







## **Mississippi Child Death Review Panel**

## 2013 Report of Mississippi Child Deaths



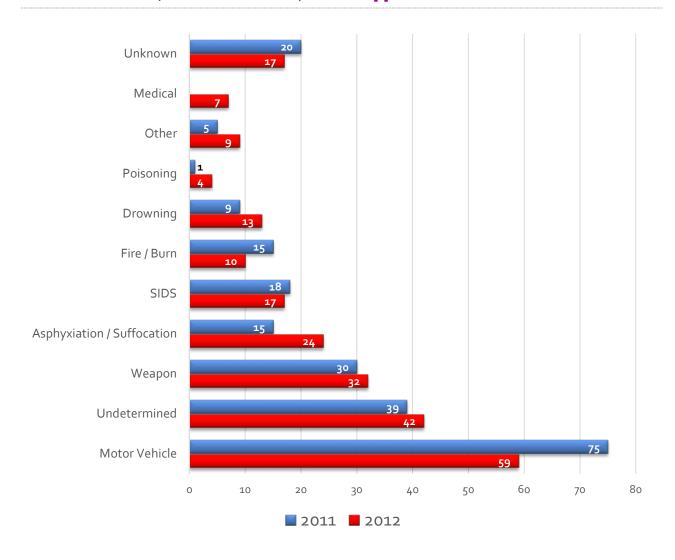


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## **Executive Summary**

Among Mississippi residents less than 18 years of age, there were 565 deaths during 2012 – a 7% (n=45) decrease from 2011 data. The panel reviewed 193 cases of which more than 80% were preventable – a missed opportunity to have saved 159 young lives. Highlighted findings include:

- + The panel celebrated a dramatic 21% decrease in child motor vehicle fatalities (2011 = 75; 2012 = 59).
- Infant deaths (less than 1 year of age) accounted for more than 1/3 of 2012 cases reviewed, and 61% of total child deaths during 2012. However, there was an overall decrease in the total number of Mississippi infant deaths since the prior year (2011 = 373; 2012 = 342).
- **4** No remarkable racial or ethnic disparities noted.
- Asphyxiation and suffocation deaths comprise the largest increase in Cause /Circumstance of death, most often occurring among infants in unsafe sleep environments (2011 = 15; 2012 = 24).



#### Causes of Death, Reviewed Cases, Mississippi 2011 & 2012





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A summary of 2010 child death statistics for the United States is provided as a frame of reference for determining how Mississippi compares to the rest of the nation in rates of child deaths. The 2010 data are the most recent data available for comparing across all 50 states. The table was extracted from the National MCH Child Death Review website available at <a href="http://www.childdeathreview.org/nationalchildmortalitydata.htm">http://www.childdeathreview.org/nationalchildmortalitydata.htm</a> .

Total Child Population (Ages 0-19)	Number of Child Deaths	Child Mortality Rate	
83,267,556	45,068	54.1	
Infant Mortality Number and Rate, per 1,00	oo Live Births (2010)		
Number of Live Births (Ages o-1)	Number of Infant Deaths	Infant Mortality Rate	
3,944,153	24,586	6.2	
Selected Causes of Death, Ages 0-19, per 1	00,000 Population (2010)		
Cause	Number of Deaths	Mortality Rate	
Natural	31,171	37.4	
Perinatal Conditions	12,093	14.5	
Congenital Anomalies	6,114	7.3	
Neoplasms	2,160	2.6	
Respiratory Disease	1,314	1.6	
Circulatory Disease	1,477	1.8	
Nervous System Disease	1,418	1.7	
SIDS	2,063	2.5	
Unintentional Injury	8,684	10.4	
Motor Vehicle	4,419	5.3	
Drowning	1,027	1.2	
Fire/Burn	365	0.4	
Poisoning	838	1.0	
Suffocation/Strangulation	1,176	1.4	
Firearm	134	0.2	
Homicide	2,808	3.4	
Firearm	1,790	2.1	
Suicide	1,933	2.3	
Firearm	749	0.9	
Suffocation/Strangulation	926	1.1	
Poisoning	121	0.1	

- Sources: Centers for Disease Control and Prevention, National Center for Health Statistics.

