

Ohio Child Fatality Review Thirteenth Annual Report

*This report includes reviews of child deaths that occurred in 2011
and aggregate reviews for 2007-2011.*

MISSION

To reduce the incidence of preventable child deaths in Ohio

SUBMITTED SEPTEMBER 30, 2013, TO

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William G. Batchelder, Speaker, Ohio House of Representatives
Keith Faber, President, Ohio Senate
Tracy Maxwell Heard, Minority Leader, Ohio House of Representatives
Eric Kearney, Minority Leader, Ohio Senate
Ohio Child Fatality Review Boards
Ohio Family and Children First Councils

SUBMITTED BY

Ohio Department of Health
Ohio Children's Trust Fund



TABLE OF CONTENTS

Dedication and Acknowledgements	4
Letter from the Directors	5
Executive Summary and Key Findings	6
Prevention Initiatives	11

REVIEWS FOR 2011 DEATHS

2013 Data Reporting.....	16
Reviews by Demographic Characteristics	18
Reviews by Manner of Death and by Cause of Death	19
Deaths from Medical Causes.....	20
Deaths from External Causes.....	24
Reviews by County Type	27

REVIEWS FOR 2007-2011 DEATHS

Summary of Reviews.....	30
Trends over Five Years.....	34
Deaths to Hispanic Children, All Ages.....	36
Poisoning Deaths, All Ages.....	38
Homicide, All Ages	40
Suicide, All Ages	43
Child Abuse and Neglect, All Ages.....	45
Reviews by Age Group: Infant Deaths from All Causes	49
Infant Deaths Due to Prematurity	54
Deaths in Sleep Environments	59
Deaths to Children 1 to 4 Years Old	65
Deaths to Children 5 to 9 Years Old	68
Deaths to Children 10 to 14 Years Old	71
Deaths to Children 15 to 17 Years Old	74
Preventable Deaths	77
Conclusion.....	79

APPENDICES

I. Overview of Child Fatality Review Program	80
II. Child Fatality Review Advisory Committee Members	82
III. Child Fatality Review Program Staff	84
IV. 2013 Local Child Fatality Review Board Chairs.....	85
V. ICD-10 Codes.....	91
VI. Ohio County Type Designations	92
VII. Data Tables	
1. Reviews of 2011 Deaths by Manner of Death by Age, Race and Gender.....	93
2. Reviews of 2011 Deaths: All Causes by Age.....	94
3. Reviews of 2011 Deaths: All Causes by Race	95
4. Reviews of 2011 Deaths: All Causes by Gender.....	96
5. 2011 Child Population, Child Deaths and Reviews by County Type.....	96
6. Reviews of 2007-2011 Deaths by Manner of Death by Age, Race and Gender	97
7. Reviews of 2007-2011 Deaths: All Causes by Age	98
8. Reviews of 2007-2011 Deaths: All Causes by Race	99
9. Reviews of 2007-2011 Deaths: All Causes by Gender	100
10. Reviews of 2007-2011 Deaths by Year by Age, Race and Gender.....	101
11. Reviews of 2007-2011 Deaths by Year by Causes, Circumstances and Preventability	102
12. Reviews of 2007-2011 Deaths by County Type by Age, Race and Gender.....	103
13. Reviews of 2007-2011 Deaths by County Type by Causes, Circumstances and Preventability	104
VIII. References	105

DEDICATION

This report is made possible by many dedicated professionals in every community throughout the State of Ohio. With a desire to protect and improve the lives of young Ohioans, they have committed themselves to gaining a better understanding of how and why children die. Each child's death represents a tragic loss for the family, as well as the community. We dedicate this report to the memory of these children and to their families.

ACKNOWLEDGEMENTS

This report is made possible by the support and dedication of more than 500 community leaders who serve on Child Fatality Review (CFR) boards throughout the State of Ohio. Acknowledging that the death of a child is a community problem, members of the CFR boards step outside zones of personal comfort to examine all of the circumstances that lead to child deaths. We thank them for having the courage to use their professional expertise to work toward preventing future child deaths.

We also extend our thanks to the Ohio Child Fatality Review Advisory Committee members. Their input and support in directing the development of CFR in Ohio has led to continued program improvements.

We acknowledge the generous contributions of other agencies in facilitating the CFR program including the Ohio Children's Trust Fund; the Ohio Department of Health (ODH), divisions of Family and Community Health Services and Prevention, and Office of Healthy Ohio; state and local vital statistics registrars; and the National Center for the Review and Prevention of Child Death.

The collaborative efforts of all of these individuals and their organizations ensure Ohio children can look forward to a safer, healthier future.

Dear Friends of Ohio Children:

We respectfully present the Thirteenth Annual Ohio Child Fatality Review (CFR) Report containing information from reviews of child deaths that occurred in calendar year 2011, as well as a summary of the data for deaths that occurred during the five-year period from 2007 to 2011. In facts and figures, this report tells the story of why Ohio children are dying and outlines the work of the CFR program and local and state efforts to prevent these deaths. We hope this report will lead to a reduction in the incidence of the untimely and preventable deaths of Ohio children.

Established by the Ohio General Assembly in July 2000, the CFR program works to examine the factors contributing to Ohio children's deaths. It is only through careful review of child deaths that we are better prepared to prevent future deaths. This report was created to raise awareness of preventable child deaths and understanding of prevention initiatives to ensure the health and well-being of our state's children.

In 2011, 1,591 Ohio children died and 1,547 (97 percent) of these deaths were reviewed by local CFR boards. The CFR process begins at the local level where local boards consisting of professionals from public health, children's services, recovery services, law enforcement and health care review the circumstances surrounding every child death in their county. Through their collective expertise and collaborative assessment, solutions are identified and local prevention initiatives created.

All of us must work together to prevent future child deaths by:

- Educating families, children, neighbors, organizations and communities on preventable child deaths.
- Encouraging community and individual involvement in recognizing and preventing risk factors that contribute to child deaths.
- Assisting and supporting families to achieve healthy parenting practices through education and resources.
- Empowering individuals to intervene in situations where violence and neglect harm children.
- Improving systems of care so all children receive optimal health care before and after birth, and throughout their lives.

We encourage you to consider the facts, analysis and recommendations presented in this report and make a commitment to create a safer and healthier Ohio for our children. Only *together* can we eliminate preventable child deaths.

Sincerely,

Theodore E. Wymyslo, MD
Director of Health
Ohio Department of Health

Kristen Rost
Executive Director
Ohio Children's Trust Fund

Ohio Child Fatality Review

EXECUTIVE SUMMARY

The 2013 Child Fatality Review (CFR) Annual Report presents information from the reviews of deaths that occurred in 2011, as well as a summary of the data for deaths that occurred from 2007 to 2011.

Every child's death is a tragic loss for the family and community. Through careful review of these deaths, we are better prepared to prevent future deaths.

The Ohio CFR program was established in 2000 by the Ohio General Assembly in response to the need to better understand why children die. The law mandates CFR boards in each of Ohio's counties (or regions) to review the deaths of all children younger than 18. Ohio's CFR boards are composed of multidisciplinary groups of community leaders. Their careful review process results in a thorough description of the factors related to child deaths.

In 2005, Ohio CFR boards began using a new case report tool and data system developed by the National Center for Child Death Review. The tool and data system underwent slight revisions in 2007, 2010 and 2011, based on feedback from users. As a result, the revised tool more clearly captures information about the factors related to each child death and better documents the often complex conversations that happen during the review process.

The comprehensive nature of the case report tool and the functionality of the data system have allowed more complete analysis for all groups of deaths. Each section of this report contains detailed data regarding the circumstances and factors related to child deaths. The sections offer in-depth information about identified groups of deaths by age group and by special circumstances such as suicides, homicides and child abuse deaths, demonstrating the potential of data analysis combined with the review process to identify risk factors and to give direction for prevention activities.

CFR does make a difference. In addition to the Prevention Initiatives on page 11, local and state initiatives impacted by the CFR process, findings and data are highlighted throughout the report in rounded teal-colored text boxes. These collaborations, partnerships and activities are proof that communities are aware that knowledge of the facts about a child death is not sufficient to prevent future deaths. The knowledge must be put into action.

The mission of CFR is to reduce the incidence of preventable child deaths in Ohio. Through the process of local reviews, communities and the state acknowledge that the circumstances involved in most child deaths are too complex and multidimensional for responsibility to rest with a single individual or agency. The CFR process has raised the collective awareness of all participants and has led to a clearer understanding of agency responsibilities and possibilities for collaboration on all efforts addressing child health and safety. It is only through continued collaborative work that we can hope to protect the health and lives of our children.

Key Findings

Ohio's 88 local CFR boards reported 1,547 reviews of 2011 child deaths which were used for analysis for this report. This represents 97 percent of all 1,591 child deaths for 2011 reported in data from Ohio vital statistics. Deaths that were not reviewed include cases still under investigation or involved in prosecution and out-of-state deaths reported too late for thorough reviews.

Black children and boys of all races died at disproportionately higher rates than white children and girls of all races for most causes of death. Thirty-four percent (528) of deaths reviewed were to black children and 56 percent (868) were to boys of all races. Their representation in the general population is 15 percent for black children and 51 percent for boys of all races.

Reviewed cases are categorized by manner and by cause of death. Manner of death is a classification of deaths based on the circumstances surrounding a cause of death and how the cause came about. The five manner of death categories on the Ohio death certificate are natural, accident, homicide, suicide or undetermined/pending/unknown.

- Natural deaths accounted for 70 percent (1,088) of all deaths reviewed.
- Accidents (unintentional injuries) accounted for 15 percent (224) of the deaths.
- Homicides accounted for 4 percent (63) of the deaths.
- Suicides accounted for 4 percent (57) of the deaths.
- Seven percent (115) of deaths reviewed were of an undetermined, pending or unknown manner.

Seventy-one percent (1,103) of the deaths reviewed were due to medical causes.

- Eighty-one percent (890) of deaths due to medical causes were to infants less than 1 year of age.
- The most frequent medical cause of death was prematurity (505).

Twenty-three percent (357) of all deaths reviewed resulted from external causes.

- Asphyxia was the leading cause of death from external causes. Seven percent (106) of all deaths reviewed were from asphyxia, including suffocation, strangulation and choking. More than 60 percent of the deaths (64) were children less than 1 year of age, many of which occurred in a sleep environment. All but 2 of the 37 asphyxia deaths to children 10-17 years old (95 percent) were suicides.
- Vehicular deaths accounted for 5 percent (83) of all deaths reviewed. Of the 49 deaths that occurred in cars, trucks, vans or SUVs, only 37 percent (18) of the children killed were reported to be using appropriate restraints.
- Weapons, including body parts used as weapons, accounted for 5 percent (74) of all deaths reviewed. Sixty-one percent (45) were youth 10 to 17 years of age and 49 percent (36) were black children. The manner of death was accident for only two of the weapons deaths.
- Fire, burn and electrocution accounted for less than 2 percent (22) of all deaths reviewed. Fifty percent (11) of victims were less than 5 years old.
- Less than two percent (30) of all deaths reviewed were from drowning and submersion. Sixty-three percent (19) of the drowning deaths were to children under 5 years of age.
- Poisoning deaths represented 1 percent (17) of all deaths reviewed. Fifty-three percent (9) of poisoning deaths occurred to children 15-17 years old.

Deaths to infants younger than 1 year accounted for 68 percent (1,056) of the reviews.

- Infants less than 1 month old accounted for 67 percent (704) of all infant deaths and 46 percent of all deaths reviewed. Forty-one percent (434) of the infant deaths occurred within the first day of life.
- Prematurity was the most frequent cause of infant deaths, accounting for 47 percent (501).

- Congenital anomalies accounted for 17 percent (177) of all infant deaths.
- For 823 reviews where gestational age was known, 69 percent (566) of the infants were born preterm (before 37 weeks gestation). Fifty-three percent (436) were born before 30 weeks gestation.
- Sleep-related deaths (including sudden infant death syndrome or SIDS) accounted for 16 percent (169) of the 1,056 total reviews for infant deaths in 2011, more than any single cause of death except prematurity. Thirty-two percent (54) of sleep-related deaths were to black infants, which is disproportionate to their representation in the Ohio infant population (17 percent). Fifty-seven percent (97) of the sleep-related deaths occurred in locations considered unsafe such as in adult beds and on couches. Fifty percent (85) occurred to infants who were sharing a sleeping surface (bedsharing) with someone else at the time of death.
- SIDS accounted for 3 percent (34) of the 1,056 total reviews for infant deaths. At least 42 percent (15) of SIDS victims were exposed to smoke in utero.

Four percent (63) of all deaths reviewed resulted from homicide.

- Homicide deaths to boys (59 percent) and black children (56 percent) were disproportionately higher than their representation in the general population (51 percent for boys and 15 percent for black children).
- Forty-eight percent (30) of homicide deaths were to children younger than 5 years. Forty-one percent (26) were to children 15-17 years old.

Four percent (57) of all deaths reviewed resulted from suicide. The number of suicides in 2011 was double the number in 2010 (28).

- Suicides represent 22 percent of all reviews for children ages 10 to 17.
- Suicide deaths among boys (91 percent) were disproportionately higher than their representation in the general population (51 percent).
- Thirty percent (17) of the suicide deaths reviewed were from rural non-Appalachian counties, which is disproportionately higher than the proportion of children living in those counties (15 percent).

Local CFR boards reviewed 26 deaths to children resulting from child abuse and neglect in 2011. These represent less than 2 percent of all 1,547 deaths reviewed.

- Nineteen of the 26 reviews indicated that physical abuse caused or contributed to the death, while seven reviews indicated that neglect caused or contributed to the death.
- All but three of the reviews were for children younger than 10 years.

Of the 1,547 deaths reviewed, CFR boards determined 23 percent (260) were probably preventable.

- Ninety-one percent (203) of accidental deaths were deemed probably preventable.
- Sixty-two percent (104) of deaths to children 15 to 17 years of age were deemed probably preventable.

For the five-year period 2007-2011, 8,108 deaths were reviewed, which represents 97 percent of the 8,345 child deaths reported by Ohio vital statistics.

- The mortality rate for Ohio children has decreased from 64 deaths per 100,000 population in 2007 to 59 in 2011.
- The percentage of deaths from external causes due to vehicular crashes decreased from 29 percent in 2007 to 23 percent in 2011.
- The percentage of deaths from external causes due to asphyxia has increased from 28 percent in 2007 to 30 percent in 2011.

The reviews for the five-year period were analyzed by age group.

- Fifty-nine percent (305) of the infant deaths due to external causes were due to asphyxia.
- Vehicular crashes were the leading external cause of death for children older than 1 year, accounting for thirty-four percent (468) of the 1,393 reviews for external causes for children older than 1 year.
 - Nineteen percent (67) of the 361 reviews for external causes for children 1 to 4 years old were due to vehicular crashes.
 - Thirty-nine percent (58) of the 147 reviews for external causes for children 5 to 9 years old were due to vehicular crashes.
 - Thirty-six percent (84) of the 233 reviews for external causes for children 10 to 14 years old were due to vehicular crashes.
 - Forty percent (259) of the 652 reviews for external causes for children 15 to 17 years old were due to vehicular crashes.

Local CFR boards continue to make numerous recommendations for prevention and share their recommendations and findings with others in the community. More than half of the 88 counties shared information about local prevention initiatives and activities that have resulted from the CFR process in 2011.

Limitations

Calculation of rates is not appropriate with Ohio's CFR data because not all child deaths are reviewed. Instead of rates, CFR statistics have been reported as a proportion of the total reviews. This makes analysis of trends over time difficult, as an increase in the proportion of one factor will result in a mathematical decrease in the proportion of other factors. Complex analysis is needed to determine if such changes in proportion represent true trends in the factors of child deaths.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

The CFR case report tool and data system record Hispanic ethnicity as a variable separate from race. A child of any race may be of Hispanic ethnicity.

The ICD-10 codes used for classification of vital statistics data in this report were selected to most closely correspond with the causes of death indicated on the CFR Case Report Tool and may not match the codes used for some causes of death in other reports or data systems. The codes used for this report can be found in the appendices.

Since the inception of statewide data collection in 2001, Ohio CFR has used two different data systems, and the latest system has undergone improvements and revisions. Because of the differences in data elements and classifications, data in this annual report may not be comparable to data in previous reports. In-depth evaluation of contributing factors associated with child deaths is limited in some cases by small cell numbers and lack of access to relevant data.

Of the 1,591 deaths of Ohio children in 2011, 3 percent (40) occurred out-of-state. The first step of the review process, identification of a child death, is difficult when the death occurs out-of-state. Death certificates are recorded in the state where the death occurs and a process is not in place to routinely notify the county of residence for a timely review. This is a particular problem in rural Appalachian counties, where 12 percent (24) of the 199 deaths occurred outside Ohio. By contrast, less than 1 percent deaths to children of metropolitan counties died out-of-state. The state coordinator continues to work with the Ohio Vital Statistics to improve the timely notification of out-of-state deaths.

PREVENTION INITIATIVES

As stated within the 2000 law that established the Ohio Child Fatality Review (CFR), the mission of CFR is to prevent child deaths. Goals for local CFR boards include making recommendations and developing plans for implementing local service and program changes for prevention of future deaths. CFR boards must share their findings and recommendations and engage partners for action. Recommendations become initiatives only when resources, priorities and authority converge to make change happen. Again this year, more than half of the counties reported over 100 examples of successful implementation of CFR recommendations. In addition to the sample of prevention initiatives listed here, additional local and state initiatives impacted by the CFR process, findings and data are highlighted throughout the report in rounded teal-colored text boxes.

SIDS and Sleep-related Deaths

The largest number of initiatives reported deal with reducing the risk of sudden infant death syndrome (SIDS) and other sleep-related deaths. A variety of programs target minority families, grandparents, caregivers, health professionals and the whole community with risk reduction messages that include Back to Sleep, and the risks of inappropriate bedding and bedsharing. Many of these initiatives are on-going, being incorporated into existing programs such as prenatal clinics, Help Me Grow (HMG) and Special Supplemental Food Program for Women, Infants and Children (WIC). Efforts to reach the whole community include the use of billboards, displays at fairs and festivals and distribution of educational materials at popular sites for families such as zoos, playgrounds and family restaurants. Agency policies are adapted to institutionalize practices that reinforce safe sleep behaviors.

- **Allen** and **Clermont** counties have expanded their safe sleep campaigns to target workers in daycares and church nurseries. These workers can have an important role in reinforcing safe sleep messages for parents.
- Expectant parents need to be educated about safe sleep before their baby is born. **Athens** County began providing safe sleep information at the first maternal prenatal visit. A letter from the health commissioner accompanies a brochure describing a safe sleep environment.
- The sheriff's department in **Belmont** County has committed to training for first responders to improve investigation of infant deaths.
- **Clark** County has made safe sleep a priority by reviewing local data for sleep-related deaths and evaluating current education practices in the community to identify areas for improvement.
- The **Cuyahoga** County CFR, Department of Health and Human Services and MetroHealth Medical Center partnered in a yearlong staff education campaign. Education sessions, posters, and patient education materials presented local data regarding sleep-related deaths. Information and interviews were posted on the MetroHealth website. As a result of this campaign, newborns at the hospital are using sleep sacks; staff are consistently role modeling safe sleep; and all parents and caregivers are being given safe sleep education.
- To raise awareness and enlist their help in educating patients, the **Cuyahoga** County medical examiner and CFR board sent letters to local physicians encouraging them to speak with families regarding the dangers of unsafe sleep environments.
- The **Franklin** County Infant Safe Sleep and SIDS Risk Reduction Task Force hosted a Infant Safe Sleep Summit. The keynote speaker was Rachel Y. Moon, MD, a leading researcher in sudden unexpected infant deaths.
- In **Perry** County, CFR board member agencies conducted a needs assessment around the issues of sleep-related deaths. Focus groups with mothers helped refine safe sleep messages used on billboards, newspaper articles and other educational materials. Focus groups were also used in **Cuyahoga** County.
- In addition to distributing information widely through established programs which serve families, many counties are using the media to spread risk reduction information. The **Darke** County CFR

uses articles in the local newspaper to educate about safe sleep. **Carroll** County uses the health district website to promote safe sleep environments. **Jefferson** County uses public service announcements on radio and television. **Highland** County is collaborating with the local hospital and family planning clinic to provide media messages about safe sleep, especially concerning the dangers of bedsharing.

- Public health nurses in **Logan** County have collaborated with nurses in the local hospital maternity unit to increase the number of referrals for newborn home visits. Visiting nurses are able to assess the sleep environment in the home and provide risk reduction information.
- The **Lake** County health district distributed over 500 one-piece infant garments imprinted with “I sleep safer on my back in my crib.” Additionally, the local hospital received a grant to provide sleep sacks in the newborn nursery, eliminating the need for blankets.
- One-piece infant garments are also distributed through WIC clinics in **Montgomery** County. Staff conduct surveys, which show 97 percent of the participants increased their knowledge of safe sleep.
- The **Mahoning** County health district received a grant to partner with WIC and local hospitals to provide safe sleep education in the WIC setting. Objectives of the project are to increase understanding of SIDS risk reduction strategies, what constitutes a safe sleep environment and how families can provide such an environment with available resources.
- Safe sleep task forces and work groups have been organized in many counties. A group in **Jackson** County is developing plans for an educational campaign targeting all parents. A group in **Lorain** County hosted a professional development training for people who provide services to pregnant women and new mothers.
- Several counties including **Cuyahoga, Franklin, Pickaway, Ross** and **Trumbull**, are working directly with hospital staff to raise awareness about the importance of educating new parents about safe sleep practices.
- **Fayette** County has implemented a cycle of safe sleep trainings for all health department staff in addition to holding monthly parenting classes.
- In **Franklin** County, safe sleep messages are included with birth certificates ordered from the local vital statistics registrar and with prenatal care appointment reminders.
- The **Franklin** County CFR published a sleep-related infant death health indicator brief which summarizes sleep-related deaths from 2009-2011.
- To address the racial disparity in infant deaths, **Summit** County targeted African American families to receive videos distributed through child care centers and other family-serving agencies; and through minority health fairs. Fans with safe sleep messages were distributed through African American churches. **Lawrence** and **Richland** Counties are using health fairs and other minority events to distribute safe sleep education and provide displays of safe crib settings.
- Agencies in **Fairfield, Lucas, Stark** and **Summit** Counties are designated Cribs 4 Kids[®] providers. In addition to providing cribs to needy families who participate in a 90-minute class on safe sleep practices, referring agency staff are trained to reinforce the safe sleep messages through their contact with the families.
- **Warren** County has increased the educational materials including videos available for clinic waiting areas.

Child Abuse and Neglect

The CFR process can identify opportunities for improvement in programs and policies to prevent child abuse and neglect. Responsibility for prevention activities is shared among all the member agencies. The Ohio Children’s Trust Fund (OCTF) helps fund community based primary and secondary child abuse prevention programs using evidence-based curricula in many Ohio counties.

- In 2010, a **Cuyahoga** County task force of 30 professionals from a wide variety of social service and legal fields developed recommendations focusing on decision points during the family reunification process, permanency and use of evidence-based practice. Many recommendations continue to be

implemented.

- A shaken baby simulator was purchased and is now available through the health department in **Sandusky** County for use in parenting classes, babysitting classes, high school groups and other community education settings.

Suicide

The need for youth suicide prevention is also being addressed as a result of the CFR process. In many counties, such as **Allen, Carroll, Cuyahoga, Delaware, Lucas and Union**, CFR findings are shared with county suicide prevention coalitions and task forces to focus on awareness of suicide and develop strategies to reduce the factors that increase the risk of suicide, identify youth at risk and increase the availability of mental health services.

- In response to youth suicides in **Delaware** County, the suicide prevention coalition held community meetings and workshops.
- More than 600 community members attended a suicide summit in **Allen** County in the fall of 2012.
- Three hospitals in **Lucas** County are working together on a bullying prevention campaign to include public service announcements, an educator workshop and a live broadcast of a town hall meeting.
- The Olweuss bullying prevention program is being expanded to more high schools in **Clermont** County.

Vehicular Injuries

Vehicular crashes continue to be a leading cause of injury and death to children. Many local CFR boards were involved in efforts to pass Ohio's Distracted Driving law which took effect in August 2012. Boards are active in educating families about the new law, in addition to Ohio's Booster Seat law and Graduated Driver License law. In addition to continued efforts in most counties to improve teen driver education and infant car seat programs, local CFR boards are addressing specific issues regarding vehicular deaths in their community.

- A second teen driving summit was sponsored by the **Clermont** County Safe Communities program to encourage and empower a new group of teen leaders to develop programs for their schools to get peers to slow down, buckle up and eliminate cell phone use while driving.
- The **Hardin** County CFR is using social media to address all-terrain vehicle safety.
- The **Union** County Safe Communities/Safe Kids is working with the state highway patrol on a teen driving campaign focusing on driving in hazardous conditions and avoiding texting and drinking while driving.
- Engineering issues with a particular section of roadway were brought to the attention of the **Medina** County Safe Communities coalition for follow-up.

Infant Deaths

Although only 12 percent of infant deaths were deemed preventable, CFR boards recognize the detrimental effects of unhealthy lifestyles and poor prenatal care on the lives of infants. In response to needs identified through the reviews of infant deaths, many counties have launched collaborative efforts to reduce infant mortality. Typical partners include HMG, WIC, Child and Family Health Services projects, local physicians, schools and other health and social service providers.

- All women who apply for prenatal benefits at **Hardin** County Job and Family Services are provided information about the importance of early prenatal care and if needed, referrals to local providers.
- The local maternity hospital in **Scioto** County began screening all newborns for exposure to drugs. Some obstetricians are also doing routine prenatal toxicology screenings.
- A countywide work group to address infant mortality has been organized in **Knox** County.
- Funding was received to support a new initiative in **Cuyahoga** County called "Breast for Success." A certified lactation counselor will support mothers in their decision to breastfeed.
- In order to raise community awareness and stakeholder support, **Summit** County held an infant

mortality summit as the first of many planned initiatives.

Substance Abuse

The misuse and abuse of prescription drugs and other substances harms youth and children, who suffer intentional or accidental overdose and prenatal exposure as well as inadequate care and supervision when adults use. Local CFR boards such as **Brown** have joined with other community agencies to combat this epidemic and protect children.

- Cole's Warriors, a coalition in **Clark** County created to address prescription drug use among teens, has several strategies including drug drop box locations, Tip Submit, community provider education events and promotion through social media.
- The **Mahoning** County coroner met with representatives of the pharmaceutical manufacturer of Suboxone which is used to treat opioid dependence. The company was gathering evidence that the tablet form of the medication was linked to higher rates of pediatric exposure than the popular sublingual film form. In 2012, the company announced plans to phase out the tablet form and to improve the packaging of the film form.
- In **Medina** County, the CFR process led to discussions between children's protective services, the Alcohol Drug and Mental Health (ADAMH) board and the court system to improve coordination of interventions and services for children regarding drug overdoses. Improvements include triggers for automatic referrals.

General Health and Safety

Countywide collaborations and partnerships produced many programs to increase the general health and safety of children.

- A culturally appropriate brochure on farm safety was developed in **Holmes** County. The brochure was distributed at the Amish Health and Safety Day event.
- The **Franklin** County CFR developed posters highlighting the "Top 10 Tips for Healthier, Safer Children," based on CFR findings. The posters addressed areas of health and safety for children including safe sleep, prenatal care, smoking cessation, fire and water safety and more.
- The **Seneca** County health department issued a press release regarding winter ice safety, including guidelines for determining when the ice is safe for recreational use and what to do if the ice breaks.
- Signs urging personal cleanliness and hand washing were posted in strategic locations around **Scioto** County, including around the livestock barns at the county fair.

Systems Improvements

One of the goals set by Ohio law for CFR is to promote cooperation, collaboration and communication among all groups that serve families and children. The CFR process continues to have a positive impact on participating agencies. Many boards report an increase in cooperation and understanding between participating agencies and some have developed written policies to facilitate communication. The review process stimulates discussion about existing services in communities, identifying gaps in services, access to service barriers, the need to maximize use of existing services and opportunities for increased collaboration.

