

>> Childhood Fatalities in Oregon

Oregon State Child Fatality Review Team

The mission of the State Child Fatality Review Team is to prevent childhood deaths by reviewing child fatality cases and identifying trends, educating the public on incidents and prevention, and developing recommendations for public policy initiatives.

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Executive summary

Children represent the future. It is important to understand the nature and patterns of child death to keep children alive and improve the health and safety of children in Oregon. This report represents data from child deaths in Oregon in 2014. The data are from death certificates and Oregon's child fatality review (CFR) process. Analysis of this data is used to inform prevention opportunities and identify ways to develop programs and policies that focus on meaningful changes.

Child deaths in Oregon in 2014

There were 357 children aged 0–17 years who died (41.61 deaths per 100,000) in Oregon in 2014. Mortality rate was the highest in infancy; almost two-thirds of all childhood deaths were among infants. The rate decreased to the lowest in children aged 5–9 years and increased again in adolescents aged 10 years and older. Mortality rates were higher among males than among females in Oregon. Compared to non-Hispanic whites, the rates among minority populations were higher, with the exception of non-Hispanic Asians/Pacific Islanders.

Patterns of mortality varied with age. The vast majority (95%) of infant deaths were due to natural causes. Most deaths in children aged 1–17 years (56%) were due to injuries. Injury was the leading cause of death among children aged 1–17 years. Deaths due to perinatal and congenital causes predominated among infants aged less than one month. External/injury became a common cause among children aged one year and older and predominated among adolescents aged 15–17 years. Unexplained or not classified causes were a major cause of death among infants aged 1–11 months. Acquired natural causes were common among children aged 1–14 years.

Patterns of mortality were similar between males and females among children; overall, males were more likely than females to die from injury and unexplained causes.

Injury was the cause of death among 86 children, which accounted for 24% of the total child deaths in Oregon. The leading causes/mechanisms of injury death were suffocation/hanging (26), motor vehicle crashes (17) and firearm (16). By intent, they were unintentional injury (51), suicide (23) and homicide (9).

Child deaths reviewed by local CFR teams in 2014

There are 36 local child fatality review teams in Oregon. Beginning in 2014, child deaths reviewed by local teams were submitted electronically into the National Center for Child Death Review Data System. In this first year of reporting, 18 county teams reviewed 111 deaths, which accounted for approximately 75% of cases that should have been reviewed.

Among 111 reviewed deaths, 68 children died from an external cause/injury, 17 died from a medical condition, 11 deaths could not be determined to be caused from injury or a medical condition and 15 deaths were an unknown cause of death. Three of the 111 reviewed deaths were abuse cases and two were neglect cases.

According to CFR data, 34 deaths among the 36 sudden unexpected infant death (SUID) were related to sleeping or sleep environment: 21 (62%) of 34 infants had been sleeping on same surface/shared a bed with other people and 12 (35%) infant deaths were caused by airways that were fully or partially obstructed by person/object.

Local CFR teams also determine through case review if any of the deaths could have been preventable. In 2014, local teams determined that 78% of the injury deaths were preventable, 64% of the SUID deaths were preventable and 63% of suicides could have been prevented.

Introduction

This report summarizes findings from an analysis of data from death certificates and Oregon’s child fatality review (CFR) process (Appendix A) on children who died in Oregon in 2014. Of the 357 children that died, 111 deaths were reviewed by local CFR teams. Data were electronically submitted to the National Center for Child Death Review on these deaths for the first time in 2014. Analysis of this data is used to inform prevention opportunities and identify ways to develop programs and policies that focus on meaningful changes.

Methods

Death certificate data are from the Center for Health Statistics, Oregon Health Authority. Death certificates include a determination of the cause and manner of death. Based on the *International Classification of Diseases, Tenth Revision* (ICD–10), we have classified deaths registered under ICD-10 for the underlying cause of death into five broad groups: perinatal causes; congenital causes; acquired natural causes, including both acute and chronic medical and surgical conditions; external causes, including unintentional incidents, homicides, suicides and undetermined deaths; and deaths that remain unexplained (Appendix B). To provide more detailed information on cause of injury among injury deaths, the deaths are categorized by two parameters: by manner/intent (e.g., unintentional injury, homicide, suicide and undetermined) and by cause (e.g., motor vehicle crash, firearm, suffocation, drowning, Appendix C).

Data from the CFR process are from the National Child Death Review Case Reporting System (NCDR-CRC). NCDR-CRS was developed in the United States to provide child death review teams a tool to capture, analyze and report on the full set of information shared at a child death or serious injury review.¹ Oregon’s CFR process focuses on the subset of child deaths that are “unexpected.” This includes deaths to children from birth through age 17 years from unintentional injuries, intentional injuries, such as homicide and suicide, sudden infant death syndrome (SIDS) and unexpected deaths due to natural causes. All local/county CFR teams review cases of injury death occurring in their counties and cases of non-injury death of residents, regardless of county of death (e.g., a child may be transported to a hospital out of the county). Oregon joined NCDR-CRS in 2013. Local (county) teams use the Web-based, standardized NCDR-CRS to report and collect case data on deaths that occurred on/after January 1, 2014.

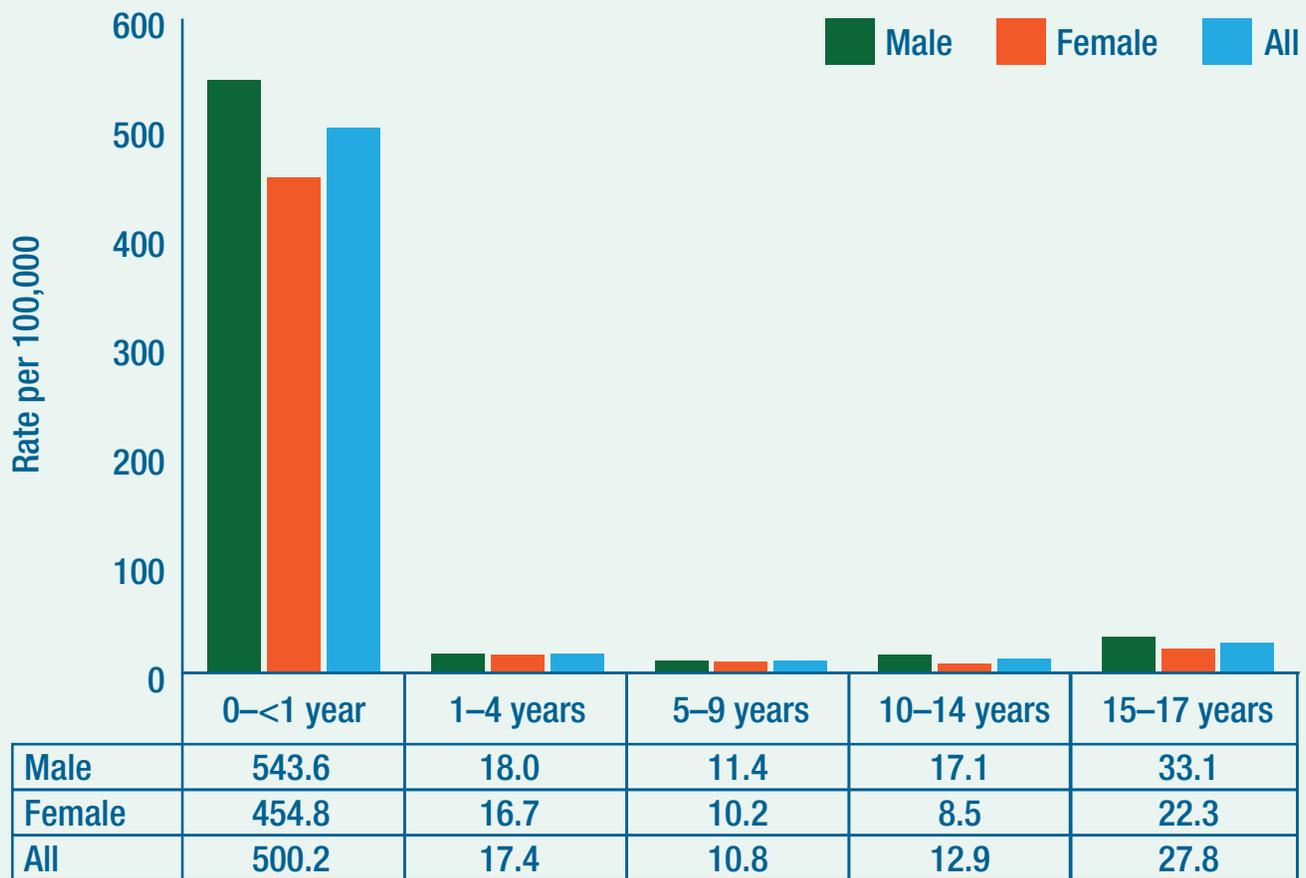
¹ Covington TM. The US National Child Death review case reporting system. *Inj Prev.* 2011 Feb;17 Suppl 1:i34-7.

Findings

Death certificate data

Death certificate data showed that 357 children aged 0–17 years died (41.61 deaths per 100,000) in Oregon in 2014. Mortality rates were approximately 20 times higher among infants (500.2 per 100,000) than other age groups (Figure 1); two-thirds (n=227; 64%) of the children who died in Oregon in 2014 were younger than 1 year of age.

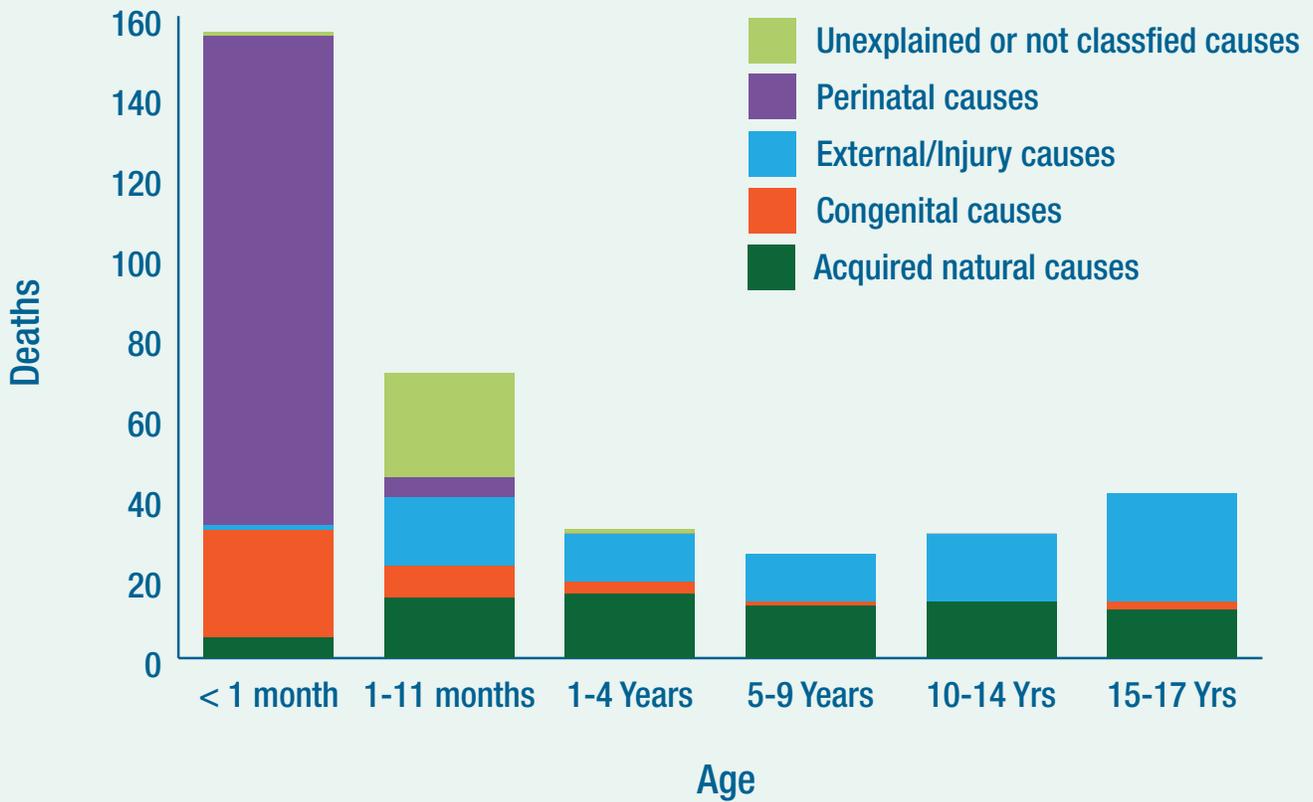
Figure 1. Age-specific child death rate, by age group and sex, Oregon, 2014



Source: Death certificate data, Oregon Public Health Division
Population data, National Center for Health Statistics.

Patterns of mortality varied with age. Perinatal and congenital causes predominated among infants younger than 1 month. Unexplained or not classified causes were a major cause of death among infants aged 1–11 months. External/injury became a common cause among children aged one year and older, and predominated among adolescents aged 15–17 years. Acquired natural causes were more common among children aged 1–14 years (Figure 2, Table 1)

Figure 2. Pattern of child death, by age, Oregon, 2014



Source: Death certificate data, Oregon Public Health Division.

