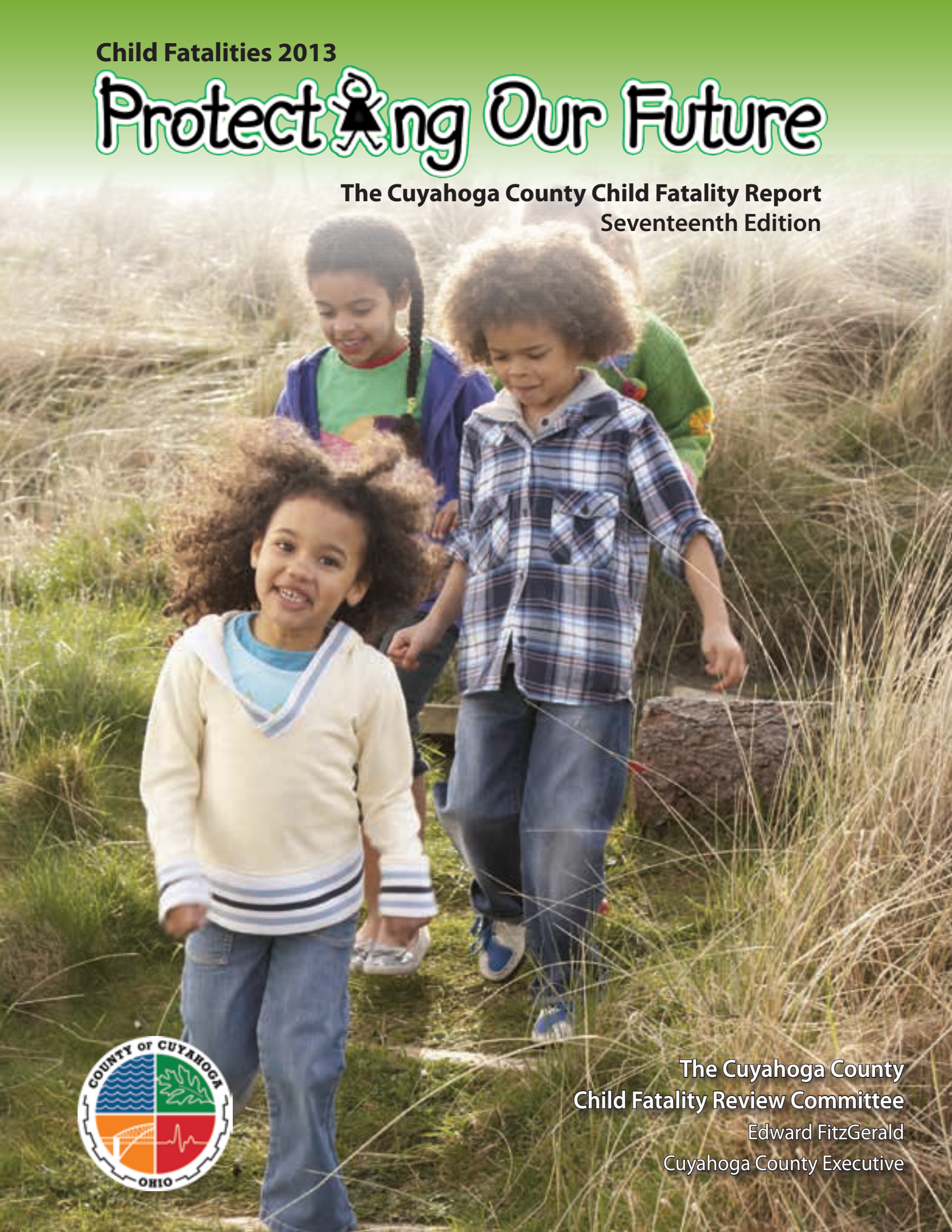
Child Fatalities 2013

Protecting Our Future

The Cuyahoga County Child Fatality Report
Seventeenth Edition



The Cuyahoga County
Child Fatality Review Committee
Edward FitzGerald
Cuyahoga County Executive

We dedicate this report to all the families
who mourn the death of their child.
The community honors their memory
by pledging itself to a course of action that strives
***to prevent the death of another**.*

TECHNICAL GLOSSARY

Infant – A person under 1 year of age.

Neonatal Period – The time period for all infants from their date of birth through the 27th day of life.

Postneonatal Period – The time period for all infants from the 28th day of life until the day before their 1st birthday.

Child – A person between 0 and 17 years of age (all references to "child" in this report specify which age group/range is being discussed).

Cause of Death – Event that causes a physical problem, no matter how brief or prolonged, that leads to a child's death.

Manner of Death – Description of circumstances under which a child died. There are five categories for manner of death:

1. Natural: the death is a consequence of natural disease.
2. Accident: unintended and essentially unavoidable death, not by a natural, suicidal, or homicidal manner.
3. Suicide: death caused by self, with some degree of conscious intent.
4. Homicide: death caused by another human.
5. Undetermined: not enough evidence, yet or ever, to determine the manner of death.