- CDC WONDER On-line Database, CDC WISQARS On-line Database. Data accessed on 12/4/2012.

- Rates based on 20 or fewer deaths may be unstable. Use with caution.



## **State Team Members**

State Medical Examiner's Office	Erin Barnhart, MD
Lt. Governor Appointee	Jamie Seale
House Speaker Appointee	Owen Bev Evans, MD
Office of the Attorney General	Patti Marshall
Office of the Attorney General	Gloria Salters
Department of Human Services	Tamara Garner
State Fire Marshal's Office	Tammy Peavy
Children's Advocacy Center of Mississippi	Karla Tye
Children's Safe Center	Scott Benton, MD
Children's Safe Center	Rebecca Mansell, JD
American Academy of Pediatrics	Leigh Campbell, MD
Mississippi Safe Kids	Elizabeth Foster
SIDS Alliance	Leslie Threadgill
SIDS Alliance	Cathy Files
March of Dimes	Dina Ray
Jackson State University	Gerri Cannon-Smith, MD
UMMC Pathology Dept.	Vacant
MS Coroner-ME Association	Vacant
MS Sheriffs Association	Vacant
MS Police Chiefs Association	Vacant
Department of Health, Vital Statistics	Judy Moulder
Department of Health, Women's Health	Juanita Graham, DNP-RN





## **Prologue**

During the 2012 calendar year, 565 Mississippi children under the age of 18 died. While each death leaves a terrible void, each also provides a powerful opportunity to recognize risks and prevent future deaths. To better understand how and why so many Mississippians die so young, the Child Death Review Panel (CDRP) reviews individual child death cases and makes recommendations to eliminate preventable child deaths in Mississippi. This report compiles CDRP findings from review of case records including, but not limited to, Mississippi vital records, toxicology reports, autopsies, and death scene investigations. The CDRP aspires to:

Identify factors that put children at risk of injury or death	Share information among agencies that serve children and families	Improve local investigations of unexpected child deaths
Identify and fill gaps in existing service systems	Reveal trends in unexpected child injury and death	Educate the public about child injury and death, and prevention strategies

We believe several recently passed House and Senate bills may potentially decrease the occurrence of child death in Mississippi. We heartily appreciate the efforts of numerous members of the Mississippi Senate and House of Representatives that support child protective legislation and applaud the passage of the following bills and/or resolutions:

#### **House Bills Passed**

Booster Seat Law
Bans riding off road vehicles in public waterways, increases fines for trespass
\$50 Fee on sale of ORVs/motorcycles to help pay for the state Trauma Care System
Hospital notification of State Fire Marshal on burn injuries
Joint Resolution encouraged ORV safety course, use helmets for riders under age 16, and slower speeds
Prohibited the sale of novelty lighters
"Nathan's Law" increased fines for passing a stopped school bus

#### **Senate Bills Passed**

SB2280 (2009)	Graduated Licenses for Teens
SB2249 (2009)	Self-extinguishing Cigarettes
SB2770 (2009)	Teen Suicide Prevention Education for teachers
SB2196 (2011)	ATV/ORV helmet mandate under age 16 with vehicle operator having either driver's license OR safety certificate
SB2836 (2011)	Study and make recommendations on reform of State Mental health services for children, youth and adults

We are extremely pleased with the legislature's focus on addressing the needs of the State Medical Examiner's Office, which has greatly augmented a more timely and accurate completion of Mississippi child death investigation. The 2013 CDRP Annual Report on 2012 deaths honors the memory of *all* children who have died in Mississippi. The CDRP hopes that these findings will facilitate collaboration towards making Mississippi a safer and healthier place for children, our most vulnerable citizens.





## **Review Process**

#### **Criteria for Review**

The CDRP reviews death cases involving Mississippi residents less than 18 years of age considered unexpected or unexplained. The CDRP also reviews child deaths of non-Mississippi residents occurring in Mississippi.

Since inception in 2006, the CDRP has experienced a vast learning curve. Procedures and protocols continue to be refined through lessons learned. The CDRP goal to thoroughly review as many deaths as possible, emphasizing those deemed preventable. Availability of records continues to be a challenge as well as lack of dedicated staff to conduct record abstractions and convene meetings in a timely manner.