Table 1. Number and rate (per 100,000) of death among children, by age group and cause, Oregon, 2014

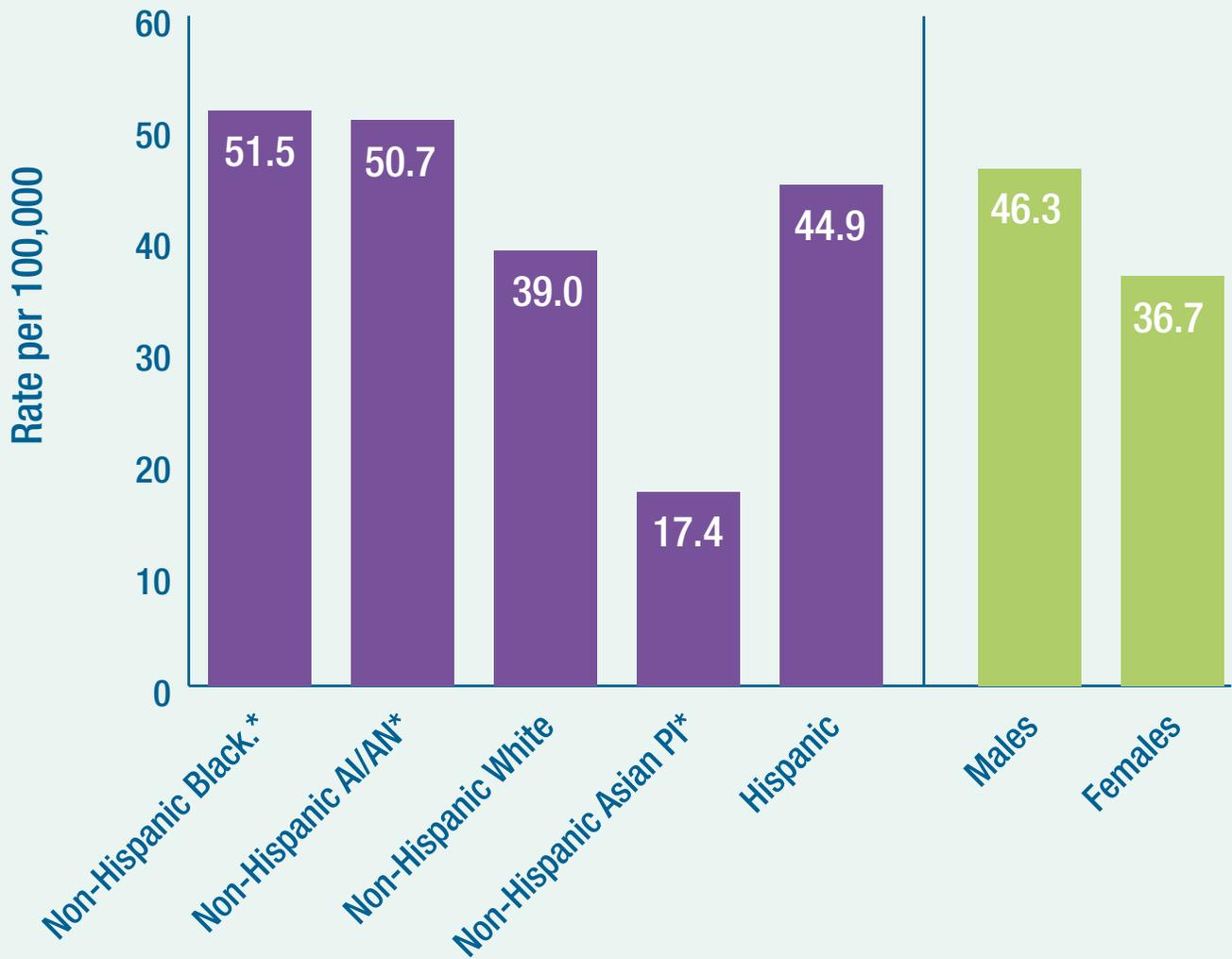
Age	Death/Rate	Acquired natural causes (I-XV)	Congenital causes (XVII)	External/injury causes (XX)	Perinatal causes (XVI)	Unexplained or not classified causes (XVIII)
<1 month	Death	5	27	1	122	1
	Rate*	11.0	59.3	2.2	267.8	2.2
1–11 months	Death	15	8	17	5	26
	Rate*	32.9	17.6	37.3	11.0	57.1
1–4 years	Death	16	3	12	0	1
	Rate	8.7	1.6	6.5	0.0	0.5
5–9 years	Death	13	1	12	0	0
	Rate	5.4	0.4	5.0	0.0	0.0
10–14 years	Death	14	0	17	0	0
	Rate	5.8	0.0	7.1	0.0	0.0
15–17 years	Death	12	2	27	0	0
	Rate	8.1	1.4	18.3	0.0	0.0

* Rate is per 100,000 live births.

Source: Death certificate data, Oregon Public Health Division.
Population data, National Center for Health Statistics.

Of the 357 children, 227 (64%) were non-Hispanic White, 15 (4.2%) were non-Hispanic Black, seven (2.0%) were non-Hispanic American Indian/Alaska Native, eight (2.2%) were non-Hispanic Asian/Pacific Islander, 10 (2.8%) identified as more than one race, 84 (23.5%) were of Hispanic ethnicity and six were other race/unspecified. Mortality rates were higher among males than among females in Oregon. Compared to non-Hispanic Whites, the rates among minority populations, except non-Hispanic Asians/Pacific Islanders, were higher (Figure 3).

Figure 3. Child death rate, by race/ethnicity and sex, Oregon, 2014

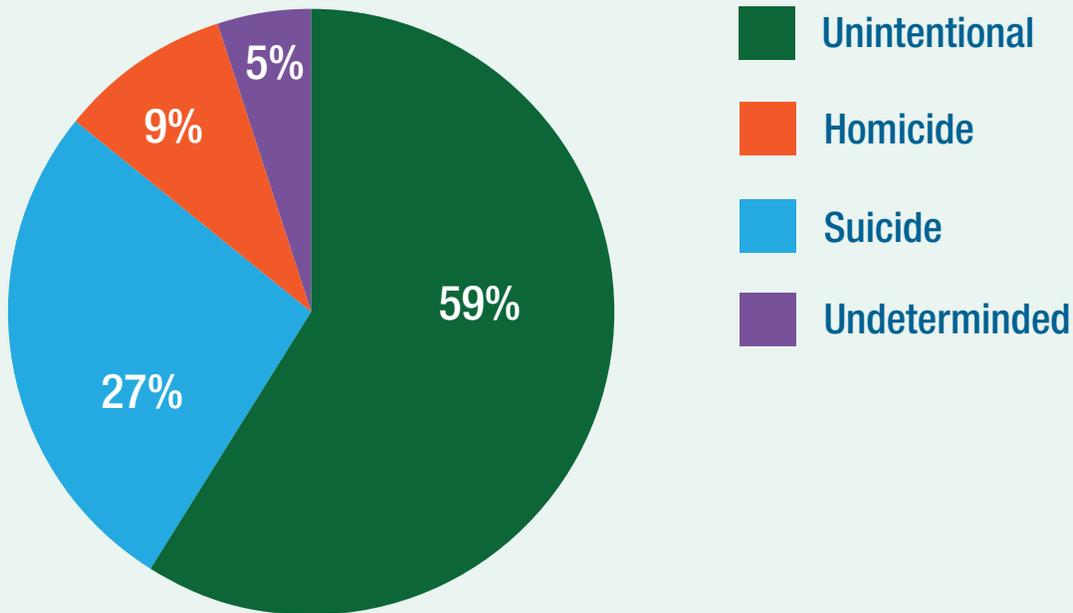


*Rate was calculated from small number (<20 events).
AI/AN: American Indian / Alaskan Native
PI: Pacific Islander

Source: Death certificate data, Oregon Public Health Division.
Population data, National Center for Health Statistics.

External/injury was the cause of death among 86 children, which accounted for 24% of total child deaths in Oregon. Of 86 deaths, 51 (59%) were due to unintentional injury, 23 (27%) were suicide, eight (9%) were homicide, and four were undetermined (Figure 4).

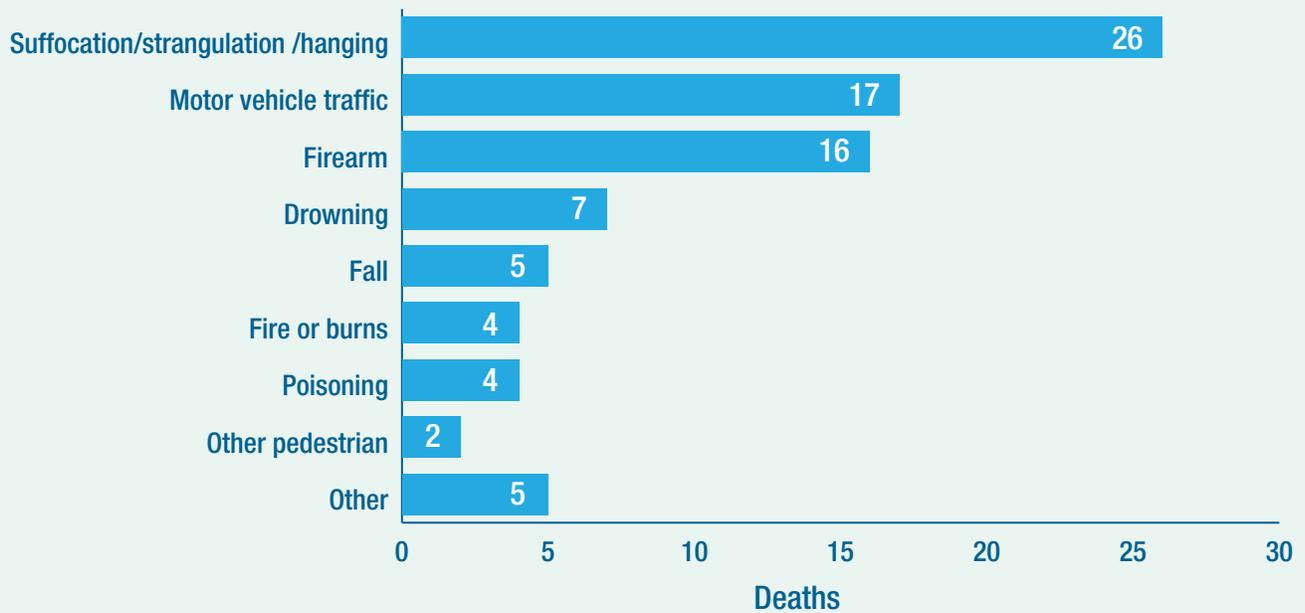
Figure 4. Injury deaths among children, by intent, Oregon, 2014



Source: Death certificate data, Oregon Public Health Division.

Regardless of intent, the leading causes of injury death were suffocation (26 deaths, 30%), motor vehicle crashes (17 deaths, 20%), firearm (16 deaths, 19%), drowning (seven deaths, 8%), and falls (five deaths, 6%) (Figure 5).

Figure 5. Injury deaths among children, by mechanism/cause, Oregon, 2014



Source: Death certificate data, Oregon Public Health Division.

More males than females died from injury. The highest injury death rates were among infants, adolescent females aged 15 to 17 years, and adolescent males aged 10 to 17 years (Table 2).

