tumor (total)	5	2	4	6	3	13	7	2	3	3	6	26.1%
Astrocytoma / glioma	8, 17		15	3, 5, 16	7	10, 13, 13	4, 11, 15, 15	9, 14	11	6, 7	3	
Brain stem, unspecified						3, 6						
Choroid plexus							8					
Ependymoma	13					6						
Glioblastoma										8	1	
Medulloblastoma	5				8	13	4, 8					
Rhabdoid						1			3 wks, 9		2	
Unspecified	11	10, 11	4, 6, 11	4, 9, 10	2	2, 10, 12, 14, 16						
Ewing's sarcoma		9					2	NB, 14	8		1	4.3%
Hepatic carcinoma /hepatoblastoma					5		7, 7, 15					0.0%
Leukemia, acute or chronic	1, 2, 15, 17	3, 12, 12	13, 16			2, 4, 17	13		3, 10, 13	3, 3, 4, 8, 14, 16	9	39.1%
Lung, squamous cell carcinoma									14		1	4.3%
Lymphoma, Hodgkin's			17		17							0.0%
Lymphoma, non-Hodgkin's ("lymphoblastic")				11								0.0%
Mesothelioma, peritoneal			17									0.0%
Neuroblastoma	10	3, 4, 4		5			3, 8, 17	5	2	7, 10	3	13.0%
Neuroendocrine tumor												0.0%
Osteosarcoma					4	17		17		15	1	4.3%
Palate tumor					16							0.0%
Pelvic sarcoma				14								0.0%
Pineal gland dysgerminoma												0.0%
Renal medullary carcinoma												0.0%
Rhabdoid tumor of the kidney	11m											0.0%
Rhabdomyosarcoma		7					4	15	7		1	4.3%
Wilms' tumor				3, 6	16	4	7, 12			8	1	4.3%
Unspecified type												0.0%
<b>Total (N)</b>	<b>11</b>	<b>11</b>	<b>8</b>	<b>12</b>	<b>9</b>	<b>19</b>	<b>18</b>	<b>7</b>	<b>10</b>	<b>13</b>	<b>23</b>	<b>100.0%</b>

TABLE 7. INFECTIOUS, CHRONIC AND OTHER DISEASE CONDITIONS	2007	2008	Total
	(N)	(N)	(N)
<b>Respiratory Diseases</b>			
Asthma, treated	1	3	4
Bronchitis / bronchiolitis/ bronchopneumonia	2	1	3
Pneumonia / pneumonitis, non-specific	2	1	3
Pneumonia, aspiration, influenza A or pertussis	1	2	3
Pneumonia, respiratory syncytial virus (RSV)	3	0	3
<b>Circulatory System</b>			
Arrhythmia, medication induced	1	0	1
Cardiomegaly, hypertropic	0	1	1
Myocarditis, diffuse or lymphocytic	1	1	2
Hemolytic uremic syndrome	1	0	1
<b>Infectious Diseases</b>			
Meningitis, bacterial	2	2	4
Streptococcus pyogenes infection following trauma	1	0	1
<b>Autoimmune Disorders</b>			
Lupus erythematosus	2	0	2
Wegener's granulomatosis	0	0	0
<b>Other</b>			
Cerebral palsy (complications)	1	1	2
Dehydration	1	1	2
Seizure disorder, epileptic or of unknown origin	2	0	2
Unknown medical cause	1	2	3
<b>Total (N)</b>	<b>22</b>	<b>15</b>	<b>37</b>

TABLE 8. MOTOR VEHICLE-RELATED INCIDENTS <sup>1</sup>	2007	2008	Total
	(N)	(N)	(N)
<b>Motor Vehicle Crash - Restraint status<sup>2</sup></b>			
Restrained	10	10	20
Not restrained	18	14	32
Unknown	2	0	2
<b>MVC Subtotal</b>	<b>30</b>	<b>24</b>	<b>54</b>
<b>Other Motor Vehicle-Related Incident</b>			
Bicycle / scooter	2	0	2
Sled	1	0	1
All-Terrain Vehicle	2	0	2
<b>Other Subtotal</b>	<b>5</b>	<b>0</b>	<b>5</b>
<b>Total (N)</b>	<b>35</b>	<b>24</b>	<b>59</b>

<sup>1</sup>Only includes motor vehicles engaged in traffic. Categories refer to the location of the child.

<sup>2</sup>Age-appropriate restraints: car seat or booster seat for children through age eight; seatbelt and/or shoulder harness for older ages.