#### Definitions

*Cause of death:* As used in this report, the term "cause of death" refers to the underlying event resulting in death. The underlying cause of death is the disease, injury, or action initiating the sequence of events that leads directly to death, or the circumstances of the accident or violence that produced the fatal injury.

*Omission vs. Commission:* Omission is a failure to act or do something to prevent a negative event. Commission is an act that results in a negative event.

*Manner of Death:* One of six general categories (including Accident, Homicide, Suicide, Undetermined Circumstances, Pending Investigation, or Natural Causes) on the MS Death Certificate.

*Medical / Natural Causes:* A manner of death by other than external means (the expected outcome of a disease, birth defect, or congenital anomaly). The CDRP normally will not review such cases. However, many "Pending" or "Undetermined/Unknown" causes of death are discovered to be death by "Natural Causes."

Sudden Infant Death Syndrome (SIDS): Sudden infant death syndrome is the sudden death of an infant under age one that cannot be explained after a thorough investigation has been conducted, including a complete autopsy, an examination of the death scene, and a review of the clinical history. SIDS is a diagnosis of exclusion of all other possible factors contributing to the death.

Sudden Unexpected Infant Death (SUID): This is a cause of death listed because of the CDC's increasing need for accurately classified data regarding infant death. SUID cases are deaths that occur suddenly and unexpectedly among infants less than one year of age, where the cause of death is not immediately known prior to investigation. SUID has several categories. SIDS, accidental suffocation, unknown, infections, inborn errors of metabolism, poisoning/overdose, and cardiac channelopathies are a few examples.

**Unexpected/Unexplained:** This classification is used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information; or, despite complete and thorough investigation, full autopsy, histology and toxicology work-up, cause and thus manner of death remain unknown.

Undetermined: This classification is used when the cause and/or manner of death cannot be determined.

Unknown: Regarding the case review process, this term represents the absence of the information.

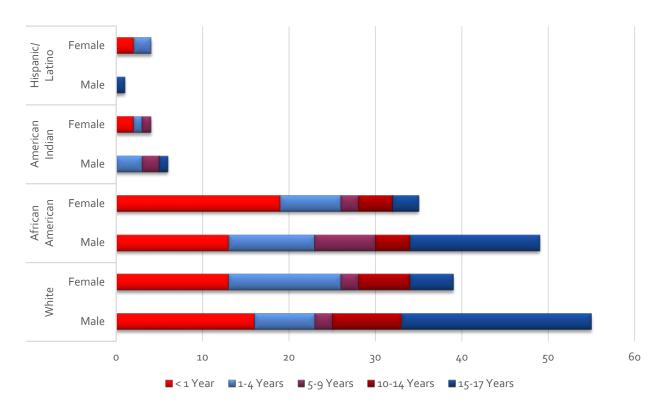


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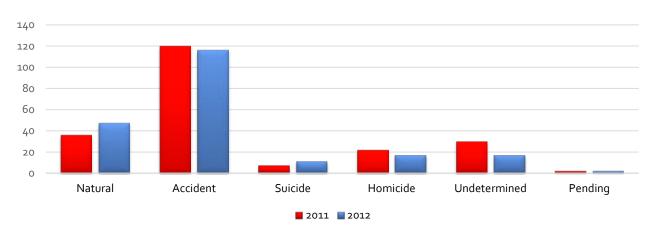
## **Overview of Reviewed Deaths**

#### **Demographics of Reviewed Child Deaths, Mississippi 2012**

Among all but Hispanic racial or ethnic groups, male deaths occurred more frequently than female deaths. The greatest gender disparity occurred between both white and African American 15-17 year olds. Overall, infant deaths (< 1 year of age) accounted for the largest proportion of deaths for all racial and ethnic groups.



#### Manner of Child Deaths, Mississippi 2011-2012



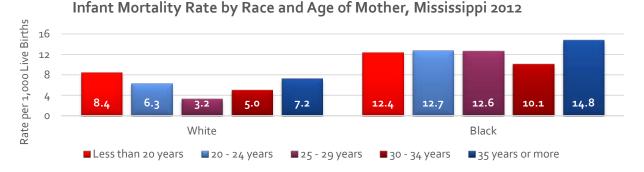
Accidental death was, by far, the most common manner of death.