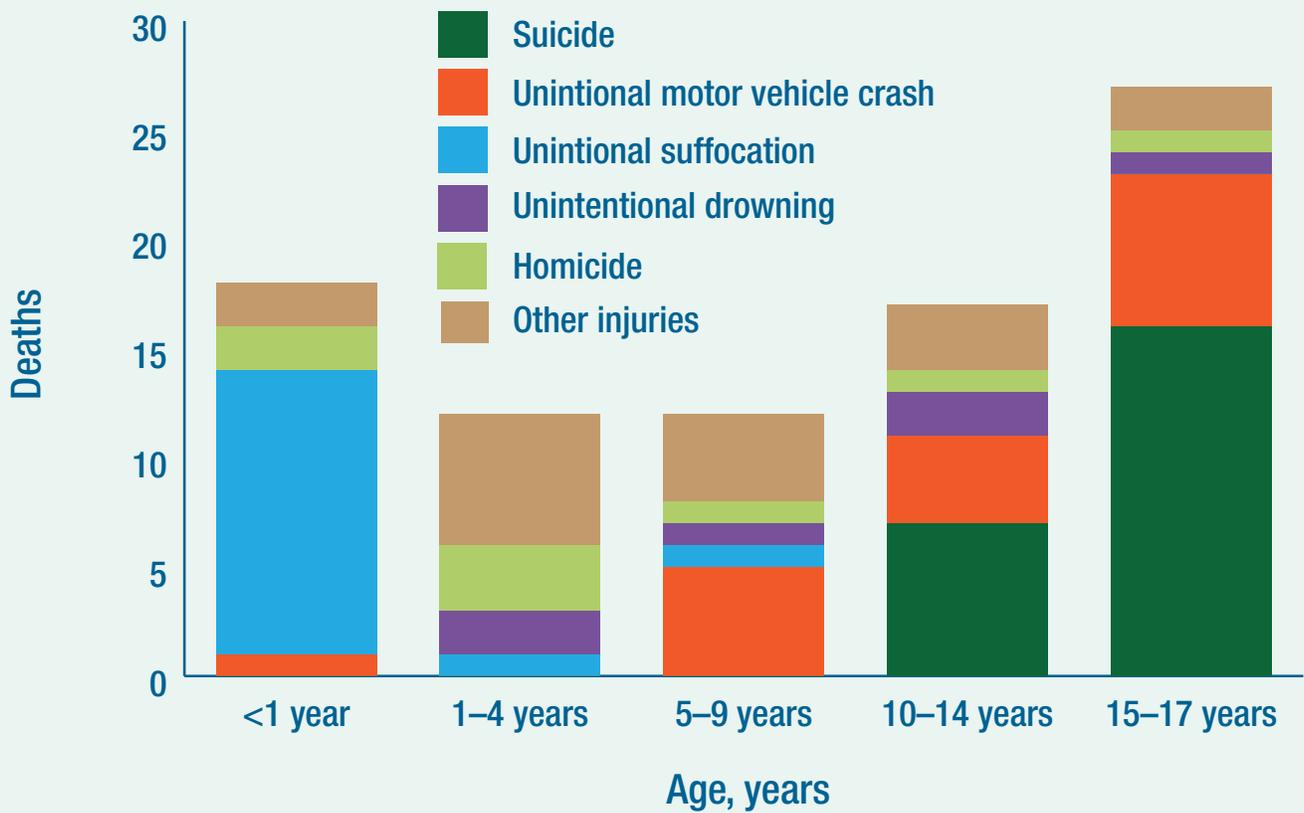
Table 2. Number and rate (per 100,000) of injury death among children, by age group and sex, Oregon, 2014

Sex	<1 year		1–4 years		5–9 years		10–14 years		15–17 years		Total	
	Death	Rate	Death	Rate	Death	Rate	Death	Rate	Death	Rate	Death	Rate
Male	9	38.8	7	7.4	6	4.9	15	12.2	17	22.5	54	12.3
Female	9	40.5	5	5.6	6	5.1	2	1.7	10	13.9	32	7.6

Source: Death certificate data, Oregon Public Health Division.
Population data, National Center for Health Statistics.

Causes of injury death varied with age. Figure 6 and Table 3 shows the patterns of common injury deaths among children in different age groups. Deaths due to unintentional suffocation mainly occurred in infancy. Suicide and unintentional motor vehicle traffic incidents were the main causes of injury death among adolescents aged 15–17 years.

Figure 6. Pattern of injury death among children, by age, Oregon, 2014



Source: Death certificate data, Oregon Public Health Division.

Table 3. Number and rate (per 100,000) of injury death among children, by age group and intent/cause, Oregon, 2014

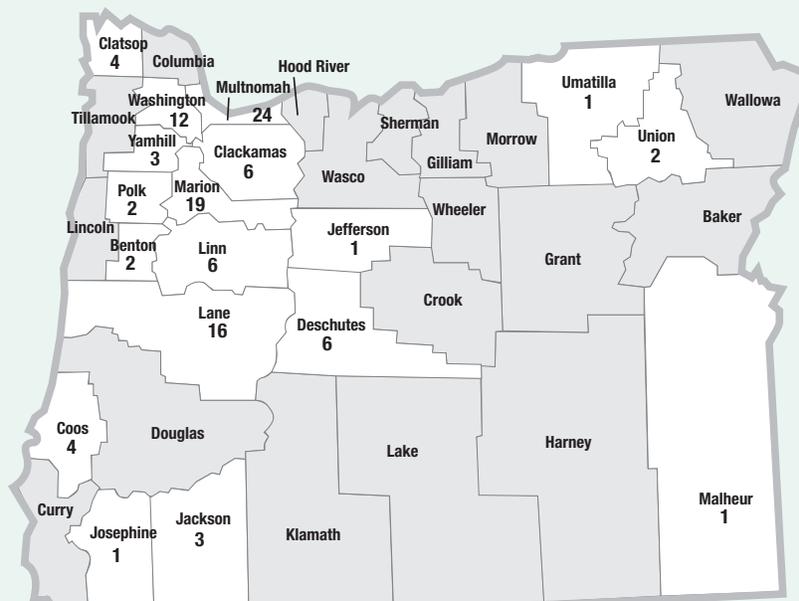
Age	Death/Rate	Unintentional suffocation	Unintentional MV crash	Unintentional drowning	Homicide	Suicide	Other
<1 year	Death	13	1	0	2	0	2
	Rate	28.6	2.2	0.0	4.4	0.0	4.4
1–4 years	Death	1	0	2	3	0	6
	Rate	0.5	0.0	1.1	1.6	0.0	3.3
5–9 years	Death	1	5	1	1	0	4
	Rate	0.4	2.1	0.4	0.4	0.0	1.7
10–14 years	Death	0	4	2	1	7	3
	Rate	0.0	1.7	0.8	0.4	2.9	1.2
15–17 years	Death	0	7	1	1	16	2
	Rate	0.0	4.8	0.7	0.7	10.9	1.4

Source: Death certificate data, Oregon Public Health Division.
Population data, National Center for Health Statistics.

CFR data

Oregon’s CFR process focuses on reviewing “unexpected” deaths, which include deaths due to injury, SIDS and unexpected deaths due to natural causes. According to death certificate data, approximately 130 deaths were reviewable unexpected cases in 2014. Oregon CFR teams (n=18 county teams) reviewed 111 child fatality cases, which included 95 unexpected cases occurring in Oregon in 2014 (Figure 7). Overall, the county teams reviewed approximately 75% of unexpected cases that should be reviewed.

Figure 7. Child fatality review cases by county, Oregon, 2014 (n=111)



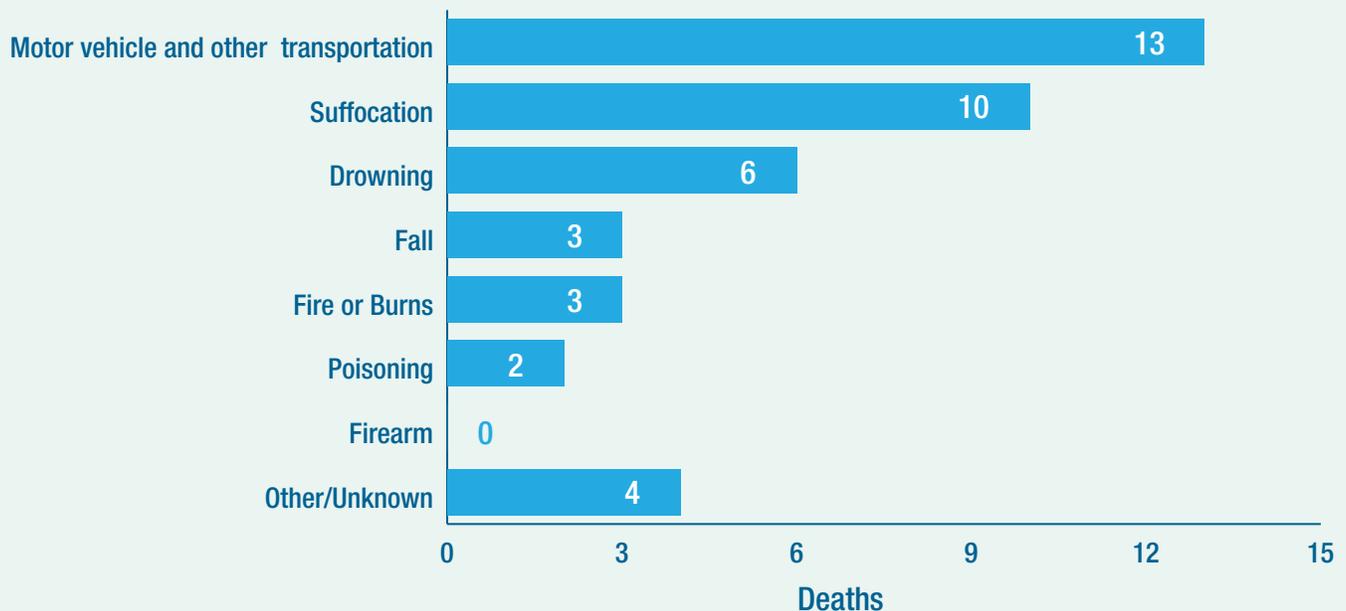
Of the 111 child deaths reviewed, 68 children died from an external cause/injury, 17 died from a medical condition, 11 deaths could not be determined to be caused from injury or a medical condition, and 15 deaths were unknown as to cause of death.

Among the 68 injury deaths reviewed, 41 deaths were due to unintentional injury, 19 were suicides and eight were homicides.

Unintentional injury deaths reviewed by local CFR teams

There were 51 unintentional injury deaths among children younger than 18 years of age in death certificate data. Local teams reviewed 41 of the unintentional deaths. Thirteen deaths were related to motor vehicle traffic (MV) and other transportation, 10 deaths were due to suffocation and six children died by drowning (Figure 8).

Figure 8. CFR-reviewed* unintentional injury deaths among children, by mechanism/cause, Oregon, 2014



*CFR: case fatality review

Source: Oregon CFR teams

Motor vehicle and other transportation CFR data

Of the 13 child deaths caused by motor vehicles and other transportation, six were male and seven were female; one was an infant, two were aged 5–9 years, three were aged 10–14 years and seven were aged 15–17 years; one was a driver, nine

were passengers and three were pedestrians. Data collected included ages of drivers involved in the incidents: three were between 16–18 years, four were between 22–29 years, five between 30–65 years, and three were 65 years of age and older. Eight incidents occurred on rural roads. Among nine passengers who died in MV-traffic crashes, five used seat belt/child seat/booster seat correctly, two had used seat belts incorrectly and two cases did not have information on seat belt use. Table 4 shows the causes of the incidents. Some incidents might have involved more than one cause/circumstance.

Table 4. Causes of incidents among CFR-reviewed* unintentional child injury deaths involving motor vehicles and other transportation, Oregon, 2014

Cause	Count	Percentage
Speeding over limit	1	8
Unsafe speed for conditions	2	15
Recklessness	0	0
Ran stop sign or red light	0	0
Driver distraction	1	8
Driver inexperience	0	0
Mechanical failure	0	0
Poor tires	1	8
Poor weather	2	15
Poor visibility	3	23
Drugs or alcohol use	1	8
Fatigue/sleeping	1	8
Medical event	0	0
Back/front over	0	0
Flipover	0	0
Poor sight line	0	0
Car change lines	0	0
Road hazard	1	8
Animal in road	0	0
Cell phone use while driving	1	8
Racing, not authorized	0	0
Other	2	15

*CFR: case fatality review

Source: Oregon CFR teams

Suffocation CFR data

There were 10 children who died from suffocation. The details of suffocation can be found below, in the section of SUID.

Suicide deaths reviewed by CFR teams

There were 23 children younger than age 18 years who died by suicide in 2014. Of the 23 deaths, 19 cases were reviewed by CFR teams.

Among the 19 reviewed cases, seven children were aged 10–14 years, 12 were aged 15–17 years; 13 were male and six were female.

Eleven of the 19 suicides died from firearm injury, seven from suffocation/hangings and one from MV/other transportation. Of the 11 firearm suicides, the guns used were handgun (n=6), hunting rifle (n=2), assault rifle (n=2) and shotgun (n=1). The firearms belonged to victims' self (n=4), parents (n=4), sibling (n=1), friend (n=1) and other/unknown (n=1).

Eight (42%) were reported to having received mental health services before suicide, seven were receiving mental health services at the time of the suicide and three were taking medication for mental illness at the time of death.

Four of the 19 who died by suicide had a history of substance abuse and three had been victims of child maltreatment (two experienced physical abuse, two emotional abuse and one sexual abuse).

The personal crises most commonly reported before suicide were breakup with boyfriend/girlfriend (n=5), parents' divorce/separation (n=2), family discord (n=2), bullying as victim (n=2) and drug/alcohol use (n=2).

Additional data collected indicated one child had a prior suicide attempt, two had a history of self-mutilation, five children had talked about suicide and three had made a suicide threat before suicide.

Additional information on youth suicide in Oregon is available from the [Oregon Violent Death Reporting System](#).

Child abuse and neglect deaths reviewed by CFR teams

Of the 111 deaths that were reviewed by CFR teams, local teams determined three deaths were abuse cases and two were neglect cases. Abuse and neglect were defined according to standards developed by the State Child Fatality Review Team. These deaths do not reflect all the child abuse and neglect cases in Oregon — only those reviewed by local teams. Additional information on child abuse and neglect in Oregon is available from the [2014 Child Welfare Data Book](#).

Three abuse deaths were children younger than 1 year (n=1), and between 1–4 years (n=2); two males and one female. Their deaths were caused by suffocation (n=1), firearm (n=1) and beaten/thrown/dropped (n=1).

The perpetrators were the child’s biological father (n=2) and mother’s partner (n=1).

Two neglect deaths were children younger than 1 week (n=1) and between 1–4 years (n=1); one male and one female. Their deaths were caused by poisoning (n=1) and inflicting with fire/burn (n=1).

Both neglect deaths resulted from failure to provide shelter (n=1) and failure to protect from a hazard (n=1) by their biological mothers.