Sleep Related Deaths – Deaths to infants under the age of 1 year that occur while sleeping. They can be classified as the following three types:

1. Sudden Infant Death Syndrome (SIDS): a sudden, unexplained death of an infant less than 1 year old. It is a diagnosis of exclusion, meaning that after an extensive review of the infant's medical history, a complete autopsy, and a death scene investigation, no cause can be identified.
2. Accidental Suffocation: a result of another person lying on the baby, wedging of the baby, or the baby's face, in a soft surface such as a pillow, blanket, or bumper pad.
3. Sudden Unexplained Infant Death (SUID)/Undetermined: ruled as the cause of death when an exact reason cannot be found, but the scene investigation indicates that there were dangers in the baby's sleep area.

White – A person having ancestry in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who self report their race as "white" on demographic documents.

All Other Races – A person who does not have ancestry in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race is not "white" or report entries such as black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander.

Rate – Measure that indicates how often an event is occurring during a certain time period; it is calculated by taking the count of an event during a specific time period and dividing this number by the population that is at risk for experiencing the event during the time period. Rates are often expressed in units of 10, such as per 100, per 1,000, or per 100,000.

> ***Example:*** *The infant death rate is expressed as the number of deaths that occurred among infants 1 to 364 days old who were born alive during a given year divided by the number of live births that occurred in the same year multiplied by 1,000. Therefore, if 200 infants died during 2013 and there were 16,000 live births during the same year, the infant death rate would be 12.5 per 1,000 live births (calculated by taking 200 divided by 16,000 and multiplying by 1,000).*

Disparity – Term used to describe the difference or inequity between two groups.

> ***Example:*** *If the infant death rate was lower in whites compared to the infant death rate in all other races, a racial disparity exists because one racial group (all other races) has a higher rate of infant deaths compared to another racial group (whites).*

Ratio – Comparison made between two things; the fraction formed by the division of one amount by another.

> ***Example:*** *The population of Anytown, USA, was 100,000. It had 40,000 dwelling units. The ratio of people to dwelling units was 2.5 (100,000 divided by 40,000 equals 2.5).*

Trend – Term used to describe the general direction in which data are headed over a period of time. It often is demonstrated by placing a line in a chart. There needs to be a minimum of two data points to start a trend line, but as a general rule most researchers prefer a minimum of six data points to predict a trend.

First Ring Suburbs of Cleveland – Municipalities whose borders touch some portion of the city of Cleveland. See **Appendix A** in data tables section.

Outer Ring Suburbs of Cleveland – Municipalities whose borders don't touch some portion of the city of Cleveland. See Appendix A in data tables section.

Social Determinants of Health – The circumstances in which people are born, grow up, live, work, and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.[1]

[1] World Health Organization. Social determinants of health: Key concepts. Available online at http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/index.html (accessed July 25, 2014).

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AN OVERALL LOOK AT 2013

There were 186 child deaths in 2013, third lowest total number of deaths in past 20 years.

In 2013 we saw the third lowest number of child deaths in the county in 20 years. The total number increased by four from the 2012 finalized total of 182. The 2012 total includes three deaths that were not discovered until after the release of the 2012 report. There was very little variation in the number of deaths in all age groups. The total number of child deaths for 2013 included 133 infants, 31 children between 1 and 9 years old, and 22 children between 10 and 17 years old. **Table 1** shows the number of deaths by age group since 2004.

Table 1 Annual Number of Deaths by Age Group

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Under 1 Year	161	164	166	162	171	141	140	144	131	133	**1513**
1 - 9 Years	30	30	31	33	30	42	16	23	30	31	**296**
10 - 17 Years	36	45	36	35	39	30	22	20	21	22	**306**
Total	**227**	**239**	**233**	**230**	**240**	**213**	**178**	**187**	**182**	**186**	**2115**

Two more infants died in 2013, second lowest number of infant deaths in past 20 years.

Two fewer infants died in 2013 due to birth defects, sleep related, and infections than in 2012. Cancer and drowning had one fewer infant death in 2013. Prematurity (from 76 in 2012 to 82 in 2013) increased by six deaths. Other perinatal complications had two more deaths while other medical causes and homicide had one more death. Motor vehicle accidents, undetermined injury related, and fire had the same number of deaths in 2013 compared to 2012.

One more death to children between 1 and 9 years.