TABLE 9. UNINTENTIONAL INJURY	2007	2008	Total
	(Age)*	(Age)	(N)
Alcohol poisoning	17y		1
Choked on food/toy	6m		1
Crushed in cattle chute		8y	1
Crushed in fall with horse		11y	1
Crushed by building during tornado		13y, 13y, 13y	3
Crushed by car falling off jack		1m	1
Drowned, home pool		2y, 2y, 3y	3
Drowned, open water (boating / swimming / walking)	11y, 17y	14y, 16y	4
Fall from table		2y	1
Fire, house/trailer/apartment**	5m & 2y	2y & 3y, 3y, 4y	6
Gasoline explosion		14y	1
Shot while playing with firearm	4y	13y, 15y	3
Struck in head while playing		10y	1
Suffocation/strangulation, sleep-related	2w, 4m	1m, 2m, 3m, 3m, 3m, 3m, 4m, 6m, 7m, 10m	12
Suffocation/strangulation, not sleep-related	1y, 6y	9y, 15y	4
<b>Total (N)</b>	11	32	43

\*Ages are given in years (y), months (m), and weeks (w).

Deaths connected with "&" are from the same incident.

\*\*Four additional fire deaths are included in the Neglect section.

TABLE 10. SUICIDE		Firearms (Age)		Hanging (Age)		Overdose (Age)		Other (Age)		Subtotal (N)		Total (N)	
2000	Male	15, 15, 16		15, 15, 15, 15, 16, 17, 17		-		14, 17		12	92.3%	13	10%
	Female	-		15		-		-		1	7.7%		
2001	Male	13, 17, 17, 17, 16		14, 16		16		-		8	72.7%	11	9%
	Female	14, 16		17		-		-		3	27.3%		
2002	Male	14, 15, 15, 15, 16, 16, 17		-		-		-		7	77.8%	9	7%
	Female	15		14		-		-		2	22.2%		
2003	Male	16, 16, 17		11, 12, 15, 17, 17, 17		16		13		11	91.7%	12	9%
	Female	16		-		-		-		1	8.3%		
2004	Male	12, 13, 13, 16, 17		15		-		17, 17		8	80.0%	10	8%
	Female	-		-		-		14, 16		2	20.0%		
2005	Male	13, 17		13, 14, 16, 17		-		15		7	70.0%	10	8%
	Female	16		15		-		16		3	30.0%		
2006	Male	14, 14, 15, 15, 16, 16, 16, 17, 17		11,14,14,17		-		-		13	76.5%	17	13%
	Female	-		14, 15		-		14,16		4	23.5%		
2007	Male	15, 15, 16, 17		13, 13, 13, 14, 14, 15, 15, 15, 15, 16, 17, 17		-		-		16	84.2%	19	15%
	Female	-		16, 17		17		-		3	15.8%		
2008	Male	13, 15, 16, 16, 17, 17		15, 15,17		-		-		9	69.2%	13	10%
	Female			13, 14, 14, 17		-		-		4	30.8%		
2009	Male	16, 16, 16, 17		9, 16, 16, 17		-		16		9	64.3%	14	11%
	Female	16		14, 15, 16		17				5	35.7%		
Subtotal	Male	48	88.9%	43	74.1%	2	50.0%	7	58.3%	100	78.1%	128	100%
	Female	6	11.1%	15	25.9%	2	50.0%	5	41.7%	28	21.9%		
Total (N)		54		58		4		12		128			
		42.2%		45.3%		3.1%		9.4%		100%			

TABLE 11. INTENTIONAL INJURY	2007	2008	Total
	(Age)	(Age)	
<b>Criminal child abuse or neglect (alleged or convicted)</b>			
Blunt force trauma	9m, 11m, 1y	8m, 1y, 2y, 4y	7
Shaken Baby / Shaken Infant Syndrome		1m	1
Reckless endangerment	4y	1m	2
<b>Subtotal (N)</b>	4	6	10
<b>Homicide / manslaughter (alleged or convicted)</b>			
Firearm	3y, 3y & 6y, 6y, 11y, 16y, 16y	11y, 15y, 15y, 17y	11
Stabbing	5y	15y	2
<b>Subtotal (N)</b>	8	5	13
<b>Total (N)</b>	12	11	23

Ages are given in years (y), months (m) and weeks (wks).  
Cases separated by "&" refer to siblings.

TABLE 12. PARENTAL / CARETAKER NEGLIGENCE	2007	2008	Total (N)
	(Age)	(Age)	
<b>Failure to protect from hazard</b>			
Drowned in backyard pool		4y	1
House fire	11m & 2y & 16y	2y	4
Suffocation	2m	8m	2
<b>Failure to provide necessities</b>			
<b>Failure to seek medical care / treatment</b>			
Pneumonia		1m	1
<b>Emotional neglect</b>			
<b>Abandonment</b>			
<b>Total (N)</b>	5	4	8

Ages are given in years (y), months (m) and weeks (wks).  
Cases separated by "&" refer to siblings.

# NEBRASKA CHILD DEATH REVIEW REPORT

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FOR 2007 AND 2008

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