Sudden unexpected infant death (SUID) cases reviewed by CFR teams

SUID is the death of an infant younger than 1 year of age that occurs suddenly and unexpectedly, and whose cause of death is not immediately obvious before investigation. SUID commonly includes three types of infant deaths: sudden infant death syndrome (SIDS), accidental suffocation and strangulation in bed (ASSB), and unknown cause.²

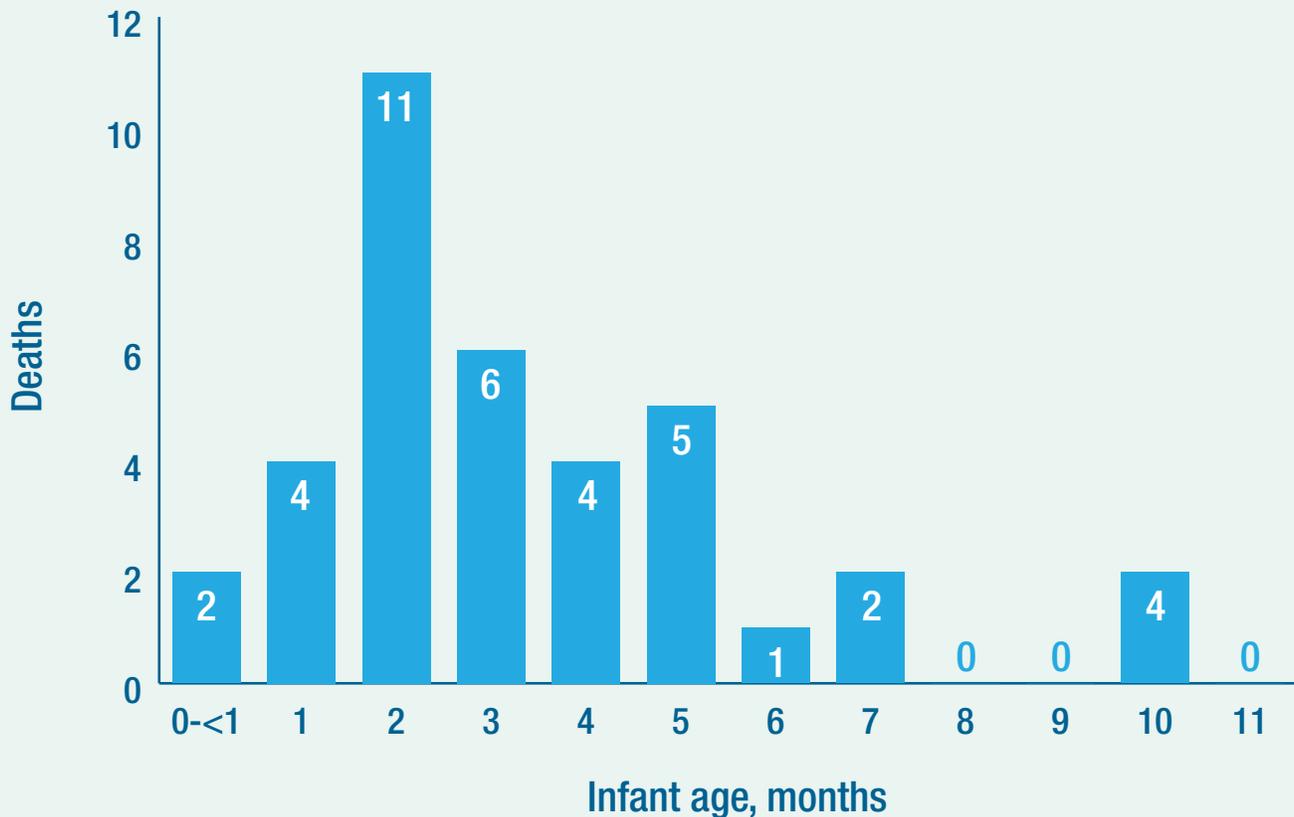
Death certificate data show there were 38 probable cases of SUID in 2014. Of the 38 deaths, 23 cases were SIDS, 10 were ASSB, two were probable positional asphyxia and three were an unknown cause of death.

Local CFR teams reviewed 36 infant deaths identified as cases of SUID. Eleven deaths (30%) were caused from suffocation/asphyxia.

² CDC. About SUID and SIDS (www.cdc.gov/sids/aboutsuidandsids.htm)

Of the 36 infant that died from SUID, 20 were male and 16 were female. Their ages ranged from 2 hours to 10 months; most infants were 1–5 months old (Figure 9).

Figure 9. CFR-reviewed* SUID deaths# by age, Oregon, 2014



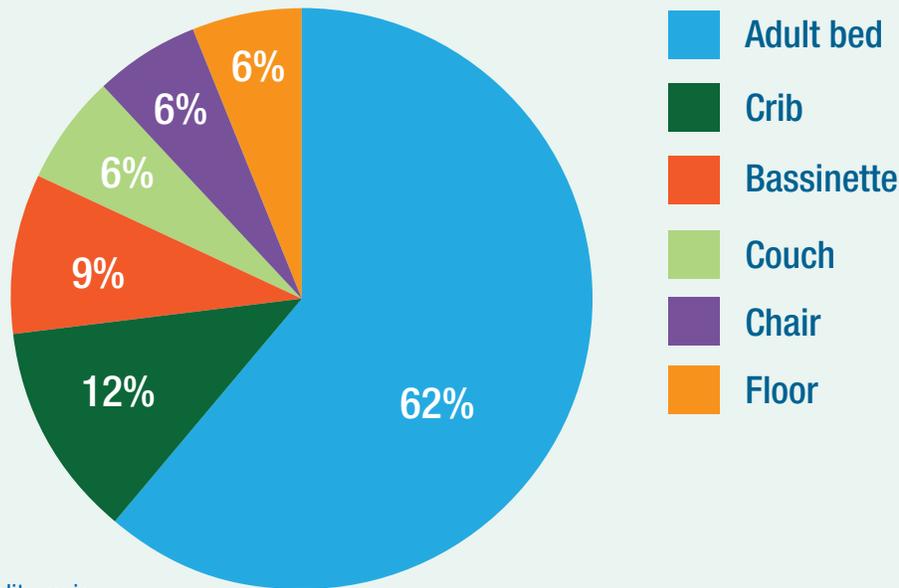
*CFR: case fatality review
#SUID: sudden unexpected infant death

Source: Oregon CFR teams

Sleep-related deaths reviewed by CFR teams

Thirty-four of the 36 SUID deaths were determined by local CFR teams to be related to sleeping or sleep environment. Of these 34 sleep-related SUID deaths, 21 infants (62%) were put to sleep on an adult bed, seven (21%) were put to sleep in a crib or bassinette; 21 (62%) had been sleeping on the same surface/shared a bed with other people (Figure 10); and 12 infants were found to have their airways fully or partially obstructed by a person/object (Table 5).

Figure 10. Sleep places among infants who died of SUID*, CFR-reviewed# deaths, Oregon, 2014



*CFR: case fatality review

#SUID: sudden unexpected infant death

Source: Oregon CFR teams

Table 5. CFR* findings related to sleep environment among the 34 SUID deaths, Oregon, 2014

Description	Count	Percentage
Sleep position		8
• Put to sleep on back	19	56
• Put to sleep on stomach	7	21
• Found on back	15	44
• Found on stomach	11	32
• Found on side	5	15
Sleep with other people	21	62
• Sleep with adult(s)	20	59
• Sleep with child/children	1	3
• Sleep with adult and child	2	6
Sleep with a pacifier	3	9
Infant was wrapped or swaddled in blanket	10	29
Found a crib/bassinette in the home	24	71
Supervisor used alcohol and/or drug	2	6
Caregiver fell asleep while feeding	3	9
Infant exposed to secondhand smoke	6	18
Infant's airway		0
• Fully obstructed by person or object	8	24
• Partial obstructed by person or object	4	12

*CFR: case fatality review

Source: Oregon CFR teams

CFR-reviewed child deaths involving Child Protective Services (CPS)

Besides collection of the national child death review data elements, Oregon’s CFR process collects additional information involving Child Protective Services (CPS) (Table 6). Oregon will assess the data quality and report them in the future.

Table 6. Additional information involving Child Protective Services

Data element description (to be assessed and reported in future)
Karly's law case
At time of death
<ul style="list-style-type: none"> • Child in custody of state • An active investigation involving child
In the previous five years
<ul style="list-style-type: none"> • The primary caregiver and child were reunited • Child's family received family preservation service

*CFR: case fatality review

Source: Oregon CFR teams

Prevention determination in CFR-reviewed cases

Based on 2014 CFR data, local Child Fatality Teams determined that 78% of child

Table 7. CFR-reviewed* deaths that could have been prevented by cause, Oregon, 2014

Cause	Count	Percentage
Deaths due to injury (n=68)	53	78
Deaths of SUID (n=36)	23	12
Suicides (n=19)	12	63
All causes (n=111)	67	60

*CFR: case fatality review

Source: Oregon CFR teams

deaths from injury were preventable: 64% of the SUID deaths were preventable and 63% of suicides could have been prevented (Table 7).

Discussion

Death certificate data are a reliable and valuable source to understand patterns of child death. Mortality data provide important information about what causes children died of, the magnitude of problems, the different factors that contribute to or associate with child death, the target areas that need improvement, and directions for future prevention.

However, mortality data do not have the details surrounding a child death; they do not provide information as to why and how a child died. For example, death certificate data could not determine which child died from abuse and which one died from neglect. A child who dies in a motor vehicle crash can be identified using death certificates, but the death certificate gives no information on whether or not the driver had been drinking or whether the child was appropriately using a seat belt. A deeper understanding of the circumstances surrounding every child's death, the causes of death, the contributory factors and the possible intervention factors is needed to take preventive action.

CFR teams are often made up of representatives from law enforcement, district attorney's office, child protective services, public health, medical examiner's office, Emergency Medical Services and medical care services. The CFR process gathers information from multiple sources, looks for details and discusses potential measures to prevent a child death. Collecting and analyzing data from the CFR process will help to generate strategies to reduce child deaths and develop prevention programs.

The change to electronic reporting to the National Center for Child Death Review Data System allows local CFR teams to run reports on all data they have entered into the system. Local teams can then generate strategies to make community and organizational changes to improve the lives of children.

In 2014, the first year of electronic reporting, 111 child deaths, which included 75% of the reviewable child deaths, were discussed and reported by county teams. To get a complete picture of unexpected child deaths in Oregon and meet the requirement of state statutes, we encourage teams to review at least 90% of cases that occur during 2015 and provide complete data on the cases reviewed. The collection and reporting of complete data, along with the involvement of new community partners in the local review process when needed, will improve the ability of CFR teams to identify and recommend system changes and prevention activities that will save children's lives in

Appendix A. The child fatality review process



Oregon Revised Statutes Governing Child Fatality Review

418.748 Statewide team on child abuse and suicide. (1) The Oregon Health Authority, in collaboration with the Department of Human Services, shall form a statewide interdisciplinary team to meet twice a year to review child fatality cases where child abuse or suicide is suspected, identify trends, make recommendations and take actions involving statewide issues.

(2) The statewide interdisciplinary team may recommend specific cases to a child fatality review team for its review under ORS 418.785.

(3) The statewide interdisciplinary team shall provide recommendations to child fatality review teams in the development of protocols. The recommendations shall address investigation, training, case selection and fatality review of child deaths, including but not limited to child abuse and youth suicide cases. [1989 c.998 §5; 1991 c.451 §4; 1997 c.714 §2; 2005 c.562 §7; 2013 c.14 §8]

Note: See note under 418.746.

418.749 [1989 c.998 §6; 1993 c.546 §104; 1993 c.622 §6; renumbered 418.702 in 2005]

418.750 [1971 c.451 §3; 1973 c.110 §2; 1975 c.644 §4; 1981 c.892 §94; repealed by 1993 c.546 §141]

418.785 Child Fatality Review Teams. (1) Each county multidisciplinary child abuse team shall establish a child fatality review team to conduct child fatality reviews. The purpose of the review process is to help prevent severe and fatal child abuse and neglect by:

- (a) Identifying local and state issues related to preventable child fatalities; and
- (b) Promoting implementation of recommendations at the county level.

(2) In establishing the review process and carrying out reviews, the child fatality review team shall be assisted by the county medical examiner or county health officer as well as other professionals who are specially trained in areas relevant to the purpose of the team.

(3) The categories of fatalities reviewed by the child fatality review team include:

- (a) Child fatalities in which child abuse or neglect may have occurred at any time prior to death or may have been a factor in the fatality;
- (b) Any category established by the county multidisciplinary child abuse team;
- (c) All child fatalities where the child is less than 18 years of age and there is an autopsy performed by the medical examiner; and
- (d) Any specific cases recommended for local review by the statewide interdisciplinary team established under ORS 418.748.

(4) A child

fatality review team shall develop a written protocol for review of child fatalities. The protocol shall be designed to facilitate communication and the exchange of information between persons who perform autopsies and those professionals and agencies concerned with the prevention, investigation and treatment of child abuse and neglect.

