Alaska Maternal-Infant Mortality Review and Child Death Review
Annual Report 2012

Reviews of child deaths 2007-2009

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Special thanks to all of the MIMR-CDR Review Committee members,
who contributed their time and expertise to the case reviews.

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1. Executive Summary

This report summarizes findings of the Alaska Maternal Infant Mortality Review and Child Death Review (MIMR-CDR), based on committee reviews of 99% of all deaths of children ages 1-14 years during 2007-2009. During these three years, the average mortality rate for this age group in Alaska was 24.5 per 100,000 population. Child mortality rates were highest in the Southwest region and lowest in the Anchorage/Matanuska-Susitna region, higher among Alaska Native children compared to non-Native children, and lower among children ages 5-9 years compared to older and younger age groups.

Allowing for multiple causes of death, the most common causes noted by the committee were medical conditions (26%), asphyxiation (21%), motor vehicle collisions (18%), and infections (18%). Drug or alcohol use either directly or indirectly contributed to 13%.

Many Child Death Review committees find it helpful to present summary information on causes of death categorized by the manner of death, due to differences in preventability and types of prevention messages. This structure is used in Section 6 of this report. During case reviews, the MIMR-CDR committee classified deaths into the following categories of manner of death:

- Unintentional injury
- Natural – related to a chronic, acute, or congenital medical condition or process
- Maltreatment – injury caused by the actions or inaction of another person, with or without the intention to cause death, including homicide, abuse and neglect
- Suicide – intentional self injury
- Could not be determined – the evidence was not sufficient to positively determine manner of death

The most common manner of death by committee consensus determination was unintentional injury (50%), followed by natural (25%), maltreatment (9%), and suicide (4%). The committee could not determine a manner of death for 13% of deaths reviewed.

The review committee determined that 73% of all child deaths were definitely, probably or possibly preventable, including 100% of deaths with maltreatment and suicide as the manner of death, 90% of unintentional injury deaths, and 27% of natural deaths. For each death reviewed, the committee noted actions or behaviors that may have prevented specific deaths and identified general recommendations for future actions, policies, or programs to keep children safe. These general recommendations are in Section 7 of this report.

2. History and objectives of MIMR-CDR

The Alaska MIMR was established by the Commissioner of the Department of Health and Social Services in 1989 and initially reviewed selected fetal and infant (<1 year of age) deaths. After an initial pilot period, the program started comprehensive reviews of all infant deaths during 1992. Comprehensive review of maternal deaths (deaths from any cause within one year of pregnancy) began in 1999. Case reviews of deaths of children ages 1 to 18 years (the Child Death Review) began with deaths during 2004. Both MIMR and CDR are modeled on national evidence-based programs.

MIMR-CDR conducts ongoing and systematic collection, review, analysis, and interpretation of information surrounding maternal, infant and child deaths. The ultimate goal of the program is to develop recommendations for public health interventions, changes in legislation, policy and practices to

prevent deaths and reduce mortality in infants, children and mothers. MIMR-CDR has the following objectives:

- Collect accurate and complete data on medical, social, behavioral and environmental causes of and contributors to death.
- Identify disparities, risk factors, and trends in deaths.
- Identify preventable causes of and contributors to death (including barriers and system issues).
- Educate members of the review committee and improve quality of care, delivery of services and communication among agencies and providers.
- Increase public awareness by presenting recommendations and findings to various state, local, and community partners.

MIMR-CDR operates under Alaska Statute Section 18.15.360b regarding acquisition of data for conditions of public health importance. Identifiable information provided to MIMR-CDR is protected under 18.15.355-18.15.395.

At the time this Annual Report was being prepared, the MIMR-CDR Review committee had completed reviews of 99% of child deaths ages 1-14 years occurring during 2007-2009. The MIMR-CDR committee generally completes retrospective reviews of deaths 2-3 years after they occurred. See *Appendix A* for a table comparing numbers of deaths reviewed as of June 2012 and number reported by the Alaska Bureau of Vital Statistics, by year.

3. Methods: review process, criteria for review, and sources of information

The MIMR-CDR Committee is a multidisciplinary group of professionals and child advocates who possess knowledge and experience relating to infant and child health and welfare. Members have expertise in a variety of areas relevant to infant and child health including neonatology and perinatology, family practice, obstetrics/gynecology, pediatrics, pathology and social work. While State of Alaska employees may assist with case reviews and provide relevant information on services provided by the State, voting on recommendations is completed only by non-State employees. See *Appendix B* for a list of current committee members.

The MIMR-CDR program maintains case files for all deaths in Alaska of children ages 0-17 years, both residents and non-residents. The committee currently only reviews of case files for children ages 0-14 years, but plans to review deaths of older children at a future date.

<u>Sources of information</u>
MIMR-CDR attempts to obtain copies of the following types of original records and information. It may take up to two years for the MIMR-CDR Manager to gather all of the associated reports and documents and create a complete case file, depending on the cause and location of the death.

- ***Death Certificate.*** Death certificates are required to open a new case in the MIMR-CDR files. Death certificates provide information concerning the death, including date and place of death, and the cause and manner of death as determined at the time of death or autopsy.

- ***Birth Certificate.*** The full birth certificate record provides clinical and demographic information about the mother, child, and certain pregnancy risk factors. Birth certificates also direct the

MIMR-CDR program manager to other sources of information about the child, such as place of birth and physicians and providers involved at the time of birth. Birth certificates are always requested for infant deaths and are requested for child deaths on a case-by-case basis.

- ***Medical Records.*** These include all relevant hospital, private physician, village clinic and health aide records. Records requested for infant deaths are: maternal prenatal, admission, and labor and delivery; and child delivery (including intensive care unit), additional hospitalizations, emergency room, and outpatient visits (including well child check-ups). Medical records for child deaths are requested based on the circumstances surrounding the death.

- ***Autopsy Reports.*** Other specialized reports conducted in conjunction with an autopsy, such as pathology reports on tissues and cultures, are also requested separately from the autopsy.

- ***Investigative Reports.*** First responder reports and Police/State Trooper/Village Public Safety Officer investigative reports are requested for all out-of-hospital deaths.

- ***Medicaid***. The state Medicaid database is searched for relevant ICD-9 billing codes for health care visits or medications for the deceased child.

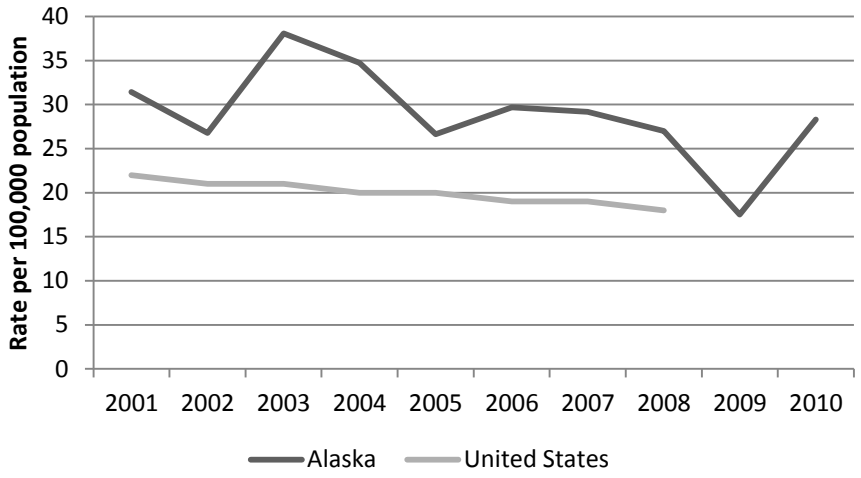
- ***Office of Children's Services*.** Information on reports to OCS and subsequent determinations is collected for the deceased child and siblings.