- The **Cuyahoga** County Help Me Grow and the Department of Children and Family Services benefit from the creation of a liaison position that ensures referrals contain needed information to successfully engage families and troubleshoot system-to-system issues. As a result, both agencies report increased sharing of information and families staying in services longer. A similar liaison position has been created between HMG and ADAMH.
- Law enforcement, children's protective services and the coroner's office in **Van Wert** County are working to improve communication between agencies, especially in cases of severe but not fatal child abuse.
- Several counties including **Fulton** and **Knox**, have identified a need for bereavement services and are

- providing more information to area providers and directly to the parents of deceased children.
- **Morrow** County CFR board members participated in the community health assessment and Community Health Improvement Plan process. Drug abuse, especially by parents, has been identified as a community health problem which negatively impacts children through abuse and neglect, lower quality of life, poor outcomes in health and education, and ultimately can affect the child's ability to parent effectively.
 - The **Erie** County CFR is improving the timeliness of their reaction to child fatalities with communication through a secured website.
 - The **Jackson** County CFR has improved their reviews with increased access to complete medical information.
 - The local prosecutor and additional medical professionals have been added to the **Delaware** County CFR board.
 - The **Clinton** County CFR has improved its organization and procedures, resulting in a smoother process which maximizes members' time and results in more thorough reviews.
 - In its second CFR report to the community, **Clermont** County included maps of geo-coded data for the past five years.
 - **Trumbull** County has convened a task force to develop protocols for investigations of severe child injury and death scenes.
 - A prevention committee has been organized in **Montgomery** County. This is a larger group than the review board whose responsibility is to receive the findings of the review board, evaluate for trends, and recommend and implement prevention strategies.

The CFR process can reveal broad issues in the community that affect the health and safety of children. The **Mercer** County CFR noted that many of the deaths reviewed were from families affected by divorce and with limited father involvement. Additional data from member agencies confirmed that a large percent of juvenile crime offenders had limited father interaction. The board is sharing findings and seeking funding to promote organizations that support and strengthen the role of fathers and organizations that assist children with father figures.

2013 DATA REPORTING

By April 1 of each year, local Child Fatality Review (CFR) boards must submit to ODH the following information with respect to each child death reviewed:

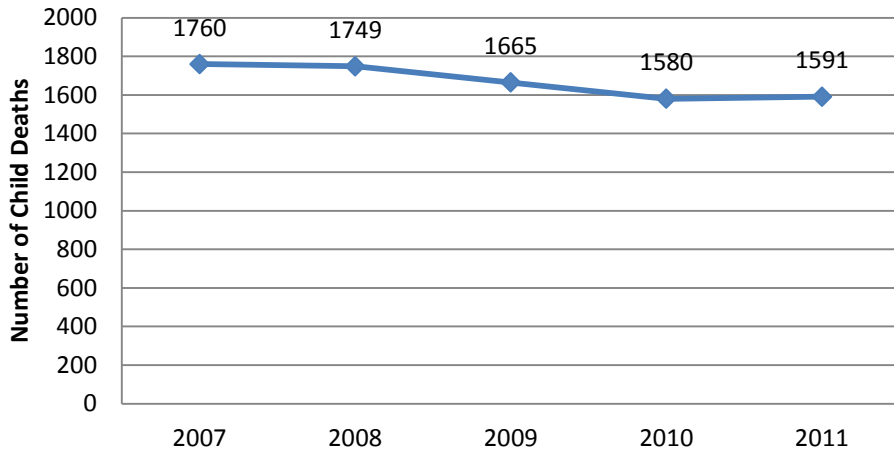
- Cause of death.
- Factors contributing to death.
- Age.
- Gender.
- Race.
- Geographic location of death.
- Year of death.

In addition to the case review information, the local boards submit a report of their activities and recommendations for actions that might prevent future deaths. This report contains no case-identifying information and is a public record.

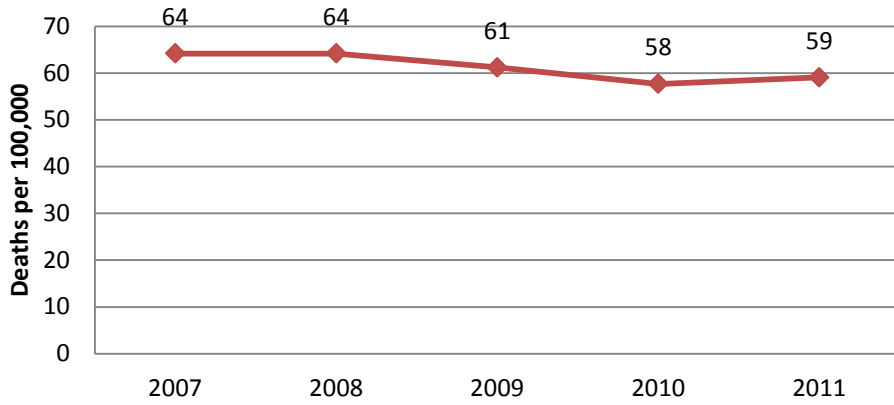
There were a total of 1,547 completed reviews of 2011 child deaths reported by April 1, 2013. This represents 97 percent of all child deaths (1,591) in Ohio for 2011, based on data from Ohio Vital Statistics. Deaths that were not reviewed include cases still under investigation or involved in prosecution and out-of-state deaths reported too late for thorough reviews. All 88 counties submitted reports, although not all counties reported reviews. More than 200 recommendations for prevention were submitted. More than half of the 88 counties shared information about local prevention initiatives and activities that have resulted from the CFR process.

According to Ohio Vital Statistics, the number of Ohio child deaths has decreased from 1,760 in 2007, when 1,723 reviews (98 percent) were completed, to 1,591 in 2011. The child mortality rate has decreased from 63 deaths per 100,000 children in 2007 to 59 in 2011.

Ohio Child Deaths by Year, 2007-2011



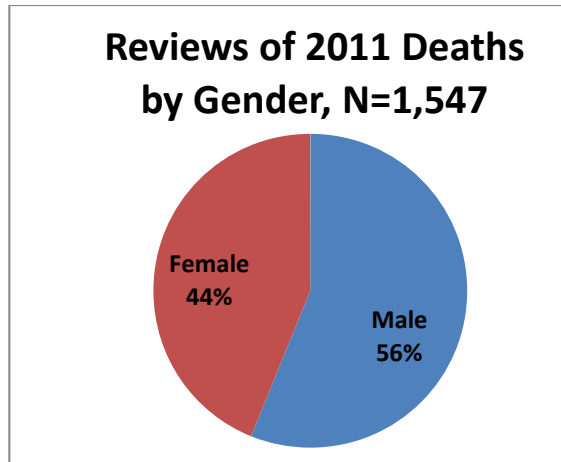
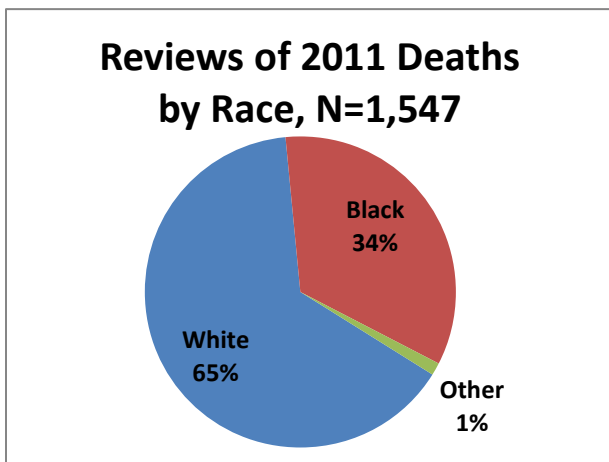
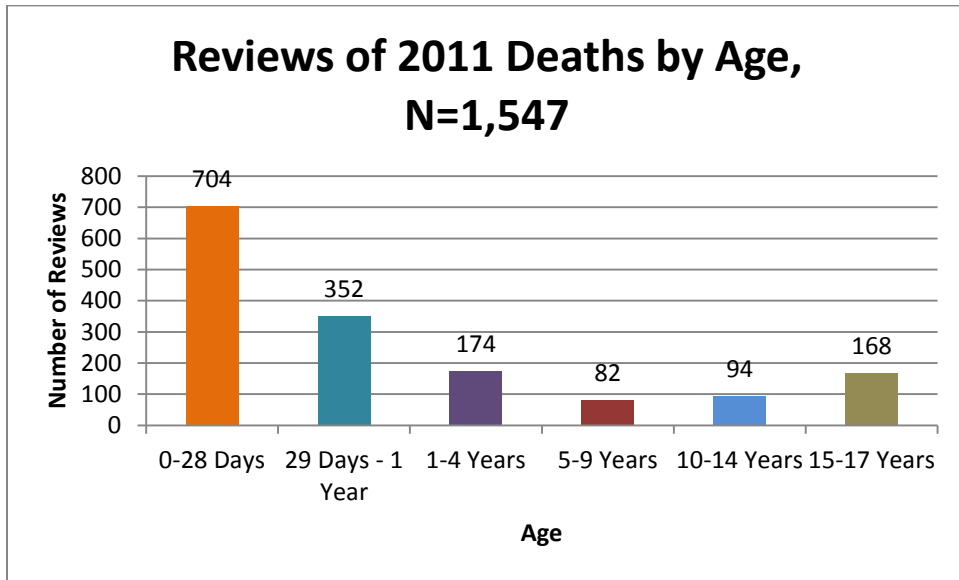
Ohio Child Mortality Rate by Year, 2007-2011



REVIEWS FOR 2011 DEATHS

Reviews by Demographic Characteristics

Local child fatality review (CFR) boards reviewed the deaths of 1,547 children who died in 2011. Sixty-eight percent (1,056) of the reviews were for children less than 1 year of age. There were greater percentages of reviews among boys (56 percent) and among black children (34 percent) relative to their representation in the general Ohio child population (51 percent for boys and 15 percent for black children, per U.S. Census data¹). Four percent (62) of all reviews were for children of Hispanic ethnicity, which closely compares to their representation in the general Ohio child population (5 percent).



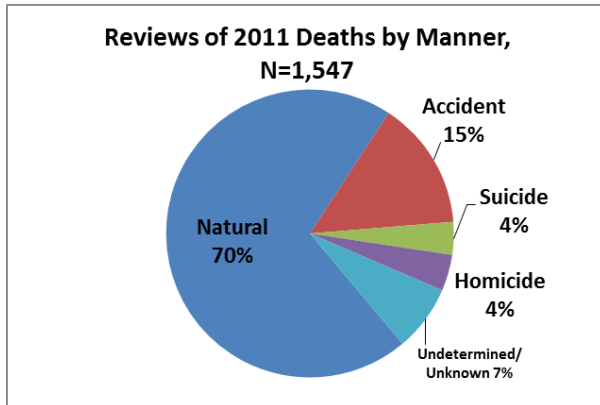
*36 cases with multiple races indicated were assigned to the minority race.

Reviews by Manner of Death

Manner of death is a classification of deaths based on the circumstances surrounding a cause of death and how the cause came about. The five manner-of-death categories on the Ohio death certificate are natural, accident, homicide, suicide and undetermined. For deaths being reviewed, CFR boards report the manner of death as indicated on the death certificate. For deaths that occurred in 2011, the 1,547 reviews were classified as follows:

- Seventy percent (1,088) were natural deaths.
- Fifteen percent (224) were accidents.
- Four percent (63) were homicides.
- Four percent (57) were suicides.
- Seven percent (115) were of an undetermined or unknown manner.

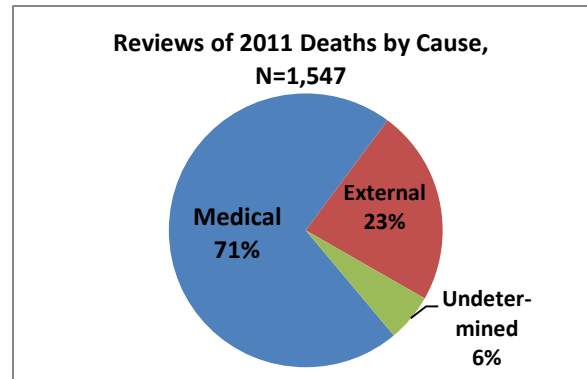
Since 2004, the proportional distribution of reviews across the manners has changed very little. See Appendix VII for additional tables including manner of death by demographic information.



Reviews by Cause of Death

The CFR case report tool and data system implemented in 2005 classify causes of death by medical or external causes. Medical causes are further specified by particular disease entities. External causes are further specified by the nature of the injury. In 2011, the 1,547 reviews were classified as follows:

- Seventy-one percent (1,103) were due to medical causes.
- Twenty-three percent (357) were due to external causes.
- In 87 reviews, the cause of death could not be determined as either medical or external.



DEATHS FROM MEDICAL CAUSES

Background

Deaths from medical causes are the result of a natural process such as disease, prematurity or congenital defect. A death due to a medical cause can result from one of many serious health conditions.

Many of these conditions are not believed to be preventable in the same way accidents are preventable. But with some illnesses such as asthma, infectious diseases and screenable genetic disorders, under certain circumstances, fatalities may be prevented. Many might be prevented through better counseling during preconception and pregnancy, earlier or more consistent prenatal care and smoking cessation counseling. While some conditions cannot be prevented, early detection and prompt, appropriate treatment can often prevent deaths.

Vital Statistics

Ohio Vital Statistics reported 1,193 children who died of medical causes in 2011. For further information on the ICD-10 codes used to produce vital statistics data, see Appendix V.

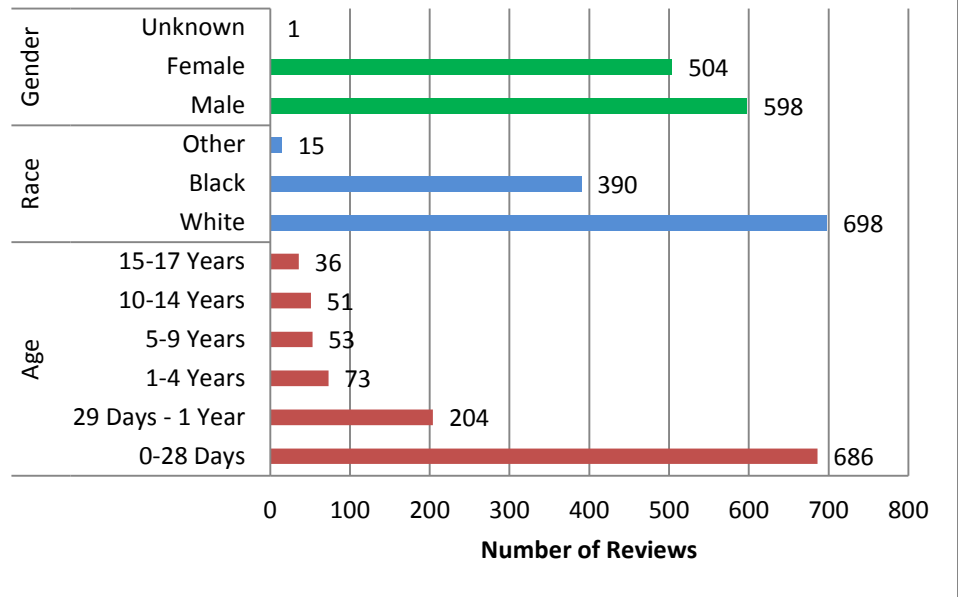
CFR Findings

Seventy-one percent (1,103) of the 1,547 reviews for 2011 deaths were from medical causes.

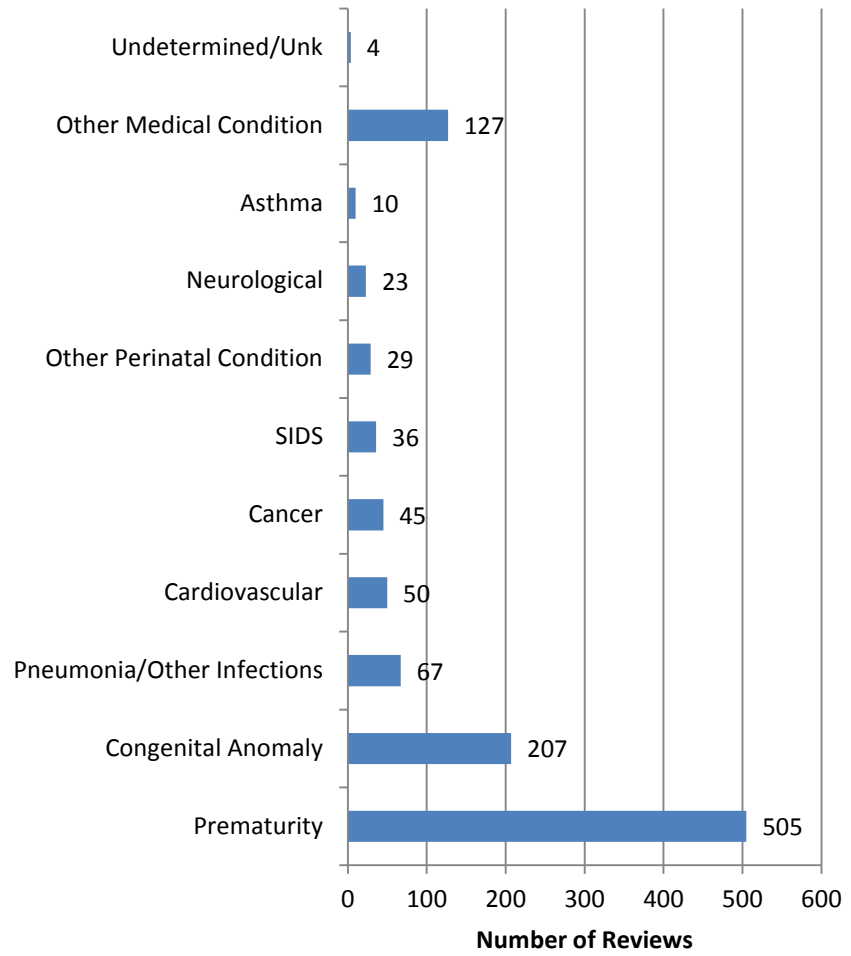
- Eighty-one percent (890) of the 1,103 reviews for medical causes were to infants under the age of 1 year.
- Fifty-four percent (598) of the 1,103 reviews for medical causes were to male children.
- Thirty-five percent (390) of the 1,103 reviews for medical causes were to black children, which is disproportionate to their representation in the Ohio child population (15 percent).
- The CFR data system provides a list of 15 medical conditions in addition to an “Other” category for classifying deaths from medical causes more specifically. Prematurity, congenital anomalies and pneumonia/other infections were the three leading medical causes of death.
 - Forty-six percent (505) of the deaths from medical causes were due to prematurity.
 - Nineteen percent (207) were due to congenital anomalies.
 - Six percent (67) were due to pneumonia and other infectious conditions.
 - Sudden infant death syndrome (SIDS) is a medical cause of death. Three percent (36) of the deaths from medical causes were due to SIDS.
- The leading medical cause of death for children older than 1 year was cancer. Twenty percent (42) of 213 deaths from medical causes to children older than 1 year were due to cancer.

For additional tables including all medical causes of death by demographic information, please see Appendix VII.

Reviews of 2011 Deaths from Medical Causes, N=1,103



Reviews of 2011 Deaths from Medical Causes, N=1,103



Three Leading Medical Causes of Death, by Age, Race and Gender						
	Prematurity (N=505)		Congenital Anomalies (N=207)		Pneumonia/ Other Infections (N=67)	
Age	#	%	#	%	#	%
1-28 Days	467	92	106	51	15	22
29 – 364 Days	34	7	71	34	18	27
1-4 Years	4	<1	10	5	17	25
5-9 Years	-	-	6	3	3	4
10-14 Years	-	-	10	5	8	12
15-17 Years	-	-	4	2	6	9
Unknown	-	-	-	-	-	-
Missing	-		-		-	
Race	#	%	#	%	#	%
White	271	54	144	70	41	61
Black	225	45	59	29	25	37
Other	9	2	4	2	1	1
Unknown	-	-	-	-	-	-
Missing	-		-		-	
Gender	#	%	#	%	#	%
Male	275	54	108	52	41	61
Female	229	45	99	48	26	39
Unknown	1	<1	-	-	-	-
Missing	-		-		-	
Total	505		207		67	

Percents may not total 100 due to rounding.

DEATHS FROM EXTERNAL CAUSES

Background

External causes of death are injuries, either unintentional or intentional, resulting from acute exposure to forces that exceed a threshold of the body's tolerance, or from the absence of such essentials as heat or oxygen.²

Vital Statistics

Ohio Vital Statistics reported 398 children who died of external causes in 2011. For further information on the ICD-10 codes used to produce vital statistics data, see Appendix V.

CFR Findings

Twenty-three percent (357) of the 1,547 reviews for 2011 deaths were due to external causes.

- Thirty-seven percent (132) of the 357 reviews of deaths from external causes were for children ages 15 to 17 years.
- Thirty percent (106) of the 357 reviews for external causes were for black children, which is disproportionate to their representation in the Ohio child population (15 percent).
- Sixty-two percent (220) of the 357 reviews for external causes were for boys, which is disproportionate to their representation in the population (51 percent).
- Asphyxia, vehicular injuries, and weapons injuries were the three leading external causes for the 357 reviews. Asphyxia has been the leading external cause of death for three of the past five years.
 - Thirty percent (106) were due to asphyxia.
 - Twenty-three percent (83) were due to vehicular injuries.
 - Twenty-one percent (74) were due to weapons injuries, including the use of body parts as weapons.

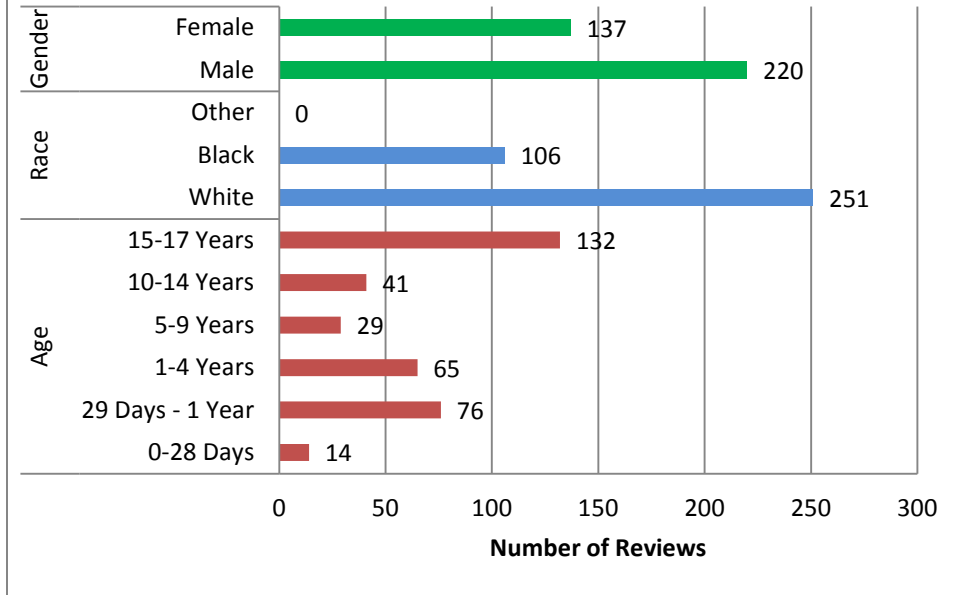
For additional tables including all external causes of death by demographic information, please see Appendix VII.

Ohio Injury Prevention Partnership

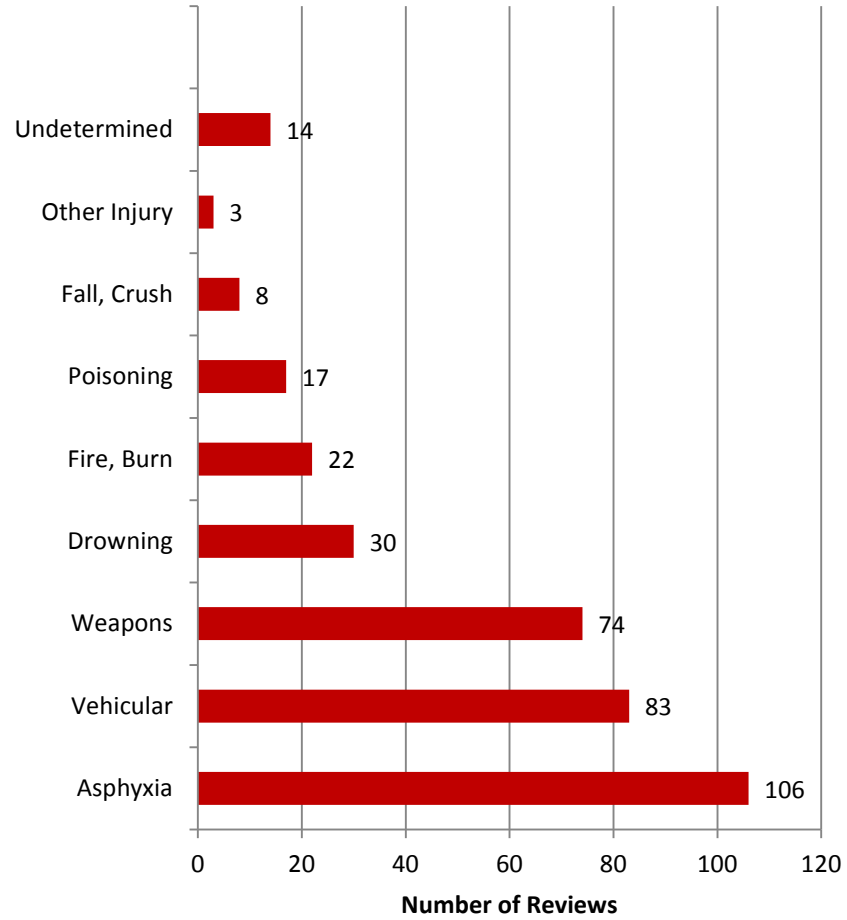
The Ohio Injury Prevention Partnership (OIPP) is a statewide group of professionals representing a broad range of agencies and organizations concerned with building Ohio's capacity to address the prevention of injury, particularly related to the group's identified priority areas. One of the subgroups of OIPP, the Child Injury Action Group (CIAG) works to develop and implement policies to decrease injuries and fatalities within their five priority areas including: teen safe driving; child restraint law review and revision; sports related traumatic brain injury; bicycle and wheeled sports helmets; and infant safe sleep. Ohio CFR data and findings have been used to inform the strategic plan for the CIAG.



Reviews of 2011 Deaths from External Causes, N=357



Reviews of 2011 Deaths from External Causes, N=357



REVIEWS BY COUNTY TYPE

Background

ODH categorizes Ohio's 88 counties into four county-type designations (rural Appalachian, rural non-Appalachian, suburban and metropolitan) based on similarities in terms of population and geography. The current county type designations originated with the Ohio Family Health Survey in 1998 and are based on the U.S. Code and U.S. Census information. See Appendix VI for a map of Ohio counties by county type.

To analyze the CFR data by county type, the computer-assigned case number was used to determine the county of review. In nearly all cases, the county of review is the county of the child's residence.

In 2011, Ohio's child population was distributed as follows:

- 13 percent rural Appalachian;
- 15 percent rural non-Appalachian;
- 19 percent suburban;
- and 54 percent metropolitan.³

According to Ohio Vital Statistics, the 2011 child deaths were distributed as follows:

- 13 percent rural Appalachian;
- 13 percent rural non-Appalachian;
- 13 percent suburban;
- and 61 percent metropolitan.⁴

The percentage of all deaths that were reviewed varied by county type:

- 90 percent rural Appalachian;
- 95 percent rural non-Appalachian;
- 93 percent suburban;
- and 100 percent metropolitan.

For an explanation of deaths not reviewed, please see "Limitations" on page 10 and "Overview of Ohio Child Fatality Review Program" on page 80.

It is known that many factors related to child deaths are not evenly distributed across the county types. Complex analysis is needed to determine the significance of the CFR county-type findings.

CFR Findings

The 1,547 reviews of deaths that occurred in 2011 were distributed as follows:

- Twelve percent of reviews (179) were from rural Appalachian counties.
- Thirteen percent of reviews (202) were from rural non-Appalachian counties.
- Thirteen percent of reviews (197) were from suburban counties, which is disproportionately lower than the proportion of children living in suburban counties (19 percent).
- Sixty-three percent of reviews (969) were from metropolitan counties, which is disproportionately higher than the proportion of children living in metropolitan counties (54 percent).

Manner of Death by County Type

- Sixty-five percent (711) of natural deaths reviewed were from metropolitan counties, which is disproportionately higher than the proportion of children living in metropolitan counties (54 percent).
- Seventeen percent of reviews for accidental deaths were from both rural Appalachian (39) and rural non-Appalachian (38) counties, which is disproportionately higher than the proportion of

children living in those counties (12 percent and 15 percent).

- Thirty percent (17) of suicide deaths reviewed were from rural non-Appalachian counties, which is disproportionately higher than the proportion of children living in those counties (15 percent).
- The percentage of reviews for homicide deaths was higher in metropolitan (67 percent) than the proportion of children living in those counties (54 percent).

Manner of Death by County Type, N=1,547									
	Rural Appalachian		Rural Non-Appalachian		Suburban		Metro-politan		Total
	#	%	#	%	#	%	#	%	#
Natural	111	10	133	12	133	12	711	65	1,088
Accident	39	17	38	17	33	15	114	51	224
Suicide	8	14	17	30	12	21	20	35	57
Homicide	5	8	10	16	6	10	42	67	63
Undetermined/ Unknown	16	14	4	4	13	11	82	71	115
Total	179	12	202	13	197	13	969	63	1,547

Percents may not total 100 due to rounding.