(5) Within the guidelines, and in a format, established by the statewide interdisciplinary team established under ORS 418.748, the child fatality review team shall provide the statewide interdisciplinary team with information regarding the categories of child fatalities described under subsection (3) of this section.

(6) Upon the conclusion of a criminal case involving a child fatality, or upon the conclusion of a direct appeal if one is taken, the district attorney may submit a letter to the Governor and the Director of Human Services outlining recommendations for the systemic improvement of child abuse investigations. [2005 c.562 §20; 2007 c.674 §8]

418.706 State Technical Assistance Team for child fatalities; duties. The State Technical Assistance Team for child fatalities is established in the Oregon Health Authority. The purpose of the State Technical Assistance Team is to provide staff support for the statewide interdisciplinary team, as described in ORS 418.748, and, upon request, to provide technical assistance to the child fatality review teams established under ORS 418.785. The duties of the State Technical Assistance Team shall include but are not limited to:

(1) Designing, implementing and maintaining an information management system for child fatalities;

(2) Providing training assistance and support for identified individuals on county multidisciplinary child abuse teams in accurate data collection and input;

(3) Compiling and analyzing data on child fatalities;

(4) Using data concerning child deaths to identify strategies for the prevention of child fatalities and serving as a resource center to promote the use of the strategies at the county level; and

(5) Upon request of a county multidisciplinary child abuse team, providing technical assistance and consultation services on a variety of issues related to child fatalities including interagency agreements, team building, case review and prevention strategies. [Formerly 418.753; 2009 c.595 §363b]

Note: 418.706 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 418 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

Case Definition for Child Fatality Review

The State Child Fatality Review Team reviews a selection of cases that have been reviewed by local teams. Local teams are required to review, at minimum, deaths in the following categories:

- All medical examiner cases
 - Homicides,
 - Accidents,
 - Suicides,
 - Undetermined causes, and
 - Deaths due to natural causes that were unexpected

Residence and Place of Incident

Local Child Fatality Review teams should review all deaths that occur in their counties and review deaths to children who die in the county but who are residents elsewhere. In some cases two counties will choose to review the same death. In cases where the child dies in another county because of transport for emergency care, the county where the incident occurred should review the death. Local teams are encouraged to collaborate and coordinate case review.

If a team reviews a non-resident occurrence, the coordinator should notify the resident county review coordinator of the death in the event that the resident county will want to review the death as well. This is particularly important in rural counties whose children are often transported to tertiary care centers where they are pronounced dead.

CHILD FATALITY - STATE REVIEW ABSTRACT

Selected for State Team Review on:

Why Selected:

Child's Name:		
DOB:	DOD:	Age:
Mother:		Father:
Resident County:		County of Death:
Reviewing County:		Date of Local Review:
Manner of Death:		Cause of Death:
CPS History:		Disability:
Name of Investigating LEA:		
Summary of Circumstances of Death		
Abuse/Neglect Determination:	No	
What could be done to prevent a similar death?		
Case Coordination/Systems Issues Identified		

Prepared by:

STATE CHILD FATALITY REVIEW SUMMARY RECORDING FORM

<i>Child's Name:</i> _____	
<i>County of Residence:</i> _____	<i>Date of Birth:</i> _____
<i>County of Death:</i> _____	<i>Date of Death:</i> _____
<i>Manner of Death:</i> _____	<i>Cause of Death:</i> _____

WHY WAS THIS CASE SELECTED?

LIST ANY ISSUES REFERRED TO STATE TEAM:

LOCAL TEAM PREVENTION RECOMMENDATIONS:

STATE TEAM REVIEW DISCUSSION:

Is the investigation in this case complete?

Questions or issues raised by the team?

List any information needed for further review:

What could be done to prevent a similar death?

Should any of these activities be implemented now, and if so, who will do it?

STATUS OF CASE AT STATE REVIEW:

FOLLOW-UP:

Conducting the State Child Fatality Review Team Meeting

Convening the meeting

A confidentiality agreement signed by team members and invited guests should be at a sign in table at each meeting. Team members and guests must sign in and sign a confidentiality statement prior to the meeting. Each member agrees to keep meeting discussions and information shared at the meeting confidential. Confidentiality is essential for each agency to fully participate in the meetings.

Team members are reminded by the co-chairs that:

- The review team is not an investigative body.
- Review meetings are closed to the public.
- All participants agree to keep the discussion confidential and discussion of specific cases is protected.
- The team keeps no written record of the meeting, except for documentation of action items agreed upon by team members. Members can make notes in their private records.
- Individuals come and leave with only their own records on specific cases.
- Case abstracts must be left on the table and not taken from the meeting.
- The purpose of the team is to improve investigations, services and agency practices and to identify ways to prevent other child deaths.

The co-chairs address any logistical issues prior to conducting the case reviews.

Sharing Information

Reviews are conducted by discussing selected child deaths individually. Team members from the Oregon Health Authority and the Department of Human Services develop and hand out case abstracts of the cases as they are reviewed. State team members and invited local team members review the case abstract with the team. When possible it is important to invite local team members to discuss the case more fully after the abstract is presented. The co-chairs will then ask members to provide information from their agency's records and, when appropriate, distribute it to other members. If information is distributed, it must be collected again before the end of the meeting.

Information can be shared in the following order:

1. The State Medical Examiner presents information on the investigation, autopsy and pending or final determination of cause and manner of death.

2. The Department of Human Services present information on any child abuse or neglect investigations on the victim or any family members.
3. The law enforcement officials present information on the scene and other investigations.
4. Public Health reports on the death certificate, and any information it has on the family, child or circumstances.
5. Other team members report on any information they have and can share with the team.
6. The prosecutor reports on the status of the investigation and any legal action.

If information is needed by an investigative agency, it should be accessed after the team meeting, utilizing standard investigative practices and approaches.

Clarification

Review team members next ask for clarification or raise questions about the information shared. Prior to moving on with a review, all team members should feel confident that they understand all information as presented or ask for further clarification.

Discussion

The co-chairs should ask the following questions, each of which should be answered thoroughly before proceeding to the next one. When all the questions have been answered to the team's satisfaction, the review should document action items and move to the next case.

1. Is the investigation complete, or should we recommend further investigation? If so, what more do we need to know?
2. Are there services we should provide to family members and other persons in the community as a result of this death?
3. Are other children at risk of imminent harm? If so, what action should be taken to protect them?
4. Should we recommend any changes to agency practices or policies based on what we know about the circumstances, cause and manner of this child death?

5. What risk factors were involved in this child death?
6. What do we recommend should be done to prevent another death in the future?
7. Who should take the lead in implementing our recommendations for prevention?
8. Is our review of this case complete or do we need to discuss it at our next meeting?

Holdover Reviews

Cases may need to be discussed at more than one meeting. Investigation results may be incomplete at the first review. Team members may wish to obtain additional information from their agencies. A team member or guest with significant information may be absent. Or a case may continue to progress and need to be updated.

Referrals

If a review team identifies the need for services, referrals should be made. Referrals are usually handled by the team member professionally associated with the program or agency that provides the appropriate service. However, any team member can assist in making a referral. Teams should discuss how referrals will be made and who will be responsible for handling them.

Agency Conflict Resolution

Participating agencies may have individuals with concerns or disagreements regarding specific cases. Reviews are not opportunities for others to criticize or second-guess agency decisions in child death cases. Issues with procedures or policies of particular agencies are sometimes identified; however, agency team members are responsible for any further action taken by their agencies on such issues.

Teams are not peer reviews. They are designed to examine system issues, not the performance of individuals. The team review is a professional process aimed at improving system response to child deaths.

Many agencies involved in child fatality review teams do not have an internal mortality review process. Child Protective Services conducts multi-agency reviews for child fatalities, in which the child or family had prior contact with the agency. Some hospitals conduct internal reviews for in hospital child deaths. For most agencies, however, review teams provide the only forum for reviewing their actions, policies and procedures related

Conducting the State Child Fatality Review Team Meeting 3

to child deaths.

If conflict among team members interrupts a review, the team co-chairs should intervene so the review can progress. The team co-chairs can contact the team members outside the meeting to discuss and help resolve conflicts. Sometimes disagreement is both productive and appropriate, but disruption of the review is not productive.

Concluding Case Review Meeting

The co-chairs should remind members of the schedule for the next team meeting or assign a member to schedule the next meeting. Co-chairs should review action items and remind members to leave behind case abstracts and other handouts that contain confidential case information.

Guide to Participating in Child Fatality Case Review

The Goal of Child Fatality Reviews is to understand why children die, ensure interagency coordination, and to take action to prevent other deaths.

Use of this Guide

Use the guide to help determine what records should be brought to your meeting, what risk factors to evaluate, the types of services your team should ensure are provided, and evidence-based prevention activities your team may consider.

Effective review team meetings require team members to:

- Come prepared with information on the deaths to be reviewed
- Share their information openly and honestly
- Seek solutions instead of blame

At each case review, members should consider:

- Is the investigation complete, or should we recommend further investigation? If so, what more do we need to know?
- Are there services we should provide to family members, other children and other persons in the community as a result of this death?
- What risk factors were involved in this child's death?
- What changes in behaviors, technologies, agency systems and/or laws could minimize these risk factors and prevent another death?
- What are our best recommendations for helping to make these changes?
- Who should take the lead in implementing our recommendations?
- Is our review of this case complete or do we need to discuss it at our next meeting?

The following pages contain information about the types of cases that teams review.

Considerations in Review of Natural Deaths among Infants

Facts

- Natural deaths among infants comprise the largest group of child deaths. These include deaths due to congenital anomalies, infants born prematurely and of low birth weight, respiratory complications, infections, and other medical conditions.
- Infant death rates are calculated as the number of deaths per 1,000 live births.
- The greatest numbers of natural deaths among infants occur within the first 24–48 hours of life. Black infants are more than twice as likely to die in their first year than white infants.
- Many infant deaths can be prevented through improvements to maternal prenatal health.
- Prematurity refers to infants born at less than 37 weeks gestation, and low birth weight refers to infants weighing less than five pounds, five ounces at birth.

Records Needed

- Public Health birth records
- Health records for well and sick visits and immunizations
- Death certificates
- Prenatal care records
- Hospital birth records
- Emergency Department records
- Any support services utilized, including WIC and Family Planning
- Police reports
- Prior CPS reports on caregivers
- Home visitation reports

Risk Factors

- Maternal smoking
- Prior pre-term delivery.
- Previous infant or fetal loss.
- Inadequate prenatal care (late entry, missed appointments).
- Medical conditions of the mother.
 - Maternal age (under 20, over 35)
 - Infections, including sexually transmitted (STI)
 - Hypertension
 - Diabetes
 - Poor nutritional status
 - Obesity
 - Short inter-pregnancy interval
- Poverty.
- Substance, alcohol and tobacco use.
- Stressors and lack of social support.
- Less than 12th grade education.
- Unintended pregnancy.
- Physical and emotional abuse of mother.

Services to Consider

- Bereavement services.
- Specialized burial services for stillborn or fetal deaths.
- Preconception and pregnancy planning.
- Specialized services for surviving siblings.
- Genetic counseling for certain congenital anomalies.

Improvements to Agency Practices

- Much of prevention is closely related to agency practices surrounding maternal health. Many of these practices are considered prevention and described in the next section.

Effective Prevention Actions

- Ensure that all women have access to preconception care and counseling and prenatal care.
- Ensure that all women have postpartum care options available that include pregnancy planning.
- Work with hospitals and providers to make sure that every infant that leaves the hospital has a primary care provider established.
- Improve local provider knowledge of pre-conception health care issues.
- Improve emergency response and transport systems.
- Provide maternal and infant support services to improve the social/psychological environment for women and families at risk.
- Encourage the comprehensive assessment of risks due to STIs, substance abuse including alcohol, smoking, domestic violence, depression, social support, housing, employment, transportation, etc. by all local providers and perhaps as a local hospital delivery policy.
- Develop and distribute community resource directories to raise awareness of where to go for help and services.
- Provide mentoring, support, outreach and advocacy at the community level utilizing paraprofessionals, indigenous health workers and faith-based initiatives.
- Develop systems to provide transportation and childcare to women seeking prenatal care.
- Coordination of care between programs and parts of the health care system.
- Forums to raise awareness of consumers, providers and policy makers of infant mortality issues.
- Local community/business/health care partnerships to broaden the number of stakeholders.
- Enhanced community education to include unplanned/unwanted pregnancy prevention, including teen pregnancy prevention services and early detection of signs and symptoms of pre-term labor.

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Considerations in Review of Natural Deaths among Children Aged 1–18 Years

Facts

- Death from natural causes is the third leading cause of mortality among children over one year of age, following unintentional injuries and suicide.
- Cancer, congenital anomalies and cardiac conditions are the top three causes of natural death.
- Fatalities from illnesses such as asthma, infectious diseases and some screenable genetic disorders, under certain circumstances, can be prevented.
- Asthma affects approximately five million children a year in the U.S. The asthma death rate for ages 19 years and younger increased by 78% between 1980 and 1993, many believe due to environmental conditions.
- Failure to seek medical care for ill children can be fatal in some instances.