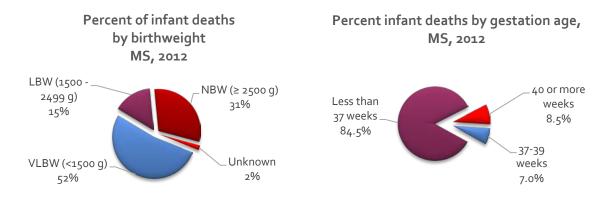
## **Findings - Infant Deaths**

#### Infant Mortality, Mississippi 2012

Infant mortality is the death of babies less than one year of age. In 2012, the MS infant mortality rate was 8.8, a historical low for MS, although still the highest in the nation.



The greatest number of MS infant deaths occurs among very low birthweight (VLWB- less than 1,500 g or 3 lbs. 5 oz.) and/or premature (< 37 weeks gestation) infants. MS infant deaths were higher among infants born preterm (before 37 weeks of pregnancy) low-income women, uninsured women, black women, and teens are at higher risk of preterm delivery. The preterm birth rate among whites in MS is 14.1, and the rate for blacks is 20.6 (per 1,000 live



births).

The MSDH is undertaking a diverse approach, working with healthcare providers and community leaders across the state to improve MS maternal and infant health. MSDH focuses on six evidence-based strategies to reduce infant mortality.



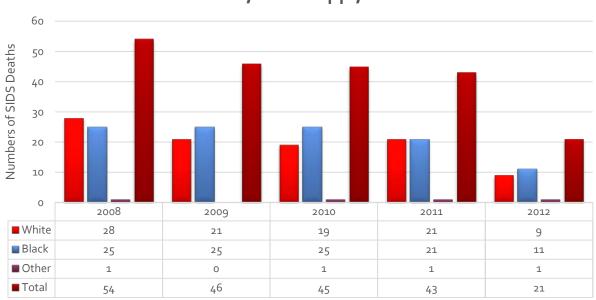




#### SUID vs. SIDS vs. Undetermined

The subtle differences between Sudden Unexplained Infant Death (SUID), Sudden Infant Death Syndrome (SIDS) and "Undetermined" as causes of infant death require additional clarification. A SUID is simply a sudden unexplained event that may or may not have been thoroughly investigated. A SIDS death is a sudden infant death that remains unexplained after a thorough investigation, including review of medical history, death scene investigation, and autopsy. "Undetermined" is the preferred cause of infant death assigned by the medical examiner after a thorough investigation does not reveal a conclusive cause of death. Confusion and discrepancies in the consistent application of these terms compromise the consistency and accuracy of infant death data.

Nationally, SIDS rates have been declining since the early 1990s. Similarly, the numbers of Mississippi SIDS deaths have declined over the last 5 years. However, research suggests that the SIDS decline can, at least partially, be explained by *increases* in other SUID categories such as Undetermined and Suffocation or Asphyxia, frequently associated with unsafe sleep environments, i.e., overlaying, co-sleeping, suffocation, and wedging of infants.



SIDS Deaths, Mississippi, 2008-2012

Inaccurate classification of cause and manner of death obviously hinders prevention efforts – not only in Mississippi, but nationwide. Researchers are unable to adequately monitor national trends, identify risk factors, or evaluate

More coroner training is needed to assure <u>accurate</u> investigation and reporting of infant deaths. intervention programs without standardized classification. Consequently, the CDC began the SUID Initiative. The goals of this initiative were to develop tools and protocols to standardize and improve data collection, promote consistent diagnosis and reporting of cause/manner of death, use data monitoring to prevent SUID, and improve national SUID reporting.

Several Mississippi Coroners (n=28) received training in 2014 on how to properly complete the SUID Investigation Reporting Form, interview families, and conduct death scene reenactments (e.g., how the infant was discovered, type of sleeping environment, etc.). However, Mississippi continues to lack *consistent* and thorough reporting.