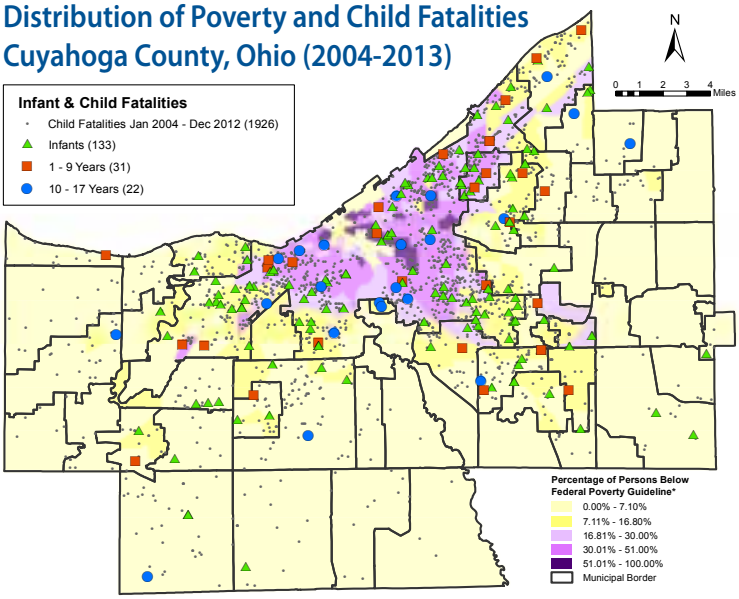
Thirty-one children between 1 and 9 years of age died in 2013. This was the third consecutive increase, but the total number of deaths was similar to the number of deaths from 2004 to 2008. Drowning (from 1 in 2012 to 3 in 2013) and accidental injury related (from 0 in 2012 to 2 in 2013) increased by two deaths, while prematurity and other perinatal complications had one more death in 2013. Causes of death that had the same number of deaths include: birth defects, sleep related, homicide, infections, motor vehicle accident, suicide, undetermined injury related, and fire. Other medical causes (from 8 in 2012 to 3 in 2013) was the only cause of death that had fewer deaths in this age group in 2013.

One more death to children between 10 and 17 years.

Twenty-two children between 10 and 17 years died in 2013. This was tied for the third lowest total number of deaths in this age group in the last 20 years. Birth defects (from 1 in 2012 to 3 in 2013) had two more deaths, while suicide, drowning, and undetermined other all had one more death in 2013. Other medical causes, infections, motor vehicle accident, undetermined injury related, and fire had the same number of total deaths in 2013 compared to 2012. Cancer had two fewer deaths in 2013, while prematurity and homicide decreased by one death in this age group.

Map 1

Distribution of Poverty and Child Fatalities Cuyahoga County, Ohio (2004-2013)



*Data obtained from the US Census Bureau and based on the 2000 socioeconomic data. Percentage of poverty was calculated at the 2000 census tract level.

Note: Technical assistance and census data for Map 1 was provided by Northern Ohio Data and Information Services, Maxine Goodman Levin College of Urban Affairs, Cleveland State University.

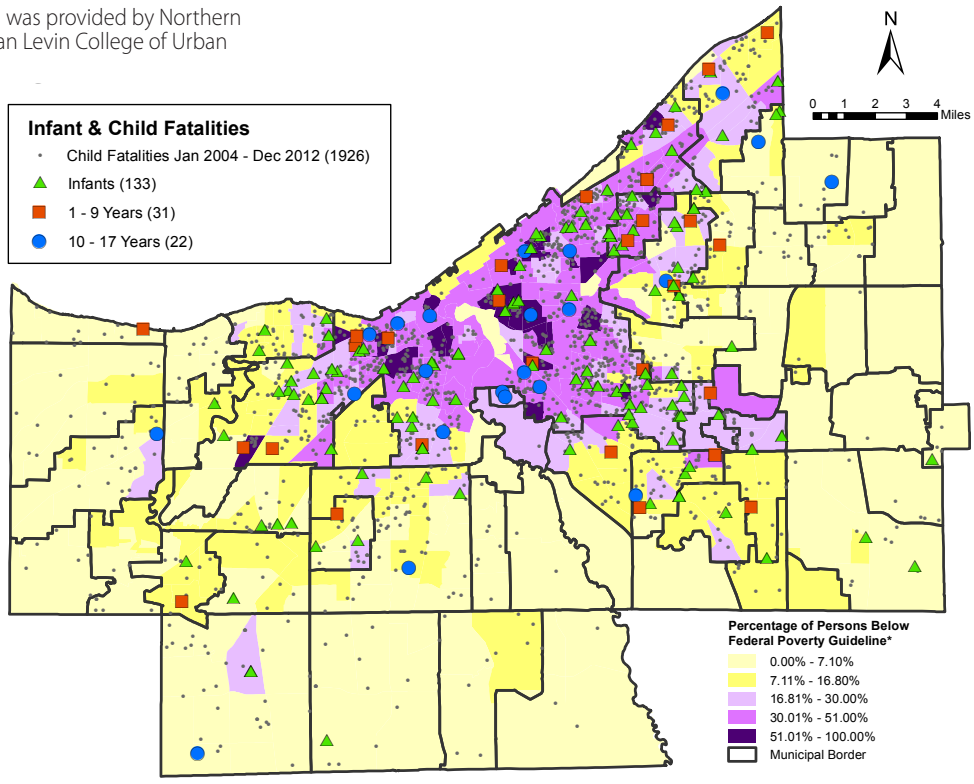
Map 1 and Map 2 illustrate that the distributions of poverty and child deaths are closely related. Map 1 shows the distribution of poverty from data obtained in the 2000 decennial census and all child deaths between 2004 and 2013.[2] Map 2 shows the distribution of poverty from data retrieved in the 2008-2012 five-year American Community Survey,[3] based on the 2010 census tracts, and deaths from the same time period used in Map 1. The 2008-2012 Cuyahoga County poverty rate was 17.7%,[4] which is approximately twice as low (or lower) as the poverty rate that exists in the purple shades on the map. The 2013 federal poverty guideline for a family of four was $23,550.[5]

A larger area on Map 2 is covered with shades of purple, which represents the highest percentages of people living in poverty. Poverty has expanded beyond the city of Cleveland borders, especially on the east side, and into our first ring suburbs in the northeast and southeast. African Americans and other minorities make up the majority of the population in areas with the darkest shades of purple.