- ***Other potential data sources when appropriate and/or available***: Child Fatality Review Team reports, MIMR-CDR files of related children, court records, Alaska Pregnancy Risk Assessment Monitoring System and Childhood Understanding Behaviors Survey, newborn screening reports, genetic clinic reports, social network searches, news articles, obituaries, and any other records or reports which may add value to the review process are also included.

4. Trends and demographics

We present here trends in child mortality rates for 2001 through 2010, the most recently available year for vital records and population data, so that readers can visually compare mortality rates for the three years that are the focus of this report, 2007-2009, with years before and after. The data source for these trends is the Alaska Bureau of Vital Statistics for death certificate information and the Alaska Department of Labor and Workforce Development Vintage 2010 estimates for the population denominators. Due to the small annual number of child deaths in Alaska (range 25-55 deaths per year during 2001-2010), annual rates fluctuate and sub-population rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

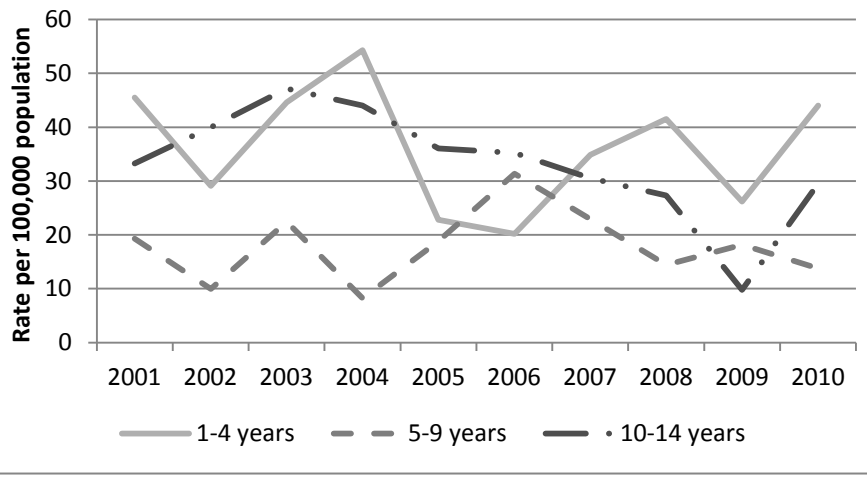
Figure 1. Trends in mortality rates for children ages 1-14 years, Alaska and United States; 2001-2010



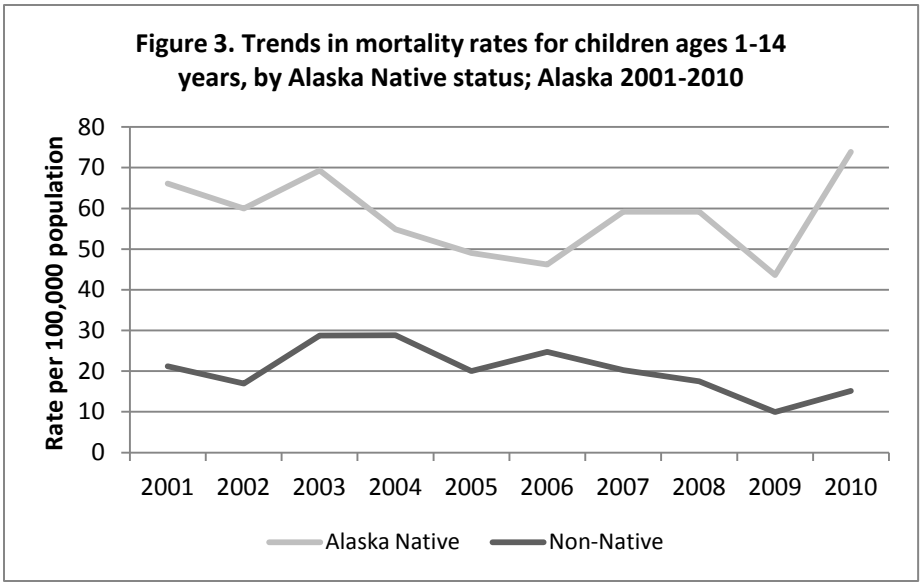
The Alaska mortality rate for children ages 1-14 years has been consistently higher than the rate for the United States (**Figure 1**). During 2007-2009, the average mortality rate of children ages 1-14 in Alaska was 24.5 per 100,000 population. The most recently available US rate, in 2008, was 18 per 100,000 children.

Data source for US rate: online Kids Count Data Center (http://datacenter.kidscount.org/)

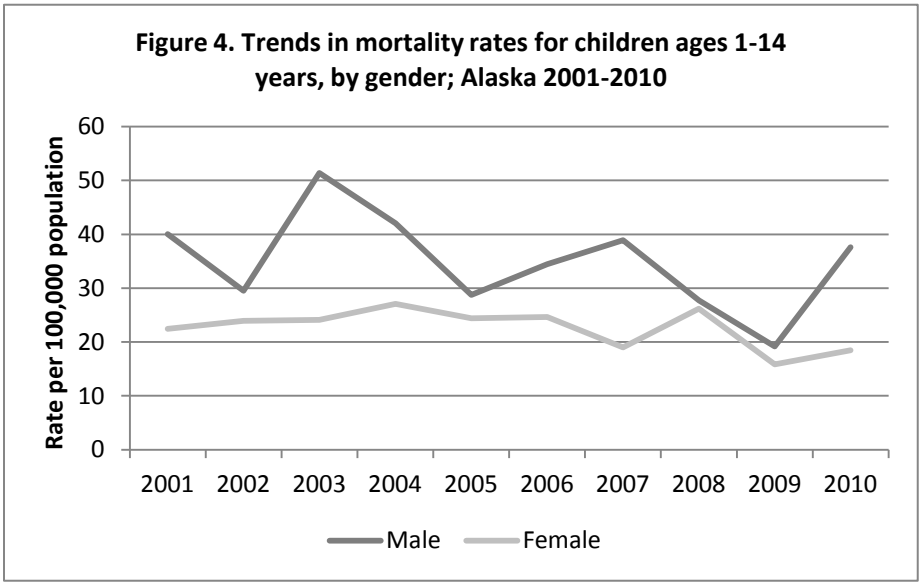
Figure 2. Trends in child mortality rates, by age group; Alaska, 2001-2010



During 2007-2009, children ages 5-9 years had a lower mortality rate (average 18.5 per 100,000 population) compared to children ages 1-4 years (34.1/100,000) and children ages 10-14 years (22.6/100,000) (**Figure 2**).



Alaska Native children had an average mortality rate more than three times the rate for non-Native children during 2007-2009 (54.0 per 100,000 population and 15.9 per 100,000 respectively) (**Figure 3**). Although rates were higher for Alaska Native children during all single years examined, the difference was not always statistically significant.