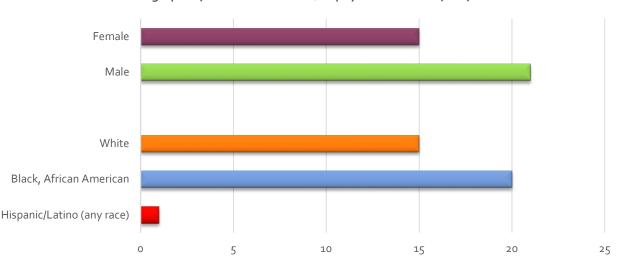


#### Sudden Infant Death Syndrome (SIDS)

As previously defined, a SIDS death is a sudden infant death that remains unexplained after a thorough investigation, including review of medical history, death scene investigation, and autopsy. Confusion and discrepancies in the consistent application of these terms compromise the consistency and accuracy of infant death data. Mississippi Vital Statistics show a 50% decline in 2012 SIDS cases, as compared to 2011. However, the lower number may or may not reflect a true decline in SIDS deaths, but rather a decline in the use of the term SIDS as a cause of death.

#### Infant Suffocation / Asphyxiation

There were 36 infant deaths due to suffocation or asphyxiation. All 36 cases were sleep-related deaths.



Demographics, Infant Suffocation / Asphyxiation Deaths, MS, 2012

#### **Sleep Related Infant and Child Deaths**

During early 2012, MSDH selected safe sleep for infants as one of six strategies for reducing Mississippi infant mortality. Sleeprelated deaths relate to the infant's sleeping environment. The environment may be unsafe for sleeping because of the surface upon which the infant was placed to sleep, the position in which the infant was placed to sleep, or the presence of second hand smoke, blankets, pillows, fluffy bedding or toys, animals, or other people such as a parent or sibling. As noted in the previous section, all 36 cases of suffocation or asphyxiation deaths were sleep-related events. The vast majority of those were due to co-sleeping, such as the infant sharing a bed or sleep surface with a parent, sibling, or animal.

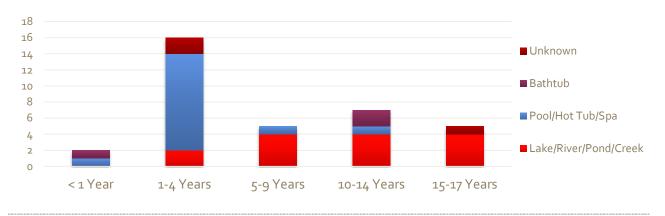






#### **Drowning / Watercraft Deaths**

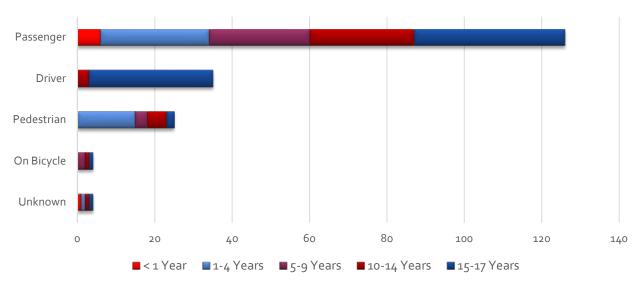
Mississippi recorded 35 child deaths due to drowning during 2012. The greatest proportion (34%) of drowning deaths occurred among children between one and four years of age in a pool or hot tub. Older child and adolescent drowning deaths (n=12) were more likely to occur at a lake, river, pond, or creek. The drowning victims were predominantly male (n = 26).



#### Child drowning deaths by age and event location, MS, 2012

#### **Motor Vehicle Deaths**

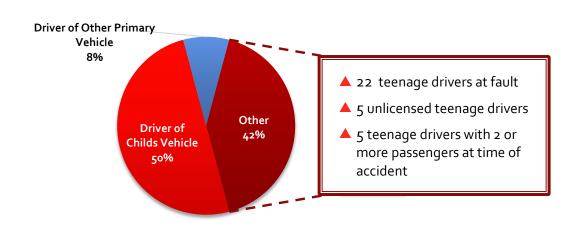
There were 194 motor vehicle related child and adolescent deaths in Mississippi during 2012. Teenage drivers accounted for 35 of those deaths. Child and adolescent aged vehicle passengers accounted for 126 deaths. There were 29 deaths among pedestrians and bicycle riders. Child and adolescent motor vehicle deaths were more common among white males and most often occurred in a rural setting.