Map 2

Distribution of Poverty and Child Fatalities Cuyahoga County, Ohio (2004-2013)

This disturbing trend in our data is unfortunately representative of poverty data trends seen nationwide. The national poverty rate increased from 12.5% in 2007 to 15.0% in 2012.[6] In 2012, 27.0% of black, non-Hispanic people lived in poverty across America, while only 9.7% of white, non-Hispanics lived in similar circumstances.[7] Strategic targeting of resources in geographic hotspots could help to ensure that every family has the necessary resources to adequately provide for our future generation.



*Data obtained from the 2008-2012 American Community Survey, US Census Bureau. Percentage of poverty was calculated at the 2010 census tract level.

[2] US Census Bureau. 2000 Census of population and housing; Summary file 1. Available online at http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml (accessed July 3, 2014).

[3] US Census Bureau. 2008-2012 American Community Survey 5-year estimates. Available online at http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml (accessed July 3, 2014).

[4] Ibid.

[5] US Department of Health and Human Services (HHS). The 2013 HHS poverty guidelines. Available online at http://aspe.hhs.gov/poverty/13poverty.cfm (accessed July 18, 2014).

[6] The Stanford Center on Poverty and Inequality. National report card on poverty and inequality (2014). Available online at http://web.stanford.edu/group/scspi/center_events_sotu.html (accessed July 11, 2014).

[7] Ibid.

Child death rate increases slightly in 2013.

Figure 1 illustrates the stabilization of the rate of child deaths since 2001 and gives a historical perspective over the past 20 years. Four more deaths in 2013 led to a 2.2% increase in the overall number of child deaths in Cuyahoga County, which was the third-lowest total number of deaths since 1993. While the child death rate has been fairly consistent since 2001, the last five years have shown a slight improvement compared to the previous five years from 2004 to 2008.

Figure 1

Total Child Deaths (age 0-17)
Cuyahoga County (1994-2013)

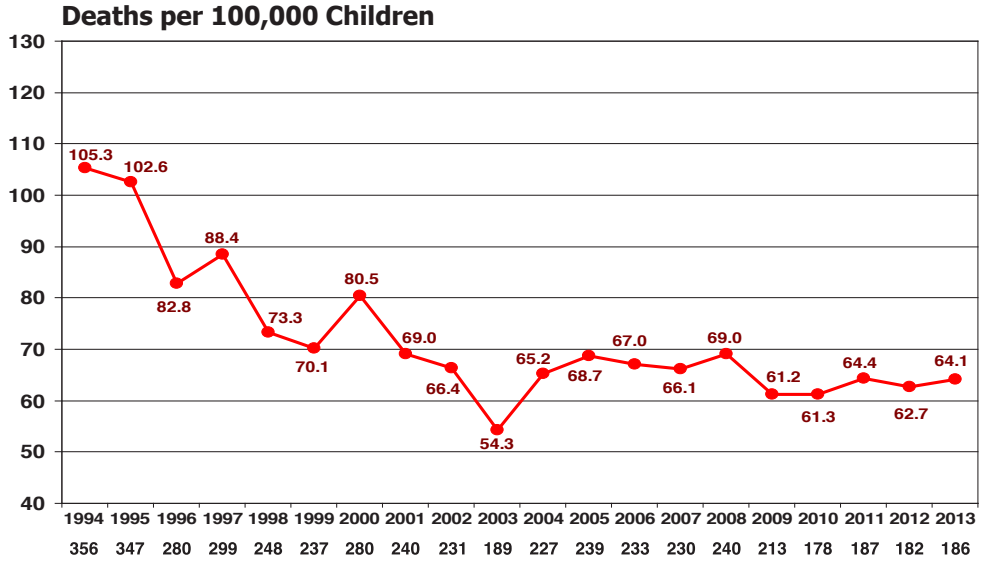


Table 2

Leading Causes of Death by Age Group in 2013

Cause of Death	Under 1 Year	1 - 9 Years	10 - 17 Years	Total
Prematurity	82	1	0	**83**
Birth Defects	23	9	3	**35**
Sleep Related	16	0	0	**16**
Homicide	2	4	8	**14**
Other Medical Causes	3	3	2	**8**
Other Perinatal Complications	4	1	0	**5**
Suicide	0	0	5	**5**
Cancer	1	2	1	**4**
Drowning	0	3	1	**4**
Motor Vehicle Accident	0	3	1	**4**
Infections	2	1	0	**3**
Accidental - Injury Related	0	2	0	**2**
Fire	0	1	0	**1**
Undetermined - Injury Related	0	1	0	**1**
Undetermined - Other	0	0	1	**1**
Total	**133**	**31**	**22**	**186**

Table 2 provides a breakdown of the leading causes of death by age group. It shows that a large majority (75%) of deaths continue to be rooted in medical related causes such as prematurity, birth defects, cancer, infections, and other medical conditions. Of all deaths, 72% occurred in children under 1 year of age, which is the lowest ratio of infant deaths to total deaths since 2009. In the 10- to 17-year-old age group, homicide and suicide made up almost 60% of deaths in this age category.

