PREVENTING CHILD DEATHS

Report and Recommendations on the Review of 2012 Child Deaths

Mahoning County Child Fatality Review Board

The mission of the Mahoning County Child Fatality Review Board is to decrease the incidence of preventable fetal and child deaths by:

- *Promoting cooperation, collaboration, and communication between all groups, professions, agencies, or entities that serve families and children*
- *Maintaining a comprehensive database of all child deaths that occur in Mahoning County in order to develop an understanding of the causes and incidences of those deaths*
- *Recommending local services and program changes to the groups, professions, agencies, or entities that serve families and children that might prevent fetal and child deaths*
- *Advising the Ohio Department of Health of aggregate data trends and patterns concerning child deaths*

Introduction

The Ohio General Assembly established the Child Fatality Review (CFR) program in 2000 to identify potential risk factors that lead to child deaths and to offer recommendations for preventing similar deaths in the future. Each county is required to establish a CFR Board that must review the deaths of children under 18 years of age residing in that county. The Mahoning County District Board of Health coordinates the CFR Board in Mahoning County with representation from the county coroner, local law enforcement, the children services board, the alcohol and drug addiction services board, mental health services, the city health department and vital stats department, and area physicians. The Mahoning County CFR Board reviews all child deaths in the county but a more thorough review is prepared and discussed on all child deaths that occur under the following conditions:

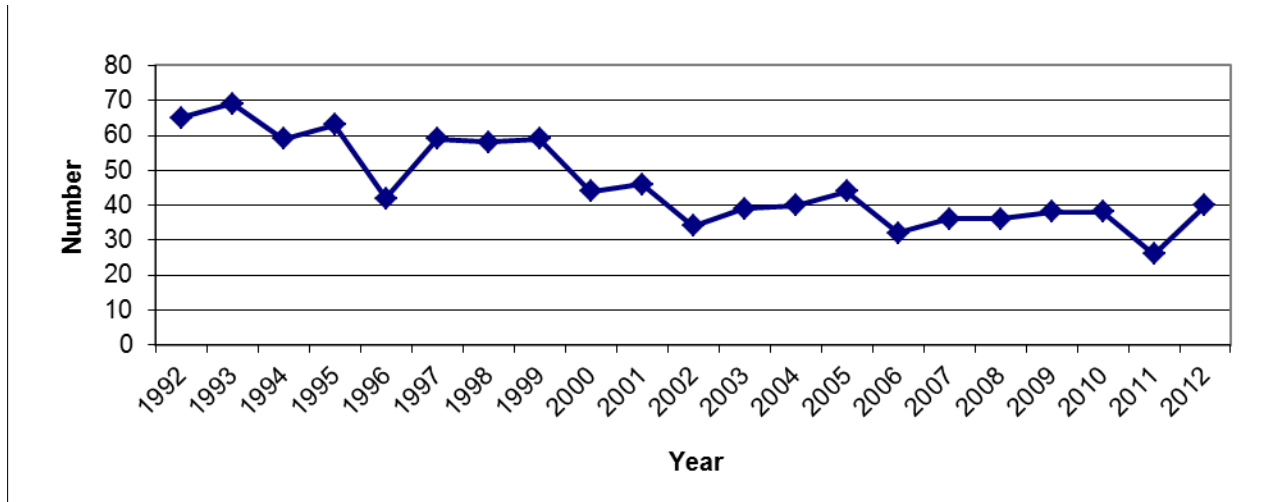
- A death which has been investigated by the coroner, which includes any death unattended by a physician and a death due to an injury, either intentional or unintentional
- When a review is requested by any Child Fatality Review Board participant

This report contains information from the Mahoning County Child Fatality Review Board's review of child deaths that occurred in Mahoning County in 2012. It reflects the work of many dedicated professionals in the community who have committed themselves to gaining a better understanding of how and why children die.

Trends in Child Deaths

According to Ohio Vital Statistics, the number of Ohio child deaths has decreased from 1,760 in 2007 to 1,591 in 2011. The child mortality rate has decreased from 63 deaths per 100,000 children to 59 in 2011 *(Ohio Child Fatality Review, Thirteenth Annual Report, September 2013).* Unfortunately, in Mahoning County, the child mortality rate in 2012 is 80 deaths per 100,000 children under the age of 18. Figure 1 depicts the overall downward trend of child deaths in Mahoning County with a high of 69 total deaths in 1993 to 40 total child deaths that occurred in Mahoning County in 2012. In 2012, there is a rise in child deaths compared to 2011. There have not been as many child deaths in one year since 2005.