Child and adolescent motor vehicle deaths, MS, 2012

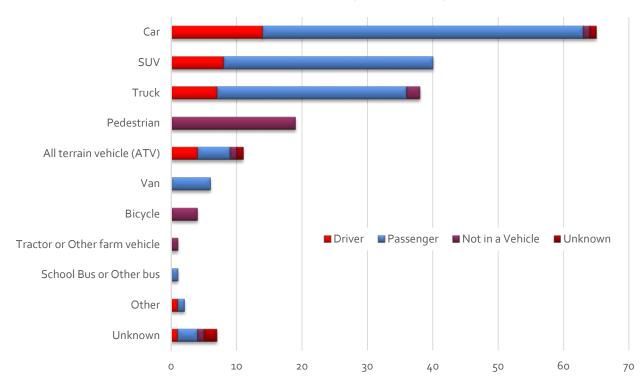


The panel reviewed 72 motor vehicle related child and adolescent deaths and of those 72, the driver was found to be at fault in 53 cases. In 35 of the motor vehicle related deaths, a teenager was driving. Among those 35, the teenage driver was at fault in 22 cases. Five cases occurred among unlicensed teenage drivers. Additionally, five teenage driver cases were noted to have two or more adolescent passengers in the car at the time of the accident.



Vehicle drivers in motor vehicle related child and adolescent deaths, MS, 2012

The majority of child and adolescent vehicle related deaths occurred when the child or adolescent was a passenger in a car, SUV, or truck. There were 46 cases in which the child or adolescent was noted to be unrestrained or improperly restrained (either not wearing a seatbelt or not in an appropriate child or infant car seat).



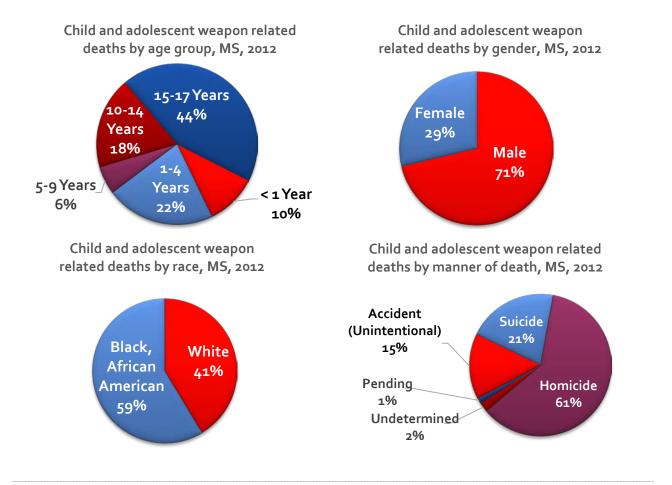
Child and adolescent motor vehicle deaths by mode of transportation, MS, 2012





#### **Weapon Related Deaths**

The panel reviewed 87 weapon related child and adolescent deaths. Among those reviewed, the most common weapon used was a firearm (68%), two cases involved unsupervised children, and in nearly 9 of every 10 cases, an act of omission or commission contributed to the death.



#### **Poisoning / Overdose / Acute Intoxication**

The six poisoning, overdose, and/or acute intoxication deaths reviewed by the panel most often included a prescription medication.