Medical Causes of Death by County Type

- Sixty-five percent (716) of the reviews of deaths from medical causes were from metropolitan counties, which is disproportionately higher than the proportion of children living in metropolitan counties (54 percent). Reviews of deaths due to prematurity were particularly over-represented in metropolitan counties. Seventy-four percent (374) of deaths due to prematurity were from metropolitan counties. In contrast, only 9 percent (47) of the deaths due to prematurity were from suburban counties, which is disproportionately less than the proportion of children living in suburban counties (19 percent).

Medical Causes of Death by County Type, N=1,103									
	Rural Appalachian		Rural Non-Appalachian		Suburban		Metro-politan		Total
	#	%	#	%	#	%	#	%	#
Prematurity	38	8	46	9	47	9	374	74	505
Congenital Anomaly	28	14	19	9	30	15	130	63	207
Pneumonia/ Other Infection	12	18	7	10	12	18	36	54	67
All Other Medical Causes	40	12	61	19	47	15	176	54	324
Total	118	11	133	12	136	12	716	65	1,103

Percents may not total 100 due to rounding.

External Causes of Death by County Type

- Seventeen percent (14) of vehicular deaths were from rural Appalachian counties, which is disproportionately higher than the proportion of children living in rural Appalachian counties (13 percent).
- Thirty-two percent (7) of fire and burn deaths reviewed were from rural Appalachian counties, which is disproportionately higher than the proportion of children living in those counties (13 percent).

External Causes of Death by County Type, N=357									
	Rural Appalachian		Rural Non-Appalachian		Suburban		Metro-politan		Total
	#	%	#	%	#	%	#	%	#
Asphyxia	19	18	19	18	15	14	53	50	106
Vehicular	14	17	15	18	16	19	38	46	83
Fire/Burn	7	32	1	5	4	18	10	46	22
All Other External Causes	12	8	29	20	16	11	89	61	146
Total	52	15	64	18	51	14	190	53	357

Percents may not total 100 due to rounding.

Reviews of Special Interest

The distribution of the 169 reviews for sleep-related deaths varies from the population distribution by county type.

- Sixteen percent of reviews (27) were from rural Appalachian counties.
- Ten percent of reviews (17) were from rural non-Appalachian counties.
- Twelve percent of reviews (20) were from suburban counties.
- Sixty-two percent of reviews (105) were from metropolitan counties.

The distribution of the 26 reviews for child abuse and neglect deaths also varies from the population distribution by county type. Sixty-two percent (16) of the reviews were from metropolitan counties.

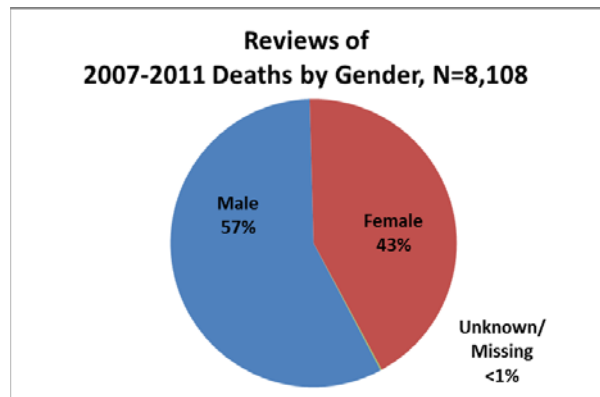
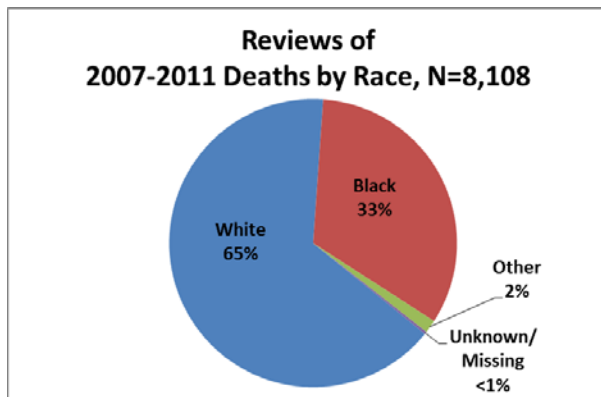
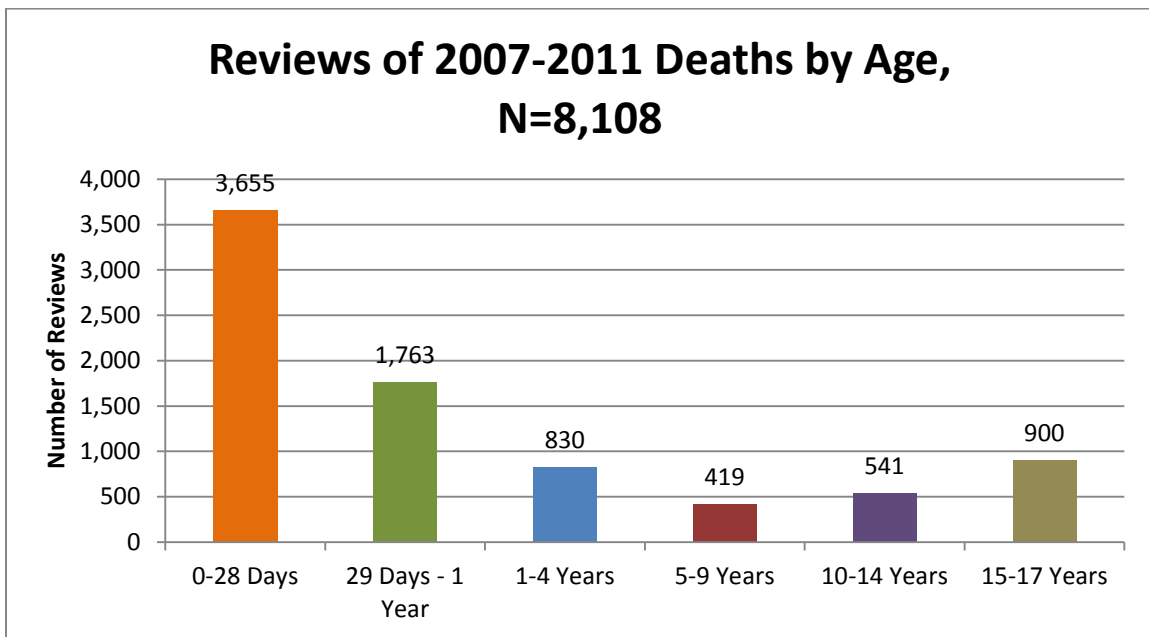
For more data regarding reviews of 2011 deaths, see Appendix VII.

REVIEWS FOR 2007-2011 DEATHS

SUMMARY OF REVIEWS

To gain more understanding of the factors related to child death, data have been analyzed for the five-year year-of-death period 2007-2011. For the five-year period, Ohio CFR boards have completed 8,108 reviews, which represent 97 percent of the 8,345 child deaths reported by Ohio Vital Statistics.

- Sixty-seven percent (5,418) of the reviews were for children less than 1 year of age.
- There were greater percentages of reviews among boys (57 percent) and among black children (33 percent) relative to their representation in the general Ohio population (51 percent for boys and 15 percent for black children, per U.S. Census data⁵).
- Five percent (382) of all reviews were for children of Hispanic ethnicity.

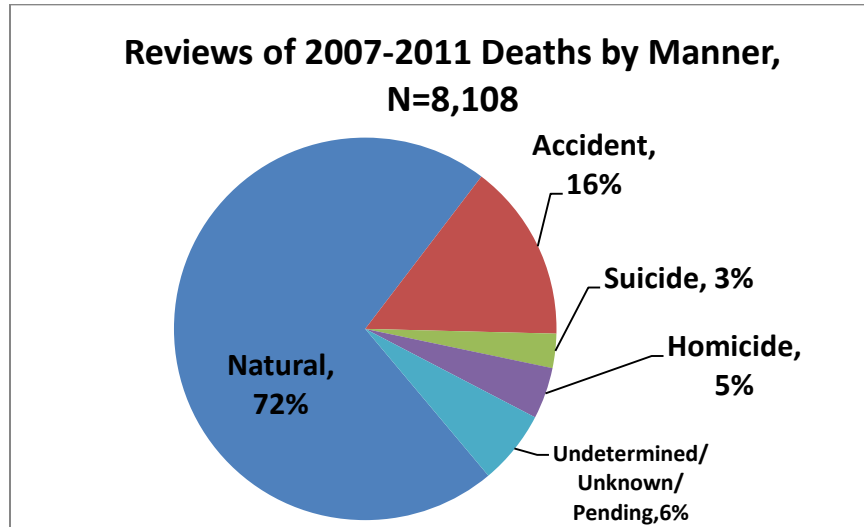


* 184 cases with multiple races were assigned to the minority race.

Reviews by Manner of Death

For the five-year period 2007-2011, the 8,108 reviews were classified as follows:

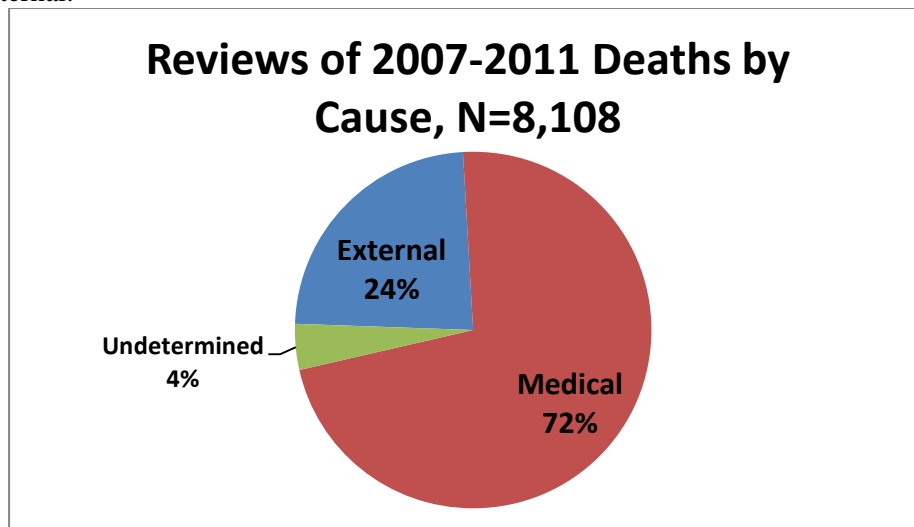
- Seventy-two percent (5,796) were natural deaths.
- Fifteen percent (1,218) were accidents.
- Four percent (353) were homicides.
- Three percent (235) were suicides.
- Six percent (506) were of an undetermined or unknown manner.



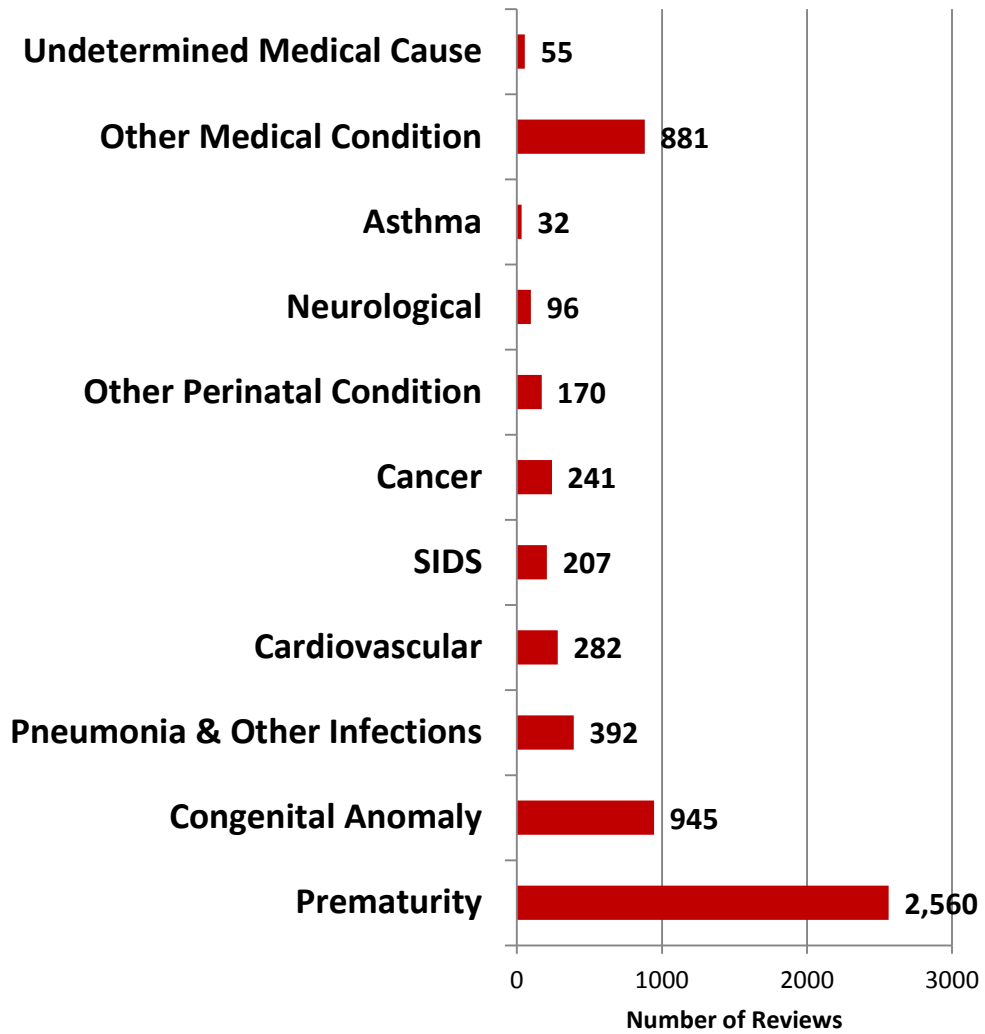
Reviews by Cause of Death

The CFR case report tool and data system implemented in 2005 classify causes of death by medical or external causes. Medical causes are further specified by particular disease entities. External causes are further specified by the nature of the injury. For the five-year period 2007-2011, the 8,108 reviews were classified as follows:

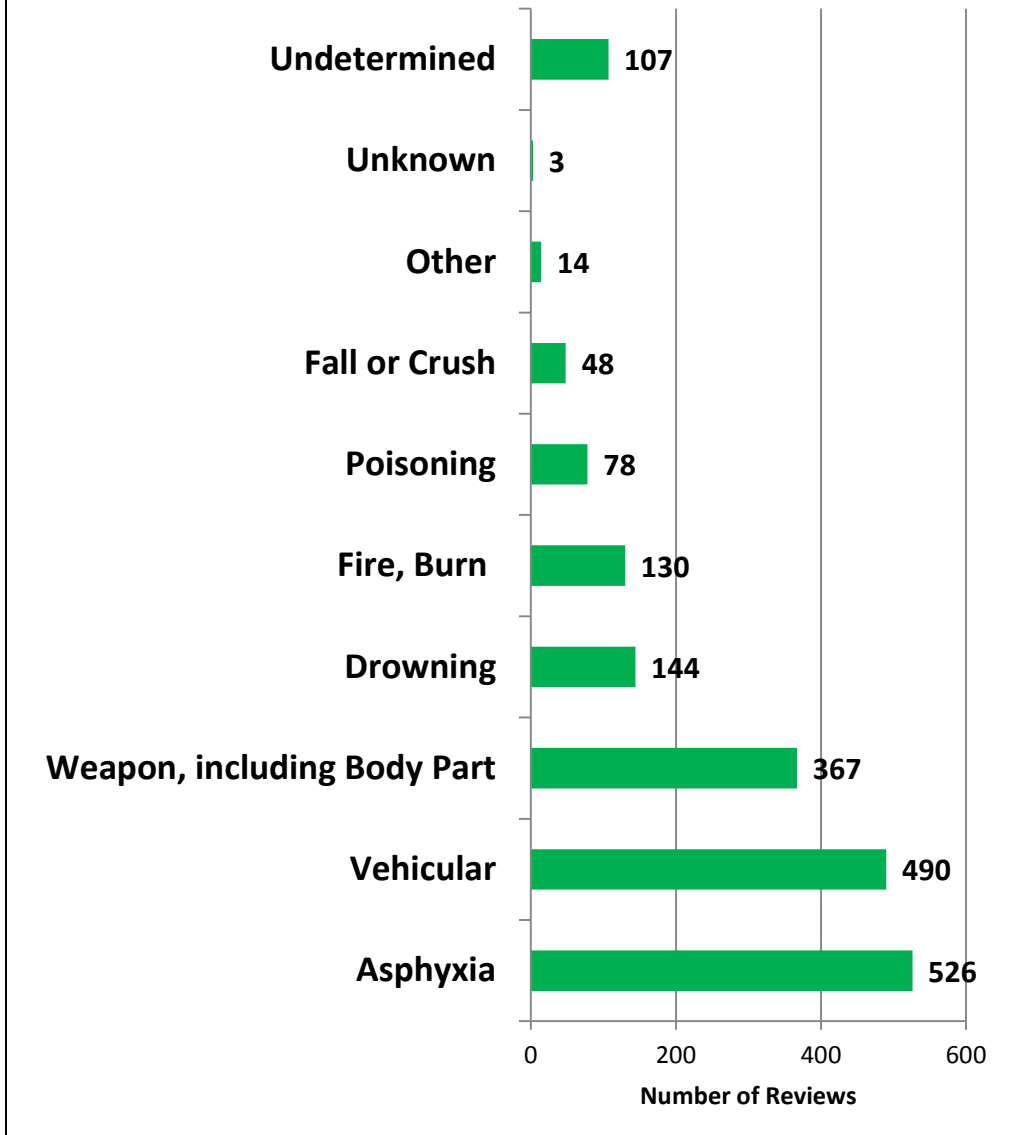
- Seventy-two percent (5,863) were due to medical causes.
- Twenty-four percent (1,907) were due to external causes.
- For four percent (338) of the cases, the cause of death could not be determined as either medical or external.



Reviews of 2007-2011 Deaths from Medical Causes, N=5,863



Reviews of 2007-2011 Deaths from External Causes, N=1,907

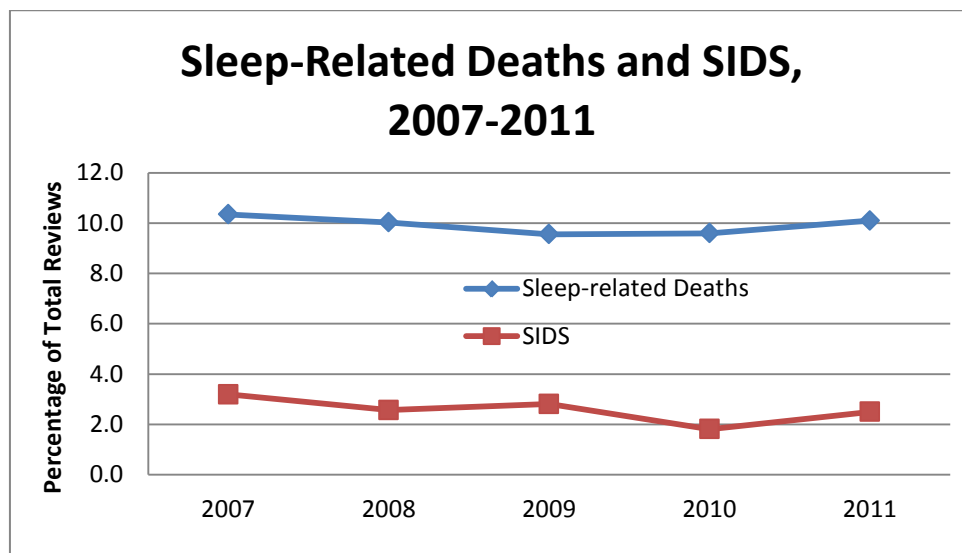


See Appendix VII for additional review information regarding demographics for 2007-2011 deaths.

TRENDS OVER FIVE YEARS

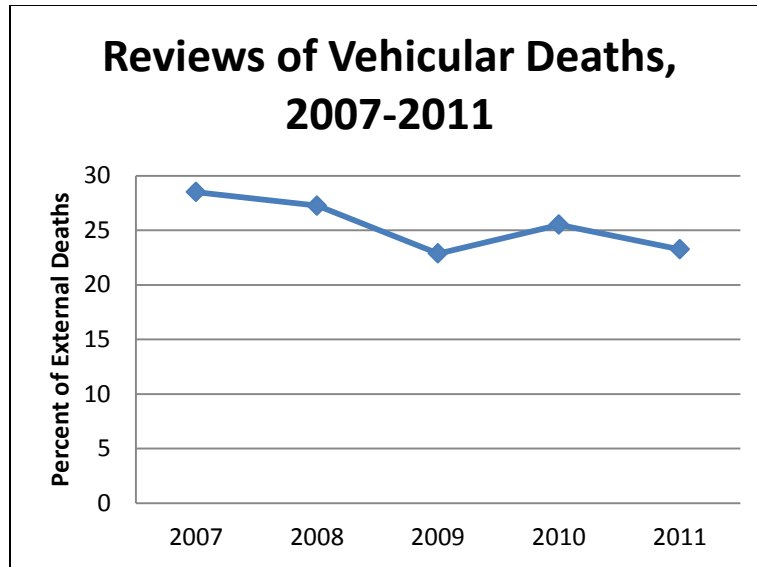
For the five-year period 2007-2011, the proportional distribution of reviews across many factors, such as manner of death, age, race, gender and preventability, has changed very little.

- Seventy-two percent (5,796) of the reviews were natural manner of death. The percentage changed little over the period, from a high of 73 percent in 2007 to a low of 70 percent in 2008.
- Sixty-seven percent (5,418) of the reviews were for infants less than 1 year old. The percentage has increased slightly each year, from 66 percent in 2007 to 68 percent in 2011. The increase is likely due to improved processes to identify and review these deaths.
- Fifty-seven percent (4,649) of the reviews were for boys. The percentage changed little over the period, from a high of 59 percent in 2007 to a low of 56 percent in 2010.
- Thirty-three percent (2,675) of the reviews were for black children. The percentage has changed little over the period, from a high of 35 percent in 2008 to a low of 31 percent in 2010.
- Twenty-three percent of the deaths reviewed were deemed probably preventable. The percentage changed little over the period, from a high of 24 percent in 2008 to a low of 22 percent in 2007, 2009 and 2010.
- Reviews for sleep-related infant deaths account for 10 percent (819) of all reviews. The percentage has remained constant for the five-year period. The percentage of reviews for SIDS deaths has changed little from 3 percent in 2007 to 2 percent in 2011.

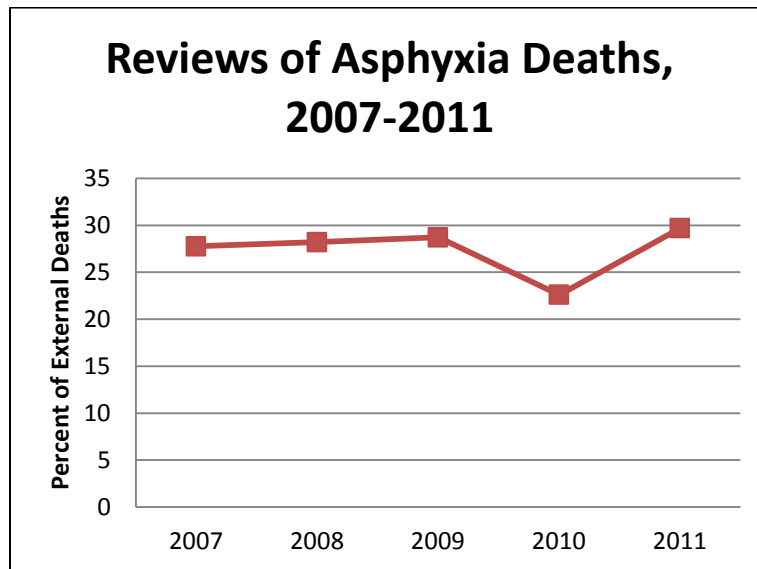


Over the five-year period, changes were noted in the percentage of reviews for some groups of death, particularly vehicular injuries and asphyxia.

- Six percent (490) of all reviews were due to vehicular crashes. This is 26 percent of the 1,907 reviews for deaths from external causes. The percentage of deaths from external causes due to vehicular crashes has decreased from 29 percent in 2007 to 23 percent in 2011, with a peak in 2010 to 26 percent. The overall five year trend is a decrease in the percentage of deaths due to vehicular crashes. White boys ages 15 – 17 years accounted for 29 percent (141) of all vehicular deaths.



- Eight percent (526) of all reviews were due to asphyxia. The percentage of deaths from external causes due to asphyxia increased from 28 percent in 2007 to 30 percent in 2011, with a decrease to 23 percent in 2010. Each year, the largest numbers of asphyxia deaths are suffocation deaths to infants less than 1 year old. Fifty-four percent (284) of the asphyxia deaths were sleep-related infant deaths.



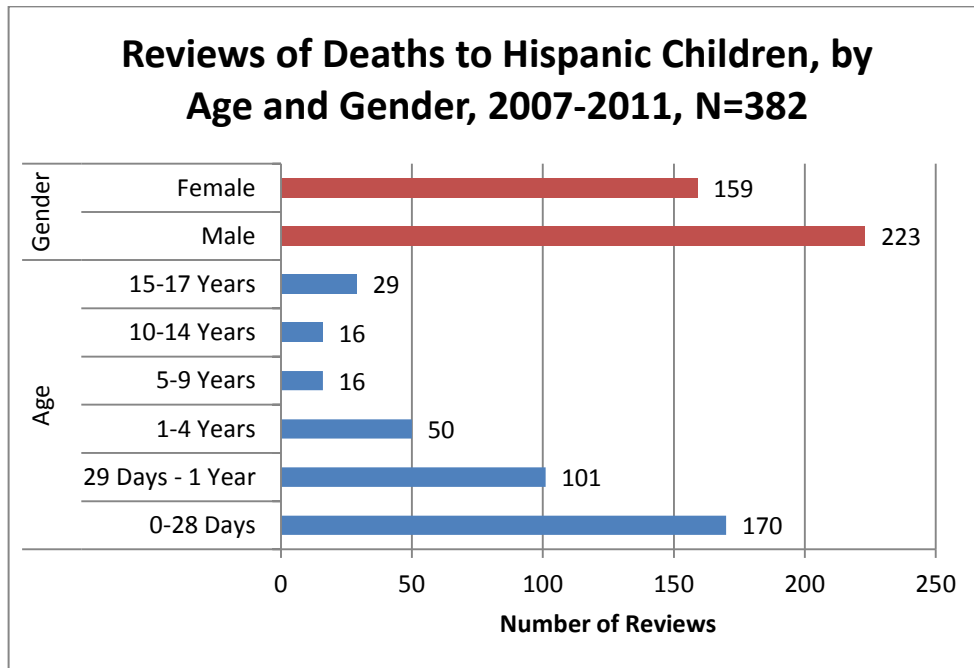
The comprehensive nature of the case report tool and the functionality of the data system have allowed more complete analysis for all groups of deaths. The following sections of this report offer in-depth information about reviews of deaths to Hispanic children, poisoning deaths, deaths by special circumstances, such as suicides, homicides and child abuse deaths, and by age group. Each section contains detailed data regarding the circumstances and factors related to child deaths.

DEATHS TO HISPANIC CHILDREN, ALL AGES

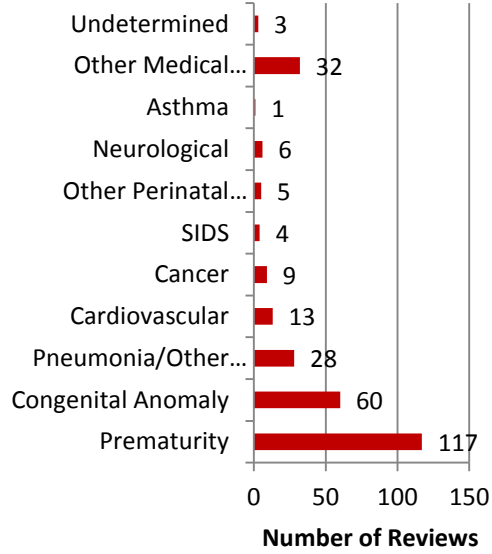
The CFR case report tool and data system record Hispanic ethnicity as a variable separate from race. A child of any race may be of Hispanic ethnicity.