Figure 1: Number of Child Deaths in Mahoning County, Birth to 17 years of Age, 1992-2012



Key Findings of 2012 Child Deaths

Of the 40 deaths reviewed, the majority, 67.5% (n=27), were for children less than 1 year of age. Figure 2, represents the age distribution of the child deaths. Of the child deaths, 62.5% (n=25) were male verses 37.5% female; 52.5% (n=21) were black, 40% were white, and 7.5% were considered "other." The majority of deaths (60%, n=24) were residents of the city of Youngstown, 20% of the deaths were residents of Boardman, and two deaths occurred in each of the following townships: Austintown, Beaver, and Milton. One death occurred in each Canfield and Poland Townships.

Manner of death explains how the cause of death came about. The five manner of death categories on the Ohio death certificate are natural, accident, homicide, suicide, and undetermined. Natural was the most common manner of death accounting for 65% of the children under the age of 18, followed by 22.5% accidental, 10% were homicides, and 2.5% were of an undetermined or unknown manner. See Figure 3 for a comparison of the manner of deaths from 2010-2012 with the State of Ohio in 2011 *(Ohio Child Fatality Review, Thirteenth Annual Report, September 2013).*

Figure 2: Age of Child Deaths, Mahoning County, Birth to 17 Years of Age, 2012

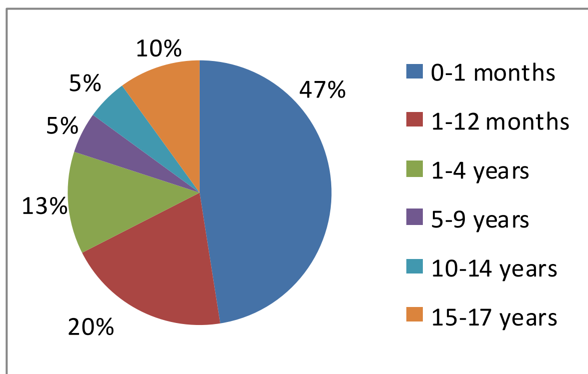


Figure 3: Manner of Child Deaths, Mahoning County, Birth to 17 Years of Age, 2010-2012 Comparison

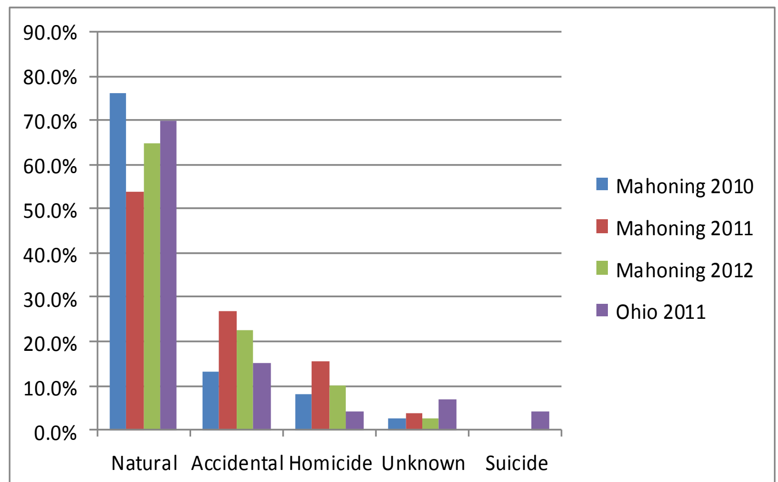


Table 1 summarizes each of the 40 child deaths in 2012. Natural deaths are primarily caused by disease/medical causes. Some deaths by medical causes are believed to be unpreventable, but some, under certain circumstances, may be prevented through better preconception and pregnancy health, earlier or more consistent prenatal care and smoking cessation counseling, or through early detection and prompt, appropriate treatment. **Prematurity** and secondly **birth defects**, were the most common medical causes of natural deaths in 2012.

External causes of death (injury related) accounted for 35% of the 2012 deaths. **Asphyxia or positional asphyxia** is the most frequent external cause of a death followed by deaths due to weapon related injuries and drowning.

Table 1: Manner and Cause of Deaths by Age Group, 2012

Manner	Cause	0-1 Months	1-12 Months	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Natural								**26 (65%)**
	Birth Defects	4	1		1		1	**6**
	Prematurity	14	1	1				**17**
	Cancer		1	1				**2**
	Pneumonia and other infections		1					**1**
Accidental								**9 (22.5%)**
	Drowning			2			1	**3**
	Asphyxia or positional asphyxia	1	4					**5**
	Gunshot					1		**1**
Homicide								**4 (10%)**
	Gunshot				1		2	**3**
	Struck by Person/Object			1				**1**
Undetermined						1		**1 (2.5%)**
Total		**19 (47.5%)**	**8 (20%)**	**5 (12.5%)**	**2 (5%)**	**2 (5%)**	**4 (10%)**	**40**

Table 2 lists cumulative Mahoning County child death data from 2004 to 2012 by manner and medical cause of death by age group.