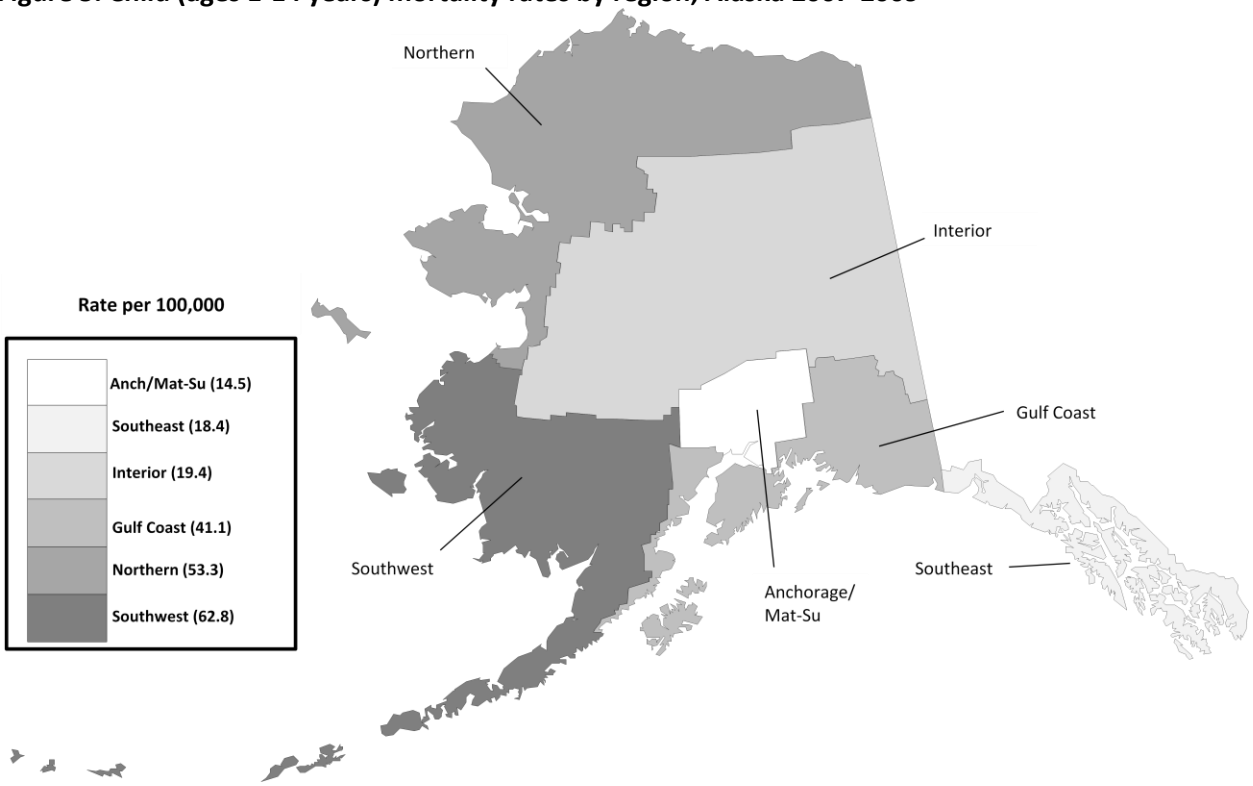


The average mortality rates for male and female children were statistically similar during 2007-2009 (28.6 per 100,000 population for males and 20.3 per 100,000 for females) (**Figure 4**).

Almost one-third (32%) of children ages 1-14 years who died during 2007-2009 resided in the Anchorage or Mat-Su region. The remainder lived in the Southwest (17%), Gulf Coast (17%), Interior (13%), Northern (10%), and Southeast (7%) regions, while 5% were residents of another state. Child mortality rates were highest for the Southwest (62.8 per 100,000 population) and Northern (53.3 per 100,000) regions and lowest for Southeast (18.4 per 100,000) and Anchorage/Mat-Su (14.5 per 100,000) regions (**Figure 5**).

Residence was determined from the child's region of residence as indicated on the death certificate. The region of residence does not necessarily indicate the region where the death occurred. The six regions defined by the Alaska Department of Labor were used in this analysis.

Figure 5. Child (ages 1-14 years) mortality rates by region; Alaska 2007-2009

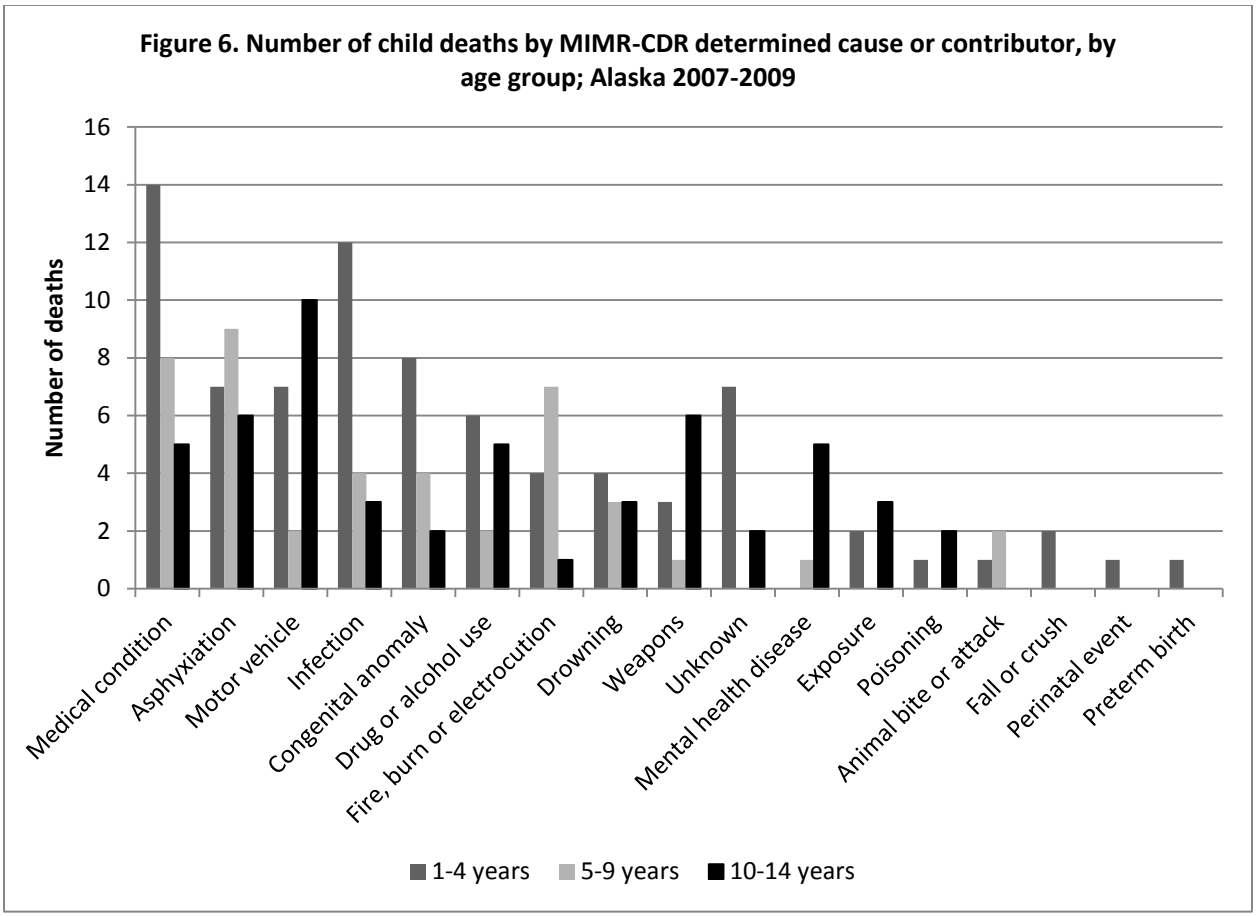


5. Review Findings: overview of causes and contributors to death

During 2007-2009, there were 104 deaths among children ages 1-14 years. Among these, 103 (99%) have been reviewed by the MIMR-CDR committee. The one death that was not reviewed at the time of this report was related to accidental suffocation.