For the five-year period 2007-2011, five percent (382) of the 8,108 total reviews were for children of Hispanic ethnicity. During the five-year period, the population of Hispanic children living in Ohio increased slightly from 4 percent of the total child population in 2007 to 5 percent in 2011.⁶

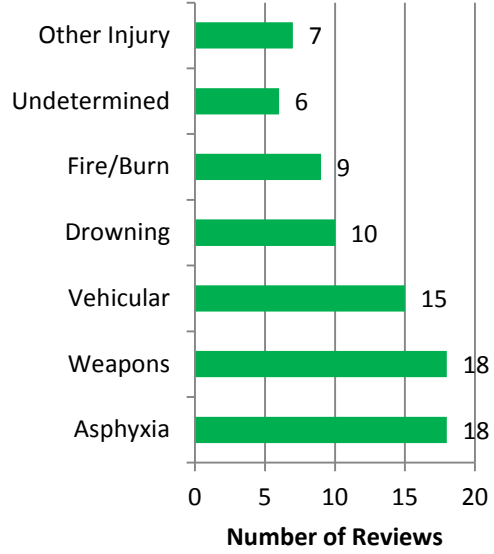
- Seventy-one percent (271) of the reviews for Hispanic children were for infants.
- Prematurity and congenital anomalies were the leading medical causes of death, accounting for 46 percent (177) of the reviews for Hispanic children.
- The leading external causes of death were asphyxia (18) and weapons (18), followed by vehicular crashes (15).
- Fifteen percent (41) of the reviews for Hispanic infants were sleep-related deaths.



Reviews of Deaths to Hispanic Children by Medical Causes, 2007-2011, N=278



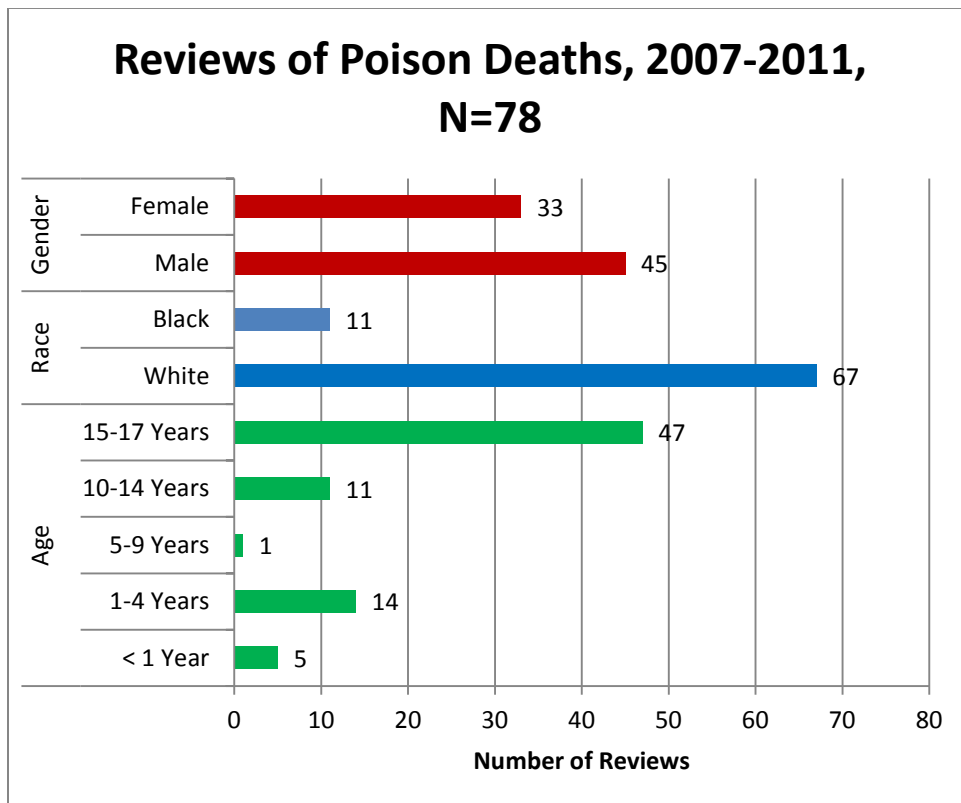
Reviews of Deaths to Hispanic Children by External Causes, 2007-2011, N=83



POISONING DEATHS, ALL AGES

Combining data from five years allows more analysis for deaths due to poison, where in-depth analysis is limited by small numbers in a single year.

- Local CFR boards reviewed 78 poisoning deaths for 2007-2011. These deaths represent four percent of the 1,907 deaths from external causes for the period. Seventy-one percent (55) of the deaths were of accidental manner. Nine percent (7) were suicides.
 - Sixty percent (47) of the deaths occurred to 15 to 17 year olds.
 - The poison agents for this age group included prescription and over-the-counter medications, methadone, street drugs, alcohol and carbon monoxide.
 - Twenty-six percent (20) of the poisoning deaths occurred to children younger than 10 years.
 - The poison agents for this age group included prescription and over-the-counter medications, methadone, and street drugs. None were poisoned by household cleaners or plants.



Prescription Drug Abuse, Misuse and Overdose in Ohio

From 1999 to 2011, Ohio's death rate due to unintentional drug poisonings increased 440 percent with the increase in deaths driven largely by prescription drug overdoses. Nearly five Ohioans die each day as a result of unintentional drug overdose. The impact of this epidemic on the health and safety of children has been identified by local CFR boards. A multidisciplinary state action team developed recommendations for policy changes to address the problem. House Bill 93 was passed unanimously in the Ohio legislature and signed into law by Governor John R. Kasich in May, 2011. This law provides the state medical and pharmacy boards and law enforcement agencies with additional tools to shut down pill mills, and investigate and prosecute those providers that are illegally and unethically prescribing and dispensing medication. Since the implementation of law, more than a dozen pill mills have been shut down in Scioto County alone.

The Ohio Department of Mental Health and Addiction Services, the Ohio Attorney General's Office and ODH are actively engaged in addressing this problem through funding community coalitions, promoting public awareness campaigns, implementing drug disposal events, promoting education for physicians and other prescribers, funding prevention programs in schools, colleges and work sites, implementing Naloxone (overdose antidote) distribution programs and revising and expanding criminal justice and treatment programs to respond appropriately to increasing needs related to prescription drug abuse.

Through these collaborative endeavors, Ohio plans to continue its efforts to curb prescription drug abuse, misuse and overdose with the goal of promoting the health and safety of parents, which will ultimately promote the well-being of Ohio's children. Additional information and resources about this topic and details on program activities are available on the ODH Violence and Injury Prevention Program Drug Overdose website at <http://www.healthyohioprogram.org/vipp/drug/dpoison.aspx> .

HOMICIDE, ALL AGES

Background

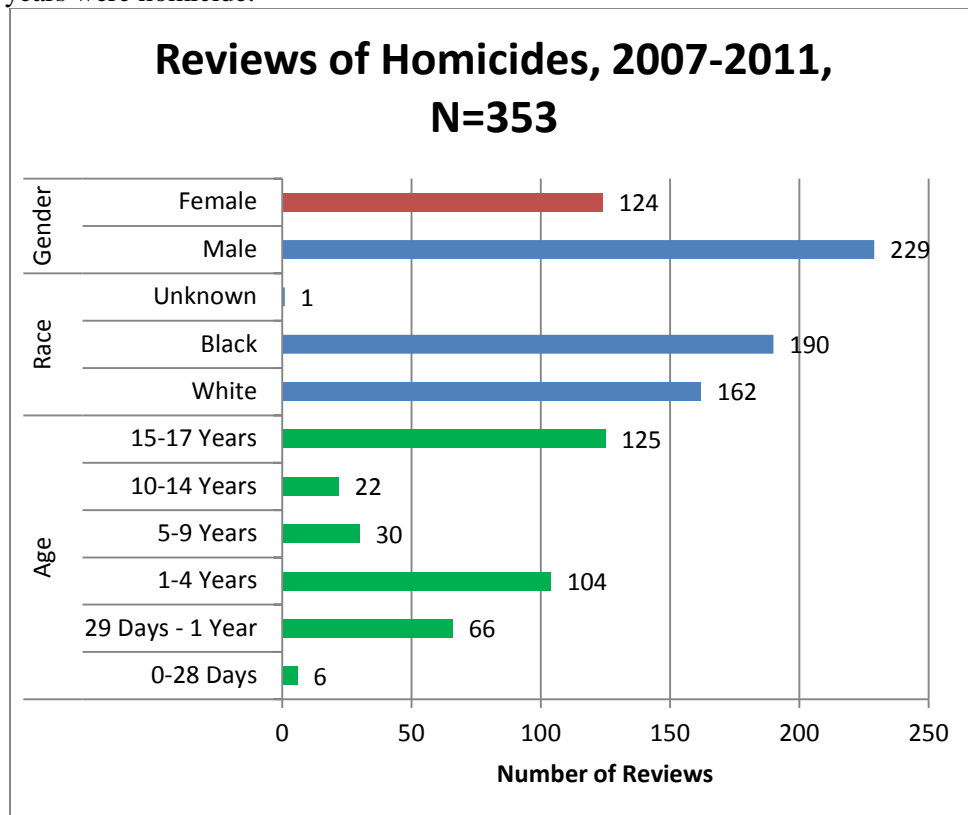
The CFR case report tool and data system capture information about homicide as a manner of death and as an act of commission, regardless of the cause of death. Because homicide has unique risk factors and prevention strategies, homicide reviews from all causes of death have been combined for further analysis as a group.

According to the National Center for Injury Prevention and Control, in 2010 homicide was the third-leading cause of death for children ages 10 to 17 years and accounted for 11 percent of the deaths in this age group. Homicide was the leading manner of death for black children ages 10 to 17 years, accounting for 29 percent.⁷

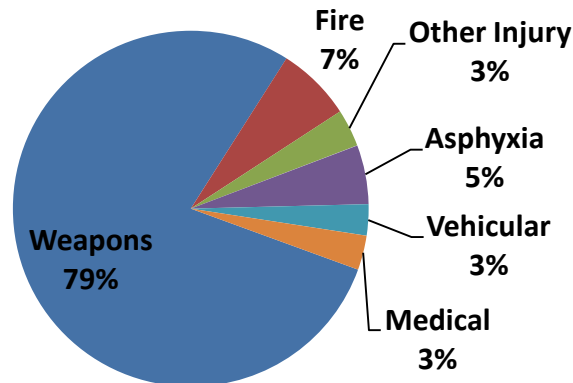
CFR Findings

For the five-year period 2007-2011, local CFR boards reviewed 353 deaths to children resulting from homicide. Homicides represent four percent of the total reviews and fourteen percent of all reviews for children ages 15 to 17 years. The percentage of all reviews due to homicide was 4 percent in 2008 and 2009, and 5 percent in 2007 and 2010.

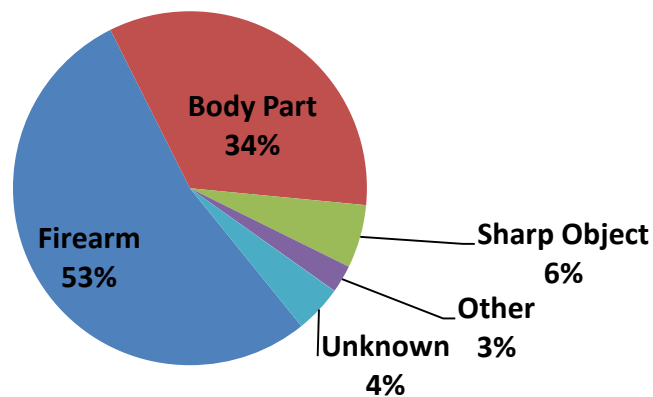
- Homicide deaths to boys (65 percent) were disproportionately higher than their representation in the general population (51 percent).
- The proportion of homicide deaths to black children (54 percent) was more than 3 times their representation in the general population (15 percent).
- Of the 173 deaths from all causes to black boys ages 15 to 17 years, 49 percent (85) were homicides, while only 3 percent (14) of the 433 deaths from all causes to white boys ages 15 to 17 years were homicide.



Homicides by Cause of Death, N=353



Homicides by Weapon Type, N=277



For a better understanding of the factors related to homicides, the 353 reviews were divided by age: 206 reviews for children 0 to 9 years old, and 147 reviews for children 10 to 17 years old.

- Seventy-nine percent (277) of homicide deaths were caused by a weapon, including body parts.
 - Eighty-one percent (119) of the homicides to children 10 to 17 years old involved firearms as the weapon. Fourteen percent (29) of the homicides to children 0 to 9 years old involved firearms.
 - Forty-five percent (92) of the homicides to children 0 to 9 years old involved the use of body parts as weapons.
- The perpetrator was more often a family member for children less than 10.
 - For children less than 10 years old, the perpetrator was a parent, stepparent, or other relative in 61 percent (125) of reviews. The parents' partner was responsible for 19 percent (39) of the homicides to younger children.
 - For children ages 10 to 17, the most frequently reported perpetrator was an acquaintance, friend or stranger (47 percent). There were 13 children ages 10 to 17 killed by a gang member (9 percent).
- In 51 percent (179) of the homicide reviews, the place of incident was the child's home.
 - For children less than 10 years old, the place of incident was the child's home in 75

- percent (155) of reviews.
- For children ages 10 to 17 years, the commonly reported places of incident were roadways (20 percent), sidewalks (18 percent), child's home (16 percent), and friend's home (14 percent).
- Thirty-six percent (126) of the homicides reviewed were deemed to be child abuse or neglect. Fifteen percent (53) had an open case with childrens' protective services at the time of the incident.

Reviews of Homicides by Perpetrator, 2007-2011, N=353		
Person Causing Death	#	%
Biological Parent	113	33
Stepparent	6	<2
Parent's Partner	40	12
Other Relative	28	8
Acquaintance	41	12
Friend/Boyfriend/Girlfriend	26	8
Gang Member	13	4
Stranger	24	7
Unknown	35	10
Other	3	<1
Missing	11	
Total	353	100

Percents may not total 100 due to rounding.

Reviews of Homicides by Place of Incident, 2007-2011, N=353		
Place of Incident	#	%
Home	179	51
Road	33	9
Friend's Home	27	8
Relative's Home	24	7
Sidewalk/Driveway/Parking Lot	46	13
Other	34	10
Unknown	10	3
Missing	0	
Total	353	100

Percents may not total 100 due to rounding.

SUICIDE, ALL AGES

Background

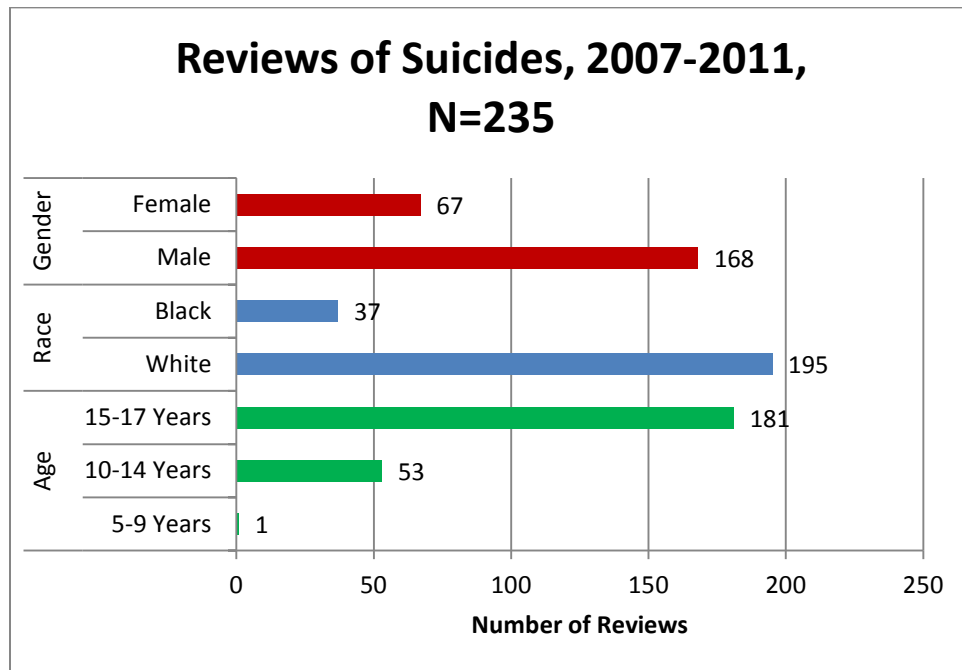
Suicide is death caused by self-directed injurious behavior with intent to die.⁸ The CFR case report tool and data system capture information about suicide as a manner of death and as an act of commission, regardless of the cause of death. Because suicide has unique risk factors and prevention strategies, suicide deaths from all causes have been combined for further analysis.

According to the National Center for Injury Prevention and Control, suicide accounted for 13 percent of the deaths for young people ages 10 to 17 years nationally in 2010.⁹

CFR Findings

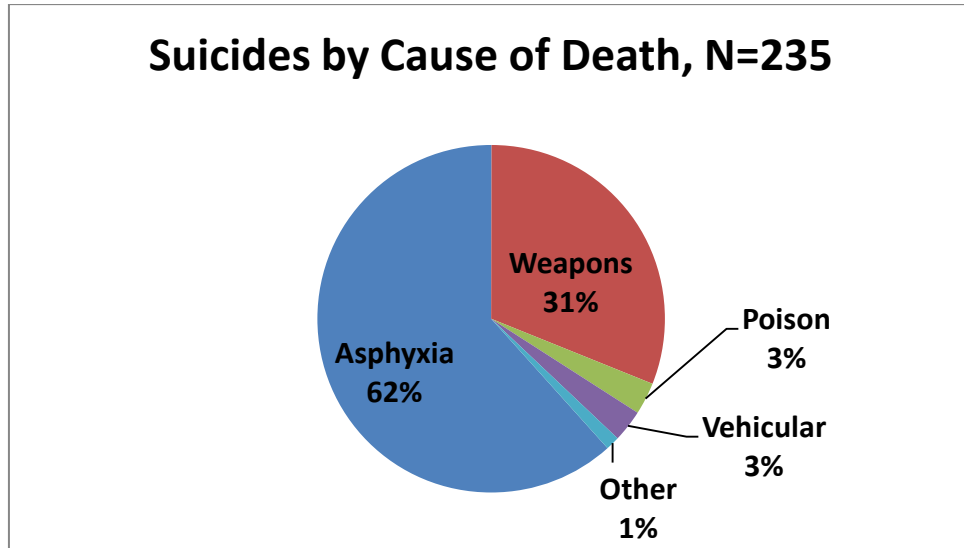
For the five-year period 2007-2011, local CFR boards reviewed 235 deaths to children from suicide. These represent three percent of the total 8,108 reviews and 16 percent of all reviews for children ages 10-17. The largest number of suicides occurred in 2008 (58) and the fewest occurred in 2010 (28).

- Suicide deaths were disproportionately higher among boys (72 percent) than their representation in the general population (51 percent).
- Seventy-seven percent (181) of the suicide deaths reviewed were to children ages 15 to 17.
- Twenty percent (48) of reviews for suicide deaths were from rural non-Appalachian counties and 22 percent (52) were from suburban counties, which is disproportionately higher than the proportion of children living in those counties (15 percent and 18 percent).



- Sixty-two percent (145) of the suicide deaths were caused by asphyxiation and 31 percent (73) were caused by a weapon.
- The most frequently indicated factors that might have contributed to the child's despondency included family problems, such as divorce and arguments with parents; arguments and break-ups with friends; school issues including failure; drug and alcohol use; victimization by bullying; and other personal crises.

- Seventeen percent (45) of reviews for suicide deaths indicated the child had a history of child abuse or neglect. Fifteen had an open child protective services case at the time of the incident.
- Twenty-nine percent (67) of the suicide victims were receiving mental health services at the time of the incident. Twenty percent (48) had been prescribed medications for mental health conditions.



CHILD ABUSE AND NEGLECT, ALL AGES

Background

Child abuse and neglect is any act or failure to act on the part of a parent or caretaker that results in death, serious physical or emotional harm, sexual abuse or exploitation; or that presents an imminent risk of serious harm. Physical abuse includes punching, beating, shaking, kicking, biting, burning or otherwise harming a child and often is the result of excessive discipline or physical punishment that is inappropriate for the child's age. Head injuries and internal abdominal injuries are the most frequent causes of abuse fatalities. Neglect is the failure of parents or caregivers to provide for the basic needs of their children, including food, clothing, shelter, supervision and medical care. Deaths from neglect are attributed to malnutrition, failure to thrive, infections and accidents resulting from unsafe environments and lack of supervision.

Some deaths from child abuse and neglect are the result of long-term patterns of maltreatment, while many other deaths result from a single incident. According to Prevent Child Abuse America, there are several factors that put parents at greater risk of abusing a child: social isolation, difficulty dealing with anger and stress, financial hardship, alcohol or drug abuse, mental health issues, and apparent disinterest in caring for the health and safety of their child.¹⁰

Many child abuse and neglect deaths are coded on the official death certificate as other causes of death, particularly unintentional injuries or natural deaths. In a study of 51 deaths identified as child abuse and neglect by local Ohio Child Fatality Review (CFR) boards in 2003 and 2004, 31 different causes of death were recorded on the death certificates. The causes included both medical and external injuries, both intentional and unintentional.¹¹

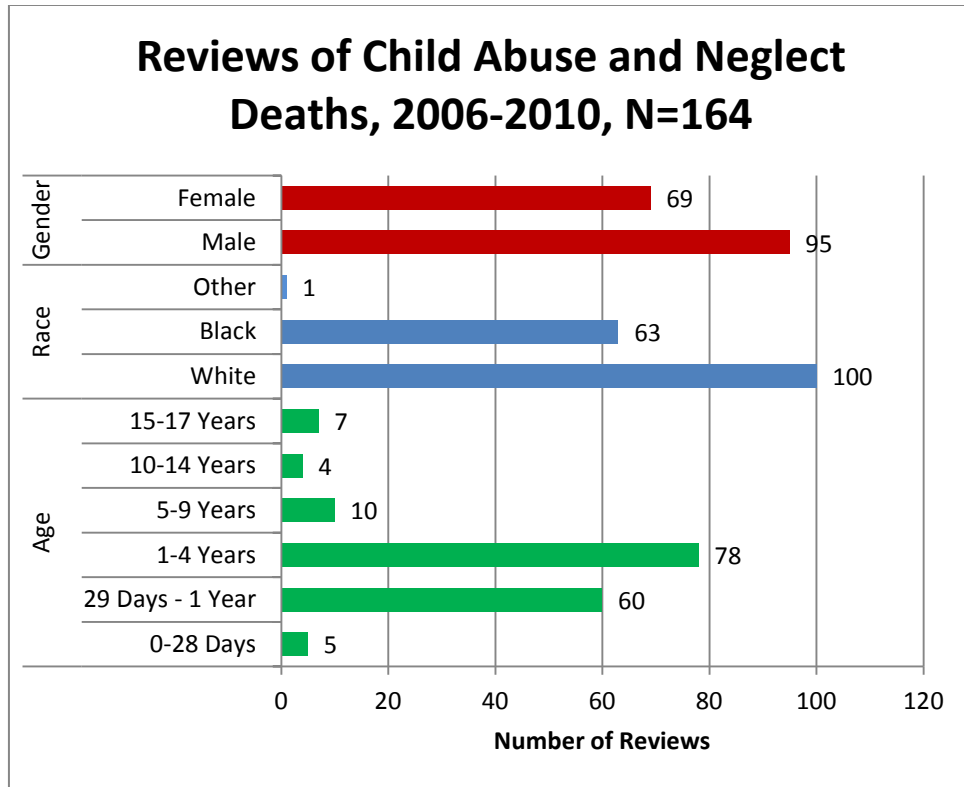
Best estimates are that any single source of child abuse fatality data, such as death certificates, exposes just the tip of the iceberg. The interagency, multidisciplinary approach of the CFR process may be the best way to recognize and assess the number and the circumstances of child maltreatment fatalities. Even the CFR process is likely to under count child abuse fatalities due to delays in reviews caused by lengthy investigation and prosecution procedures.

The CFR case report tool and data system capture information about child abuse and neglect deaths as acts of omission or commission, regardless of the cause of death. The tool collects details about the circumstances and persons responsible for the death.

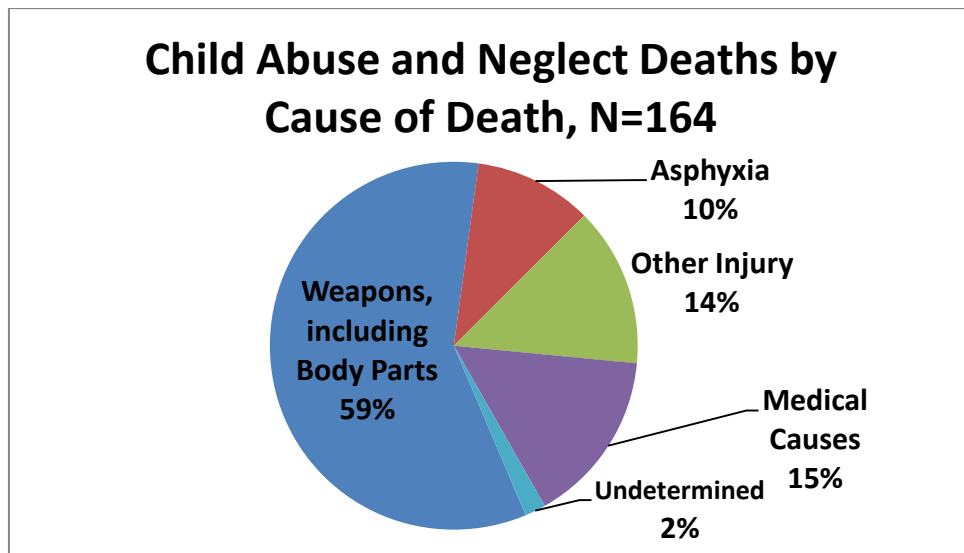
CFR Findings

For the five-year period 2007-2011, local CFR boards reviewed 164 deaths from child abuse and neglect. These represent two percent of all 8,108 deaths reviewed. The percentage of reviews of child abuse and neglect deaths has not changed during the five-year period.

- Seventy-six percent (125) of the 164 reviews indicated that physical abuse caused or contributed to the death, while 27 percent (45) reviews indicated that neglect caused or contributed to the death. Six reviews indicated both abuse and neglect caused or contributed to the death.
- Eighty-seven percent (143) of child abuse and neglect deaths occurred among children younger than 5 years old.
- A greater percentage of child abuse and neglect deaths occurred to black children (38 percent) relative to their representation in the general population (15 percent).



- The 164 deaths identified as child abuse and neglect were the result of several kinds of injuries.
 - Fifty-nine percent (96) were the result of weapons including use of a body part as a weapon.
 - Other causes of death included medical causes, asphyxiation, drowning, poison, and fire/burn injuries.
- The majority of the 164 child abuse and neglect deaths reviewed were violent deaths, with 117 resulting from physical abuse, including 32 indicating the child had been shaken.



- Thirty-seven percent (60) of the 164 child abuse and neglect deaths reviewed indicated the child had a prior history of child abuse and neglect, and 22 percent (36) had an open child protective services

case at the time of the incident. Twenty-three percent (38) of the 164 reviews indicated the child's primary caregiver had a prior history as a perpetrator of abuse or neglect.

- Sixty percent (99) of the reviews indicated the person causing the death was a biological parent. The parent's partner was indicated as the perpetrator in 21 percent (34) of the reviews.
- For the 150 reviews where the type of residence was known, 93 percent (139) of the children were living in a parental home. Only six were in official placement in foster homes, relative foster homes or licensed group homes.

Reviews of Child Abuse and Neglect Deaths by Person Causing Death, 2007-2011, N=164		
Person	#	%
Biological Parent	99	60
Stepparent/Foster Parent	5	3
Parent's Partner	34	21
Other Relative	7	4
Friend/Acquaintance	5	3
Other	4	2
Unknown	10	6
Total	164	100

Percents may not total 100 due to rounding.

For all 8,108 deaths reviewed from all causes for the five-year period 2007-2011, 5 percent (395) indicated a prior history of child abuse or neglect, and 4 percent (304) had an open case with child protective services at the time of the death.

Ohio Children's Trust Fund

The Ohio Children's Trust Fund (OCTF) is Ohio's sole public funding source for child abuse and neglect prevention. OCTF was created in Ohio law in 1984 and is governed by a board of 15 members representing a broad public-private partnership. The board consists of representatives from children's services agencies, education, law enforcement and the pediatric community. Eight members are appointed by the Governor to represent the citizens of Ohio, four members are legislative appointees and three members are agency directors (ODH, ODJFS and the Ohio Department of Mental Health and Addiction Services). The Board supervises the policies and programs of the Trust Fund and the ODJFS serves as the administrative agent for procurement and budgeting purposes.