Records Needed

- Public Health birth records
- Pediatric records for well and sick visits
- Death certificates
- Medical examiner reports
- Hospital birth records
- Emergency Department records
- Public Health immunization records
- Names, ages and genders of other children in home
- Police reports
- CPS reports on caregivers and child
- Home visitation reports
- ISD records, if applicable

Risk Factors

- Children with chronic health conditions or congenital anomalies.
- Exposure to environmental hazards, especially of vulnerable children.
- Non-compliance with prescribed treatment regimens.
- Parental or caregiver failures to seek adequate medical attention.
- Child maltreatment.

Services to Consider

- Bereavement services.
- Specialized services for surviving siblings.
- Crisis responses for friends of decedent, including in schools.
- Burial payments for families needing financial assistance.

Improvements to Agency Practices

- Were services in place for chronically ill children?
- Were referrals made and followed up for repeat health care visits and other care?
- Were efforts made to obtain full complement of available public services for eligible families?
- Was investigation coordinated with CPS and other agencies?
- Was death referred to medical examiner if medical neglect was suspected?

Effective Prevention Actions

- Provide coordinated wrap-around services for chronically ill children.
- Develop community education campaigns surrounding chronic health problems in children, such as asthma.
- Ensure that schools are provided sufficient information and training for children with chronic health problems.
- Conduct assessments and seek removal of suspected environmental health hazards.

For More Information

- American Academy of Pediatrics
www.aap.org
- American Lung Association
www.lungusa.org
- Easter Seal Society
www.easter-seals.org
- March of Dimes
www.modimes.org
- Maternal Child Health Bureau

Considerations in Review of Deaths due to Asthma

Facts

- Asthma is one of the most common chronic diseases of childhood.
- An estimated 4 million children under age 18 have had an asthma attack in the past 12 months.
- Asthma fatalities can usually be prevented.
- The asthma death rate for ages 19 and younger increased by 78% between 1980 and 1993, many believe due to environmental conditions.
- Failure to seek medical care for asthmatic children can be fatal.
- Even though asthma cannot be cured, it can almost always be controlled.

Records Needed

- Death certificates
- Medical examiner reports
- Pediatric records for well and sick visits, including info on medications prescribed, asthma management plan, pulmonary function testing, specialty referrals
- Emergency Department/EMS records
- Any support services, such as school asthma management programs
- CPS reports on caregivers and child

Risk Factors

- Lack of steroid inhalers or peak flow meters
- African-American and low-income children; children with allergies
- Children living in crowded conditions, which leads to increased exposure to allergens and infections
- Exposure to environmental hazards such as tobacco smoke, air pollution, strong odors, aerosols and paint fumes
- Non-compliance with prescribed treatment regimens
- Parental or caregiver failures to recognize seriousness of attacks and seek adequate medical attention

Services to Consider

- Bereavement services for family and friends.
- Crisis responses for friends of decedent, including in schools.
- Burial payments for families needing financial assistance.

Improvements to Agency Practices

- Were referrals made and followed up on for health care visits for poorly controlled asthma and other care?
- Were efforts made to obtain full complement of available public services for schools and eligible families?
- Was investigation coordinated with CPS and other agencies?
- Was death referred to medical examiner if medical neglect was suspected?
- If the child was in foster care, were there asthma triggers present in the foster home?

Effective Prevention Actions

- Develop community education campaigns regarding childhood asthma.
- Ensure that schools are provided sufficient information and training to respond to students' asthma attacks.
- Conduct assessments and seek removal of suspected environmental health hazards.
- Educate health care providers on the need to prescribe corticosteroids, the need for timely referrals to specialists, and the need to limit refills for rescue medications without a physician visit or attention.
- Educate parents and children on the severity of asthma and its dangers.
- Develop system for pharmacies to notify practitioners of excessive bronchodilator use by their patients.

For More Information

- American Academy of Pediatrics
www.aap.org
- American Lung Association
www.lungusa.org
- Centers for Disease Control and Prevention
www.cdc.gov
- Allergy/Asthma Network Mothers of Asthmatics
www.aanma.org

Considerations in Review of Deaths among Children with Disabilities

Facts

- Children with disabilities are at much higher risk for death than those without disabilities.
- Child abuse is estimated to cause approximately 25% of all developmental disabilities in children.
- Children with disabilities are at the greatest risk of burn-related deaths and injury.
- Children with disabilities are abused at approximately twice the rate of children without disabilities.
- The most common form of homicidal event against children with cerebral palsy is starvation.
- Immobility is the single best predictor of mortality risk of children with disabilities, followed by feeding ability.
- Function, rather than diagnostic category, is most predictive of early mortality.
- Aspiration, constipation, dehydration and epileptic seizures are the four major health issues that can cause death in people with developmental disabilities. The 1st three can go unrecognized until major illness or death.
- Children with disabilities may not be able to express discomfort or indicate they don't feel well.
- It can be difficult to differentiate the disability from signs of abuse.

Records Needed

- Medical examiner reports
- Death certificate
- Birth records if under age one
- Emergency Department Records
- Police Reports
- Prior CPS reports on caregivers
- Any support services utilized
- Medical records and medication records
- School records

Risk Factors

- Reduced mobility
- Feeding difficulty
- Feeding tube
- Use of restraints
- Quality of supervision / Multiple supervisors
- Competency of supervisor to manage disability
- Poorly controlled seizures
- Prematurity and extreme prematurity
- Complex, uncommon medical issues
- Parents not trained to recognize symptoms
- Lack of medical continuity/follow-up by caretakers

- Lack of suitable childcare
- Unrecognized disability

Services to Consider

- Bereavement services for parents and other family members.
- Burial payments for families needing financial assistance.

Improvements to Agency/School Practices

- Do professionals know how to appropriately manage and respond to disability?
- Are parents educated to care for and manage disability and health, including use of medical equipment, and recognizing signs of distress and what reaction is needed?
- Is there a team approach to identify and respond to risk factors of children with disabilities?
- Are there appropriate autopsy protocols for children with disabilities?
- Do schools have effective information and training about disability, and adhere to best practices in use of Positive Behavioral Services?
- Do newborns with disabilities leaving hospitals have care plans, service coordinators and follow-up plans?
- Were parents of children with disabilities referred to OHP?
- Does child have access to effective medical care for complexity of disability?
- Did parents have sufficient support and respite care?

Effective Prevention Actions

- Support parents adequately to provide safe, effective care.
- Collaborate among disability agencies and CPS agencies.
- Educate caregivers, schools and other professionals to recognize health danger signs.
- Teach children with disabilities fire safety and survival skills and develop emergency plans for them.
- Train parents about child neglect and sexual abuse.
- Ban or closely regulate use of restraints for children with disabilities by schools, families and service agencies.
- Identify trends and training needs; recommend development and/or modification of provider policies; modify state policies to address systemic issues.
- Develop medical homes for children with disabilities using coordination of care model.

For More Information

- Easter Seal Society at www.easterseals.com
- March of Dimes at www.modimes.org

Guide to Participating in Child Fatality Case Review 5

Considerations in Review of Deaths due to Sudden Infant Death

Facts

- Sudden Infant Death Syndrome (SIDS) is the sudden death of an infant under one year of age, which remains unexplained after a comprehensive investigation. This must include an autopsy, examination of the death scene, review of the baby's health history, and mother's health.
- SIDS is a diagnosis of exclusion and can only be made if there is no other possible cause of death. If the death scene indicates there was a possibility of suffocation, SIDS should not be listed as the cause of death.
- Most SIDS occurs to babies between two and four months old. African American and American Indian SIDS rates are two to three times higher than the white SIDS rate.
- The mechanism causing SIDS is still unknown, although many believe that SIDS occurs when an infant is at a vulnerable age, is exposed to environmental risk factors and has a neural defect that prevents the child from responding to oxygen depletion.
- The National Back to Sleep campaign has reduced the SIDS rate by more than half since 1994.

Records Needed at Review

- Medical examiner reports
- Scene investigation reports and recreation photos
- Prenatal, birth and health records
- Interviews with family members
- Child Care Licensing investigative reports
- Prior CPS history on child, caregivers and person supervising child at time of death
- Criminal background checks on person supervising the child at time of death
- Reports of home visits from public health or other services
- Any information on prior deaths of children in family

Risk Factors

- Maternal smoking.
- Infants sleeping on their stomachs.
- Soft infant sleep surfaces and loose bedding.
- Second-hand smoke exposure.
- Overheating.
- Prematurity or low birth weight.

Services

- Bereavement services for parents and family members.
- Provide links to services such as family planning.
- Critical Incident Stress Debriefing for persons responding to scene.

Improvements to Agency Practices

- Are investigations coordinated with medical examiners, law enforcement and CPS?
- Are autopsy protocols in place, which include a process for sending scene investigation materials to the pathologist performing the autopsy?
- Are comprehensive scene investigations conducted at the place of death, as soon as possible, including scene reenactments and interviews?
- Are referrals made for bereavement services?
- Are high-risk families with newborns and young infants provided prevention services?
- Is a process in place to contact the Consumer Product Safety Commission when faulty products could be involved in causing a death?

Effective Prevention Actions

- "Back to Sleep" and other safe sleep campaigns.
- Smoking cessation education and support for pregnant and parenting women and other caregivers.
- Safe sleep education at childbirth classes and in hospitals to expectant and new parents.
- In-hospital assessments by nurses with parents to assess a baby's sleep environment when he/she goes home.
- Crib distribution programs for families.
- Working with hospitals and providers to make sure that every infant that leaves the hospital has a primary care provider established.
- Education to health care providers on giving guidance on SIDS risk reduction to parents and caregivers.
- Licensing requirements for childcare providers on safe sleep environments and infant sleep positions.

For more information

- The National SIDS Resource Center
<http://www.sidscenter.org/>
- The American Academy of Pediatrics
<http://www.aap.org/>
- Consumer Product Safety Commission
<http://www.cpsc.gov/>

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Considerations in the Review of Suffocation Deaths

Facts

- Suffocation is caused by either:
 - *Overlay*: a person who is sleeping with a child rolls onto the child and unintentionally smothers the child.
 - *Positional asphyxia*: a child's face becomes trapped in soft bedding or wedged in a small space such as between a mattress and a wall or couch cushions.
 - *Covering of face or chest*: an object covers a child's face or compresses the chest, such as plastic bags, heavy blankets or furniture.
 - *Choking*: a child chokes on an object such as a piece of food or small toy.
 - *Confinement*: a child is trapped in an airtight place such as an unused refrigerator or toy chest.
 - *Strangulation*: a rope, cord, hands or other objects strangle a child.
- Infants and toddlers are most often the victims.
- Autopsies and scene investigations are essential to rule out homicide. Rates of infant suffocations are increasing as investigators better distinguish suffocation from SIDS.

Records Needed at Review

- Medical examiner reports
- Death certificates
- Scene investigation reports and recreation photos
- Interviews with family members
- Child Care Licensing investigative reports, if occurred in child care setting
- EMS run reports
- Emergency Department reports
- Prior CPS history on child, caregivers and person supervising child at time of death
- Child's health history
- Criminal background checks on person supervising child at time of death
- Reports of home visits from public health or other services
- Any information on prior deaths of children in family
- Any information on prior reports that child had difficulty breathing
- Downloaded information from apnea monitors

Risk Factors

- Unsafe infant sleep environment.
- Prone position of infant while sleeping.
- Heavy or soft bedding and other objects near infant.
- Faulty design of cribs, beds or other hazards.
- Other persons sleeping with infant.
- Obesity, fatigue, or drug or alcohol use by persons supervising or sleeping with infant/child.

- Poor quality of supervision at time of death.
- Child's ability to gain access to objects causing choking or confinement.
- If hanging, child's developmental age consistent with activity causing strangulation.
- Family's inability to provide safe environment for child.

Services

- Bereavement and crisis services for family and friends.
- Provision of cribs/other beds for children still in home.
- Safety assessment by CPS if neglect was suspected.
- Critical Incident Stress Debriefing for persons responding to scene.

Improvements to Agency Practices

- Are investigations coordinated with medical examiners, law enforcement and CPS?
- Are comprehensive scene investigations conducted at place of death, as soon as possible, including scene reenactments and interviews?
- Are referrals made for bereavement and crisis services?
- Are high-risk families with newborns and infants provided prevention services?
- Is CPS notified in cases of suspicious deaths?
- Is a process in place to contact Consumer Product Safety Commission if death involved consumer product?

Effective Prevention Actions

- Education at childbirth classes and in hospitals to expectant and new parents on safe infant sleep environments.
- In-hospital assessments by nurses with parents to assess babies' sleep environments.
- Culturally competent public education campaigns on safe infant sleep environments.
- Crib distribution programs for needy families.
- Education to professionals on risks of infant suffocation.
- Notification to CPSC and continued product safety recalls on choking and strangulation hazards.
- Licensing requirements for child care providers on safe infant sleep environments and sleep position.

For More Information

- The National SIDS Resource Center
<http://www.sidscenter.org/>
- The American Academy of Pediatrics
<http://www.aap.org>
- Consumer Product Safety Commission
<http://www.cpsc.gov/>

Guide to Participating in Child Fatality Case Review 7

Considerations in Reviewing Deaths due to Fires

Facts

- Most fire-related deaths among children occur in residential fires, and the cause of death is most often asphyxia due to smoke inhalation, not burns.
- Toddlers, especially African American and American Indian males, are most often the victims.
- The vast majority of fire deaths occur in low-income neighborhoods.
- Children playing with matches or lighters start most of the fires that kill children.
- Young children tend to hide from the fire, making it difficult for family members or rescue personnel to locate them.
- Functioning smoke detectors are highly protective against fire fatalities.
- The risk of death in a fire increases significantly when a supervising adult is intoxicated.