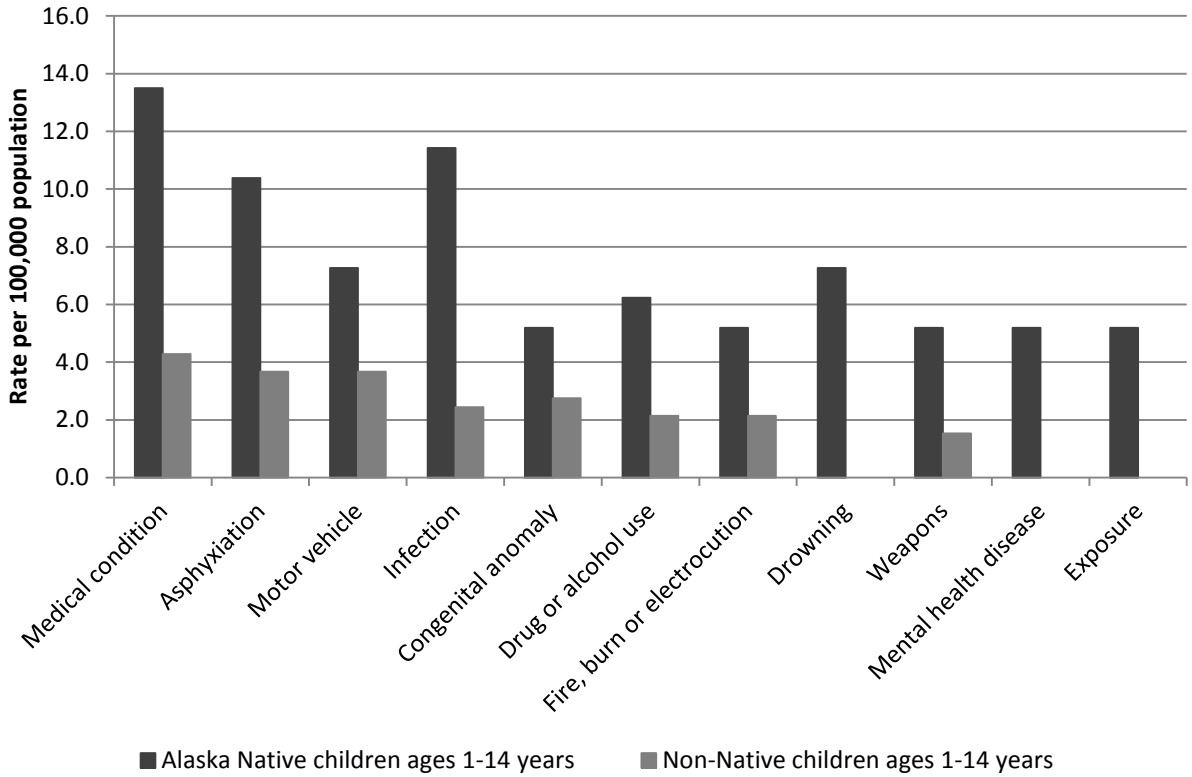
On the case review form, the committee assigns contributing causes (both primary and underlying) to each death, identifying multiple causes per death as appropriate. The predefined causes on the form were modified from the National Center for Child Death Review CDR Case Reporting System. Some causes are broad categories, such as medical conditions, due to the rarity of most individual diseases, while others are more specific, primarily for external causes such as motor vehicle collisions. (See *Appendix C* for the Case Review Form, question 6.) Among the 103 cases reviewed, allowing for multiple causes, the most common causes of death were medical conditions (26% of deaths; mortality rate 6.4 per 100,000 population), asphyxiation (21%; 5.2 per 100,000 population), motor vehicle collisions (18%; 4.5 per 100,000), and infections (18%; 4.5 per 100,000). **Figure 6** includes all of the available cause of death and contributing factor categories that were assigned by the review committee for child deaths during 2007-2009. The distribution of child age groups varied within categories; for some causes, such as medical conditions and infections, more deaths were among children in the youngest age group, while other causes, such as motor vehicle incidents and use of weapons, were more common among older children.

Figure 6. Number of child deaths by MIMR-CDR determined cause or contributor, by age group; Alaska 2007-2009



We calculated mortality rates by Alaska Native status for cause and contributor categories with more than 5 deaths. Among all categories meeting this criterion, Alaska Native children had higher mortality rates compared to non-Native children (**Figure 7**). Among Alaska Native children, the highest mortality rates were due to medical conditions (13.5 per 100,000), infections (11.4 per 100,000), and asphyxiation (10.4 per 100,000). Among non-Native children, the highest mortality rates were due to medical conditions (4.3 per 100,000), asphyxiation (3.7 per 100,000), and motor vehicle incidents (3.7 per 100,000). During the three-year study period, less than five child deaths occurred due to poisoning, animal bites or attacks, a fall or crush, perinatal events, and preterm birth. In addition to those five categories, non-Native children had less than 5 deaths due to drowning, mental health disease, and exposure.

Figure 7. Child mortality rates for cause and contributor categories, by Alaska Native status; Alaska 2007-2009

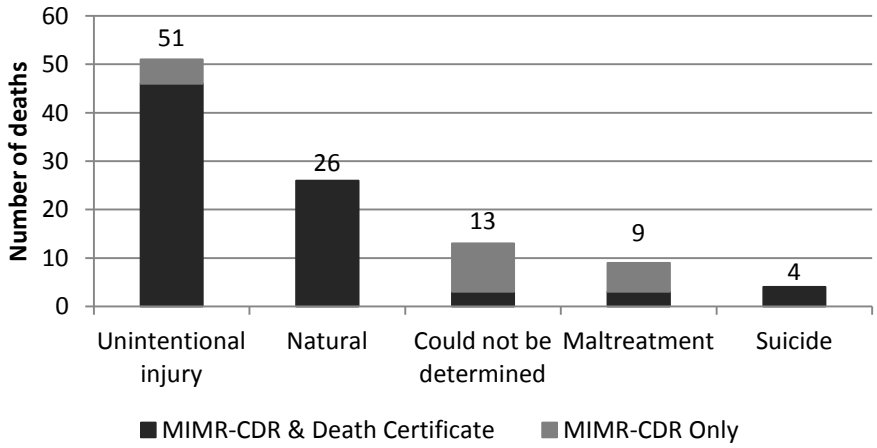


6. Review findings by manner of death

During case reviews, the MIMR-CDR committee classified deaths into the following categories of manner of death:

- Maltreatment – harm caused by the actions or inaction of another person, with or without the intention to cause death, including homicide, abuse and neglect
- Suicide – intentional self harm
- Unintentional injury
- Natural – related to a chronic, acute, or congenital medical condition or process
- Could not be determined – evidence was not sufficient to positively determine manner of death

Figure 8. Manner of death for child deaths (ages 1-14 years), by source of determination; Alaska 2007-2009



The most common manner of death assigned by the committee for children ages 1-14 years was unintentional injury (51 cases, or 50%) (**Figure 8**). This was followed by natural (25%), maltreatment (9%), and suicide (4%). The committee could not determine a manner of death for 13% of reviewed deaths.

Manner of death is typically determined at the time of death or autopsy and is indicated on the death certificate. The options for manner of death on the Alaska death certificate are “homicide”, “suicide”, “accident”, “natural”, and “could not be determined”. Upon reviewing all of the available records for individual cases, some which included information that may not have been available at the time of death, the committee did not always agree with the death certificate manner of death. The committee only agreed that the manner was natural for 26 of 37 deaths (70%) with natural on the death certificate; for two cases with a natural manner on the death certificate the committee believed the manner was unintentional injury, for two cases the committee believed the manner was maltreatment, and for seven others the committee was uncertain and indicated that they could not determine a manner of death. There were no cases for which the committee found the manner to be natural but the death certificate indicated a different manner.