OCTF receives revenues from surcharges on birth and death certificates and divorce and dissolution decrees. As provided under Ohio law, OCTF invests this revenue in three areas: county allocations, statewide prevention programs and initiatives, and child advocacy centers (CACs). OCTF also receives federal dollars through the Community Based Child Abuse Prevention (CBCAP) Grant. The purpose of the grant is to fund community based primary and secondary child abuse prevention programs with statewide significance.

In 2011, OCTF became the Ohio Chapter of Prevent Child Abuse America to align Ohio's statewide prevention efforts under one entity and to further the work of Prevent Child Abuse Ohio.

The OCTF 2009 – 2014 strategic plan incorporates three critical areas: child maltreatment as a public health problem, promoting protective factors, and investing in evidence-informed practices. It is through these three areas that OCTF works to fulfill its mission of preventing child abuse and neglect through investing in strong communities, healthy families, and safe children. In addition, the 2009–2014 strategic plan shifts OCTF from focusing solely on funding prevention programs to prioritizing increased attention to consumer education, social marketing and public policy initiatives.

REVIEWS FOR 2007-2011, BY AGE GROUPS

In response to recommendations from the Ohio CFR Advisory Committee to present the data and findings in ways that are meaningful and useful to program developers and policy makers, this report presents the findings by age groups. It is reasonable to assume that some risk and protective factors may vary by age group. Presenting findings by age group may be beneficial for programs working with specific age groups.

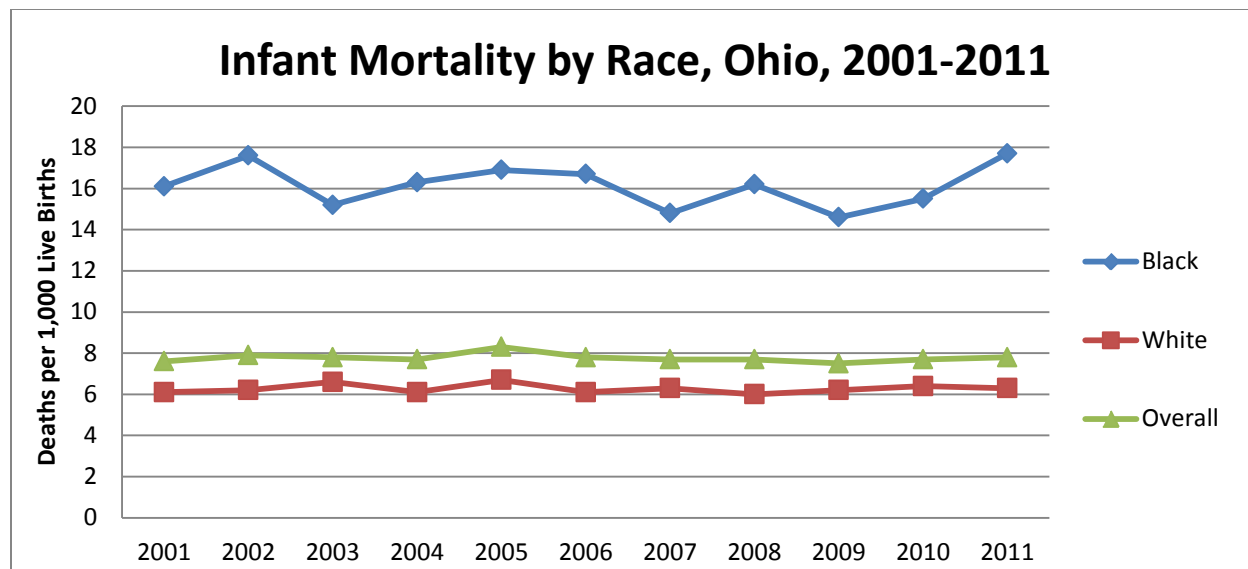
INFANT DEATHS FROM ALL CAUSES

Background

Infant mortality (IM) is an important gauge of the health of a community because infants are uniquely vulnerable to the many factors that impact health, including socioeconomic disparities. The preliminary U.S. IM rate for 2011 was 6.05 infant deaths per 1,000 live births, not significantly different from the final 2010 rate of 6.15.¹² With the exception of 2002 and 2005, the national IM rate has statistically remained the same or decreased significantly each year from 1958 through 2010.

In 2011, Ohio's overall IM rate was 7.8. Of particular concern is the black IM rate of 17.7, which is more than double the white IM rate of 6.3. These rates and proportions have changed little over the past decade.¹³

In response to Ohio's dismal IM rate and the alarming disparity between the rates for black and white infants, ODH has identified reducing IM as a high priority in its strategic plan. In addition to activities addressing IM directly, action on other high priority issues (expanding the patient-centered medical home model; reducing obesity; and curbing tobacco use) may also have a positive impact on reducing IM.



Caution should be used in interpreting rates and trends due to small numbers

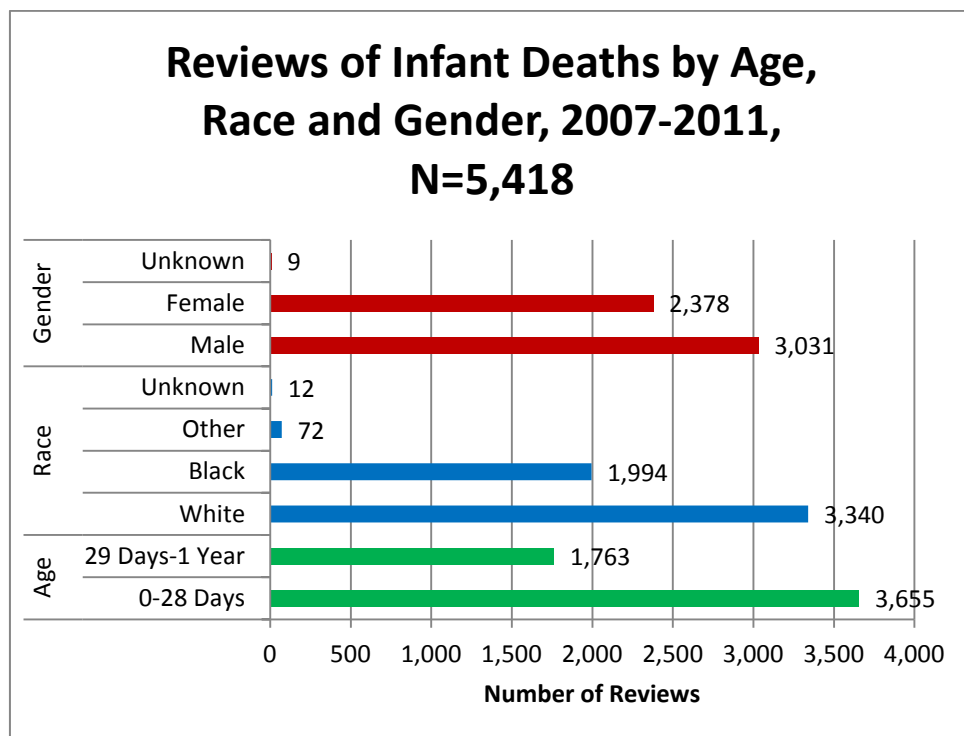
Vital Statistics

Ohio Vital Statistics data report 3,736 neonatal deaths (from birth to 28 days old) and 1,834 post-neonatal deaths (from 29 days to 1 year old) for a total of 5,570 infant deaths for the five-year period 2007-2011.

CFR Findings

Local child fatality review boards reviewed 5,418 infant deaths for 2007-2011. These represent 67 percent of all reviews for all ages.

- Forty-two percent (2,251) of the infant deaths occurred in the first day of life.
- Sixty-eight percent (3,655) were infants from birth to 28 days old.
- Thirty-two percent (1,763) were infants from 29 days to 1 year old.
- Reviews for infant deaths were disproportionately higher among boys (56 percent) and among black infants (37 percent) relative to their representation in the general population (51 percent for boys and 15 percent for black children).
- Five percent (267) of the infant deaths reviewed were to Hispanic infants. Hispanic infants account for 6 percent of Ohio's infant population.
- Fourteen percent (772) of the deaths were deemed probably preventable.



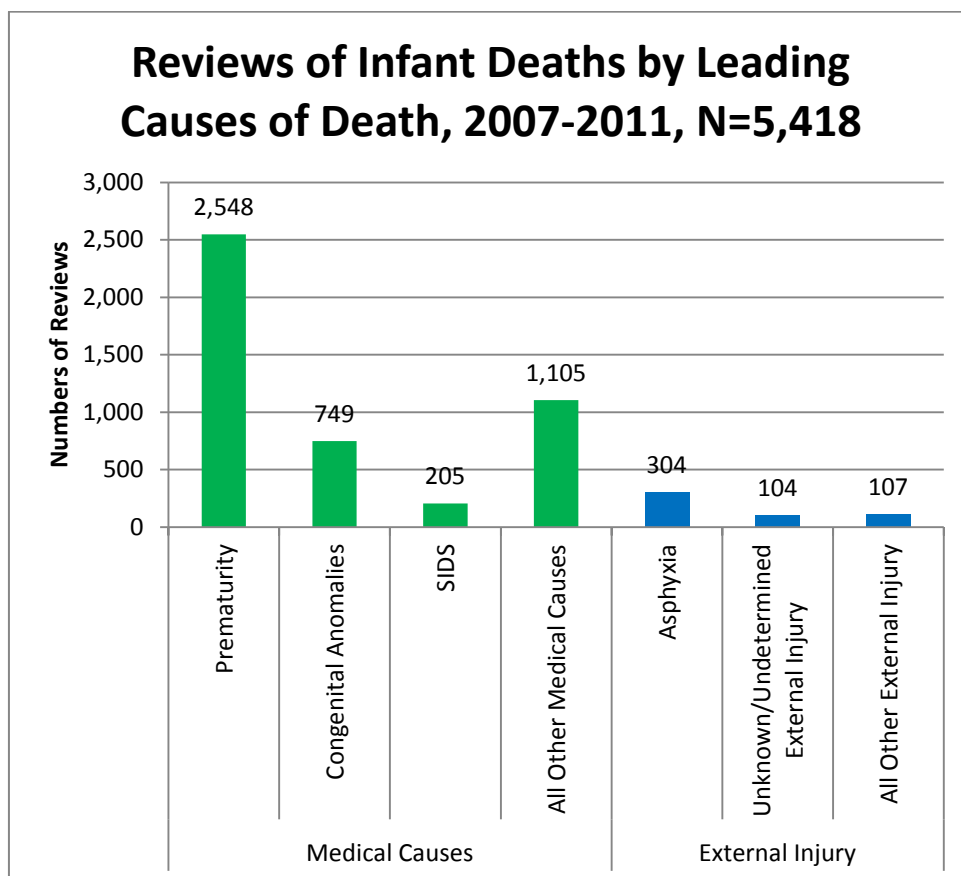
Reviews of infant deaths are grouped by cause of death:

- 4,607 (85 percent) of all infant deaths were due to medical causes.
- 514 (10 percent) were due to external injury causes.
- 297 (6 percent) were unknown if caused by medical or external causes.

Prematurity and congenital anomalies account for 72 percent (3,297) of all infant deaths from medical causes and 61 percent of infant deaths from all causes. Prematurity and congenital anomalies account for 79 percent (2,878) of the deaths to infants 0-28 days old.

Asphyxia is the leading cause of infant death due to external injury (59 percent of the infant deaths due to external injury). The next leading external cause of death is “undetermined” (17 percent of the infant deaths due to external injury).

Sleep-related deaths accounted for 15 percent (819) of all infant deaths and 42 percent (729) of the deaths to infants 29 days to 1 year old.



Other factors related to infant deaths:

- Thirteen percent (722) of the infants were from multiple births, including 77 from triplet or higher order births. For all births in Ohio in 2011, 4 percent were multiple births.
- Thirty-nine percent (2,127) of the infants were very low birthweight (<1,500 grams) and an additional 10 percent (535) were low birthweight (1,500-2,499 grams). Twenty percent (1,101) were of normal birthweight (2,500-3,999 grams) or heavier. Twenty-nine percent (1,589) of the infants were of unknown or missing birthweight. For all births in Ohio in 2011, 9 percent were low or very low birthweight.
- Fifty-one percent (2,780) of the infants were born preterm (<37 weeks gestation), 22 percent (1,210) were born full term (37-42 weeks gestation) and 26 percent (1,426) were of unknown or missing gestation. For all births in Ohio in 2011, 12 percent were born less than 37 weeks gestation.
- Twenty percent (1,086) of the infant deaths reviewed were infants born to mothers who smoked during the pregnancy. For all births in Ohio in 2011, 18 percent were born to mothers who smoked during the pregnancy.
- Twenty-six percent (1,385) of the reviews indicated the mother had a medical complication such as chronic health conditions or complications of pregnancy.

Birth History Factors for Infant Deaths, 2007-2011, N=5,418		
Birthweight	#	%
Very Low (<1,500 g)	2,128	41
Low (1,500-2,499 g)	534	10
Normal (2,500-3,999 g)	1,101	21
Above Normal (>3,999 g)	57	1
Unknown	1,332	26
Missing	266	
Gestation	#	%
< 37 Weeks	2,780	54
37-42 Weeks	1,210	23
>42 Weeks	2	<1
Unknown	1,188	23
Missing	238	
Other Circumstances	#	%
Multiple Birth	722	13
Mother Smoked during Pregnancy	1,086	20
Mothers with Medical Condition	1,385	26

Missing data have been excluded from the percentages.

Percentages may not total 100 due to rounding.

The health district in **Preble** County partners with schools, community action partnership, WIC, HMG and other stakeholders to reduce infant mortality by promoting optimal preconception health. The health district provides counseling for women presenting for pregnancy testing. Multivitamins are provided to women with negative tests; prenatal vitamins are provided to women with positive tests. Mental health screenings and referrals are also done at the time of pregnancy testing. Family planning services are provided to assure appropriate spacing of pregnancies.

Ohio Collaborative to Prevent Infant Mortality

The Ohio Collaborative to Prevent Infant Mortality (OCPIM) is dedicated to implementation of recommendations to eliminate infant mortality and disparities. Membership consists of government agencies (including ODH), advocacy groups, medical and public health providers, and a wide variety of other organizations and individuals committed to eliminating infant mortality and disparities. The collaborative operates through five workgroups: Coordinated Healthcare, Disparities/Racism, Data/Metrics/Quality Improvement, Education/Outreach, and Public Policy, and is guided by an executive/steering committee. CFR findings, data and recommendations have informed OCPIM's priorities and activities.

Recent efforts of the collaborative include raising awareness of safe sleep practices, instituting universal screening and progesterone treatment of women at high risk of preterm delivery, and creating a website of resources to help women achieve good health and raise healthy babies. In November of 2012 more than 900 individuals participated in the collaborative's first Ohio Infant Mortality Summit, *Turning Up the Volume on Infant Mortality*. OCPIM issues regular communications on infant mortality prevention to everyone who participated in the summit.

For more information on the collaborative, visit the website at <http://bit.ly/everybabymatters>.



INFANT DEATHS DUE TO PREMATUREITY

Background

Prematurity is any birth prior to 37 weeks of gestation. Infants born even a few weeks early are at increased risk for severe health problems, lifelong disability and death. Prematurity is the leading cause of infant death nationally. According to the CDC, nearly a half million infants (1 out of every 9 births) are born prematurely each year in the United States.¹⁴

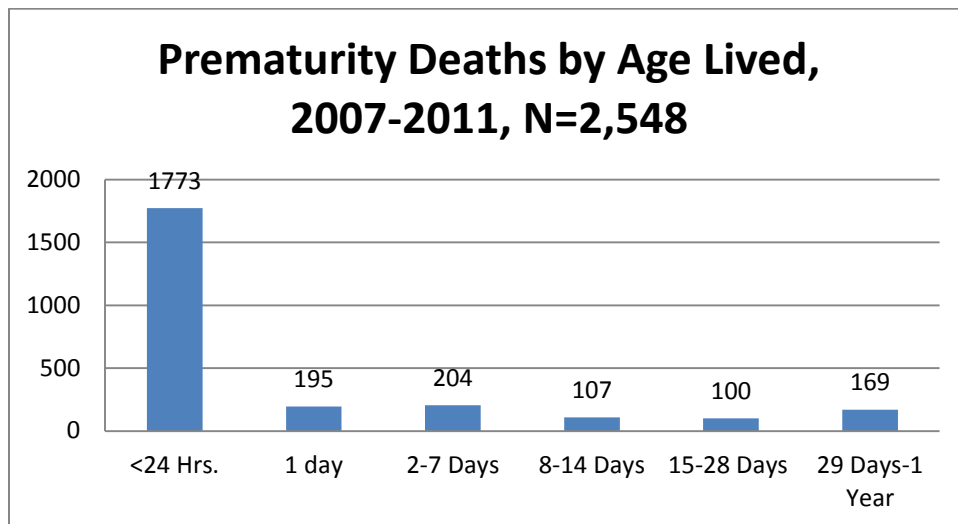
As the leading cause of death for Ohio's children, prematurity is a major contributor to Ohio's high IM rate. In response to the need to better understand the factors related to prematurity, this section has been added to the annual report.

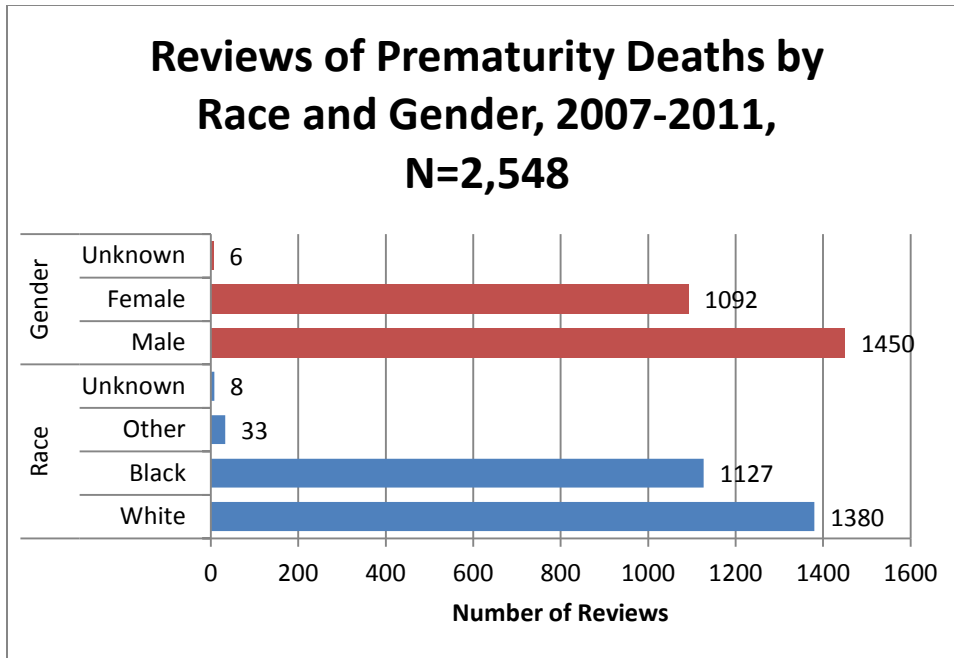
CFR Findings

The CFR case report tool and data system captures information about prematurity as both a condition of birth and a cause of death. Gestational age at birth is noted for reviews of all infant deaths from all causes. Many infants born prematurely survive the immediate complications of their early birth, but die from some other cause. A separate variable is used to record the deaths directly attributed to prematurity. This chapter includes for analysis only those reviews where the death was attributed directly to the prematurity.

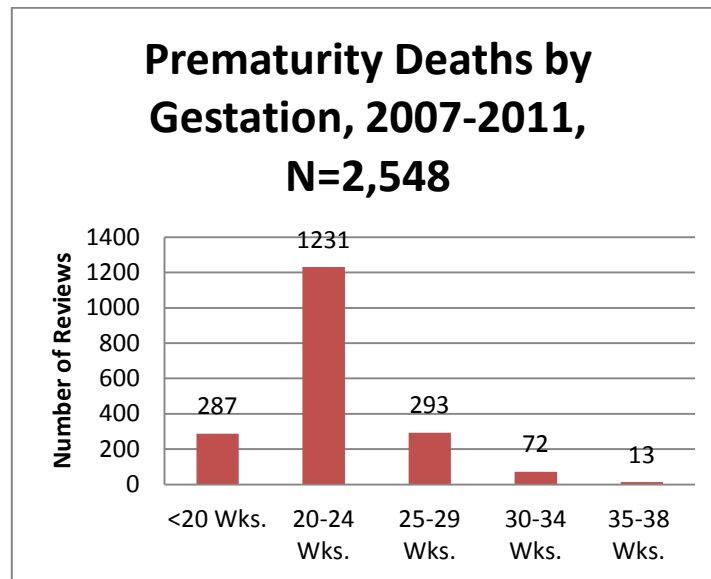
For the five-year period 2007-2011, local CFR boards reviewed 2,548 infant deaths due to prematurity. These represent 31 percent of all 8,108 reviews for all ages, and 47 percent of the 5,418 reviews for infant deaths. Reviews for deaths due to prematurity for 14 children older than 1 year were not included in this analysis.

- Ninety-three percent (2,379) of the prematurity deaths were neonatal deaths, occurring to infants from birth to 28 days of age. Seventy percent (1,773) of the deaths occurred within the first 24 hours of life.
- The proportion of prematurity deaths to black infants (44 percent) is nearly 3 times their representation in the general infant population (15 percent).
- Prematurity deaths to boys (57 percent) were disproportionately higher than their representation in the general infant population (51 percent).





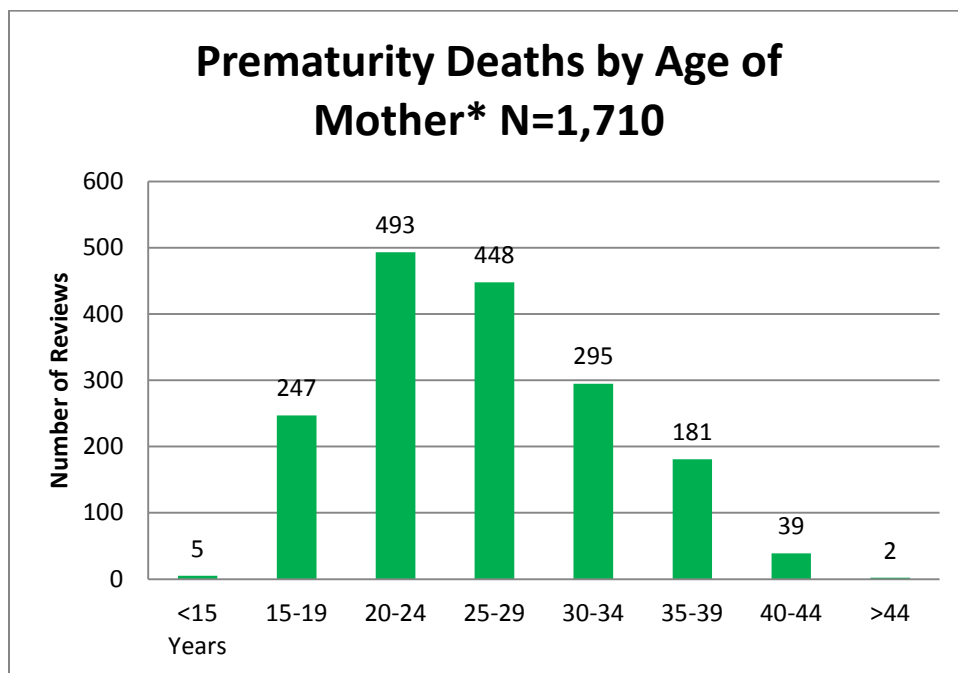
Many of the deaths due to prematurity occurred at gestational ages considered pre-viable. Of the reviews where gestational age was known, 12 percent (287) of the deaths occurred before 20 weeks gestation. An additional 50 percent (1,231) occurred between 20 and 24 weeks gestation.



Although less than 1 percent (24) of the deaths due to prematurity were deemed preventable, local CFR boards identified many factors that might increase the risk of prematurity.

- In addition to being born too early, most infants who died of prematurity were very small at birth. Forty-two percent (1,019) weighed less than 500 grams at birth. An additional 25 percent (599) weighed between 500 and 999 grams.

- Twenty-two percent (553) of the reviews of deaths due to prematurity indicated the infants were from multiple births, including 69 from triplet or higher order births. Of the 722 multiple births among infant deaths from all causes, 77 percent of the causes of death were prematurity.
- Seventeen percent (439) of the prematurity deaths reviewed were infants born to mothers who smoked during the pregnancy. For all births in Ohio in 2011, 18 percent were born to mothers who smoked during the pregnancy.
- Thirty-three percent (828) of the prematurity deaths reviewed indicated the mother experienced health complications during pregnancy. Complications included pregnancy-related conditions such as preterm labor, chorioamnionitis, and premature rupture of membranes (1,209); as well as non-pregnancy-related conditions such as hypertension, diabetes, and other infections (419).
- For the 1,710 reviews for prematurity deaths that indicated the primary caregiver was the female biological parent (mother), 15 percent (252) indicated the mother's age was less than 20 years old. This is greater than the proportion of all Ohio births for this age group (10 percent).



*Where primary caregiver identified as female biological parent.

Birth History Factors for Infant Deaths Due to Prematurity 2007-2011, N=2,548		
Birthweight	#	%
<500 grams	1,019	42
500-999 grams	599	25
1,000-1,499 grams	89	4
1,500-2,499 grams	47	2
2,500 grams and over	10	<1
Unknown	656	27
Missing	128	
Gestation	#	%
< 20 Weeks	287	12
20-24 Weeks	1,231	50
25-29 Weeks	293	12
30-34 Weeks	72	3
35-38 Weeks	12	<1
Unknown	548	22
Missing	104	
Maternal Age*	#	%
<20 Years	247	15
20-24 Years	493	29
25-29 Years	448	26
30-34 Years	295	17
35-40 Years	181	11
>40 Years	41	2
Other Circumstances	#	%
Multiple Birth	553	22
Mother Smoked during Pregnancy	439	17
Mothers with Medical Condition	828	33

Missing data have been excluded from the percentages.

Percentages may not total 100 due to rounding.

*Where primary caregiver identified as female biological parent.

Progesterone Project

Early identification of women at high risk of premature delivery and their subsequent treatment with progesterone is a best-practice model that has proven to be an effective way of extending the gestation period for many women with previous preterm deliveries and an ultrasound finding of a short cervix. Longer gestation leads to larger, better-developed, and healthier babies who are less likely to have complications or die. The Ohio Collaborative to Prevent Infant Mortality (OCPIM) will be implementing a plan for statewide screening and progesterone treatment for high-risk pregnant women, with high expectations the project will have a positive impact on prematurity rates and subsequent infant mortality.

INFANT SLEEP-RELATED DEATHS

Background

Since the beginning of the Ohio CFR program, local boards have been faced with a significant number of deaths of infants while sleeping. Some of these sudden unexpected infant deaths (SUIDs) are diagnosed as sudden infant death syndrome (SIDS), while others are diagnosed as accidental suffocation, positional asphyxia, overlay (the obstruction of breathing caused by the weight of a person or animal lying on the infant) or undetermined. SIDS is a subset of SUID and is a medical cause of death. It is the diagnosis given the sudden death of an infant under 1 year of age that remains unexplained after the performance of a complete postmortem investigation, including an autopsy, an examination of the scene of death and review of the infant's health history.¹⁵ The distinction between SIDS and other SUIDs is challenging. Many of the risk factors for SIDS and asphyxia are similar. Incomplete investigations, ambiguous findings and the presence of known risk factors for other causes of deaths result in many SUIDs being diagnosed as "undetermined cause" rather than SIDS.

The difficulty of obtaining consistent investigations and diagnoses of infant deaths led the CDC to launch an initiative to improve investigations and reporting.¹⁶ An Infant Death Investigation training was hosted by the Franklin County CFR board in June, 2011 and ODH plans to host a similar training in 2014. Many Ohio counties have adopted the CDC's Sudden Unexpected Infant Death Investigation tool and procedures.