Prematurity and other perinatal complications had the largest increases in total number of deaths in 2013. Prematurity increased from 77 in 2012 to 83 in 2013, and other perinatal complications had 3 more deaths (from 2 in 2012 to 5 in 2013). Two more deaths occurred due to drowning and accidental injury related. One more death occurred due to suicide and undetermined other. The undetermined death was a gun related death, with the intent of the shooting unknown.

There were 8 deaths due to other medical causes in 2013, which was 4 fewer than in 2012. Four of these deaths had brain related diseases, 2 had respiratory complications, 1 had a metabolic disorder, and 1 had gastrointestinal problems. Cancer had 3 fewer deaths in 2013 while sleep related and infections had 2 fewer deaths. Deaths ruled as homicide, motor vehicle accident, fire, and undetermined injury related had the same number of deaths from 2012 to 2013.

In the following pages, you will find a discussion of the specific causes of death and their associated risk factors. Also, we highlight the risks and causes that impacted age groups and races in varying degrees. As in previous reports, the data tell a compelling story about the lives and deaths of our children and the challenges their families face every day.

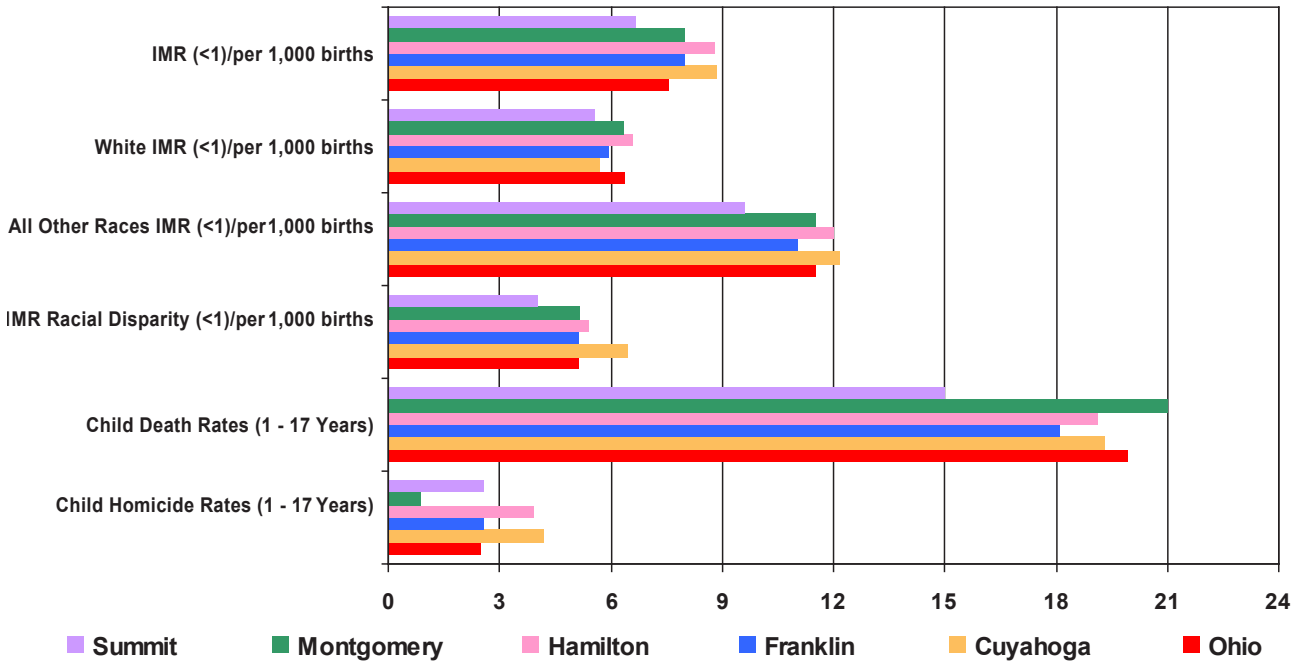
Cuyahoga County has the highest infant mortality rate and child homicide rate.

The Child Fatality Review Board sought data sources that allowed direct comparisons to other large, urban areas in the state focusing on child death and infant mortality rates. We compared Cuyahoga County with Franklin (Columbus area), Hamilton (Cincinnati area), Montgomery (Dayton area), and Summit (Akron area) counties, as well as the state as a whole.[8] These data were for 2012, the most current information available.