The committee’s maltreatment manner of death category had a broader definition than the death certificate use of ”homicide”; specifically, the committee was not limited to assigning this particular manner to deaths for which there existed sufficient evidence for the case to be prosecuted in court. The committee agreed for all three cases that were assigned homicide as the manner of death on the death certificate; however they also included in their maltreatment category four cases with an accidental manner of death on the death certificate and two cases with a natural cause of death on the death certificate.

a. Unintentional injury

Among the 51 child deaths due to unintentional injury, the most common causes of the injury were motor vehicle crash (n=18, 35%), fire or burn (n=10, 20%), and drowning (n=8, 16%). All 10 deaths in a fire incident were also associated with asphyxia. The committee found that exposure was the cause of five deaths, including three of those which were also associated with a drowning. Additional causes of unintentional injury death included gunshot wounds (4), animal bites or attacks (3), drug overdose (2), asphyxiation (2), head injury from a fall (1), and allergic reaction (1).

The committee believed that 39 (76%) of the deaths related to unintentional injury were preventable, four were probably preventable, three were possibly preventable, and five had unknown preventability. Intentional abuse by a caregiver contributed to two deaths, intentional neglect by a caregiver contributed to three, and unintentional negligence by a caregiver contributed to 20 and probably contributed to three. Types of negligence noted by the committee included inappropriate level of adult supervision, lack of working smoke detectors, and unsafe behaviors in a vehicle.

Substance use by the child caused or contributed to four deaths (two associated with exposure not related to a drowning, one motor vehicle crash, and one drug overdose). Substance use by someone else contributed to at least two deaths (one motor vehicle crash and one drug overdose) and possibly or probably contributed to six additional deaths (three motor vehicle crashes, two due to a fire, and one due to exposure).

Among the 18 motor vehicle collisions, three involved airplanes, and one each involved snow machines, all terrain vehicles, and motor bikes. In one additional case the child was riding a bicycle that was hit by an ATV. Among the remaining 11 deaths involving a car or truck collision, four children were pedestrians hit by a vehicle.

Contributing factors

- Helmet information was known for two of the four motorized sports vehicle crashes. In one the child was not wearing a helmet, and in the other the child had a helmet, but it came off in the crash and may not have been worn properly.
- Negligence by a caretaker contributed to five of the deaths. Types of negligence identified by the committee included substance use, lack of proper child restraints, improper supervision, and unsafe parking.
- 14 of the deaths could have been prevented or were potentially preventable; this was unknown for the remaining four. Things that may have prevented the deaths included reduced speed, especially in poor road conditions (6 deaths), proper use of car seats and protective gear (5 deaths), driver alertness or awareness of weather patterns (3 deaths), and side air bags (2 deaths).

The 10 deaths of children due to fires occurred in seven fire incidents. Three fires occurred in trailer or mobile homes, three were in single family homes, and one was an apartment. The ignition source of the fire was a heating stove, a gas stove, matches, and cigarettes (one each), and the source was unknown for the remaining three incidents. The presence of a smoke detector was known for five of the seven incidents; only one of these had a smoke detector that was properly functioning. Things that may have prevented the deaths (in addition to a working smoke detector) included having and practicing a family fire escape plan, clear escape routes from homes, proper use of heating equipment, and more effective interventions with children who are known fire starters.

All of the 8 drowning deaths occurred in open water, such as rivers, lagoons, lakes, and the ocean, and all were considered preventable. All but one occurred in summer months (July-September).

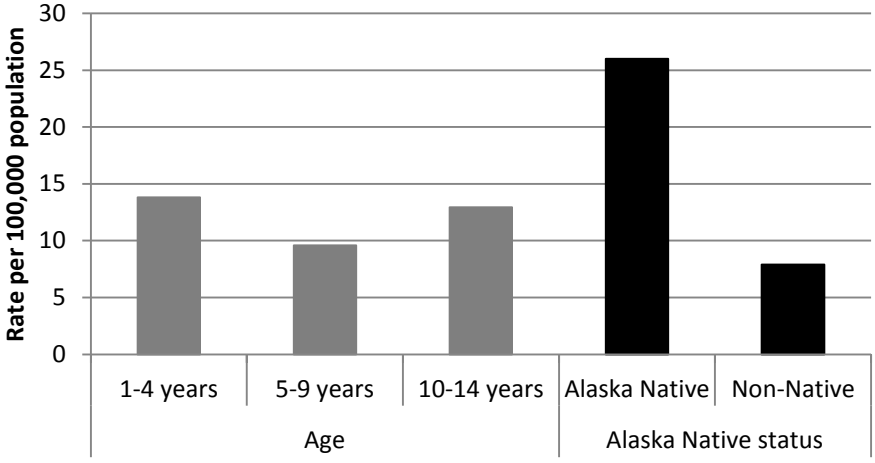
Contributing factors

- Water temperature contributed to seven deaths.
- Inappropriate supervision was noted by the review committee in six deaths.
- The child's inability to swim contributed to five deaths.
- Lack of a personal flotation device contributed to four deaths.
- Strong current contributed to four deaths.

Demographics

Twenty-seven percent of children with an unintentional injury manner of death were residents of Anchorage/Mat-Su. Others were residents of the Gulf Coast (22%), Southwest (20%), Northern (14%), Interior (10%), and Southeast (2%) regions, while 6% were residents of another state. The Northern and Southwest regions had the highest unintentional injury mortality rates (37.3 and 34.9 deaths per 100,000 children, respectively). Unintentional injury mortality rates for the Gulf Coast, Interior, and Anchorage/Mat-Su regions were 25.1, 7.5, and 6.2 deaths per 100,000, respectively. A rate was not calculated for the Southeast region due to less than five unintentional injury deaths occurring in this region during 2007-2009.

Figure 9. Child mortality rates for unintentional injury manner of death, by age group and Alaska Native status; Alaska 2007-2009



By age group, mortality rates associated with unintentional injury were lowest for children ages 5-9 years (**Figure 9**). The mortality rate for Alaska Native children was three times higher than the rate for non-Native children (26.0 vs. 7.9 deaths per 100,000 population).

b. Natural

During 2007-2009, the committee identified 26 child deaths with a natural manner of death, all of which were related to a disease process which directly caused or indirectly contributed to the death. Many of these deaths had multiple contributing medical issues. Fourteen deaths were associated with infections, 14 were associated with congenital anomalies, and 13 had a medical condition that contributed to the death. Congenital anomalies were mostly related to either cardiac, chromosomal, and nervous system abnormalities, and included complex congenital heart disease; brain malformation related to intrauterine drug exposure; congenital anomalies secondary to chromosome 8 abnormalities; Miller-Dieker lissencephaly; tracheoesophageal fistula and esophogeal atresia; hydrocephalus; microcephaly and global developmental delay; down syndrome with left and right sided cardiac