Records Needed at Review

- Medical examiner reports
- Death certificates
- Scene investigation reports and photos
- Fire marshal reports that include source of fire and presence of detectors
- EMS run reports
- Emergency Department records
- Information on zoning or code inspections and violations
- Prior CPS history on child, caregivers and persons supervising child at time of death
- Names, ages and genders of other children in home
- Criminal background checks on persons supervising child at time of death
- Reports of home visits from public health or other services
- Any information on prior deaths of children in family

Risk Factors

- Lack of working smoke detectors in the home.
- Poor quality of supervision at time of death.
- Drug or alcohol use by supervising adults.
- Child's access to lighters, matches or other incendiary devices.
- Members of household falling asleep while smoking or leaving candles burning.
- No exposure of victim to fire safety education.
- Lack of no practice of home fire escape plan.

- Use of alternative heating sources, substandard appliances or outdated wiring.
- Failure of property to maintain code requirements.

Services

- Bereavement and crisis services for family and friends.
- Emergency shelter for surviving family members.
- Safety assessment by CPS if neglect was suspected.
- Critical Incident Stress Debriefing for persons responding to scene.
- Juvenile fire-setter counseling when appropriate.

Improvements to Agency Practices

- Are investigations coordinated with medical examiner, police, fire marshal and CPS?
- Are referrals made for bereavement and crisis services?
- Are high-risk families with young children provided prevention services?
- Do well-baby or other routine health visits include questioning parents about smoke detectors?
- Is there a process in place to contact Consumer Product Safety Commission when faulty products lead to death?
- Do mental health providers routinely screen and provide treatment for child fire-setters?

Effective Prevention Actions

- Smoke detector distribution programs that provide detectors with non-removable, lithium batteries.
- *Risk Watch* or similar programs in schools, preschools and child care settings to teach fire safety and home fire escape.
- Utilization of mobile "Smoke Houses" by fire departments to teach children how fires start, how fast they can spread, and how best to escape a burning house.
- Codes requiring hard-wired detectors in new housing stock.
- Passage and enforcement of local ordinances regarding the inspection of rental units for fire safety, especially for the presence of working smoke detectors.

For More Information

- Harborview Injury Prevention and Research Center:
<http://depts.washington.edu/hiprc/>
- United States Fire Administration:
<http://www.usfa.fema.gov/safety/>
- National Fire Protection Association:
<http://www.nfpa.org/Education/index.asp>
- National SAFEKIDS
www.safekids.org

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Considerations in Reviewing Deaths due to Drowning

Facts

- Most drowning deaths to children occur when there is a lapse in adult supervision.
- Babies most often drown in bathtubs; toddlers in pools; older children and teenagers in rivers and open bodies of water.
- Water temperatures less than 70 degrees can cause “cold shock” that includes a gasp reflex (water can be swallowed) and a metabolic process that causes death due to shock (not hypothermia).
- Hypothermia occurs when a victim is submerged in water for long periods of time and the body temperature decreases dangerously until the victim loses consciousness.
- Oregon rivers typically do not warm to a temperature of 70 degrees until July.
- Infants can drown in water less than five inches deep, in less than five minutes.
- In pools and bath tubs when adequate supervision is combined with approved personal flotation devices, and four sided fencing, drowning occurrences are rare.
- Most toddlers who drown in pools enter the water unseen and unheard by others.

Records Needed at Review

- Medical examiner reports
- Death certificates
- Scene investigation reports
- EMS run reports
- Prior CPS history on child, caregivers and persons supervising child at time of death
- Names, ages and genders of other children in home
- Information on zoning and code inspections and violations regarding pools or ponds

Risk Factors

- Cold water below 70 degrees
- Strainers and/or rocks that catch and hold victims underwater
- Lack of adequate adult supervision.
- Drug or alcohol use by supervising adults.
- Child’s ability to gain access to pools.
- Child not able to swim.
- Lack of use of personal flotation devices in pools, boats, bodies of water.

Services

- Bereavement and crisis services for family members and friends.

- Safety assessment by CPS if neglect was suspected.
- Burial payments for families needing financial assistance.
- Critical Incident Stress Debriefing for persons responding to scene.

Improvements to Agency Practices

- Are investigations coordinated with medical examiner, police and CPS?
- Are referrals made for bereavement and crisis services?
- Are high-risk families with young children provided prevention services, including parenting skills and safety concerns?
- Do well-baby visits include information about bathtub safety for infants?
- Is there local enforcement of building codes for pool fencing?
- Was there adequate emergency response and equipment for a water rescue?

Effective Prevention Actions

- Strong support and local enforcement of building codes regarding proper pool and pond enclosures.
- Placement of signage near bodies of water to warn of water dangers such as cold water, strong currents and drop-offs.
- Public awareness campaigns about cold water, and water safety classes for parents of young children, emphasizing constant adult supervision, cold water, and use of personal flotation devices.
- Children’s swim and water safety classes for children over age four.
- Parent education at childbirth classes and well-baby visits on bathtub safety for infants.

For More Information

- The National Children’s Center for Rural and Agricultural Health and Safety:
<http://research.marshfieldclinic.org/children/Resources/Drowning/drowning.htm>
- National Center for Injury Prevention and Control (Centers for Disease Control and Prevention):
<http://www.cdc.gov/ncipc/factsheets/drown.htm>
- Harborview Injury Prevention and Research Center:
<http://depts.washington.edu/hiprc/>
- US Consumer Product Safety Commission:
<http://www.cpsc.gov/cpsc/pub/pubs/chdrown.html>
- National SAFEKIDS
www.safekids.org

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Considerations in Reviewing Deaths due to Child Abuse and Neglect

Facts

- Abusive Head Trauma: Most child abuse deaths are the result of injuries to the head due to violent shaking, slamming or striking the head.
- Blunt force injury to the abdomen: The second most common cause of child abuse fatality is from punches or kicks to the abdomen leading to internal bleeding.
- Other likely causes: Smothering, drowning and immersion into hot water.
- Children who die from physical abuse are often abused over time, but a one-time event can cause a death.
- Common "triggers": Caretakers who abuse their children usually cite crying, bedwetting, fussy eating and disobedience as the reason they lost their patience.
- Young children are most vulnerable: children under 6 years of age account for four-fifths of all maltreatment deaths; infants account for roughly half of these deaths.
- Fathers and mothers' boyfriends are the most common perpetrators of abuse fatalities.
- Mothers are more often at fault in neglect deaths.
- Fatal abuse is often interrelated with poverty, domestic violence and substance abuse.
- The majority of children and their perpetrators had no prior contact with CPS at the time of the death.

Records Needed at Review

- Medical examiner reports
- Death certificates
- Scene investigation reports and photos
- Interviews with family members
- Names, ages and sex of other children in home
- Child Care Licensing investigative reports
- EMS run reports
- Emergency Department records
- Prior CPS history on child, caregivers and person supervising child at time of death
- Child's health history
- Criminal background checks on person supervising child at time of death
- Home visit records from public health or other services
- Any information on prior deaths of children in family
- Any pertinent out-of-state history

Risk Factors

- Infant crying behavior
- Younger children, especially under the age of five.
- Parents or caregivers who are under the age of 30.
- Low income, single-parent families with major stresses.
- Children left with male caregivers who lack emotional attachment to the child.

- Children with emotional and health problems.
- Lack of suitable childcare.
- Substance abuse among caregivers.
- Parents and caregivers with unrealistic expectations of child development and behavior.

Services

- Involving CPS in assessing the removal of remaining children from the home.
- Bereavement services for parents and family members.
- Burial payments for families needing financial assistance.
- Critical Incident Stress Debriefing for persons responding to scene.

Improvements to Agency Practices

- Are investigations coordinated with medical examiners, law enforcement and CPS?
- Are comprehensive scene investigations conducted at place of death, as soon as possible, including scene reenactments and interviews?
- Are referrals made for bereavement services?
- Are high-risk families with newborns and young infants provided prevention services?
- Did mandatory reporters comply with requirements of child protection laws?
- Were prior inflicted injuries identified and reported?
- Did CPS conduct a full investigation and make appropriate referrals and recommendations?

Effective Prevention Actions

- Training emergency room staff to improve their ability to identify child abuse injuries and improve reporting.
- Providing an advisory on mandated reporting to human service agencies, hospitals and physicians.
- Case management, referral and follow-up of infants sent home with serious health or developmental problems.
- Media campaigns to enlighten and inform the general public on known fatality-producing behaviors, i.e., violently shaking a child out of frustration.
- Crisis Nurseries for parents "on the edge" to leave their children for a specified period of time, at no charge.
- Intensive home visiting services to parents.
- Education programs for parents

For More Information

- National Clearinghouse on Child Abuse and Neglect <http://nccanch.acf.hhs.gov/>
- Prevent Child Abuse America <http://www.preventchildabuse.org>
- American Professional Society on the Abuse of Children <http://apsac.fmhi.usf.edu/>

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Considerations in Review of Motor Vehicle Traffic Deaths

Facts

- Motor vehicle deaths include those involving cars, trucks, SUVs, bicycles, trains, snowmobiles, motorcycles, buses, tractors and all-terrain vehicles.
- Victims include drivers, passengers and pedestrians.
- Young people ages 15-20 make up 6.7% of the total driving population in this country, but are involved in 14% of all fatal crashes. Most of these crashes involve recklessness, speeding or inattention.
- Sixteen-year-olds driving with one teen passenger are 39% more likely to get killed than those driving alone, increasing to 86% with two and 182% with three or more teen passengers.
- Studies show that more than 80% of all infant and toddler car safety seats are not properly installed or used.
- Children weighing 40-80 pounds (ages 4-9) should be seated in booster seats, but most are not.
- Helmets can prevent the majority of bicycle-related head injuries.

Records Needed at Review

- Medical examiner reports
- Death certificates
- Scene investigation reports
- Interviews with witnesses
- EMS run reports
- State Uniform Crash Reports with road and weather conditions at time of crash
- Emergency Department records
- Blood alcohol and/or drug concentrations on driver
- Previous violations such as drunk driving or speeding
- Any out-of-state history
- Graduated Licensing violations among teens
- Information on other crashes at the same location

Risk Factors

Children Under 16

- Riding in the front seat of vehicles.
- Not using or improper use of child seats and seatbelts.
- Not wearing adequate safety equipment, especially bicycle helmets.
- Unskilled, underweight, immature, drivers of recreational vehicles, such as ATVs and snowmobiles.
- Riding in the bed of a pickup truck.
- Young children playing in and around vehicles
- Young children crossing streets without supervision.

Children Over 16

- Exceeding safe speeds for driving conditions.
- Riding as a passenger in a vehicle with a new driver.

- Riding in a vehicle with three or more teen passengers.
- Driving/riding between 12 midnight and 6:00 a.m.
- Not using safety belts appropriately.
- Alcohol use by drivers or passengers.
- Riding in the bed of a pickup truck.
- Unskilled, underweight, immature, drivers of recreational vehicles, such as ATVs and snowmobiles.

Services

- Bereavement and crisis services for family and friends.
- Critical Incident Stress Debriefing for persons responding to scene.

Improvements to Agency Practices

- Are investigations coordinated with medical examiners, local and state law enforcement?
- Are comprehensive scene investigations conducted, including type of restraint needed and used?
- Was the primary cause of the incident determined?

Effective Prevention Actions

Children Under 16

- Lower Anchors and Tethers for Children (LATCH): USDOT requires all new child safety seats meet stricter head protection standards.
- Legislation linked with public education to increase booster seat usage for children weighing 40 - 80 pounds.
- Child safety seat inspection programs: programs that train auto dealers, law enforcement officers and others to provide on-site safety seat inspection and training.
- Free or low-cost car safety seat distribution.
- Free or reduced-cost helmets to children.
- Discourage riding in the back of truck.
- Re-engineering of roads and improved signage.
- Ban use of ATVs by children under 16.

Children Over 16

- Enforcement of Graduated Licensing Laws
- Driver's Education: Customize local programs to emphasize most common risk factors, e.g., off-road recovery, gravel roads, poor weather conditions.
- Seat Belts: Education to increase adolescent seat belt use
- Re-engineering of roads and improved signage.

For More Information

- National Highway Traffic Safety Administration
www.nhtsa.dot.gov
- National SAFE KIDS Campaign
www.safekids.org

Considerations in Reviewing Deaths due to Suicide

Facts

- Suicide is the second leading cause of death among adolescents, following motor vehicle crash deaths.
- The methods used most often to complete suicide include firearms, hanging and poisoning.
- The risk for suicide is highest among young white males. Adolescent males of all races are four times more likely to commit suicide than females.
- Males die more often in their suicide attempts because they most often use firearms.
- Depression, coupled with stressful precipitating events, is associated with most suicides among young persons. Some of these precipitating events may seem insignificant to adults, but are very serious to vulnerable teens.
- The school setting has been identified as a critical place to recognize warning signs of suicide and to implement primary and secondary prevention activities.
- A suicide can have a huge impact on other youth.
- Youth are vulnerable to media portrayals of suicide.