Between 2004-2012, prematurity alone accounted for over half (56%) of the child deaths due to natural causes and 38% of all deaths. Deaths due to birth defects accounted for another 24% of natural deaths. Prematurity and birth defects combined accounted for 80% of the natural deaths. A disproportional amount of the prematurity deaths occurred to blacks (46%) with respect that only 15.9% of the Mahoning County population is black. Over half lived in the city of Youngstown and most of these children did not live past the first month of life.

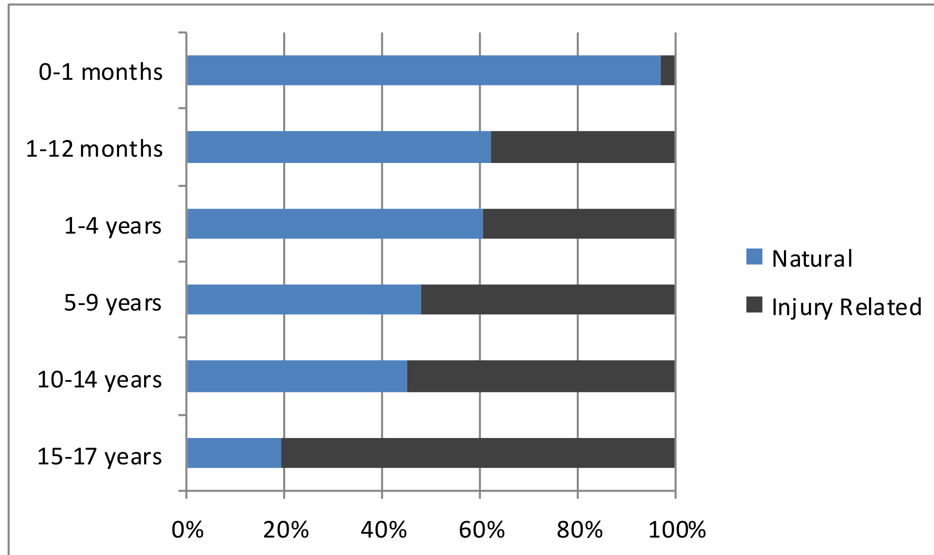
External causes of death were more diverse. Regardless of the manner of death (accidental, homicide, or suicide), deaths due to asphyxia and weapon related injuries accounted for over half of the external causes of deaths at 26.9% each. Motor vehicle crashes accounted for 19.2% of deaths due to external causes. As with medical causes, both males, blacks, and those living in the city of Youngstown were over represented.

Table 2: Manner and Cause of Deaths by Age Group, 2004 - 2012

Manner	Cause	0-1 Months	1-12 Months	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Natural								**225 (68.4%)**
	Neurological			1	1		1	**3**
	Cancer		1	3	4	6	2	**16**
	SIDS		6					**6**
	Cardiovascular			1		1	5	**7**
	Pneumonia and other infections	3	7	1	1	1		**13**
	Birth Defects	25	10	13	5	1	1	**54**
	Prematurity	110	14	1				**126**
Accidental								**60 (18.2%)**
	Fall or crush			1				**1**
	Poisoning			1		1	1	**3**
	Drowning		1	2	2		2	**7**
	Fire or burn					2		**2**
	Vehicular			2	4	3	11	**20**
	Asphyxia or positional asphyxia	4	20		1			**25**
	Gunshot			1		1		**2**
Homicide								**34 (10.3%)**
	Gunshot			1	3	2	19	**25**
	Struck by Person/Object		1	3				**4**
	Fire			2	2			**4**
	Malnutrition		1					**1**
Suicide						1	5	**6 (1.8%)**
Undetermined			2	1		1		**4 (1.2%)**
Total		**142 (43.2%)**	**63 (19.1%)**	**34 (10.3%)**	**23 (7%)**	**20 (6.1%)**	**47 (14.3%)**	**329**

As a child ages, Figure 4 highlights the shift from deaths due to natural cause to deaths due to intentional and unintentional injury related causes.

Figure 4: Natural versus Injury Related (Intentional and Unintentional) Causes of Death, by Age of Child, Mahoning County, 2004-2012



Overall, looking at the child death data from 2004-2012:

- 62.3% of the deaths were of infants less than 1 year of age.
- The top 5 causes of deaths to children under the age of 18 are:
  - Prematurity (38%)
  - Birth Defects (16.7%)
  - Asphyxia and Positional Asphyxia (8.5%)
  - Gunshot Injuries (8.5%)
  - Motor Vehicle Crashes (6.1%)

According to the *Ohio Child Fatality Review, Thirteenth Annual Report, September 2013,* upon the review of child deaths for the five-year period 2007-2011 in Ohio, there is an overall decrease in deaths due to motor vehicle crashes and an increase in deaths due to asphyxia.