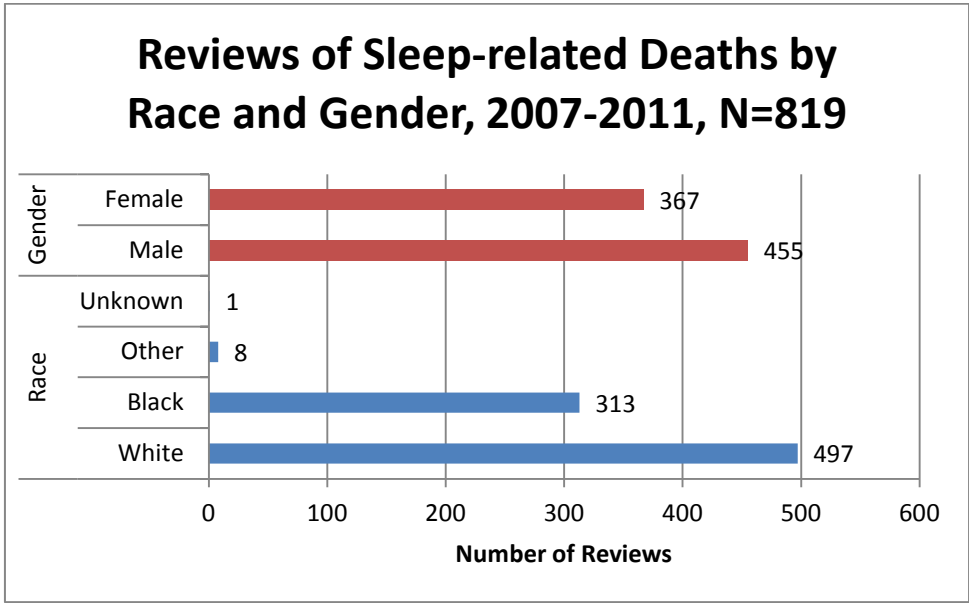
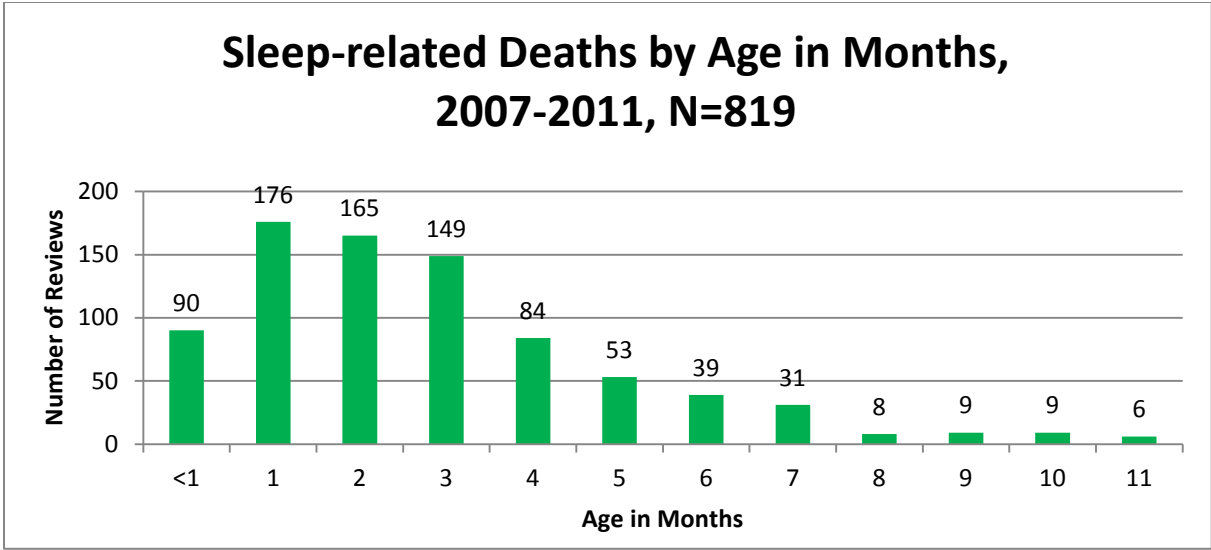
The CFR case report tool and data system captures information about deaths while sleeping as special circumstances, regardless of the cause of death. In order to better understand the contributing factors for these deaths and to develop prevention strategies, these sleep-related deaths including SIDS are analyzed and discussed as a group.

CFR Findings

From the reviews of deaths in the five-year period from 2007 to 2011, 902 cases of infants who died while in a sleep environment were identified. For the analysis of sleep-related deaths, cases of death from specific medical causes except SIDS were excluded, as were deaths from specific unrelated injuries such as fire, resulting in 819 infant sleep-related deaths. These cases include 174 SIDS reviews that included information about the circumstances.

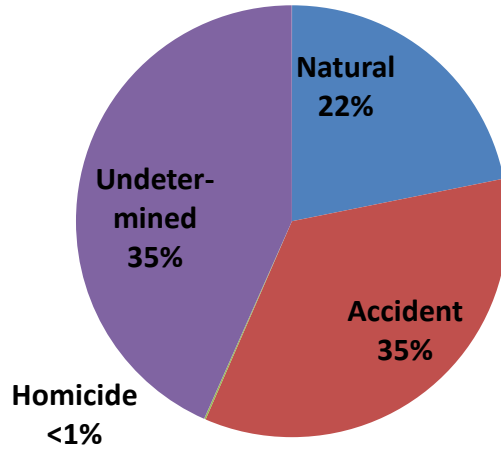
The 819 infant sleep-related deaths account for 15 percent of the 5,418 total reviews for infant deaths from 2007 to 2011, more than any single cause of death except prematurity.

- More than three Ohio infant deaths each week are sleep-related. If the sleep-related deaths were prevented, the Ohio infant mortality rate for 2011 would have been reduced from 7.8 to 6.6 deaths per 1,000 live births.
- Of the 1,763 reviews of infant deaths from 29 days to 1 year of age, 41 percent (729) were sleep related.
- Thirty-eight percent (313) of deaths in a sleep environment were to black infants. This is disproportionately higher than their representation in the general infant population (15 percent).
- Ninety-two percent (756) of the deaths occurred before 6 months of age; 53 percent (431) occurred before 3 months of age.

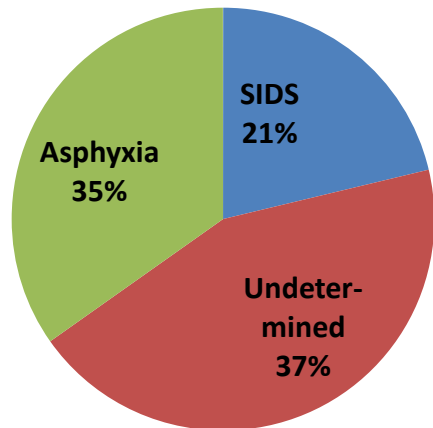


As discussed earlier in this section, determining the cause of death for infants in sleep situations is difficult, even when a complete investigation has occurred. Forty-four percent (360) of the sleep-related deaths were diagnosed as unknown or undetermined cause, even though autopsies had been completed for 98 percent of the cases.

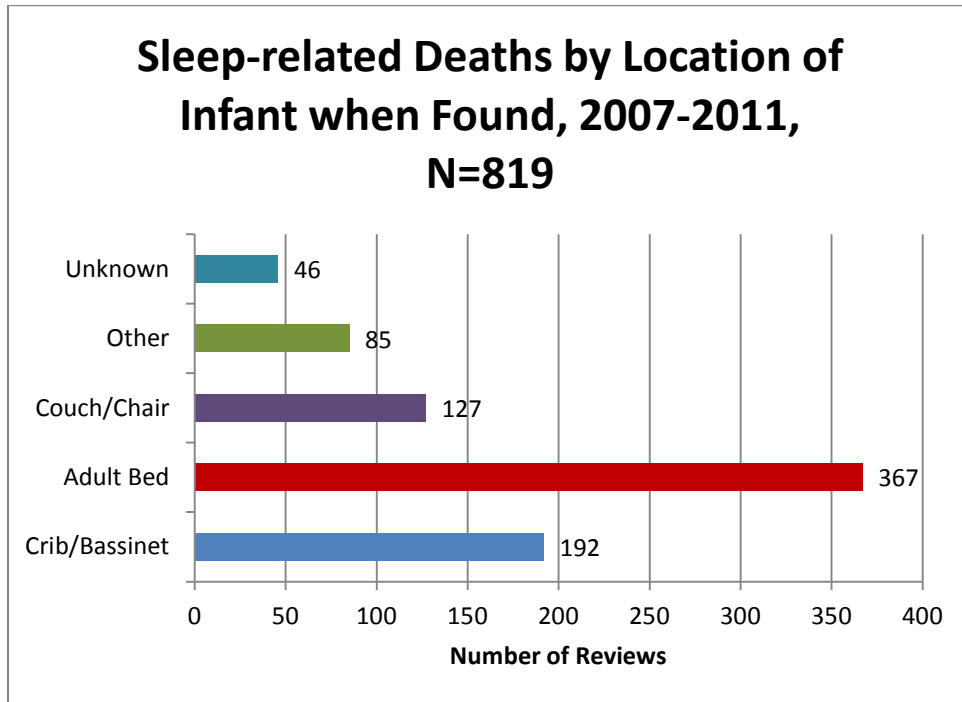
Sleep-related Deaths by Manner of Death, 2007-2011, N=819



Sleep-related Deaths by Cause of Death, 2007-2011, N=819



Twenty-three percent (192) of sleep-related deaths occurred to infants while sleeping in cribs or bassinets. Sixty percent (494) of sleep-related deaths occurred in adult beds, on couches or on chairs.



Bedsharing was a commonly reported circumstance for sleep-related deaths. Fifty-eight percent (473) of sleep-related deaths occurred to infants who were sharing a sleep surface with another person at the time of death.

- Of those cases that indicated bedsharing, 388 of the infants were sharing a sleep surface with an adult, including 78 infants who were sharing with an adult and another child.
- An additional 28 infants were sharing with another child only.
- Two infants were sharing a sleep surface with pets.
- Thirty-five reviews indicated an adult fell asleep while feeding the infant. Thirteen were bottle feeding; 16 were breast feeding. The feeding type was unknown or missing for 4 reviews.
- Of the 473 reviews indicating the infant was sharing a sleep surface, 306 (65 percent) indicated the infant’s supervisor was impaired at the time of the incident.
 - Sixty percent (283) of the bedsharing supervisors were impaired by sleep.
 - Twenty supervisors (4 percent) were impaired by alcohol.
 - Fourteen supervisors (3 percent) were impaired by drugs.

Exposure to smoking was another commonly reported circumstance for sleep-related deaths.

- Forty-three percent (349) of the infants were exposed to smoke either in utero or after birth.
- Of the 388 infants sharing a sleep surface with an adult, 46 percent (178) were also exposed to smoke either in utero or after birth.

In October 2011, the American Academy of Pediatrics (AAP) issued a policy statement restating and expanding its 2005 recommendations for reducing the risk of SIDS and other sleep-related infant deaths. (See page 64.) The ABCs of safe sleep, “alone, on his/her back, in a safety-approved crib or bassinet,” is a popular risk reduction slogan based on the recommendations. Of the 819 sleep-related deaths, only 51

(6 percent) indicated the infant was placed “ABC.” Only 33 reviews indicated the baby was placed “ABC” with no smoke exposure.

CIAG Infant Safe Sleep Subcommittee

The Child Injury Action Group (CIAG) Infant Safe Sleep Subcommittee works to reduce fatalities related to infants in unsafe sleep environments. Many local CFR board members participate on the subcommittee. The subcommittee has developed and focus group-tested messages for parents of infants in order to implement a statewide social marketing campaign. The focus groups gauged perceptions, opinions, beliefs, and attitudes towards printed concept draft advertisements related to infant safe sleep. The results of the message testing will shape the social marketing campaign with the intention to provide consistent, accurate messages designed for Ohio’s most at-risk populations. Implementation of the campaign will begin in 2014. Additionally, the subcommittee is interested in pursuing formal safe sleep policies and parent education policies in birthing hospitals and licensed childcare centers. CFR findings and data have been instrumental in the work of the subcommittee.

Infant Safe Sleep Recommendations

In October 2011, the American Academy of Pediatrics issued a policy statement expanding its 2005 recommendations for reducing the risk of SIDS and other sleep-related infant deaths. Many local CFR risk reduction activities are based on these recommendations. ODH continues to urge parents and caregivers to follow these recommendations as the most effective way to reduce the risk of infant death.

- Place infants for sleep wholly on the back for every sleep, nap time and night time.
- Use a firm sleep surface. A firm crib mattress is the recommended surface.
- Room-sharing without bedsharing is recommended. The infant's crib should be in the parents' bedroom, close to the parents' bed.
- Keep soft objects and loose bedding out of the crib.
- Pregnant women should receive regular prenatal care.
- Do not smoke during pregnancy. Avoid exposure to secondhand smoke.
- Avoid alcohol and illicit drug use during pregnancy and after birth.
- Breastfeeding is recommended.
- Offer a pacifier at sleep time after breastfeeding has been established.
- Avoid overheating.
- Avoid commercial devices marketed to reduce the risk of SIDS. None have been proven safe or effective.
- Encourage supervised "tummy time" when infant is awake to avoid flat spots on the back of the infant's head and to strengthen the upper torso and neck.
- All infants should be immunized in accordance with AAP and CDC recommendations.

The policy statement includes four recommendations directed toward health policy makers, researchers and professionals to endorse the recommendations; continue research and surveillance; adhere to safe sleep guidelines in media and manufacturing advertising; and expand the Back to Sleep campaign for parents, grandparents and all other caregivers with a major focus on the safe sleep environment.

DEATHS TO CHILDREN 1 TO 4 YEARS OLD

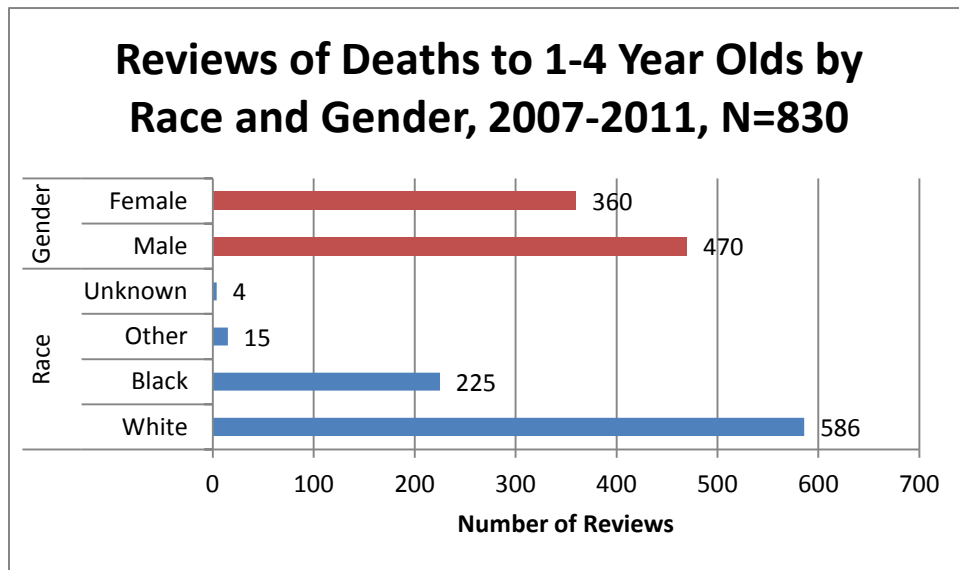
Background

No longer babies, toddlers and preschoolers experience increased mobility and more awareness of their surroundings, but lack the reasoning skills to protect themselves from many dangers.¹⁷ According to the National Center for Health Statistics, the leading causes of death for 1 to 4 year olds are accidents, congenital anomalies and homicides. Nationally, the preliminary 2011 mortality rate for this age group was statistically unchanged from 26 per 100,000 population in 2010.¹⁸

CFR Findings

For the five-year period 2007-2011, local CFR boards reviewed 830 deaths to children ages 1 to 4 years. These represent 10 percent of all 8,108 deaths reviewed.

- Reviews were disproportionately higher among boys (57 percent) relative to their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (27 percent) relative to their representation in the general population for this age group (16 percent).
- Six percent (50) of the reviews were for Hispanic children.
- Thirty-eight percent (318) of the deaths were deemed probably preventable.



The 830 reviews were classified by manner as follows:

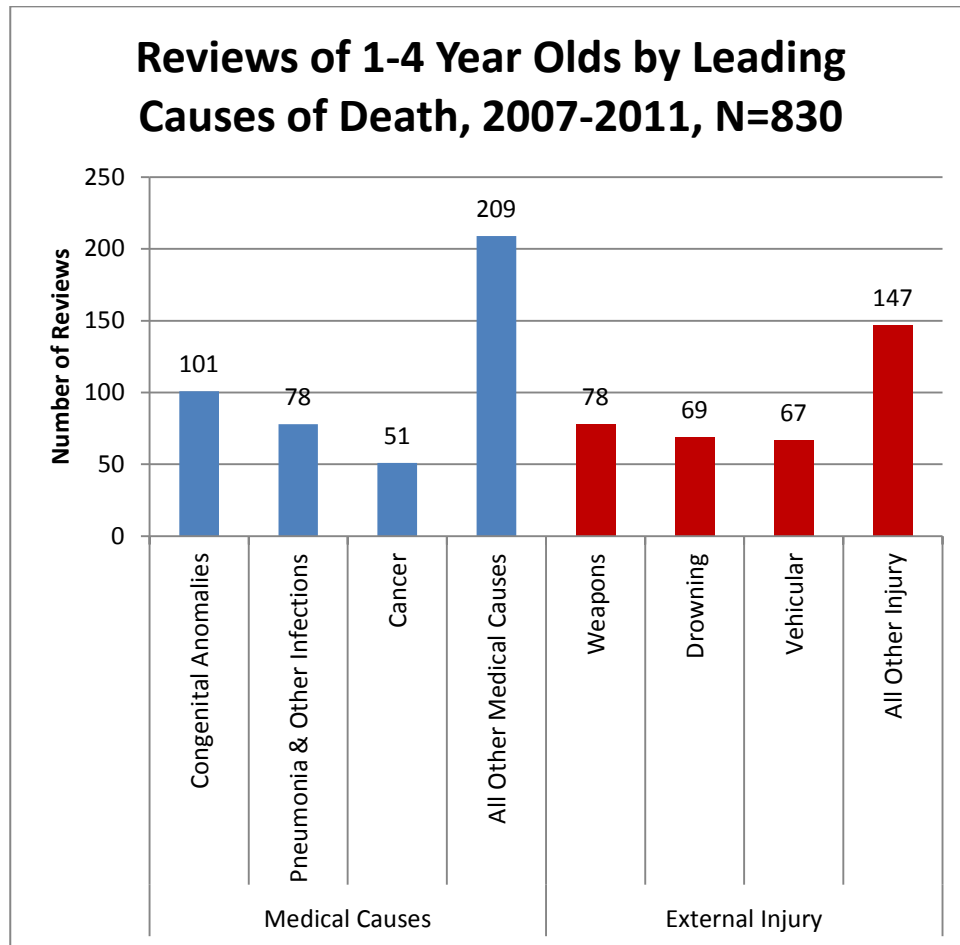
- Fifty-two percent (435) were natural deaths.
- Twenty-nine percent (244) were of accidental manner.
- Thirteen percent (104) were homicides.
- Six percent (47) were of an undetermined manner.

Fifty-three percent (439) of the 830 reviews for 1 to 4 year olds were from medical causes.

- Congenital anomalies were the leading cause of death in this age group.
- Twenty-three percent (101) of the deaths from medical causes were due to congenital anomalies.
- Eighteen percent (78) were due to pneumonia and other infections.
- Cancer accounted for 12 percent (51) of the deaths from medical causes.

Forty-four percent (361) of the 830 reviews for 1 to 4 year olds were due to external causes. Weapons injuries, drowning and vehicular crashes were the three leading external causes of death for this age group.

- Twenty-two percent (78) were due to weapons injuries, including the use of body parts as weapons.
- Nineteen percent (69) of the 338 reviews were due to drowning.
- Nineteen percent (67) were due to vehicular injuries.



Weapons injuries were the leading external cause of death for 1 to 4 year olds, accounting for 78 deaths. Seventy-three of the 78 weapons deaths were homicides. Sixty-five percent (51) were deemed child abuse or neglect.

- Of the 73 homicides, 56 percent (41) indicated the perpetrator was a biological parent. The parent's partner was cited in 39 percent (28) of the reviews.
- The weapon type was indicated as body parts in 62 percent (48) of the weapons deaths to 1 to 4 year olds. Firearms (handguns, shotguns and rifles) were indicated in 22 percent (17) of the reviews.

Vehicular injuries accounted for 68 deaths to 1-4 year olds.

- Sixty percent (40) of the 67 were passengers in vehicles. The average age of the child's driver was 31 years. Sixty-three percent (25) were responsible for the crash. Seven of the 40 drivers (18 percent) were impaired at the time of the incident.
- Fifty-four percent (36) of the 67 vehicular deaths indicated the child killed was a passenger in a car, truck, van or SUV, where by law, children must use seat belts and safety seats or boosters. Of those 36, 42 percent (15) were properly restrained.
- Thirty-seven percent (25) of the vehicular deaths were to pedestrians or children on bicycles or tricycles. Nine were back-over incidents. Eleven of the 25 pedestrians or cyclists had supervision at the time of the incident.

Local CFR boards identified 78 deaths from child abuse and neglect among 1 to 4 year olds. These represent 9 percent of all reviews for this age group, more than any other age group.

- Forty-one percent (32) of the reviews indicated the person causing the death was a biological parent.
- The parent's partner was cited in 32 percent (25) of the reviews.

Ohio's Booster Seat Law

Effective Oct. 7, 2009, Ohio's Child Restraint Law was revised to require Ohio's children to use belt-positioning booster seats when they outgrow their child safety seats (usually at 4 years old and 40 pounds). The belt-positioning booster seats must be used until the child is 8 years old, unless the child is at least 4 feet, 9 inches tall.

The revised law requires the following:

- Children younger than 4 years old or less than 40 pounds must use a child safety seat.
- Children younger than 8 years old must use a booster seat until they are at least 4 feet, 9 inches tall.
- Children ages 8 to 15 who have outgrown child safety seats and boosters must be restrained by the standard safety belts.

Booster seats raise the child so the shoulder and lap belt are correctly positioned across the strongest parts of the child's body, rather than riding up over the child's neck and stomach. By requiring the use of booster seats, the revised law will help prevent serious injuries and deaths to young children.

More information about the law and choosing the correct car seat or booster seat can be found at www.odh.ohio.gov/odhPrograms/hpr/cpsafe/childbooster.aspx.

DEATHS TO CHILDREN 5 TO 9 YEARS OLD

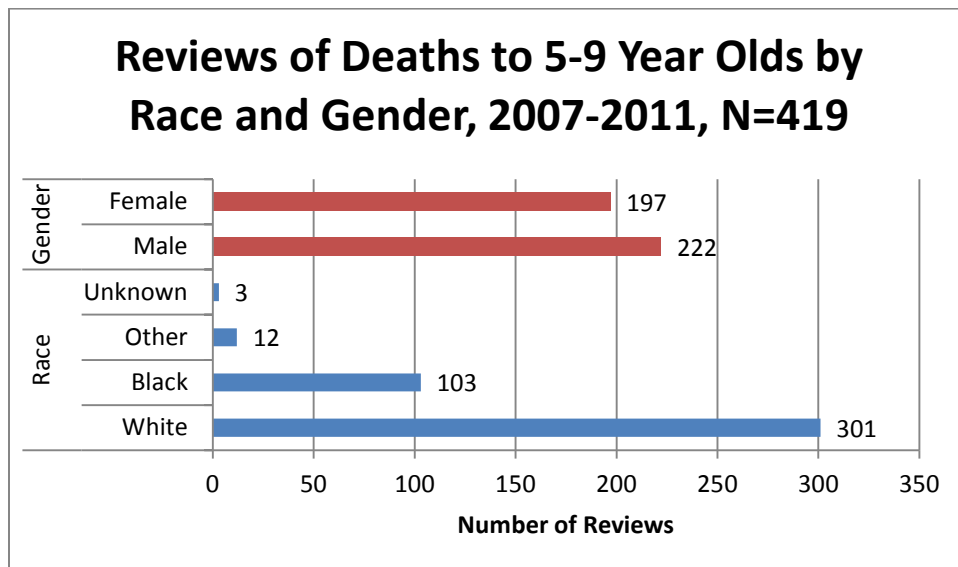
Background

Children ages 5 to 9 years continue to improve motor skills and have more regular contact with people outside their family. They have a growing understanding of consequences and of right and wrong.¹⁹ According to the National Center for Injury Prevention and Control, the leading causes of death for 5 to 9 year olds are accidents, cancers and congenital anomalies.²⁰

CFR Findings

For the five-year period 2007-2011, local CFR boards reviewed 419 deaths to children ages 5 to 9 years. These represent 5 percent of all 8,108 deaths reviewed.

- The proportion of reviews for the deaths of boys (53 percent) was slightly greater than their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (25 percent) relative to their representation in the general population (15 percent).
- Four percent (16) of the reviews were for Hispanic children.
- Thirty percent (127) of the deaths were deemed probably preventable.



The 419 reviews were classified by manner as follows:

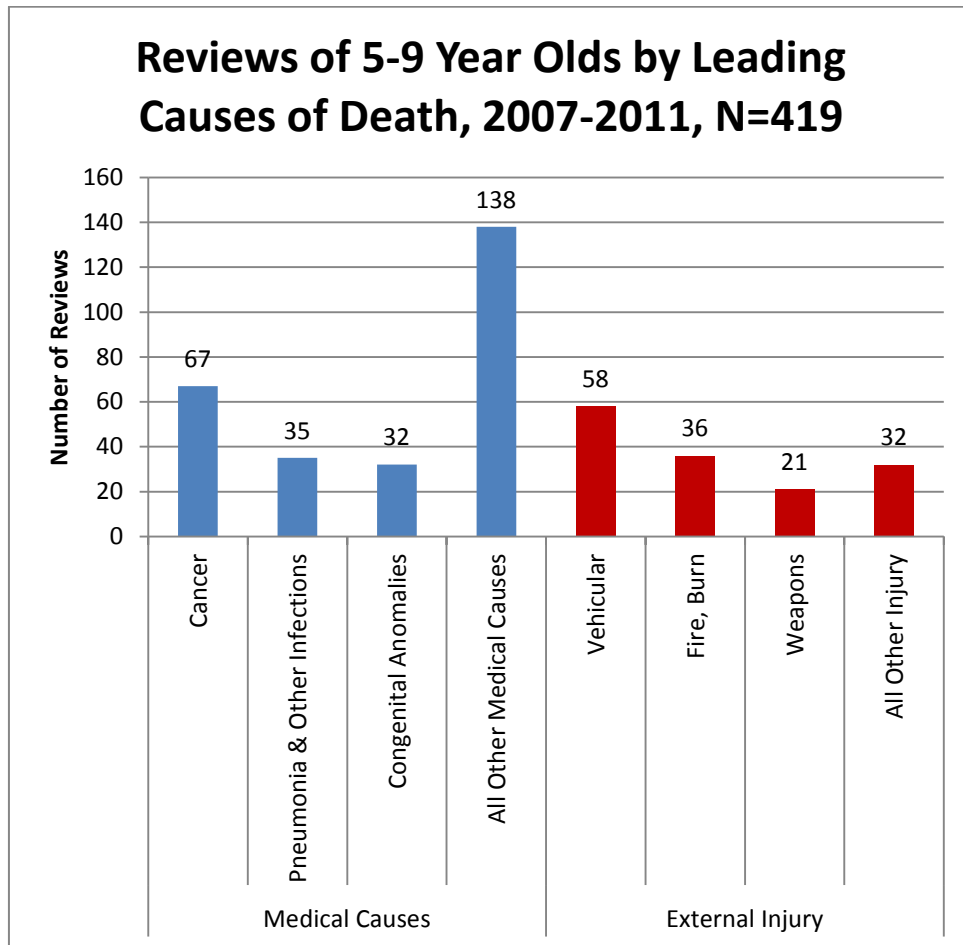
- Sixty-four percent (278) were natural deaths.
- Twenty-eight percent (116) were of accidental manner.
- Seven percent (30) were homicides.
- Less than 1 percent (1) were suicides.
- One percent (4) were of an undetermined manner.

Sixty-five percent (272) of the 419 reviews for 5 to 9 year olds were from medical causes.

- Cancer was the leading medical cause of death in this age group.
- Twenty-five percent (67) of the deaths from medical causes were due to cancer.
- Thirteen percent (35) were due to pneumonia and other infections.
- Congenital anomalies accounted for 12 percent (32) of the deaths from medical causes.

Thirty-five percent (147) of the 419 reviews for 5 to 9 year olds were due to external causes. Vehicular crashes, fires and weapons injuries were the three leading external causes of death for this age group.

- Thirty-nine percent (58) of the 147 reviews were due to vehicular injuries.
- Twenty-four percent (36) were due to fires and burns.
- Fourteen percent (21) were due to weapons injuries, including the use of body parts as weapons.



Vehicular injuries accounted for 58 deaths to 5 to 9 year olds. One vehicular death was homicide; the remainder were accidental manner.

- Fifty percent (29) of the 58 were passengers in vehicles. The average age of the child's driver was 33 years. One of the 29 drivers was impaired, while three drivers of the other vehicle were impaired at the time of the incident.
- Forty-three percent (25) indicated the child killed was a passenger in a car, truck, van or SUV, where by law, children must use seat belts and safety seats or boosters. Of those 25, 52 percent (13) were properly restrained.
- Forty-three percent (25) of the vehicular deaths were to pedestrians or children on bicycles or other pedal cycles. Eight of the 25 pedestrians or cyclists had supervision at the time of the incident.