Records Needed

- Medical examiner reports, including toxicology screens
- Death certificates
- Death scene investigation reports
- Suicide notes, social media feed and posts
- Downloads of decedent's computer
- Interviews with family and friends
- EMS run reports
- Emergency Department records
- Prior CPS history on child, caregivers and person supervising child at time of death
- Child's mental health history, if available
- School records and/or school representative at meeting
- Names, ages and genders of other children in home
- History of prior suicide attempts
- Substance/alcohol abuse history
- Any information on recent significant life events, including trouble with the law or in school
- Information on the means of suicide

Risk Factors

- Depression, mood disorders, mental illness.
- Previous suicide attempt.
- Substance abuse.
- Childhood maltreatment.
- Parental separation or divorce.
- Access to firearms.
- Interpersonal conflicts or losses.
- Previous suicide by a relative or close friend.
- Other stressors such as bullying or issues of sexuality.

Services

- Bereavement services for parents, family, and friends.
- Burial payments for families needing financial assistance.
- Critical Incident Stress Debriefing for persons responding to scene.
- School crisis response teams.

Improvements to Agency Practices

- Are investigations coordinated with medical examiners, law enforcement and Children's Protective Services?
- Are autopsy protocols in place for suicides? Are toxicology screens done routinely?
- Are comprehensive scene investigations conducted as soon as possible, including interviews?
- Are referrals made for bereavement services?
- Are friends of the victims closely monitored for warning signs of suicide in schools by teachers, administrators, janitors, bus drivers, etc?

Effective Prevention Actions

- RESPONSE – school based comprehensive program
- School gatekeeper training to help school staff to identify and refer students at risk and respond to suicide or other crises in the school.
- Community gatekeeper/suicide risk assessment to train community members who interact frequently with teens.
- General suicide education to help youth understand warning signs and supportive resources.
- Screening programs to identify students with problems that could be related to suicide, depression and impulsive or aggressive behaviors.
- Peer support programs to foster positive peer relationships and competency in social skills youth.
- Crisis centers and hotlines.
- Restriction of access to lethal means of suicide, including removal of firearms in homes of high-risk teens.
- Interventions after a suicide for friends and relatives to help prevent or contain suicide clusters and to help adolescents and young adults cope effectively with the feelings of loss that follow a sudden death or suicide.
- Development of assessment tools for evaluating suicide risk for students who are expelled from school or arrested for minor offenses.

For More Information

- Youth Suicide Prevention Program
www.oregon.gov/OHA/ph/ipe/ysp/index.shtml
- Suicide Prevention Resource Center
www.sprc.org

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Considerations in the Review of Teen Homicides

Facts

- In 2000, the *Youth Risk Behavior Surveillance Survey* reported that almost one-fifth of the 10th and 12th graders reported that they had carried a firearm within the previous 30 days for self-defense or to settle disputes.
- When socio-economic status is held constant, differences in homicide rates by race become insignificant.
- Homicides are usually committed by casual acquaintances of the same sex, race and age, using inexpensive, easily acquired handguns.
- Drug dealing and gang involvement are often the cause of disputes leading to homicides.
- The majority of firearm homicides occur in small pockets of large cities.

Records Needed

- Medical examiner report
- Death certificate
- Scene investigation reports
- Police and crime lab reports
- CPS histories on family, child and perpetrators
- Names, ages and genders of other children in home
- Ballistics information on firearms
- Prior crime records in neighborhood
- Juvenile and criminal records of teen and perpetrators
- Interviews with witnesses
- Information from gang squad

Risk Factors

- Easy availability of and access to firearms.
- Youth living in neighborhoods with high rates of poverty, social isolation and family violence.
- Youth active in drug and gang activity.
- Early school failure, delinquency and violence.
- Youth with little or no adult supervision.
- Prior witnessing of violence.

Services to Consider

- Bereavement services.
- Neighborhood-based crisis intervention.
- Witness protection services.

Improvements to Agency Practices

- Are comprehensive investigations conducted on all youth homicides?
- Are crime surveillance efforts targeted to neighborhoods with high rates of teen violence?
- Do schools have policies in place to address threats made to students?
- Are witnesses to violence provided appropriate services?

Effective Prevention Actions

- Intensive, early intervention services for high-risk parents.
- Targeted activities in neighborhoods with high homicide rates, including:
 - Police presence and gun deterrence in hot spots.
 - Involvement of political leaders.
 - Mobilization of neighbors and community members.
 - After-school recreation programs.
 - Neighborhood Watch.
- Interdiction of illegal guns and focused prosecution of gun offenders.
- Dropout prevention programs and alternative education opportunities.
- Mentoring, therapy and bullying prevention support programs.
- Multi-systemic therapy for troubled youth.

For more information

- Johns Hopkins Center for Gun Policy and Research
www.jhsph.edu/gunpolicy/
- Department of Justice
<http://www.usdoj.gov/youthviolence.htm>

Appendix B. Cause of child death by category and ICD-10 code

Causes of child deaths, by category and ICD-10 code

Category	Cause	ICD-10 code
Acquired natural causes (I-XV)	Certain infectious and parasitic diseases	A00–B99
	Neoplasms	C00–D48
	Diseases of the blood and bloodforming organs and certain disorders involving the immune mechanism	D50–D89
	Endocrine, nutritional and metabolic diseases	E00–E88
	Mental and disorders	F00–F99
	Diseases of the nervous system	G00–G98
	Diseases of the eye and adnexa	H00–H57
	Diseases of the ear and mastoid process	H60–H93
	Diseases of the circulatory system	I00–I99
	Diseases of the respiratory system	J00–J98
	Diseases of the digestive system	K00–K92
	Diseases of the skin and subcutaneous tissue	L00–L98
	Diseases of the musculoskeletal system and connective tissue	M00–M99
	Diseases of the genitourinary system	N00–N98
	Pregnancy, childbirth and the puerperium	O00–O99
Perinatal causes (XVI)	Certain conditions originating in the perinatal period	P00–P96
Congenital causes (XVII)	Congenital malformations, deformations and chromosomal abnormalities	Q00–Q99
External/Injury causes (XX)	External/injury causes	V01–Y89
Unexplained or not classified causes (XVIII)	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00–R99

*CFR: case fatality review

Source: Oregon CFR teams

Appendix C. External cause of injury mortality matrix for ICD-10

External cause of injury mortality matrix for ICD-10

Mechanism	Intent/Manner					
	All injury	Unintentional	Suicide	Homicide	Undetermined	Legal intervention/war
All injury	V01-Y36, Y85-Y87, Y89, *U01-*U03	V01-X59, Y85-Y86	X60-X84, Y87.0, *U03	X85-Y09, Y87.1, *U01-*U02	Y10-Y34, Y87.2, Y89.9	Y35-Y36, Y89(.0, .1)
Cut/pierce	W25-W29, W45, X78, X99, Y28, Y35.4	W25-W29, W45	X78	X99	Y28	Y35.4
Fall	W00-W19, X80, Y01, Y30	W00-W19	X80	Y01	Y30	
Fire/ hot object or substance	X00-X19, X76-77, X97-X98, Y26-Y27, Y36.3, *U01.3	X00-X19	X76-X77	X97-X98, *U01.3	Y26-Y27	Y36.3
Firearm	W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0, *U01.4	W32-W34	X72-X74	X93-X95, *U01.4	Y22-Y24	Y35.0
Machinery	W24, W30-W31	W24, W30-W31				
All transport	V01-V99, X82, Y03, Y32, Y36.1, *U01.1	V01-V99	X82	Y03, *U01.1	Y32	Y36.1
Natural / environmental	W42, W43, W53-W64	W42, W43, W53-W64, W92-W99, X20-X39, X51-X57	W92-W99, X20-X39, X51-X57, W92-W99, X20-X39, X51-X57	W92-W99, X20-X39, X51-X57		
Overexertion	X50	X50				
Poisoning	X40-X49, X60-X69, X85-X90, Y10-Y19, Y35.2, *U01(.6-.7)	X40-X49	X60-X69	X85-X90, *U01.6-.7	Y10-Y19	Y35.2
Struck by or against	W20-W22, W50-W52, X79, Y00, Y04, Y29, Y35.3	W20-W22, W50-W52	X79	Y00, Y04	Y29	Y35.3
Suffocation	W75-W84, X70, X91, Y20	W75-W84	X70	X91	Y20	

Mechanism	Intent/Manner					
	All injury	Unintentional	Suicide	Homicide	Undetermined	Legal intervention/war
Other specified, classifiable	W23, W35-W41, W44, W49, W85-W91, Y85, X75, X81, X96, Y02, Y05-Y07, Y25, Y31, Y35(.1,.5), Y36(.0,.2,.4-.8), *U01.0, .2, .5, *U03.0	W23, W35-W41, W44, W49, W85-W91, Y85	X75, X81, *U03.0, *U01.0, .2, .5	X96, Y02, Y05-Y07,	Y25, Y31	Y35(.1, .5) Y36(.0, .2,.4-.8)
Other specified, nec	X58, Y86, X83, Y87.0, Y08, Y87.1, Y33, Y87.2, Y35.6, Y89(.0,.1), *U01.8, *U02	X58, Y86	X83, Y87.0	Y08, Y87.1, *U01.8, *U02	Y33, Y87.2	Y35.6, Y89 (.0, .1)
Unspecified	X59, X84, Y09, Y34, Y89.9, Y35.7, Y36.9, *U01.9, *U03.9	X59	X84, *U03.9	Y09, *U01.9	Y34, Y89.9	Y35.7 Y36.9
Adverse effects	Y40-Y59, Y60-Y84, Y88					
Drugs	Y40-Y59, Y88.0					
Medical care	Y60-Y84, Y88(.1-.3)					

*CFR: case fatality review

Source: Oregon CFR teams

Glossary

Abuse: A pattern of violence occurring in the course of parent-child or care giver-client relationship. A child has been non-accidentally physically or emotionally injured, sexually abused or exploited, or who dies as a result of abuse. Abuse in Oregon is “actual” as well as “threatened harm” to a child (Child Welfare).

Unintentional intent: An unanticipated but often predictable event leading to injury, e.g., in traffic, industry or a domestic setting, or such an event developing in the course of a disease.

Age-specific rate: A rate calculated for a group of defined age range.

Bed sharing: The infant’s sharing a bed with another person (usually the mother).

Cause of death: The primary or basic disease process or injury ending life (ORS 146.003).

Child: An individual from birth through age 17.

Congenital anomalies: Structural defects present at birth and including conditions or health problems that would have required continued medical care if the child had survived.

Crisis: A suicide circumstance in which an acute precipitating event appears to have contributed to the suicide (e.g., the victim was just arrested; the person had a major argument with a boyfriend/girlfriend the night before).

Drowning: A mechanism of death resulting from submersion in water or other liquid.

Falls: A mechanism of death resulting from a fall, push or jump from a high place.

Firearm: Any weapon (including a starter gun) designed to or may readily be converted to expel a projectile by the action of an explosive (e.g., gun powder).

Hispanic: A cultural category that includes Whites, African Americans, and mixed racial populations from Mexico, Central and South America, and the Caribbean Islands.

Homicide: The killing of one person by another.

Injury: Unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical or chemical energy, or from the absence of such essentials as heat or oxygen. The terms injury and trauma are interchangeable.

Karly's law: A law named after a 3-year-old girl who died from abuse after allegations went unchecked. The law mandates that children in Oregon who exhibit suspicious physical injuries in the course of a child abuse investigation must receive medical attention within 48 hours.

Manner of death: The designation of the probable mode of production of the cause of death, including natural, accidental, suicidal, homicidal, legal intervention or undetermined (ORS 146.003).

Motor vehicle: A mechanism of death resulting from a crash of any motorized vehicle.

Neglect: Neglect is negligent treatment or maltreatment of a child that causes actual harm or substantial risk of harm to a child's health, welfare and safety (SCF).

Perinatal conditions: Conditions that have their origin in the perinatal period (20 weeks gestation to 28 days post birth) even though death may occur after 28 days of life. Perinatal conditions include prematurity and birth trauma.

Poisoning: A state of illness caused by the presence of any harmful or toxic substance that has been ingested, inhaled, applied to the skin or resulted from any other form of contact.

Rate: A method to standardize a number so comparisons can be made between different populations. The number of events divided by the population in a specific age group multiplied by 100,000.

Risk factor: A characteristic that has been statistically demonstrated to be associated with (although not necessarily the direct cause of) a particular injury. Risk factors can be used for developing prevention efforts.

SIDS (sudden infant death syndrome): death as characterized by the sudden, unexpected death of an apparently healthy infant. Before a diagnosis of SIDS is made, a death scene investigation, autopsy and medical history should be completed by the medical examiner to rule out other causes.

Suffocation/hanging/strangulation: Mechanisms of injury resulting in airway obstruction in which the victim died from lack of oxygen.

Suicide: A death resulting from the intentional use of force against oneself. A preponderance of evidence should indicate the use of force was intentional.



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