Preventive Measures

Natural Deaths during the Neonatal and Post-neonatal Period

Birth defects and prematurity are the most common causes of death in infants. Mahoning County's infant mortality rate in 2007-2010 was 9.7 per 1,000 live births, which is considerably higher compared to the infant mortality rate in Ohio or in the nation, which are 7.7 and 6.1 per 1,000 live births respectively. The infant mortality rate in the African American population in Mahoning County is disproportionally higher at 16.6 deaths per 1,000 live births.

In response to the high infant mortality rate, the Mahoning County District Board of Health and the Youngstown City Health District along with hospitals and social service agencies in the county are collaborating with the Ohio Equity Institute (OEI) and the Ohio Department of Health. Through OEI, multiple urban areas within Ohio are working together to decrease infant mortality and reduce racially disparate birth outcomes.

Data analyzed by OEI indicate that low education, poverty, and birth spacing are factors in infant mortality. The recommendation is to have at least 18-24 months between delivery and next conception to improve birth outcomes. Another factor which can prevent a large percentage of premature births is the use of progesterone, which is a project being spearheaded by Akron Children's Hospital

There are simple steps to take to reduce the risk of birth defects. Food intake, life-style choices, factors in the environment, pre-existing health conditions, and medication use before and during pregnancy all can play a role in reducing or increasing the risk of birth defects.

To help prevent birth defects. Women who are pregnant or may become pregnant are advised to:

- Consume 400 micrograms of folic acid daily
- Manage chronic maternal illnesses such as diabetes, seizure disorders, or phenylketonuria (PKU)
- Reach and maintain a healthy weight
- Talk to a health care provider about taking any medications, both prescription and over-the-counter
- Avoid alcohol, smoking, and illicit drugs
- See a health care provider regularly
- Avoid toxic substances at work or at home
- Ensure protection against domestic violence
- Know their family history and seek reproductive genetic counseling, if appropriate

Accidental Infant Deaths in a Sleep Environment

For 2013, the county received a $4,000 grant from the CJ Foundation for SIDS to provide education to WIC clients about Sudden Infant Death Syndrome (SIDS) risk reduction strategies and to teach expectant and new mothers how to provide a safe sleep environment for their infants. Through the project, nearly 200 mothers were trained with 99% consistently reporting their use of safe sleep environments for their infants. In addition, local WIC policies were aligned with the Ohio Department of Health's new policies on infant feeding and safe sleep and with the safe sleep recommendations from the American Academy of Pediatrics.

Mahoning County District Board of Health and the Mahoning County WIC Program became a "Cribs for Kids" partner, which enabled us to purchase *pack-n-plays* at a reduced cost. With financial assistance from Ohio WIC, we purchased 100 *pack-n-plays* that were distributed to WIC families who otherwise would have been unable to provide a safe sleep environment for their infants.

Ongoing education needs to continue to educate caregivers and local physicians about the ABCs of safe sleep– Alone. Back. Crib. Every baby, every sleep! For more information on safe sleep practices and on the steps the state is taking to prevent these deaths from happening, go to www.safesleep.ohio.gov.

Accidental Deaths due to Drowning

The CFR Board reviews, on average, one drowning death per year, but in 2012, we reviewed three. Toddlers are most at risk of drowning and they tend to occur when there is a lapse in adult supervision. In most cases, toddlers who drown enter the water unseen by others. Effective prevention actions include increased public awareness campaigns emphasizing the need for constant adults supervision of young children around water and on the importance of personal floatation devises. When adequate supervision is combined with approved personal flotation devices, drowning occurrences are rare. Suggested venues of education could include landscapers, pool retail operators, swim clubs, pool chemical companies, installers, etc.

Acknowledgements

We want to express our appreciation to the individuals and agencies who serve on the CFR board for their professional expertise to work toward preventing future child deaths. Special thanks the Youngstown City Health District for providing copies of birth and death certificates and to Dr. Joseph Ohr and the staff of the Mahoning County Coroner's Office for their expertise and compassion.

Tracy Styka, MS
CFR Board Staff Coordinator, Mahoning County District Board of Health
Jan Baharis, MS, LPCC-S
CFR Board Volunteer Coordinator, Compass Family and Community Services - Daybreak
Patricia Sweeney, JD, MPH, RN
CFR Board Chair, Health Commissioner, Mahoning County District Board of Health
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