In 2012 Cuyahoga had the highest all other races infant mortality rate, but the second-lowest white infant mortality rate (IMR) (**Figure 2**). Overall IMR for Cuyahoga was higher than the other urban counties in Ohio. In terms of child death rate, Cuyahoga had the second-highest child death rate but was lower than the overall state rate. Our child homicide rate was the highest out of the five counties. These data suggest that Cuyahoga County must take a hard look at preventive measures needed to help curb the recent increase in the infant mortality and child death rates in our county.

Figure 2

Peer County Comparisons in 2012



[8] Center for Public Health Statistics and Informatics, Ohio Department of Health. 2012 Infant and child mortality by county. The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

Minority children are more than twice as likely to die in Cuyahoga County.

The racial disparity between white and all other race children increased to a ratio of 2.4 in 2013 which is the highest since 2010 (**Figure 3**). The increase in the ratio is because the all other races death rate increased to its highest total since 2009 and the white rate decreased to its lowest rate in the last three years. The sober truth is minority children are still more than twice as likely to die as white children, but the ratio has decreased by 33% from the peak in 2008. For the first time since 2008, the infant death racial disparity ratio increased and for the first time since 2007 was lower than the child racial disparity ratio. It is important to look at the disparity ratios for infants (birth to less than 1 year) and children (1 to 17 years) separately.

Figure 3 Child Death Rates by Race (age 0-17)

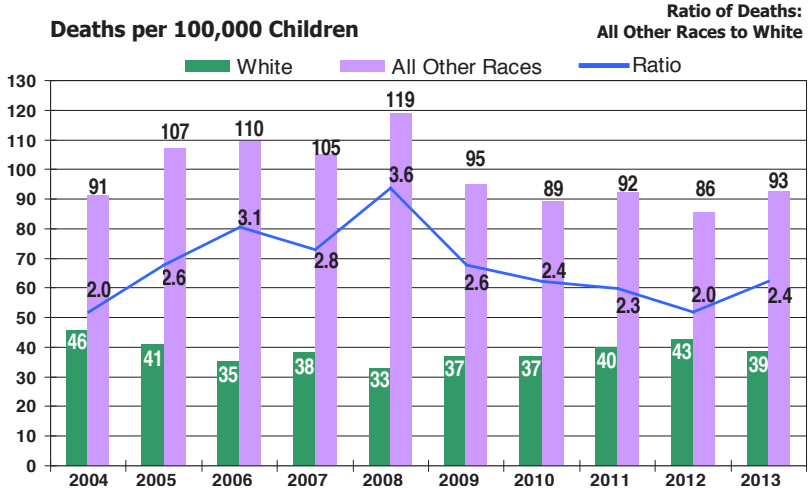
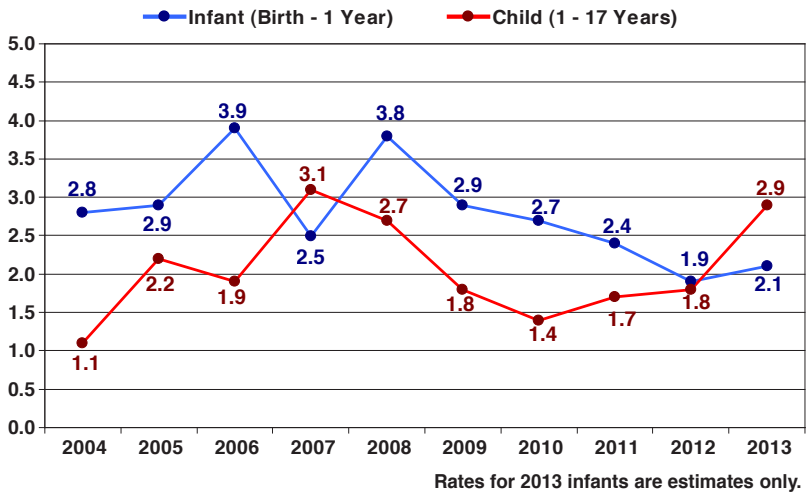


Figure 4 Racial Disparity Ratios



The racial disparity for both age groups is illustrated in **Figure 4**. The graph shows that the rate of minority children ages 1 to 17 who died was almost three times as high as white children. The child racial disparity ratio increased from 1.8 in 2012 to 2.9 in 2013. The significant increase was due to a combination of an increase in the number of deaths to children of all other races from 31 in 2011 to 38 in 2012, as well as a decrease in the number of deaths to white children from 20 in 2012 to 15 in 2013 (refer to **Table 14**). The number of white children who died was the fewest in the last 20 years. Almost 30% of all minority children ages 1 to 17 who died in 2013 died from homicide, while only 7% of white children died from the same manner.

The graph also shows the racial disparity of infant deaths (2.1) increased for the first time since 2008, but was the second-lowest ratio in the last ten years. This is due to the second-lowest IMR in the last ten years for infants of all other races, as well as the second-highest IMR of white infants in the last ten years. The finalized infant death racial disparity ratio in the US for 2011 is 1.8.[9] The increase in the racial disparity ratio in both age groups, especially the more than 60% increase in the child racial disparity ratio, shows we have work to do to ensure minority children have the same opportunity as white children for surviving and thriving in our county.