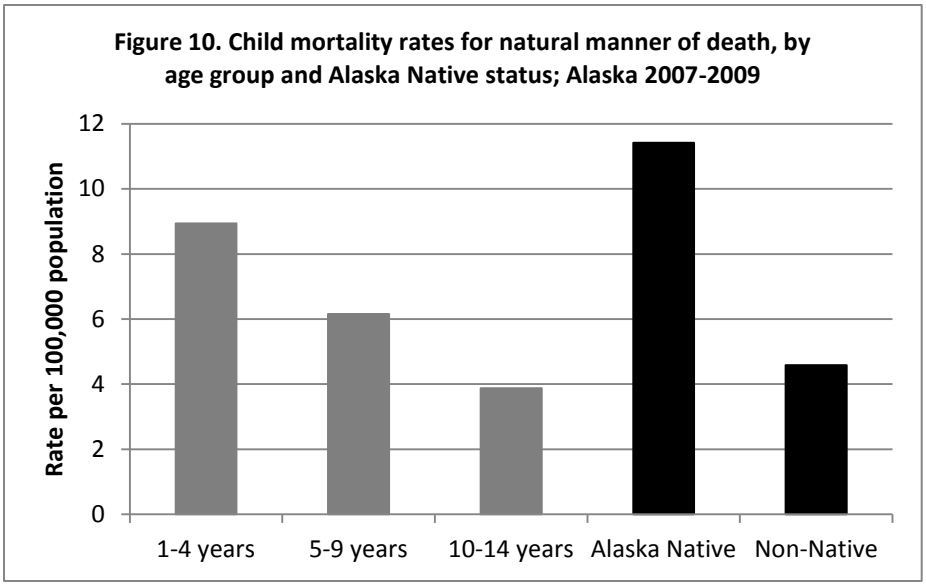
hypertrophy; Trisomy 18; unknown neurodegenerative disorder; and panhypopituitarism. Medical conditions noted as contributing to deaths included cerebral palsy (2 cases), metastatic brain cancer (2 cases), acute T-cell lymphoma, juvenile acute myelogenous leukemia, Batten's disease, Pearson's Syndrome, muscular dystrophy, diabetes insipidus, and seizure disorder (2 cases). Infections were primarily in combination with each other or other medical conditions, and included Group A strep pneumonia, influenza A (H1N1), cytomegalovirus (3 cases), vancomycin-resistant staph sepsis, acute bronchopneumonia from a staph infection, and unspecified sepsis syndromes.

Among the 26 deaths, the committee found that almost all (n=21) were receiving adequate health care for the medical condition, and death was expected or possibly expected in 24 deaths. The committee identified only two deaths (8%) that were definitely or probably preventable and five (19%) that were possibly preventable. Things that might have helped prevent these deaths included no maternal prenatal drug use, earlier diagnosis of lymphoma, closer monitoring of the child's health condition and improved continuity of care, appropriate antibiotics at onset of illness, tertiary care, and vaccination.

Demographics

Forty-two percent of children with a natural manner of death were residents of Anchorage/Mat-Su. The remainder were residents of the Interior (27%), Gulf Coast (15%), Southwest (8%), Northern (4%), and Southeast (4%) regions. The mortality rate associated with natural deaths for residents of the Interior and Anchorage/Mat-Su regions were 10.4 and 4.8 per 100,000 population, respectively. Rates were not calculated for the remaining regions due to small numbers.

Figure 10. Child mortality rates for natural manner of death, by age group and Alaska Native status; Alaska 2007-2009



By age group, mortality rates for natural deaths were highest for children ages 1-4 years and lowest for children ages 10-14 (**Figure 10**). The mortality rate for Alaska Native children was twice the rate for non-Native children (11.4 vs. 4.6 per 100,000 population).

c. Maltreatment

The committee believed that all nine of the deaths with a maltreatment manner of death were preventable or probably preventable. Causes and contributing factors to these deaths included:

- Co-sleeping with an impaired caregiver combined with possible medical conditions of the child;
- Drowning in a motor vehicle crash associated with polysubstance use by the driver;
- Asphyxia and smoke inhalation from a fire associated with lack of appropriate adult supervision;
- Infection and dehydration associated with neglect by a caregiver;

- Developmental delay and failure to thrive;
- Gunshot wound associated with impaired caregivers and an unsecured loaded gun;
- Trauma due to physical abuse by a caregiver.

Question 9 on the Consensus form (*Appendix C)* asks the committee to identify whether abuse, intentional neglect, or gross negligence by a caregiver caused or contributed to the child's death. The committee defined "abuse" as deliberate and intentional words or overt actions that result in harm to a child; "neglect" included the intentional failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm; and "negligence" included the unintentional failure to exercise reasonable care that would be expected of most people in a similar situation. Among the deaths for which the committee indicated the manner of death was maltreatment, they found that abuse caused or contributed to three, neglect contributed to four, and negligence contributed to eight.

Demographics

All but one child with a maltreatment manner of death were non-Alaska Native children (89%). Six of the nine children were ages 1-4 years. No region of the state had five or more deaths with a maltreatment manner of death.

d. Suicide

Four deaths had a manner of death of suicide. The ages of these children ranged from 13 to 14 years. All of the deaths due to suicide were preventable or possibly preventable. Contributing factors noted by the committee included:

- Substance use and depression;
- Obesity;
- Recent bullying;
- Possible fetal alcohol spectrum disorder of the child;
- Missed opportunities by the Office of Children's Services to intervene following reports earlier in the child's life.

e. Manner could not be determined

The committee could not determine a manner of death for 13 deaths. The manner of death identifies whether the death was intentionally caused by another person, self harm by the child, unintentional injury, or a medical condition. In most of these 13 deaths the committee felt they did not have enough information to distinguish between two possible manners of death.

For nine of the 13 deaths, the committee questioned the potential role of abuse or neglect in the causal chain leading to the death. Five of these nine had a medical condition, but the committee found evidence of possible trauma or neglect that may have also been a contributing factor. The four other deaths with an unclear contribution of abuse were deaths due to injuries with an unknown intent. Based on the information available for these deaths, the committee could not determine the role of intentional abuse vs. suicide or intentional abuse vs. unintentional injury. For one additional injury death the committee could not determine whether the manner was suicide or unintentional injury. Finally, the remaining three deaths with undetermined manner had a general lack of information about the death at the time of review. All three children had a chronic medical condition, but the committee

did not feel the information was sufficient about the condition to indicate it could have been the primary or contributing cause of death.

An autopsy was not done for six of the 13 deaths for which the committee could not determine a manner of death. For all six, the committee thought that an autopsy would have been helpful in determining the cause or manner of death.

The committee believed that three of the deaths with an unknown manner were preventable, while six were probably or possibly preventable.

Demographics

Sixty-two percent of the children with an unknown manner of death were ages 1-4 years, 15% were ages 5-9, and 23% were children ages 10-14. Seventy-seven percent were Alaska Native children. These children were residents of every region of the state, including Anchorage/Mat-Su (31%), Southeast (23%), Southwest (15%), and 8% from each of the remaining three regions, as well as one child from out of state.

7. General recommendations

For each death reviewed, the committee noted actions or behaviors that may have prevented specific deaths and identified general recommendations for actions, policies, or programs to keep Alaskan children safe. These will be used to identify priorities for future targeted recommendations.

For parents and caretakers

- Teach children about outlets for anger management and behavior modification.
- Ensure homes have working smoke detectors and clear escape routes in case of fire.
- Have a fire escape plan and discuss alternate escape routes as a family. Include the whole community (i.e. health aides, school programs) in fire safety education in rural or small communities.
- Discuss gun safety with children and practice safe storage of guns and ammunition in the house.
- Educate children about safety around large animals.
- Do not use drugs prenatally.

For state and local leaders

- Expand the ability of the Office of Children's Services to require psychological counseling and follow-up.
- Require autopsies or visual inspection for all out-of-hospital deaths of children.
- Implement ordinances for car seats or child restraints in taxies throughout the state.
- Enforce existing laws or pass regulations requiring working smoke detectors and carbon monoxide monitors in all homes.
- Fund programs to distribute and install smoke detectors around the state.
- Create or improve interventions for children who are known fire starters.
- Improve enforcement of underage drinking and speed limit laws.
- Improve access to mental health care.
- Increase immunization coverage.
- Provide palliative pediatric hospice care.
- Continue expanding the Kids Don't Float program to increase access to PFD's in remote areas.