Fire and burn injuries (36) were the second leading cause of external death for 5 to 9 year olds. Seventeen percent (6) of the 36 fire and burn deaths were homicides.

- Forty-two percent (15) of the reviews indicated a smoke detector was present. Only three were known to be functioning.

Local CFR boards identified 10 deaths from child abuse and neglect among 5 to 9 year olds. These represent 2 percent of all reviews for this age group, and 6 percent of the 164 child abuse and neglect deaths for all ages.

- Sixty percent (6) of the reviews indicated the person causing the death was a biological parent.
- Other perpetrators included other relatives and the parents' partner.

Ohio Buckles Buckeyes

The Violence and Injury Prevention Program within the Ohio Department of Health collects child restraint fines deposited into the Child Highway Safety Fund and utilizes those funds to purchase child safety restraints for low income families. The goal of the Ohio Buckles Buckeyes (OBB) program is to increase the availability of child safety seats for families who could not otherwise afford them and to increase correct installation and proper use of child safety seats for all Ohio families.

DEATHS TO CHILDREN 10 TO 14 YEARS OLD

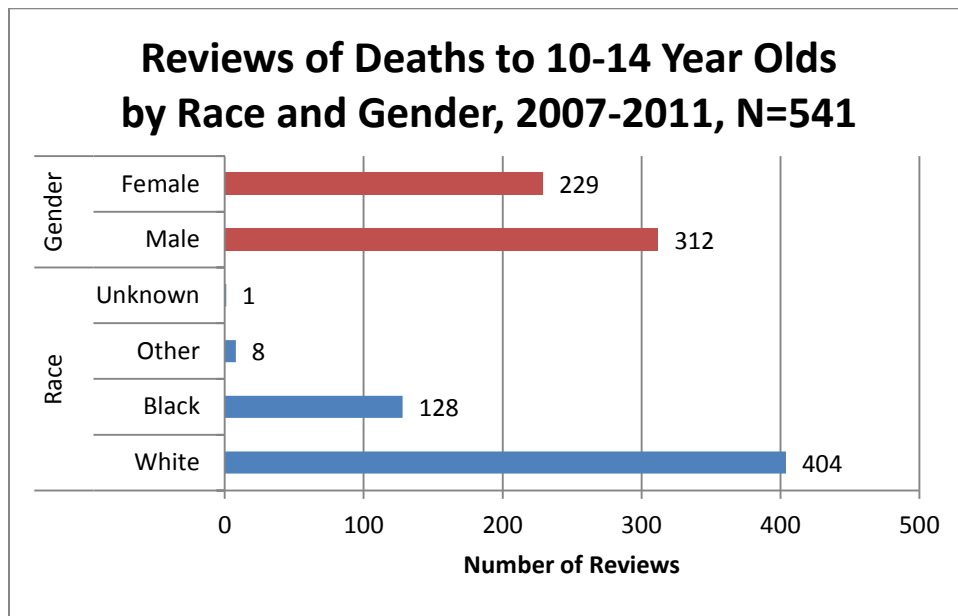
Background

Children in early adolescence experience many physical, cognitive and social-emotional changes. As 10 to 14 year olds experience more independence, they also encounter strong peer pressure.²¹ According to the National Center for Injury Prevention and Control, the leading causes of death for 10 to 14 year olds are cancers, vehicular crashes and suicides.²²

CFR Findings

For the five-year period 2007-2011, local CFR boards reviewed 541 deaths to children ages 10 to 14 years. These represent 7 percent of all 8,108 deaths reviewed.

- Reviews were disproportionately higher among boys (58 percent) relative to their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (24 percent) relative to their representation in the general population in this age group (15 percent).
- Three percent (16) of the reviews were for Hispanic children.
- Thirty-five percent (188) of the deaths were deemed probably preventable.



The 541 reviews were classified by manner as follows:

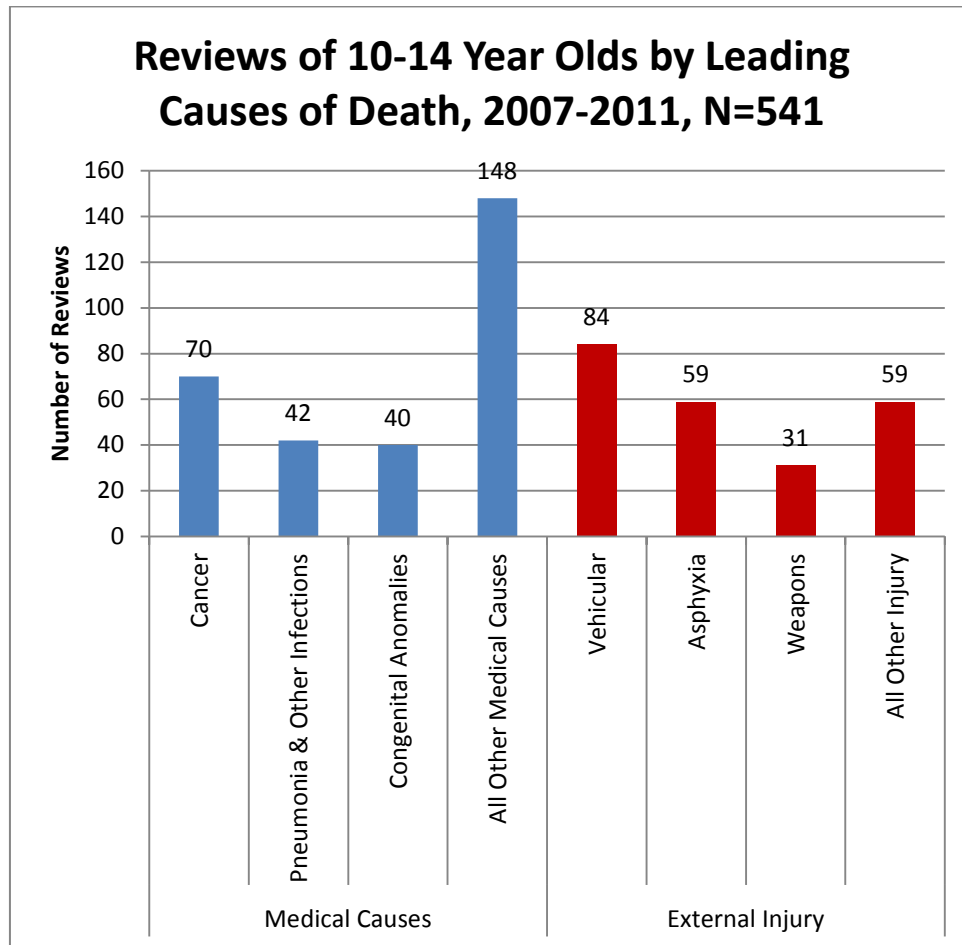
- Fifty-five percent (296) were natural deaths.
- Twenty-nine percent (154) were of accidental manner.
- Ten percent (53) were suicides.
- Four percent (22) were homicides.
- Three percent (16) were of an undetermined or unknown manner.

Fifty-six percent (300) of the 541 reviews for 10 to 14 year olds were from medical causes.

- Cancer was the leading medical cause of death in this age group.
- Twenty-three percent (70) of the deaths from medical causes were due to cancer.
- Fifteen percent (44) were due to pneumonia and other infections.
- Congenital anomalies accounted for 13 percent (40) of the deaths from medical causes.

Forty-three percent (233) of the 541 reviews for 10 to 14 year olds were due to external causes. Vehicular crashes, asphyxia and weapons injuries were the three leading external causes of death for this age group.

- Thirty-six percent (84) of the 233 reviews were due to vehicular injuries.
- Twenty-five percent (59) were due to asphyxia.
- Thirteen percent (31) were due to weapons injuries, including the use of body parts as weapons.



Vehicular injuries accounted for 84 deaths to 10 to 14 year olds. All but one of the vehicular deaths were accidental manner.

- Forty-nine percent (41) of the 84 were passengers in vehicles. The average age of the child's driver was 23 years. Two of the 41 drivers (5 percent) were impaired at the time of the incident. The driver of the other vehicle was impaired in seven cases.
- Thirty-three percent (28) indicated the child killed was a passenger in a car, truck, van or SUV, where by law, children must use seat belts. Of those 28, 21 percent (6) were properly restrained.
- Thirty-two percent (27) of the vehicular deaths were to pedestrians or children on bicycles or other pedal cycles.

Asphyxia (59) was the second leading cause of external death for 10 to 14 year olds.

- Ninety-five percent (56) of the asphyxia deaths were due to strangulation. The remaining three were due to choking or suffocation.

- Seventy-one percent (42) of the 59 asphyxia deaths were suicides.

Local CFR boards reviewed 53 suicide deaths to 10 to 14 year olds. These represent 10 percent of all 541 reviews for this age group, and 23 percent of the 235 suicide deaths for all ages.

- Seventy-nine percent (42) of the suicides were by asphyxia. Nineteen percent (10) were by weapons and one death was by poisoning.
- Twenty-six percent (14) were receiving mental health services at the time of the incident.
- The most frequently indicated factors that might have contributed to the child's despondency were arguments with parents and friends, and school problems.

DEATHS OF CHILDREN 15 TO 17 YEARS OLD

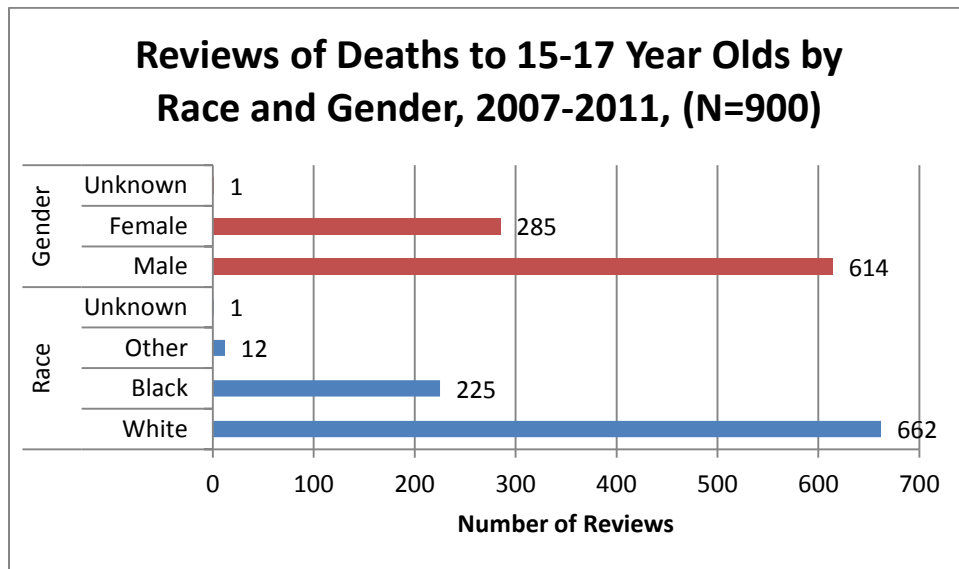
Background

Known for challenging the limits, teenagers enjoy more independence from their family and develop strong relationships with peers.²³ According to the National Center for Injury Prevention and Control, the leading causes of death for 15 to 17 year olds are vehicular crashes, suicides and homicides.²⁴

CFR Findings

For the five-year period 2007-2011, local CFR boards reviewed 900 deaths of children ages 15 to 17 years. These represent 11 percent of all 8,108 deaths reviewed.

- Reviews were disproportionately higher among boys (68 percent) relative to their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (25 percent) relative to their representation in the general population (15 percent).
- Three percent (29) of the reviews were for Hispanic children.
- Fifty-eight percent (524) of the deaths were deemed probably preventable.



The 900 reviews were classified by manner as follows:

- Twenty-seven percent (245) were natural deaths.
- Thirty-eight percent (340) were of accidental manner.
- Twenty percent (181) were suicides.
- Fourteen percent (125) were homicides.
- One percent (9) were of an undetermined or unknown manner.

Of the 173 deaths from all causes to black boys ages 15 to 17 years, 49 percent (85) were homicides, while only 3 percent (14) of the 433 deaths from all causes to white boys ages 15 to 17 years were homicide.

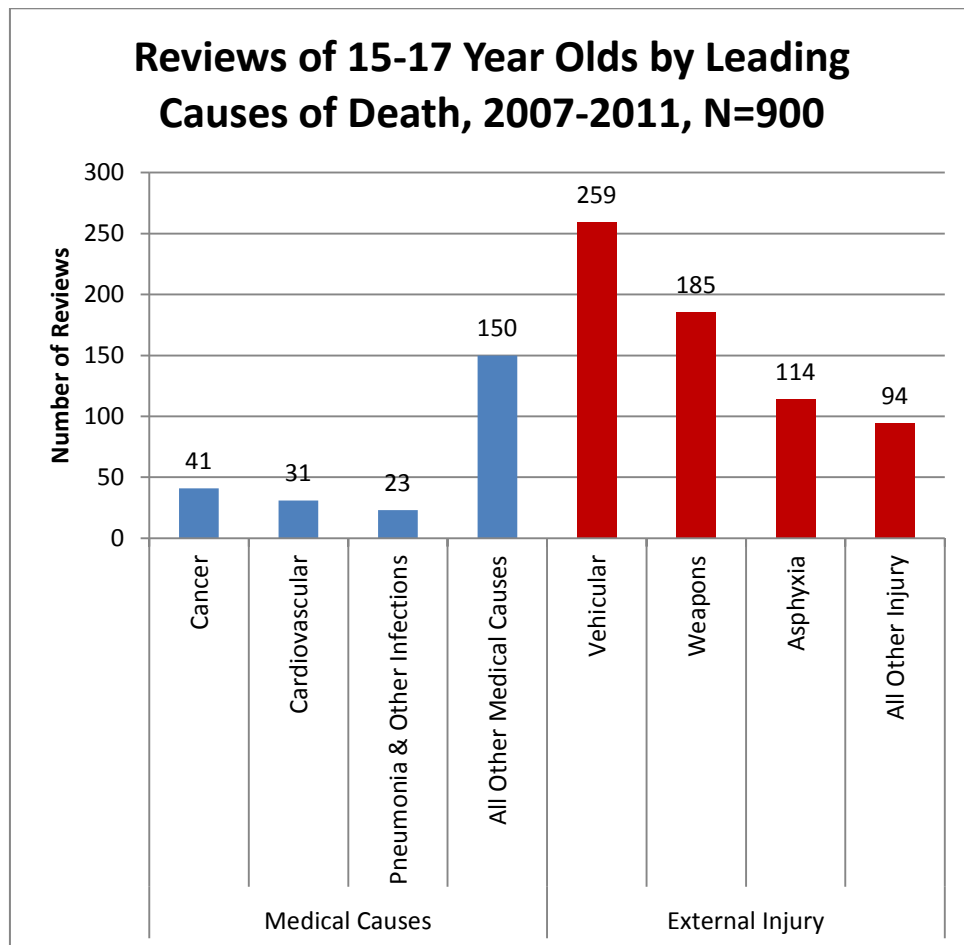
Twenty-seven percent (245) of the 900 reviews for 15 to 17 year olds were from medical causes.

- Cancer was the leading medical cause of death in this age group.
- Seventeen percent (41) of the deaths from medical causes were due to cancer.

- Cardiovascular disorders accounted for 13 percent (31) of the deaths from medical causes.
- Congenital anomalies; pneumonia and other infections; and neurological disorders each claimed nine percent (23 each) of the deaths from medical causes.

Seventy-two percent (652) of the 900 reviews for 15 to 17 year olds were due to external causes. Vehicular crashes, weapons injuries and asphyxia were the three leading external causes of death for this age group.

- Forty percent (259) of the 652 reviews were due to vehicular injuries.
- Twenty-eight percent (185) were due to weapons injuries, including the use of body parts as weapons.
- Seventeen percent (114) were due to asphyxia.



Of the 259 reviews for deaths from vehicular injuries to 15 to 17 year olds, 3 percent (7) were suicides and 3 percent (7) were homicides.

- Vehicular deaths to 15 to -17 year olds outnumbered deaths from all medical causes combined.
- Eighty-six percent (222) of the vehicular deaths to 15 to 17 year olds were white children, while 13 percent (33) were black children.
- Forty-four percent (115) of the reviews were for children who were driving the vehicle.
 - Eighty-four percent (97) of the 115 child drivers were deemed responsible for the incident. Twenty-one were impaired.

- Speed, recklessness and inexperience were the most frequently cited causes of crashes.
- Of the 95 children who were driving cars, trucks, vans and SUVs, where by law, children must use seat belts, 34 percent (32) were properly restrained.
- Thirty-eight percent (99) of the 259 vehicular deaths occurred to children who were passengers.
 - Seventy-five percent (74) of the drivers of the child's vehicle were deemed responsible for the incident. Twenty-three were impaired.
 - Speed, recklessness and inexperience were the most frequently cited causes of crashes.
 - Of the 90 children who were passengers in cars, trucks, vans and SUVs, where by law, children must use seat belts, 21 percent (19) were properly restrained.
 - For children who were passengers, the average age of the child's driver was 20 years.
- Fifteen percent (38) of the vehicular deaths were to pedestrians or children on bicycles or other pedal cycles.
- Of the 33 vehicular deaths to black 15 to 17 year olds, 36 percent (12) were pedestrians or cyclists, while 11 percent (25) of the 222 white 15 to 17 year olds were pedestrians or cyclists.

Weapons injuries, including the use of body parts as weapons, were the second leading cause of death for 15 to 17 year olds.

- The 185 weapons deaths represent 21 percent of all deaths to 15 to 17 year olds.
- Weapons deaths were disproportionately higher among boys (83 percent) and black children (60 percent) relative to their representation in the general population (51 percent for boys and 15 percent for black children).
- Sixty-two percent (114) of the weapons deaths were homicides and 34 percent (63) were suicides. Only 4 percent (8) were of accidental manner.
- Firearms (handguns, shotguns and rifles) were involved in 94 percent (174) of the deaths. Other weapons included sharp instruments and body parts used as weapons.
- Forty-one percent (76) of the reviews for weapons deaths indicated the child had a delinquent or criminal history.

Asphyxia was the third leading cause of death for 15 to 17 year olds.

- The 114 asphyxia deaths represent 13 percent of all deaths to 15 to 17 year olds.
- Ninety-four percent (107) of the asphyxia deaths were due to strangulation. The remaining seven were due to suffocation, choking, or other mechanism.
- Eighty-nine percent (102) of the 114 asphyxia deaths were suicides.

Local CFR boards reviewed 181 suicide deaths to 15 to 17 year olds. These represent 20 percent of all 900 reviews for this age group, and 77 percent of the 235 suicide deaths for all ages.

- Fifty-six percent (102) of the suicides were by asphyxia. Thirty-five percent (63) were by weapons. Other causes included vehicular crashes, poisoning, and falls.
- Twenty-nine percent (53) were receiving mental health services at the time of the incident and twenty-two percent (40) were receiving medication for mental illness.
- Nineteen percent (34) of the suicide reviews indicated a history of child maltreatment and 9 indicated an open case with children's protective services at the time of the incident.
- The most frequently indicated factors that might have contributed to the child's despondency were family discord including divorce and arguments with parents; arguments or breakups with boyfriend or girlfriend; and school problems.

Every teenager purchasing a birth certificate from the **Ross County** vital statistics registrar for the purpose of obtaining a driver's permit is given information about Ohio's Distracted Driving Law.

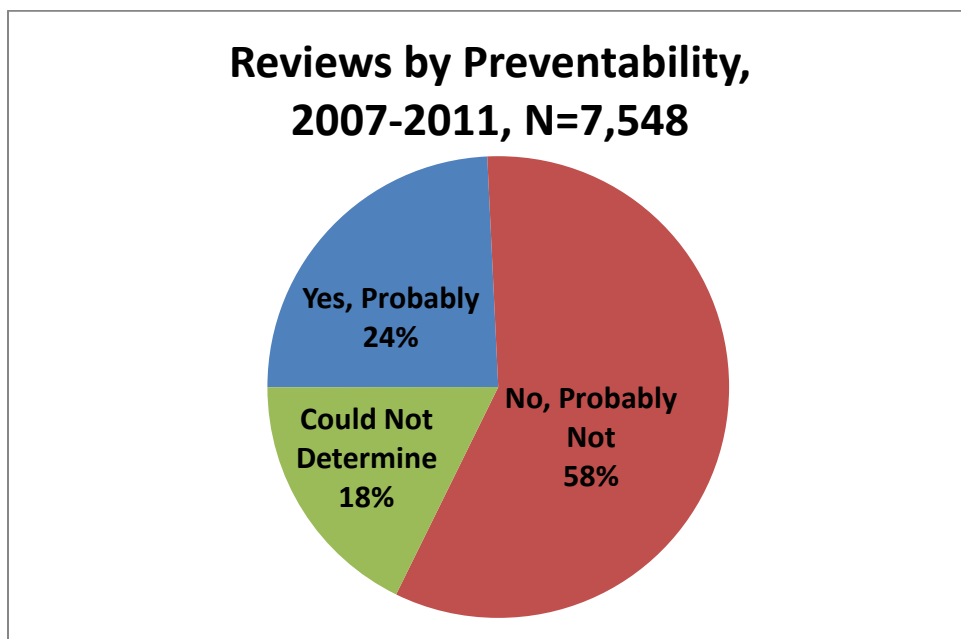
PREVENTABLE DEATHS

The mission of the Ohio Child CFR program is to reduce the incidence of preventable child deaths in Ohio. A child's death is considered preventable if the community or an individual could reasonably have changed the circumstances that led to the death.²⁵ The review process helps CFR boards focus on a wide spectrum of factors that may have caused or contributed to the death or made the child more susceptible to harm. After these factors are identified the board must decide which, if any, of the factors could reasonably have been changed. Cases are then deemed "probably preventable" or "probably not preventable."

Even if a particular case is deemed "probably not preventable," the CFR process is valuable in identifying gaps in care, systemic service delivery issues or community environmental factors which contribute to less than optimal quality of life for vulnerable individuals. For this reason, many local boards make recommendations and initiate changes even when a particular death is not deemed preventable.

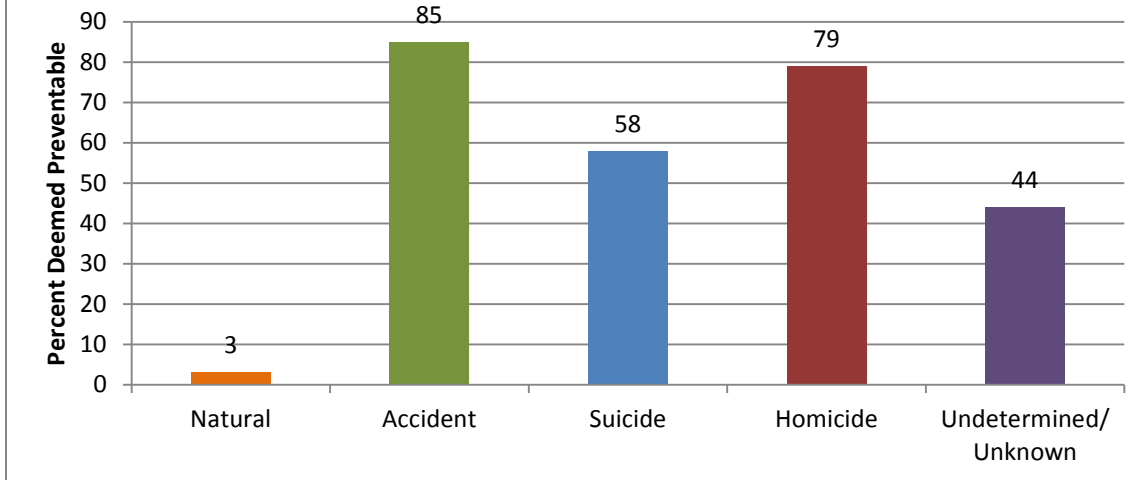
CFR Findings

Local boards determined preventability for 93 percent (7,548) of the 8,108 reviews. Twenty-four percent (1,829) of the reviews indicated the death probably could have been prevented. Preventability differed by manner of death and by age group.

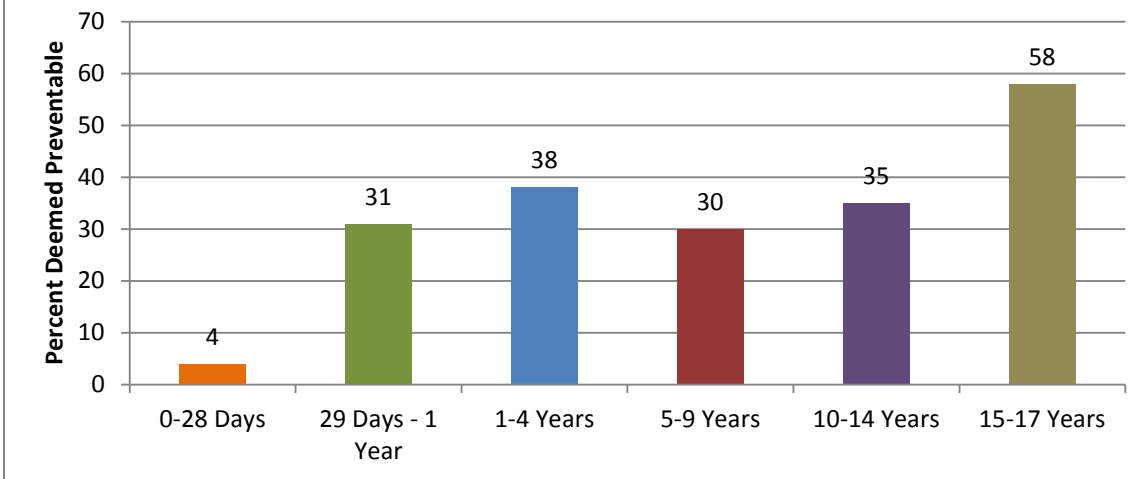


- Eighty-five percent (1,036) of the 1,218 deaths of accidental manner were considered probably preventable.
- Fifty-eight percent (524) of the 900 deaths to 15 to 17-year-olds were considered probably preventable.
- Only 4 percent (132) of the 3,655 deaths to infants less than 29 days old were considered probably preventable.

Reviews Deemed Preventable by Manner, 2007-2011, N=7,548



Reviews Deemed Preventable by Age, 2006-2010, N=7,548



Local CFR boards identify many deaths that likely could have been prevented through changes in laws or policies, such as mandating the use of booster seats in cars; or the implementation of programs, such as Cribs for Kids. Many other deaths likely could have been prevented through increased adult supervision, increased parental responsibility and the exercise of common sense. Through the sharing of perspectives during the CFR discussions, members have learned that often-repeated health and safety messages need to be presented in new ways to reach new generations of parents, caregivers and children.

CONCLUSION

The mission of CFR is the prevention of child deaths in Ohio. This report summarizes the process of local reviews by multi-disciplinary boards of community leaders, which results in data regarding the circumstances related to each death. Each child's death is a tragic story. As the facts about the circumstances of all the deaths are compiled and analyzed, certain risks to children become clear, including:

- Prematurity, which accounts for nearly half of all infant deaths.
- Unsafe sleep environments, which place healthy infants at risk of sudden death.
- Riding unrestrained in vehicles, which puts children at greater risk of death in the event of a crash.
- Racial disparity that results in black children dying from homicide at more than three times the expected rate.

This report is intended to be a vehicle to share the findings with the wider community to engage others in concern about these and other risks. Partners are needed to develop recommendations and implement policies, programs and practices that can have a positive impact in reducing the risks and improving the lives of Ohio's children. We encourage you to use the information in this report and to share it with others who can influence changes to benefit children. We invite you to collaborate with local CFR boards to prevent child deaths in Ohio.

APPENDIX I OVERVIEW OF OHIO CHILD FATALITY REVIEW PROGRAM

Child deaths are often regarded as indicators of the health of a community. While mortality data provide us with an overall picture of child deaths by number and cause, it is from a careful study of each and every child's death that we can learn how best to respond to a death and how best to prevent future deaths.

Recognizing the need to better understand why children die, in July 2000 then Governor Bob Taft signed the bill mandating child fatality review (CFR) boards in each of Ohio's counties to review the deaths of children under 18 years of age. For the complete law and administrative rules pertaining to CFR, refer to the ODH website at www.odh.ohio.gov/rules/final/f3701-67.aspx. The mission of these local review boards, as described in the law, is to reduce the incidence of preventable child deaths. To accomplish this, it is expected that local review teams will:

- Promote cooperation, collaboration and communication among all groups that serve families and children.
- Maintain a database of all child deaths to develop an understanding of the causes and incidence of those deaths.
- Recommend and develop plans for implementing local service and program changes and advise ODH of data, trends and patterns found in child deaths.