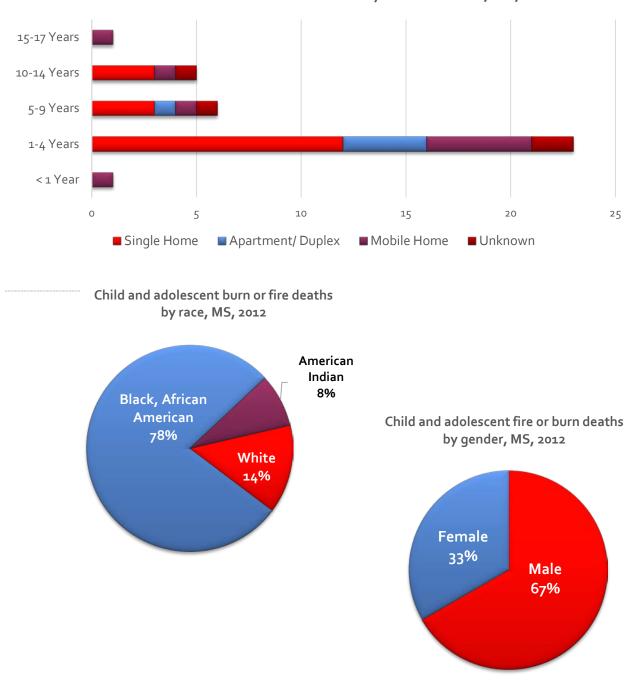
Characteristic	Prescription Drug	Cleaning substance	Other Substance	Unknown Substance
< 1 Year	0	1	1	0
15-17 Years	2	0	0	2
Male	1	1	0	1
Female	1	0	1	1
White	2	0	0	2
Black	0	1	1	0





#### **Fire / Burn Related Deaths**

The panel reviewed 36 fire or burn related child and adolescent deaths for 2012. Among those 36 cases, deaths most often occurred among young children 1-4 years of age (64%), among males (67%), and among black or African American children and adolescents (78%).



Child and adolescent burn or fire deaths by location of fire, MS, 2012

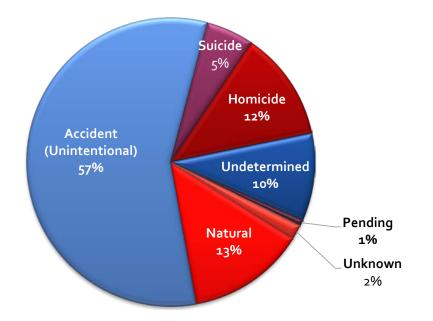




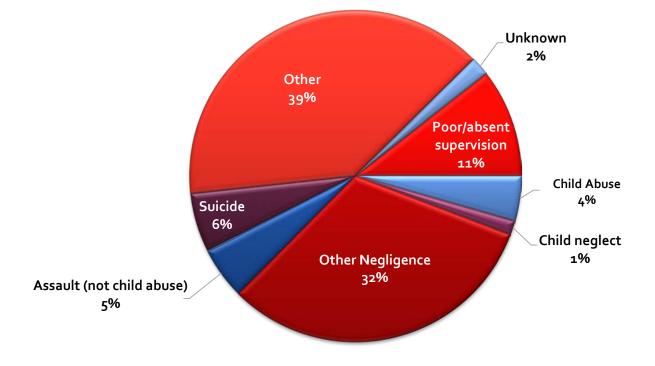
#### **Child Abuse / Neglect / Negligent Deaths**

There were 430 deaths reviewed that involved acts of omission or commission. The most common manner of death was accidental or unintentional (57%).

Child and adolescent deaths due to ommission or commission by manner of death, MS, 2012



Child and adolescent deaths due to ommission or commission by classification, MS, 2012





## **Preventability**

Among the 651 deaths reviewed since 2010, the panel determined that at least 381 child and adolescent deaths could probably have been prevented. The panel proposes recommendations for preventing child and adolescent deaths based on strategies and interventions developed and promoted by government agencies such as the Centers for Disease Control and Prevention (CDC) and national professional organizations such as the American Academy of Pediatrics.

Could the death have been prevented?						
Manner	No, Probably Not	Yes, Probably	Could Not Determine	Unknown	Total	
Natural	2	47	24	31	104	
Accident	7	234	21	86	348	
Suicide	1	9	9	8	27	
Homicide	1	46	1	10	58	
Undetermined	1	37	15	15	68	
Pending	0	3	1	2	6	
Unknown	0	5	2	33	40	
Total	12	381	73	185	651	

## **General Recommendations**

#### **Infant Deaths**

- Increase public awareness of the dangers associated with infants sleeping in adult beds and other unsafe sleep environments through simple, concise messages that family members and caregivers can easily remember.
- Promote the "Cribs for Kids" program, which has been shown to decrease rollover occurrences by 50%. In 2012, the Mississippi SIDS and Infant Safety Alliance distributed 426 cribs at a total cost of \$27,686. Each crib is purchased for \$50 with a \$15 shipping fee.
- Promote adherence to the Expansion of Recommendations for a Safe Infant Sleeping Environment by the American Academy of Pediatrics.
- Provide funding to continue to educate county coroners and medical examiners on uniform completion of the Sudden Unexplained Infant Death Scene Investigation report, including the legal requirement to complete death scene investigations.