APPENDIX A

Number of child deaths (ages 1-14) per year

	2004	2005	2006	2007	2008	2009	2010
Reported by Bureau of Vital Statistics	50	38	42	41	38	25	41
Reviewed by MIMR-CDR Committee as of June 2012	50	37	42	41	38	24	23

APPENDIX B

Current MIMR-CDR committee members as of June 2012

Name	Specialty/Organization
Mike Acarregui, MD, MBA	Executive Director, The Children's Hospital at Providence
Tina Anliker, MPH, RNC, CDR, USPHS	Clinical Coordinator, Nutaqsiivik program, Southcentral Foundation
Cathy Baldwin-Johnson, MD	Family Physician and Medical Director, Alaska CARES
Dani Bowman, MD, PhD	Associate Director Pediatric Critical Care, Alaska Native Medical Center
BJ Coopes, MD	Medical Director, PICU and Inpatient Pediatric Services, Children's Hospital at Providence
Jessica Craig, MPH	Epidemiologist, Alaska Native Tribal Health Consortium, Alaska Native Epidemiology Center
Karla Ebert, RN, LCDR, USPHS	Improvement Advisor, Southcentral Foundation
Martin Grasmeder, MD	Pediatrics and Medical Director, SouthEast Alaska Regional Health Consortium
Georgia Heiberger, EdD, PNP	Assistant Professor of Nursing, University of Alaska Anchorage
Matt Hirschfeld, MD, PhD	Medical Director, Pediatrics, Alaska Native Medical Center
Carol Klamser, FNP, DNP	Kachemak Bay Medical Clinic and Seldovia Village Tribal Health Center
Susan Lemagie, MD	Obstetrics-Gynecology, Valley Women's Health Care
Kelly Murphy, RN, LCDR, USPHS	Southcentral Foundation
Neil Murphy, MD	Obstetrics-Gynecology, Alaska Native Medical Center
Diane Payne	Children's Justice Specialist and Alaska Native community liaison
Ellen Provost, DO, MPH	Director, Alaska Native Tribal Health Consortium, Alaska Native Epidemiology Center
Nigel Wappett, MD	Obstetrics-Gynecology, Tanana Chiefs Conference
Paul Zimmer, MD	Staff Physician, Providence Kodiak Island Medical Center

Case Number:_____ **Appendix C** Date of Review:___/_____/_____

MIMR-CDR Committee Consensus Form

Case Presenter:_____ Other Case Reviewers: 1._____

Scribe:_____ 2._____

What type of death is this? [ ] Natural [ ] Accidental [ ] Suicide [ ] Assault/Neglect [ ] Unknown

1) Autopsy Performed: [ ] Yes [ ] No

If No, Committee recommended autopsy: [ ] Yes [ ] No

Why:_____

2) What do you believe was the **most probable** cause of death for this child? _____

_____

3) What do you believe were **other contributing cause(s)** that led to this death, or the incident resulting in death?

A) _____

B) _____

C) _____

D) _____

E) _____

4) Does the death certificate completely capture the above causes and contributors of death? [ ] Yes

[ ] Does not accurately reflect most probable cause of death ***Explain** why not: _____

[ ] Does not accurately reflect contributing cause(s) of death _____

5) Was the information available for review adequate for the committee to determine the cause(s) of death?

[ ] Yes [ ] No [ ] Presumptive death

What missing information would have helped to better understand this case? (*check all that apply*)

[ ] Post-mortem cultures [ ] Post-mortem drug screen [ ] Post-mortem x-rays [ ] School records

[ ] Social Service records [ ] Home interview [ ] Police report

[ ] Other medical records: (psychiatry/psychology)

[ ] Standardized death scene investigation form

[ ] Toxicology Testing:_____ _____ _____ _____

[ ] Other:_____

*** If No**, what **improvements of the available records** would have helped? _____

_____

Did **lack of access or inadequate access to care** contribute to this death? (due to geographical or other reasons)

[ ] Yes [ ] Yes probably [ ] Yes, possibly [ ] No [ ] Unknown

If any "Yes", explain: _____

6) Summary Cause of Death: Which of the following causes of death do you believe were part of the causal chain?

(i.e. if prevented may have prevented the death, even if no known prevention exists). ***Check all that apply.***

[ ] Unknown [ ] Infection [ ] Perinatal event [ ] Use of weapon(s), including body parts [ ] Exposure

[ ] MVI [ ] Poisoning [ ] Animal bite or attack [ ] Fire, burn or electrocution [ ] SUID/SIDS

[ ] Drowning [ ] Congenital anomaly [ ] Asphyxiation, suffocation, strangulation [ ] Fall or crush

[ ] Spontaneous preterm birth [ ] Mental health disease [ ] Drug, alcohol, or tobacco use [ ] Medical condition

[ ] Medically indicated preterm birth [ ] Other_____

9) Did any of the following cause or contribute to the child's death? (*See definitions handout*.)

9a) Abuse by caregiver/other Adult(s)? [ ] Yes [ ] Yes, probably [ ] No

[ ] Unknown, committee suspicious [ ] Unknown, but unlikely

***If Yes**, was the Abuse: [ ] Primary cause of death [ ] Relate cause of death [ ] Unknown

***If Yes,** relationship(s) of suspected/confirmed perpetrator(s)? _____

9b) Intentional **neglect** by a caregiver(s)? [ ] Yes [ ] Yes, probably [ ] No

[ ] Unknown, committee suspicious [ ] Unknown, but unlikely

***If Yes**, was the neglect: [ ] Primary cause of death [ ] Relate cause of death [ ] Unknown

***If Yes,** relationship(s) of suspected/confirmed perpetrator(s)? _____

9c) Gross **negligence** by caregiver(s)? [ ] Yes [ ] Yes, probably [ ] No

[ ] Unknown, committee suspicious [ ] Unknown, but unlikely

***If Yes**, was the negligence: [ ] Primary cause of death [ ] Relate cause of death [ ] Unknown

***If Yes,** relationship(s) of suspected/confirmed perpetrator(s)? _____

10) Did **substance use by the child** cause or contribute to the death?

[ ] Yes [ ] Yes probably [ ] Yes, possibly [ ] No [ ] Unknown

***If Yes**, what type of substance? [ ] Cocaine [ ] ETOH [ ] Methadone [ ] Tobacco

[ ] Semi-synthetic opiates [ ] OTC [ ] Marijuana [ ] Other: _____

[ ] Victim's prescribed meds [ ] Other's prescribed meds

10b) How did the substance use cause or contribute to the death? _____

_____

11) Did **substance use by someone else** contribute to the child's death?

[ ] Yes [ ] Yes probably [ ] Yes, possibly [ ] No [ ] Unknown

***If Yes**, what type of substance? [ ] Cocaine [ ] ETOH [ ] Methadone [ ] Tobacco

[ ] Semi-synthetic opiates [ ] OTC [ ] Marijuana [ ] Other: _____

***If Yes,** How did the substance use cause or contribute to the death? _____

***If Yes**, what was their relationship to the child? [ ] Unknown [ ] Mother [ ] Father [ ] Friend

[ ] Stranger [ ] Family member [ ] Other: _____

***If Yes**, was the person the supervisor of the child? [ ] Yes [ ] No [ ] Unknown

Specific Causes or Contributing Factors to Death

Please also refer to and correct the data extraction sheet on the left side of the file

---

Motor Vehicle **N/A** (Circle N/A and skip to next section if not applicable)

12) Was the child properly restrained or was the child wearing proper protective gear (i.e. seatbelt, child safety seat, ATV rider protection)?