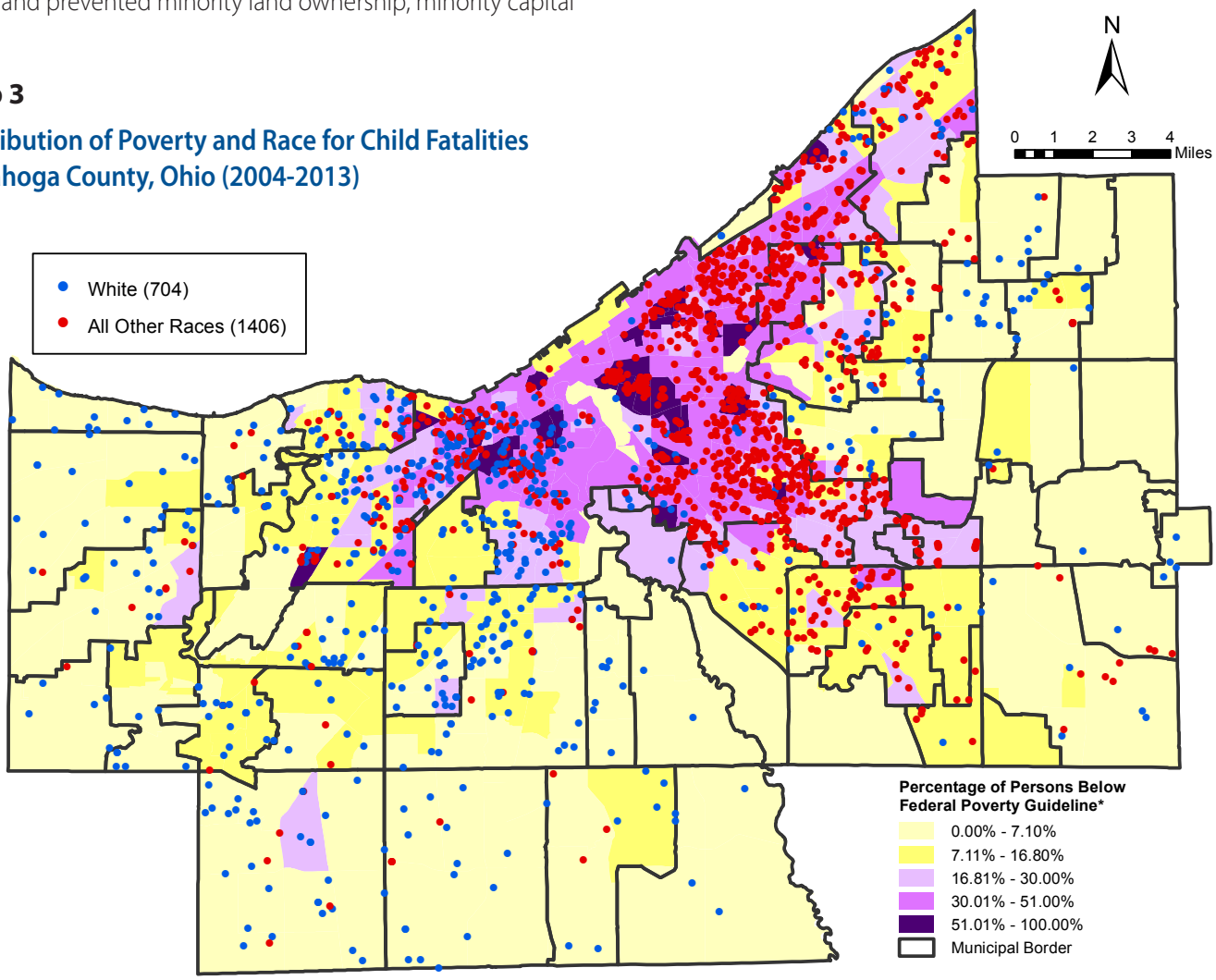
[9] Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. User guide to the 2011 period linked birth/infant death public use file. (2014) Available online at http://www.cdc.gov/nchs/data_access/VitalStatsOnline.htm (accessed August 4, 2014).

As noted in previous reports, poverty and race have a tremendous impact on health outcomes in the US. Maps 1 and 2 clearly illustrate the link between poverty and child death. Child deaths are clustered in areas where there are higher percentages of persons living below the poverty guideline, which has disproportionately impacted our minority population (**Map 3**). Additionally, the map illustrates the link between race, poverty, geographical location, and child death.

It is important to step back and look at how our county's history helps to explain the racial divide seen today in Map 3. Cleveland's black population increased 850% from 1910 to 1930. This racial population shift in our urban core created a fear of racial mixing and decreased property values. Racially restrictive covenants and racist zoning practices helped perpetuate the systemic disenfranchisement for people of color and prevented minority land ownership, minority capital accumulation, and minority suburban access.[10] These practices forced the majority of African Americans to live in undesirable, often environmentally contaminated, locations where home mortgages were not provided. While these discriminatory practices have been ruled unconstitutional, many institutions and locales did not end them until the 1970s. The impact can be seen today in many avenues of our society. One impact is the high percentage of African Americans who live in poverty on the east side and near west side of Cleveland as illustrated in Map 3. Another impact is that many health inequities that exist, such as large, racial disparity ratios of infant and child mortality, are often in the predominantly African American neighborhoods that were set up for failure many decades ago. Political, economic, and social visionaries must focus on creating an equitable system that ensures policies will help, not hinder, people, regardless of race or social class.