# Sudden Unexplained Infant Death Investigation

A Systematic Training Program for the Professiona Infant Death Investigation Specialist









#### **Drowning / Watercraft Deaths**

- Support public education and awareness campaigns about water safety, emphasizing constant adult supervision.
- Encourage the use of floatation devices when in and around open bodies of water especially those that may be unstable or unknown in nature, i.e., creeks, rivers, lakes and ponds.
- Increase availability of swimming lessons and water safety classes for both children and parents, especially when children are under age five.
- Utilize the Risk Watch<sup>®</sup> Unintentional Injuries curriculum (MS Fire Marshal's Office) in all pre-school through eighth grades.

#### **Motor Vehicle Deaths**

- Pass additional legislation regarding distracted driving, i.e., texting, cell phone usage, internet usage, etc.
- Expand current booster/car seat/infant seat laws in accordance with current American Academy of Pediatrics guidelines.
- Amend current legislation to mandate booster seats for all children at least ages four through seven weighing less than 65 lbs. to align with national guidelines of under 4'9" tall and 80 100 lbs.
- Continue to educate the public on ATV and Off-road Vehicle (ORV) safety.

#### **Weapon Related Deaths**

- Encourage gun safety education for youth and parents, and the free unintentional injury curriculum, Risk Watch®, available through the MS State Fire Marshal's Office.
- Work with all schools to assess and develop effective strategies to prevent acts of violence, possibly using resources available through the Department of Human Services (DHS), the Department of Mental Health or local Families First Resource Centers.
- Support education on the warning signs for suicide and intervention strategies provided through MS Youth Suicide Prevention Program and MS Department of Mental Health.
- Publicize helplines like (1-800) 273–TALK (the National Suicide Prevention Crisis Line).

#### **Poisoning / Overdose / Acute Intoxication**

- Encourage education and awareness of Poison Prevention Programs including the Poison Control Center (800-222-1222).
- Support substance abuse treatment programs and awareness campaigns on the warning signs of substance use.
- Encourage the use of Risk Watch<sup>®</sup> Unintentional Injuries curriculum (MS Fire Marshal's Office) in all pre-school through eighth grades.

#### **Fire / Burn Related Deaths**

- Encourage use of MS State Fire Marshal's Office Mobile Fire Safety House in all elementary school settings.
- Encourage the use of Risk Watch<sup>®</sup> Unintentional Injuries curriculum (MS Fire Marshal's Office) in all pre-school through eighth grades.
- Offer incentives to local fire departments for implementing fire safety education activities among children.
- Reverse legislation that prevents state mandates for smoke alarms and sprinklers in all single-family dwellings.





#### **Child Abuse / Neglect / Negligent Deaths**

- Continue to support education and awareness of child abuse prevention.
- Adopt dangerous animal ordinances.
- Publicize (800) 222-8000 as the Child Abuse Hotline for parents or caregivers in crisis.
- Support the recommendations of MS Youth Suicide Prevention Council.
- Offer parenting classes or outreach programs specifically geared to young parents or caregivers, possibly providing some sort of incentive for attendance.

## **Legislative Recommendations**

The Child Death Review Panel respectfully submits the following for consideration during the 2015 legislative session:

1. Financially support the Child Death Review Panel through the Mississippi State Department of Health to allow greater strides in the reduction of child deaths in our state. The program is currently unfunded limiting the scope of work that could be accomplished through this vital process.

2. Financially support an aggressive public education campaign regarding safe sleep environments for infants and injury prevention strategies for Mississippi's children.

3. Pass safe driver Legislation including restricting distracted driving and strengthening graduated licensing laws.





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## **Epilogue**

This Annual Report is dedicated to the memory of all **565** children who lost their lives in Mississippi during calendar year 2012. May we use the information contained herein to prevent any future harm to our most vulnerable citizens.



### **Child Death Review Panel**



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