While membership varies among local boards, the law requires that minimum membership include:

- County coroner or designee.
- Chief of police or sheriff or designee.
- Executive director of a public children service agency or designee.
- Public health official or designee.
- Executive director of a board of alcohol, drug addiction and mental health services or designee.
- Pediatrician or family practice physician.

Additional members are recommended and may include the county prosecutor, fire/emergency medical service representatives, school representatives, representatives from Ohio Family and Children First Councils, other child advocates and other child health and safety specialists. The health commissioner serves as board chairperson in many counties.

CFR boards must meet at least once a year to review the deaths of child residents of that county. The basic review process includes:

- The presentation of relevant information.
- The identification of contributing factors.
- The development of data-driven recommendations.

Local CFR board review meetings are not open meetings and all discussion and work products are confidential.

Each local CFR board provides data to ODH by recording information on a case report tool before entering it into a national web-based data system. The report tool and data system were developed by the National Center for Prevention and Review of Child Death (NCPRCD) with a grant from the federal Maternal and Child Health Bureau. The tool captures information about the factors related to the death and the often-complex conversations that happen during the review process in a format that can be analyzed on the local, state or national level. This report is based on the analysis of data from the NCPRCD data system.

ODH is responsible for providing technical assistance and annual training to the CFR boards. In 2012, ODH provided a new board chair/coordinator orientation. In partnership with the Ohio Collaborative to Prevent Infant Mortality, ODH held a statewide summit, November 28, "Turning Up the Volume on Infant Mortality: Every Baby Matters." Local CFR board members were encouraged to attend, and many boards were represented as presenters and exhibitors. Throughout the year, NCPRCD webinars provided additional training opportunities for Ohio's local boards. ODH staff also coordinate the data collection, assure the maintenance of a Web-based data system and analyze the data reported by the local boards. The annual state report is prepared and published jointly with the Ohio Children's Trust Fund.

To assist moving CFR forward in Ohio, an advisory committee was established in 2002. The purpose of the advisory committee is to review Ohio's child mortality data and CFR data to identify trends in child deaths; to provide expertise and consultation in analyzing and understanding the causes, trends and system responses to child deaths in Ohio; to make recommendations in law, policy and practice to prevent child deaths in Ohio; to support CFR and recommend improvements in protocols and procedures; and to review and provide input for the annual report.

This report presents information from the reviews of deaths that occurred in 2011, as well as aggregate data for the five-year period 2007 to 2011. By reporting the information by year of death, it is possible to compare CFR data with data from other sources such as vital statistics. In making such comparisons, it is important to use caution and acknowledge the unique origins and purposes for each source of data. CFR data included in this report are the outcome of thoughtful inquiry and discussion by a multi-disciplinary group of community leaders who consider all the circumstances surrounding the death of each child. They bring to the review table information from a variety of agencies, documents and areas of expertise. Their careful review process results in a thorough description of the factors related to child deaths.

Despite their best efforts, CFR boards are not able to review every child death. Some reviews must be delayed until all legal investigations and prosecutions are completed. Some deaths occur outside the county of residence or outside the state, resulting in long delays in notification to the CFR board. Because of these variables, it is usually impossible to find an exact number-for-number match between CFR data and data from other sources such as vital statistics. The unique role of CFR data is to provide a comprehensive depth of understanding to augment other, more one-dimensional data sources.

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**APPENDIX V
ICD-10 CODES
USED FOR VITAL STATISTICS DATA
INCLUDED IN CFR REPORT**

Cause of Death	ICD-10 Codes
Animal Bite or Attack	W53-W59, X20-27, X29
Asphyxia	W75-W84, X47, X66, X67, X70, X88, X91, Y17, Y20
Child Abuse and Neglect	Y06-Y07
Drowning	W65-W74, X71, X92, Y21
Environmental Exposure	W92, W93, W99, X30, X31, X32
Fall and Crush	W00-W19, W23, X80, Y01, Y02, Y30, Y31
Fire, Burn, Electrocution	X00-X09, X33, X76, X77, X97, X98, Y26, Y27, W85, W86, W87
Medical Causes (Excluding SIDS)	A000-B999, C000-D489, D500-D899, E000-E909, F000-F999, G000-G999, H000-H599, H600-H959, I000-I999, J000-J999, K000-K939, L000-L999, M000-M999, N000-N999, O000-O999, P000-P969, Q000-Q999, R000-R949
Other Causes (Residual)	All other codes not otherwise listed
Poisoning	X40-X49, X60-X65, X68, X69, X85, X87, X89, X90, Y10-Y16, Y18, Y19
Sudden Infant Death Syndrome	R95
Suicide	X60-X84
Vehicular	V01-V99, X81, X82, Y03, Y32
Weapon, Including Body Part	W26, W32-W34, X72-75, X78, X79, X93-96, X99, Y00, Y04, Y05, Y08, Y09, Y22-25, Y28-Y29, Y35.0, Y35.3

For this report, ICD-10 codes used for classification of Vital Statistics data were selected to most closely correspond with the causes of death indicated on the CFR case report tool. Therefore, the ICD-10 codes used for this report may not match the codes used for other reports or data systems.

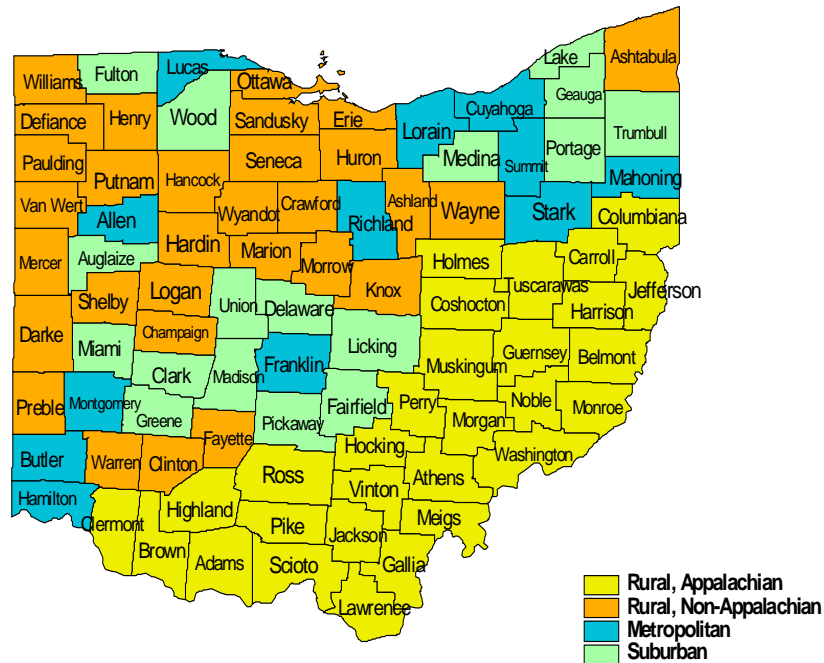
APPENDIX VI OHIO COUNTY TYPE DESIGNATIONS

Ohio's 88 counties have been categorized into four county types: rural Appalachian; rural non-Appalachian; metropolitan; and suburban.

- The 29 rural Appalachian counties were identified from Section 403 of the U. S. Code, and most are geographically situated in the Southeast region of Ohio.
- The 12 metropolitan counties were defined as non-Appalachian counties containing at least one city with 50,000 or more inhabitants as of the 1990 census.
- The 17 suburban counties were non-metropolitan, non-Appalachian counties that met the criteria of an urbanized area as defined by the U.S. Census Bureau for the 1990 census. Thus, suburban counties are essentially urbanized areas without large cities. All suburban counties are also adjacent to at least one metropolitan county.
- The 30 counties that were not Appalachian, metropolitan, or suburban were classified as rural non-Appalachian.

In 2008, Ashtabula, Trumbull and Mahoning were added to the Appalachian counties. To maintain continuity for the five-year period 2007-2011, for the purpose of this report, Ashtabula remains rural non-Appalachian; Trumbull remains suburban; and Mahoning remains metropolitan.

Ohio County Designation



**APPENDIX VII
DATA TABLES**

Table 1: Reviews of 2011 Deaths by Manner of Death by Age, Race and Gender (N=1,547)						
	Natural	Accident	Homicide	Suicide	Undetermined/ Unknown	Total
Age	#	#	#	#	#	#
1-28 Days	686	13	-	-	5	704
29-364 Days	195	59	11	-	87	352
1-4 Years	72	41	19	-	15	147
5-9 Years	52	27	2	-	1	82
10-14 Years	47	27	5	9	6	94
15-17 Years	36	57	26	48	1	168
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Race*	#	#	#	#	#	#
White	686	165	28	52	68	999
Black	387	59	35	5	42	528
Other	15	-	-	-	5	20
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Gender	#	#	#	#	#	#
Male	587	133	37	43	68	868
Female	500	91	26	14	47	678
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Total	1,088	224	63	57	115	1,547

*36 cases with multiple races indicated were assigned to the minority race.

**Table 2: Reviews of 2011 Deaths by Age
Medical Causes of Death by Age (N=1,103)**

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asthma	0	1	3	3	2	1	10
Cancer	2	2	10	13	11	7	45
Cardiovascular	17	14	7	6	2	4	50
Congenital Anomalies	106	71	10	6	10	4	207
Neurological Disorders	2	1	3	8	7	2	23
Pneumonia	3	6	11	0	6	3	29
Prematurity	467	34	4	0	0	0	505
SIDS	3	31	2	0	0	0	36
Other Infection	12	12	6	3	2	3	38
Other Perinatal Conditions	26	2	1	0	0	0	29
Other Medical Condition	48	28	14	14	11	12	127
Undetermined/Unknown	0	2	2	0	0	0	4
Medical Causes Total	686	204	73	53	51	36	1,103

External Causes of Death by Age (N=357)

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Vehicular	1	2	10	14	17	39	83
Asphyxia	10	54	3	2	10	27	106
Weapon (Including Body Part)	0	8	14	2	5	45	74
Fire, Burn or Electrocutation	0	1	10	7	4	0	22
Drowning	0	1	18	2	2	7	30
Poisoning	1	1	3	0	3	9	17
Fall or Crush	0	0	2	2	0	4	8
Exposure	0	0	1	0	0	0	1
Other Injury	0	0	1	0	0	1	2
Undetermined/Unknown	2	9	3	0	0	0	14
External Causes Total	14	76	65	29	41	132	357

For 87 reviews, the cause of death could not be determined as either medical or external.

**Table 3: Reviews of 2011 Deaths by Race
Medical Causes of Death by Race (N=1,130)**

	White	Black	Other	Unknown	Missing	Total
Asthma	1	9	-	-	-	10
Cancer	35	9	1	-	-	45
Cardiovascular	33	17	-	-	-	50
Congenital Anomalies	144	59	4	-	-	207
Neurological Disorders	17	6	1	-	-	23
Pneumonia	18	11	-	-	-	29
Prematurity	271	225	9	-	-	505
SIDS	31	5	-	-	-	36
Other Infection	23	14	1	-	-	38
Other Perinatal Conditions	23	6	-	-	-	29
Other Medical Condition	98	29	-	-	-	127
Undetermined	4	-	-	-	-	4
Medical Causes Total	698	390	15	0	0	1,103

27 cases with multiple races indicated were assigned to the minority race.

External Causes of Death by Race (N= 357)

	White	Black	Other	Unknown	Missing	Total
Vehicular	66	17	-	-	-	83
Asphyxia	82	24	-	-	-	106
Weapon (Including Body Part)	38	36	-	-	-	74
Fire, Burn or Electrocution	13	9	-	-	-	22
Drowning	22	8	-	-	-	30
Poisoning	15	2	-	-	-	17
Fall or Crush	6	2	-	-	-	8
Exposure	0	1	-	-	-	1
Other Injury	2	-	-	-	-	2
Undetermined/Unknown	7	7	-	-	-	14
External Causes Total	251	106	0	0	0	357

2 cases with multiple races indicated were assigned to the minority race.

For 87 reviews, the cause of death could not be determined as either medical or external.

**Table 4: Reviews of 2011 Deaths
Medical Causes of Death by Gender (N=1,103)**

	Male	Female	Unknown	Missing	Total
Asthma	8	2	-	-	10
Cancer	20	25	-	-	45
Cardiovascular	25	25	-	-	50
Congenital Anomalies	108	99	-	-	207
Neurological Disorders	13	10	-	-	23
Pneumonia	20	9	-	-	29
Prematurity	275	229	1	-	505
SIDS	22	14	-	-	36
Other Infection	21	17	-	-	38
Other Perinatal Conditions	15	14	-	-	29
Other Medical Condition	70	57	-	-	127
Undetermined	1	3	-	-	4
Medical Causes Total	598	504	1	0	1,103

External Causes of Death by Gender (N=357)

	Male	Female	Unknown	Missing	Total
Motor Vehicle	55	28	-	-	83
Asphyxia	66	40	-	-	106
Weapon (Including Body Part)	48	26	-	-	74
Fire, Burn or Electrocution	12	10	-	-	22
Drowning	17	13	-	-	30
Poisoning	8	9	-	-	17
Fall or Crush	6	2	-	-	8
Exposure	-	1	-	-	1
Other Injury	0	2	-	-	2
Undetermined/Unknown	8	6	-	-	14
External Causes Total	220	37	0	0	357

For 87 reviews, the cause of death could not be determined as either medical or external.

Table 5: Child Population, Child Deaths and Reviews by County Type, 2011

County Type	Child Population		Child Deaths		Reviews Completed		Percent Deaths Reviewed
	#	%	#	%	#	%	%
Rural Appalachian	342,541	13	199	13	179	12	90
Rural Non-Appalachian	400,169	15	212	13	202	13	95
Suburban	501,099	19	213	13	197	13	92
Metropolitan	1,449,283	54	967	61	969	63	100
Total	2,693,092	100	1,591	100	1,547	100	97

Table 6: Reviews of 2007-2011 Deaths by Manner of Death by Age, Race and Gender (N=8,108)

	Natural	Accident	Homicide	Suicide	Undetermined / Unknown	Total
Age	#	#	#	#	#	#
0-28 Days	3,535	68	6	-	46	3,655
29-364 Days	1,017	296	66	-	384	1,763
1-4 Years	435	244	104	-	47	830
5-9 Years	268	116	30	1	4	419
10-14 Years	296	154	22	53	16	541
15-17 Years	245	340	125	181	9	900
Unknown	-	-	-	-	-	0
Missing	-	-	-	-	-	0
Race*	#	#	#	#	#	#
White	3,740	909	162	195	287	5,293
Black	1,946	290	190	37	212	2,675
Other	95	14	-	3	7	119
Unknown	10	2	1	-	-	13
Missing	5	3	-	-	-	8
Gender	#	#	#	#	#	#
Male	3,195	765	229	168	2992	4,649
Female	2,592	452	124	67	214	3,449
Unknown	3	-	-	-	-	3
Missing	6	1	-	-	-	7
Total	5,796	1,218	353	235	506	8,108

*184 cases with multiple races indicated were assigned to the minority race.

**Table 7: Reviews of 2007-2011 Deaths by Age
All Medical Causes of Death by Age (N=5,863)**

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asthma	-	1	6	9	8	8	32
Cancer	3	9	51	67	70	10	241
Cardiovascular	108	55	40	25	23	31	282
Congenital Anomalies	499	250	101	31	40	23	945
Low Birth Weight	7	2	-	-	-	-	9
Malnutrition/Dehydration	-	8	2	-	-	-	10
Neurological Disorders	6	17	18	18	14	23	96
Pneumonia	19	65	37	14	26	14	175
Prematurity	2,379	169	11	3	-	-	2,562
SIDS	16	189	2	-	-	-	217
Other Infection	67	63	14	25	21	10	228
Other Perinatal Conditions	144	19	3	1	2	1	170
Other Medical Condition	290	177	119	77	95	93	851
Undetermined/Unknown	12	33	7	1	1	1	55
Medical Causes Total	3,550	1,057	439	272	300	245	5,863

All External Causes of Death by Age (N=1,907)

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asphyxia	47	258	40	8	59	114	526
Vehicular	3	19	67	58	84	259	490
Weapon (Including Body Part)	4	48	78	21	31	185	367
Drowning	1	8	69	17	24	25	144
Fire and Burns	1	10	60	36	17	6	130
Poisoning	1	4	14	1	11	47	78
Fall or Crush	1	2	19	5	7	14	48
Exposure	1	2	6	-	-	-	9
Other Injuries	1	-	2	1	-	1	5
Undetermined/Unknown	14	89	6	-	-	1	110
External Causes Total	74	440	361	147	233	658	1,907

For 338 reviews, the cause of death could not be determined as either medical or external.

**Table 8: Reviews of 2007-2011 Deaths by Race
All Medical Causes of Death by Race (N=5,863)**

	White	Black	Other	Unknown	Missing	Total
Asthma	9	23	-	-	-	32
Cancer	190	42	8	1	-	241
Cardiovascular	197	79	2	-	1	282
Congenital Anomalies	677	251	15	1	1	945
Low Birth Weight	7	2	-	-	-	9
Malnutrition/Dehydration	7	3	-	-	-	10
Neurological Disorders	65	28	3	-	-	96
Pneumonia	120	51	4	-	-	175
Prematurity	1,386	1,135	33	5	3	2,562
SIDS	161	42	4	-	-	207
Other Infection	150	71	7	-	-	228
Other Perinatal Conditions	119	49	2	-	-	170
Other Medical Condition	651	186	12	2	-	851
Undetermined	37	15	2	1	-	55
Medical Causes Total	3,776	1,977	95	10	5	5,863

138 cases with multiple races indicated were assigned to the minority race.

External Causes of Death by Race (N= 1,907)

	White	Black	Other	Unknown	Missing	Total
Asphyxia	375	144	4	1	-	526
Vehicular	411	73	6	-	-	490
Weapon (Including Body Part)	183	183	-	1	-	367
Drowning	103	36	4	1	-	144
Fire and Burns	88	40	1	-	1	130
Poisoning	67	11	-	-	-	78
Fall or Crush	39	7	2	-	-	48
Exposure	7	2	-	-	-	9
Other Injuries	5	-	-	-	-	5
Undetermined/Unknown	42	68	-	-	-	110
External Causes Total	1,320	564	17	3	3	1,907

31 cases with multiple races indicated were assigned to the minority race.

For 338 reviews, the cause of death could not be determined as either medical or external.

**Table 9: Reviews of 2007-2011 Deaths by Gender
All Medical Causes of Death by Gender (N=5,863)**

	Male	Female	Unknown	Missing	Total
Asthma	19	13	-	-	32
Cancer	120	121	-	-	241
Cardiovascular	145	137	-	-	282
Congenital Anomalies	502	441	-	2	945
Low Birth Weight	3	6	-	-	9
Malnutrition/Dehydration	5	5	-	-	10
Neurological Disorders	47	49	-	-	96
Pneumonia	109	66	-	-	175
Prematurity	1,457	1,099	3	3	2,562
SIDS	114	93	-	-	207
Other Infection	124	104	-	-	228
Other Perinatal Conditions	92	78	-	-	170
Other Medical Condition	480	369	-	2	851
Undetermined/Unknown	25	30	-	-	55
Medical Causes Total	3,242	2,611	3	7	5,863

All External Causes of Death by Gender (N= 1,907)

	Male	Female	Unknown	Missing	Total
Asphyxia	321	208	-	-	526
Vehicular	318	172	-	-	490
Weapon (Including Body Part)	271	96	-	-	367
Drowning	95	49	-	-	144
Fire and Burns	62	68	-	-	130
Poisoning	45	33	-	-	78
Fall or Crush	40	8	-	-	48
Exposure	1	8	-	-	9
Other Injuries	2	3	-	-	5
Undetermined/Unknown	59	51	-	-	110
External Causes Total	1,214	693	0	-	1,907

For 338 reviews, the cause of death could not be determined as either medical or external.

Table 10: Reviews of 2007-2011 Deaths by Year by Age, Race and Gender (N=8,108)

	2007	2008	2009	2010	2011	Total
Age	#	#	#	#	#	#
0-28 Days	769	737	727	719	703	3,655
29-364 Days	364	372	342	333	352	1,763
1-4 Years	185	162	155	181	147	830
5-9 Years	87	89	80	81	82	419
10-14 Years	97	117	130	103	94	541
15-17 Years	221	199	171	141	168	900
Unknown	-	-	-	-	-	0
Missing	-	-	-	-	-	0
Race*	#	#	#	#	#	#
White	1,143	1,076	1,037	1,038	999	5,293
Black	542	579	540	487	527	2,675
Other	23	18	25	33	20	119
Unknown	7	3	3	-	-	13
Missing	8	-	-	-	-	8
Gender	#	#	#	#	#	#
Male	1,011	967	928	876	867	4,649
Female	703	709	677	682	678	3,449
Unknown	2	0	0	0	1	3
Missing	7	0	0	0	0	7
Total	1,723	1,676	1,605	1,558	1,546	8,108

* 184 cases with multiple races indicated were assigned to the minority race.

Table 11: Reviews of 2007-2011 Deaths by Year by Cause, Circumstances and Preventability (N=8,108)

	2007	2008	2009	2010	2011	Total
Medical Causes	#	#	#	#	#	#
Prematurity	552	514	486	515	504	2,571
Congenital Anomaly	184	174	192	188	207	945
Cardiovascular	75	49	64	44	50	282
SIDS	55	43	45	28	36	207
Other Infections	44	56	55	34	39	228
Cancer	53	45	48	50	45	241
Pneumonia	43	36	33	34	29	175
Other Perinatal	36	47	34	24	29	170
Neurological	20	19	13	21	23	96
Asthma	11	4	3	4	10	32
Malnutrition/Dehydration	3	2	1	2	2	10
Other Medical	165	202	176	184	124	851
Undetermined/Unknown	25	9	11	6	4	55
External Causes	#	#	#	#	#	#
Asphyxia	112	119	109	79	106	525
Vehicular	116	115	86	90	83	490
Weapon (Including Body Part)	80	72	80	61	74	367
Drowning	31	27	27	29	30	144
Fire and Burns	26	34	18	30	22	130
Poisoning	11	19	15	16	17	78
Fall or Crush	9	8	14	9	8	48
Exposure	2	1	2	3	1	9
Other Injuries	0	1	1	27	2	31
Undetermined/Unknown	20	26	24	1	14	85
	#	#	#	#	#	#
Child Abuse & Neglect	38	38	35	27	26	164
Sleep-related Infant Deaths	178	168	154	150	169	819
	#	#	#	#	#	#
Probably Preventable-All Reviews	375	394	352	348	360	1829
Year Total	1,723	1,676	1,605	1,557	1,547	8,108

Table 12: Reviews of 2007-2011 Deaths by County Type by Age, Race and Gender (N=8,108)

	Rural Appalachian	Rural Non- Appalachian	Suburban	Metropolitan	Total
Age	#	#	#	#	#
0-28 Days	355	385	442	2,473	3,655
29 – 364 Days	214	228	229	1,092	1,763
1-4 Years	130	144	119	437	830
5-9 Years	54	77	66	222	419
10-14 Years	87	92	78	284	541
15-17 Years	134	154	146	466	900
Race*	#	#	#	#	#
White	904	980	948	2,461	5,293
Black	64	80	118	2,413	2,675
Other	4	17	13	85	119
Unknown	1	3	1	7	12
Missing	1	-	-	8	9
Gender	#	#	#	#	#
Male	583	595	622	2,849	4,649
Female	389	484	455	2,121	3,449
Unknown	-	-	-	3	3
Missing	2	1	3	1	7
Total	974	1,080	1,080	4,974	8,108

* 184 cases with multiple races indicated were assigned to the minority race.

**Table 13:
Reviews of 2007-2011 Deaths by County Type by Cause, Circumstances and Preventability (N=8,108)**

	Rural Appalachian	Rural Non- Appalachian	Suburban	Metropolitan	Total
Medical Causes	#	#	#	#	#
Prematurity	212	219	283	1,857	2,571
Congenital Anomaly	116	113	133	583	945
Cardiovascular	32	45	30	175	282
Other Infections	35	30	37	126	227
Cancer	33	43	32	133	241
SIDS	45	56	40	66	207
Pneumonia	18	39	23	95	175
Other Perinatal	8	29	24	109	170
Neurological	14	17	8	57	96
Asthma	2	4	3	23	32
Malnutrition	-	2	-	8	10
Other Medical	134	145	141	431	851
Undetermined/Unknown	9	3	13	30	55
External Causes	#	#	#	#	#
Asphyxia	73	66	96	291	526
Vehicular	94	107	87	202	490
Weapon (Including Body Part)	35	44	41	247	367
Drowning	26	29	18	71	144
Fire and Burns	33	31	9	57	130
Poisoning	12	10	16	40	78
Fall or Crush	6	17	2	23	48
Exposure	-	-	2	7	9
Other Injuries	1	2	-	1	4
Undetermined/Unknown	4	4	2	101	110
Child Abuse & Neglect	#	#	#	#	#
Sleep-related Infant Deaths	23	21	18	102	164
Sleep-related Infant Deaths	98	92	93	536	819
	#	#	#	#	#
Probably Preventable – All Reviews	295	291	243	1,000	1,829
Total	974	1,080	1,080	4,974	8,108

APPENDIX VIII REFERENCES*

¹ National Center for Health Statistics and U.S. Census Bureau data. Processed through Ohio Department of Health, Vital Statistics, April 18, 2013. Note: For the Census data used in this report, persons with multiple races indicated were assigned by a complex algorithm including geographic area and proportions of all races in that area and other factors.

² Program Manual for Child Death Review. Ed. Covington T, Foster V, Rich S. The National Center for Child Death Review, 2005.

³ U.S. Census Bureau. Population Estimates. Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2010 to July 1, 2012. Available at <http://www.census.gov/popest/data/counties/asrh/2012/files/CC-EST2012-ALLDATA.pdf>

⁴ National Center for Health Statistics and U.S. Census Bureau data. Processed through Ohio Department of Health, Vital Statistics, April 18, 2013.

⁵ National Center for Health Statistics and U.S. Census Bureau data. Processed through Ohio Department of Health, Vital Statistics, April 18, 2013.

⁶ National Center for Health Statistics and U.S. Census Bureau data. Processed through Ohio Department of Health, Vital Statistics, April 18, 2013.

⁷ National Center for Injury Prevention and Control. WISQARS Injury Mortality Reports, 1999 – 2011 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

⁸ Centers for Disease Control and Prevention. Self-directed Violence Surveillance: Uniform Definitions and Recommended Data Elements, 2011. Available at http://www.cdc.gov/violenceprevention/pub/selfdirected_violence.html.

⁹ National Center for Injury Prevention and Control. WISQARS Injury Mortality Reports, 1999 – 2011 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

¹⁰ Prevent Child Abuse America. *What You Can Do: Remember the Risk Factors*. Available at www.preventchildabuse.org/index.php/research.

¹¹ Ohio Department of Health. *Ohio Child Fatality Review Seventh Annual Report. September 2007*. Available at www.odh.ohio.gov/~media/ODH/ASSETS/Files/cfhs/child%20fatality%20review/ohiochildfatalityreviewannualreport2007-3.ashx.

¹² National Center for Health Statistics. *Deaths: Preliminary Data for 2011*. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf.

¹³ National Center for Health Statistics and U.S. Census Bureau data. Processed through Ohio Department of Health, Vital Statistics, April 18, 2013.

¹⁴ Centers for Disease Control and Prevention. National Prematurity Awareness Month page. Available at <http://www.cdc.gov/features/prematurebirth/>.

¹⁵ Willinger M, James LS, Catz C. Defining the sudden infant death syndrome (SIDS): Deliberations of an expert panel, convened by the National Institute of Child Health and Human Development. *Pediatric Pathology*. 1991; 11:677-684.

¹⁶ Centers for Disease Control and Prevention. Sudden Infant Death Syndrome (SIDS) and Sudden Unexpected Infant Death (SUID): Sudden, Unexpected Infant Death (SUID) Initiative page. Available at <http://www.cdc.gov/sids/SUIDAbout.htm>.

¹⁷ National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

¹⁸ National Center for Health Statistics. *Deaths: Preliminary Data for 2011*. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf.

¹⁹ National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

²⁰ National Center for Injury Prevention and Control. WISQARS Injury Mortality Reports, 1999 – 2011 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

²¹ National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

²² National Center for Injury Prevention and Control. WISQARS Injury Mortality Reports, 1999 – 2011 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

²³ National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

²⁴ National Center for Injury Prevention and Control. WISQARS Injury Mortality Reports, 1999 – 2011 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

²⁵ Program Manual for Child Death Review. Ed. Covington T, Foster V, Rich S. The National Center for Child Death Review, 2005.

*All Internet sites referenced were last accessed September 1, 2013.