[ ] Yes [ ] No [ ] Unknown [ ] N/A

***If No**, please list what was *not* or *incorrectly* used. _____

The above listed was: [ ] Not Used [ ] Incorrectly used [ ] Unknown

13) Please describe any factors not previously mentioned that you believe may have contributed to motor vehicle incident resulting in the death of the child: _____

_____

Drowning **N/A** (Circle N/A and skip to next section if not applicable)

14) What was the primary reason child was in the water? [ ] Unknown [ ] Rescuing another [ ] Swimming [ ] Bathing

[ ] Accidental fall (i.e. fell in toilet, fell off boat)

[ ] Other: _____

15) Contributing factor(s) to death (check all that apply):

[ ] Weather [ ] Current [ ] Drop-off [ ] Inappropriate supervision [ ] House not child safe

[ ] No personal flotation devise [ ] Water temp [ ] Child's inability to swim [ ] Other: _____

16) Please describe any factors not previously mentioned that you believe may have contributed to the drowning of the child:

_____

_____

Assault **N/A** (Circle N/A and skip to next section if not applicable)

17) Child-related factors that may have contributed to the assault (*check all that had supporting evidence*)

[ ] Current sexual abuse [ ] Past sexual abuse [ ] Dangerous online activities

[ ] Prostitution [ ] Drug use/abuse [ ] History of delinquency

[ ] Other: _____

18) Perpetrator-related factors that may have contributed to the assault (*check all that had supporting evidence*)

[ ] Inexperienced caregiver [ ] Stress/frustration [ ] Drug use/abuse

[ ] Mental health issues [ ] Previous victim of DV/abuse [ ] Previously committed DV/abuse

[ ] Religious beliefs [ ] Discrimination [ ] Other: _____

19) Event-related factors that may have contributed to the assault (*check all that had supporting evidence*)

[ ] Domestic dispute [ ] Gangs [ ] Other: _____

Accident/Risky Behavior **N/A** (Circle N/A and skip to next section if not applicable)

20) Behavior that led to accident (describe behavior):_____

_____

***Did risky behavior lead to the accident?** (*See definition of risky behavior on the definitions sheet.*)

[ ] Yes [ ] Yes, probably [ ] Yes, possibly [ ] No [ ] Unknown [ ] N/A

21) The behavior described in #20 was (check all that apply): [ ] N/A [ ] behavior of someone else [ ] Unknown [ ] behavior of child

22) Behavior by self or other(s) was: [ ] Unknown [ ] Direct cause of death [ ] Contributing cause of death

23) If by child, was this behavior typical for the child's age?

[ ] Yes [ ] Yes, probably [ ] Yes, possibly [ ] No [ ] Unknown [ ] N/A

***If No**, why not? _____

_____

24) <u>If BEHAVIOR of child</u>, does evidence support this was typical behavior for this individual? [ ] N/A (reckless behavior by others)

[ ] Yes [ ] Yes, probably [ ] Yes, possibly [ ] No [ ] Unknown

***If No**, why not? _____

_____

25) <u>If BEHAVIOR of other(s)</u>, what is the relationship to the child? [ ] N/A (reckless behavior by child)

[ ] Unknown [ ] Parent [ ] Other primary caregiver [ ] Friend [ ] Family member

[ ] Stranger [ ] Sibling [ ] Other: _____

26) What was the primary reason for this behavior?_____

_____

Medical Condition N/A (Circle N/A and skip to next section if not applicable)

27) Was/were the medical condition(s) that led to the death (*check all that apply*):

[ ] Congenital [ ] Chronic [ ] Acute

28) Was death expected as a result of any of the medical condition(s)? [ ] Yes [ ] Possibly [ ] No

***If yes**, typical remaining life expectancy with condition(s): _____

29) Were any of the medical condition(s) the result of a previous event (e.g. accident, suicide attempt, etc.)?

[ ] Yes [ ] No [ ] Unknown [ ] N/A

***If yes**, what? _____

30) Did any of the medical condition(s) complicate or lead to the event that was the direct cause of the child's death?

[ ] Yes [ ] No [ ] Unknown

Medical condition continued on next page:

Medical Condition continued:

31) Was the child receiving adequate health care for the medical condition(s)? [ ] Yes [ ] No [ ] Unknown

*** If no**, was the inadequate care while the child was in utero, or after birth? [ ] in utero [ ] after birth

32) Was the child or primary caregiver compliant with prescribed care plans?

[ ] Yes [ ] No [ ] Presumed [ ] Unknown [ ] N/A

***If No**, check non-compliance issues: [ ] Appointments [ ] Medications [ ] Medical equipment use
[ ] Therapies [ ] Other:_____

33) Did the primary care facility provide adequate care based on available knowledge and technology?

[ ] Yes [ ] No [ ] Unknown [ ] N/A

***If no**, please explain:_____

_____

Sudden Unexpected Infant Deaths N/A (Circle N/A and skip to next section if not applicable)

(*Include all child asphyxiation/suffocation sleep related deaths*)

34) Was child sleeping with an impaired person?

[ ] Yes [ ] Yes, Probably [ ] Yes, Possibly [ ] No [ ] Unknown [ ] Not bed sharing

***If YES**, how was the person impaired [ ] ETOH [ ] Tobacco [ ] Extreme exhaustion
[ ] Sleep apnea [ ] Other _____

35) Did overlying contribute to the death?

[ ] Yes [ ] Yes, Probably [ ] Yes, Possibly [ ] No [ ] Insufficient information [ ] Not bed sharing

36) Did inappropriate bedding contribute to the death?

[ ] Yes [ ] Yes, Probably [ ] Yes, Possibly [ ] No [ ] Unknown

37) Did any object that is not sleep related contribute to the death (i.e. plastic bag in crib)?

[ ] Yes [ ] Yes, Probably [ ] Yes, Possibly [ ] No [ ] Unknown

38) Please circle how close this case fits the definition of a true SIDS death (*see definitions handout*).

[ ] Definitely SIDS [ ] Probably SIDS [ ] Possibly SIDS [ ] Unlikely SIDS [ ] NOT SIDS

Preventability

39) Was this death preventable? (*see definitions handout*) [ ] Unknown [ ] No. Why not? _____

[ ] Yes, possibly (causal chain/mechanism between prevention and outcome is unclear)

[ ] Yes, probably (causal chain/mechanism between prevention and outcome is clear)

[ ] Yes

40) If yes, during the sequence of events prior to the death, what reasonable things, if they **had not** occurred or **had** occurred, might have prevented the death? (Please rank in order, with 1 being most likely to have prevented death.)

Rank

[ ] _____

[ ] _____

[ ] _____

[ ] _____

[ ] _____

[ ] _____

41) What specific change(s) do you believe should occur to **prevent other similar deaths** and to keep children safe, healthy and protected? (*Check all that apply and describe*.)

[ ] Improved patient education _____

[ ] Improved parent education _____

[ ] Improved other caretaker education _____

[ ] Improved education of medical care providers; Who? _____

[ ] More widely offered school education programs _____

[ ] Increased availability and use of alcohol/drug/tobacco abuse treatment programs _____

[ ] New or expanded social support programs or services _____

[ ] New or revised procedures _____

[ ] New law or ordinance _____

[ ] Improved enforcement of existing law/ordinance; What? _____

[ ] Modify or recall consumer product; What product? _____

[ ] Improved access to medical care [ ] Primary [ ] Intensive [ ] Specialty [ ] Mental Health _____

_____

[ ] Changes in public health nursing: _____

[ ] Other: _____

42) Other comments (Anything else important about this death that has not already been captured):

_____

_____

_____