Map 3

Distribution of Poverty and Race for Child Fatalities Cuyahoga County, Ohio (2004-2013)



*Data obtained from the 2008-2012 American Community Survey, US Census Bureau. Percentage of poverty was calculated at the 2010 census tract level.

[10] Kirwan Institute for the Study of Race and Ethnicity, The Ohio State University. History matters: Understanding the role of policy, race, and real estate in today's geography of health equity and opportunity in Cuyahoga County. (Draft).

Infant mortality rate is tied for the lowest in the last ten years.

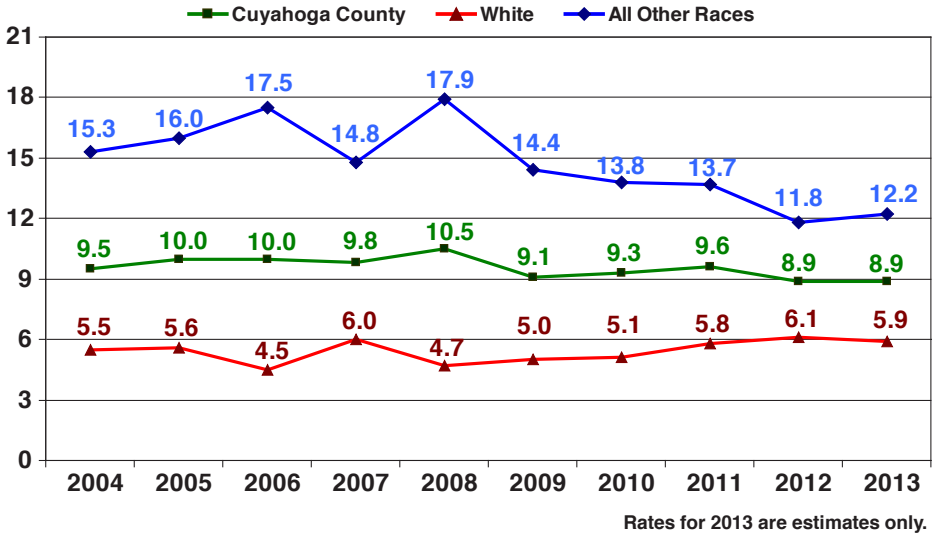
The infant mortality rate in 2013 tied with the finalized 2012 rate of 8.9 infant deaths per 1,000 live births and it was the lowest rate since 2003 (**Figure 5**). The current rate is based on 133 infant deaths among 14,899 live births, according to preliminary data received from the Ohio Department of Health (ODH) (refer to **Table 11**).[11] Our local rate of 8.9 remains significantly higher than the estimated Ohio rate of 7.2 in 2013,[12] and the finalized 2011 US rate of 6.1[13] (most recent data available). In order to match the preliminary 2013 Ohio infant mortality rate, almost one in five infants who died in 2013 would have needed to survive.

Figure 4 shows the large racial disparity of infant deaths, and we regressed slightly in this area in 2013. We have improved the racial disparity ratio by almost 45% from 3.8 in 2008 to 2.1 in 2013. In Figure 5 the IMR of 12.2 for all other races is the second-lowest rate in the last ten years but slightly higher than the finalized 2012 rate of 11.8. The 2013 rate is more than 30% lower than the high rate of 17.9 seen in 2008. The white IMR increased 26% during the same time period, but the 2013 white IMR of 5.9 still exceeded the Healthy People 2020 goal for overall IMR in the United States of 6.0.[14]

The most frequent causes of infant death continued to be prematurity (82), birth defects (23), and sleep related deaths (16) – see Table 2. These top three causes accounted for 91% of all infant deaths, which is the same as in 2012 and the ten-year average. Out of the 12 remaining infant deaths, 10 of them were medically related and the remaining 2 deaths were ruled as homicides.

Figure 5

Infant Mortality Rate (IMR) per 1,000 Live Births



Rates for 2013 are estimates only.

[11] Data on 2013 births are estimates only. The estimates are derived from unconfirmed delivery hospital data and historical patterns of geographic and racial distributions. Past experience indicates that the estimation technique used is quite accurate and provides a reasonable projection well in advance of the availability of state data for confirmed rates. Center for Public Health Statistics and Informatics, Ohio Department of Health (accessed July 14, 2014). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

[12] James A. "Preliminary 2013 Ohio infant mortality data." Unpublished preliminary data presented at Ohio Collaborative to Prevent Infant Mortality, Columbus, OH, June 2014.

[13] (CDC, User guide to the 2011 period linked birth/infant death public use file, August 4, 2014)

[14] US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020. Washington, DC. Available online at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26 (accessed June 12, 2014).

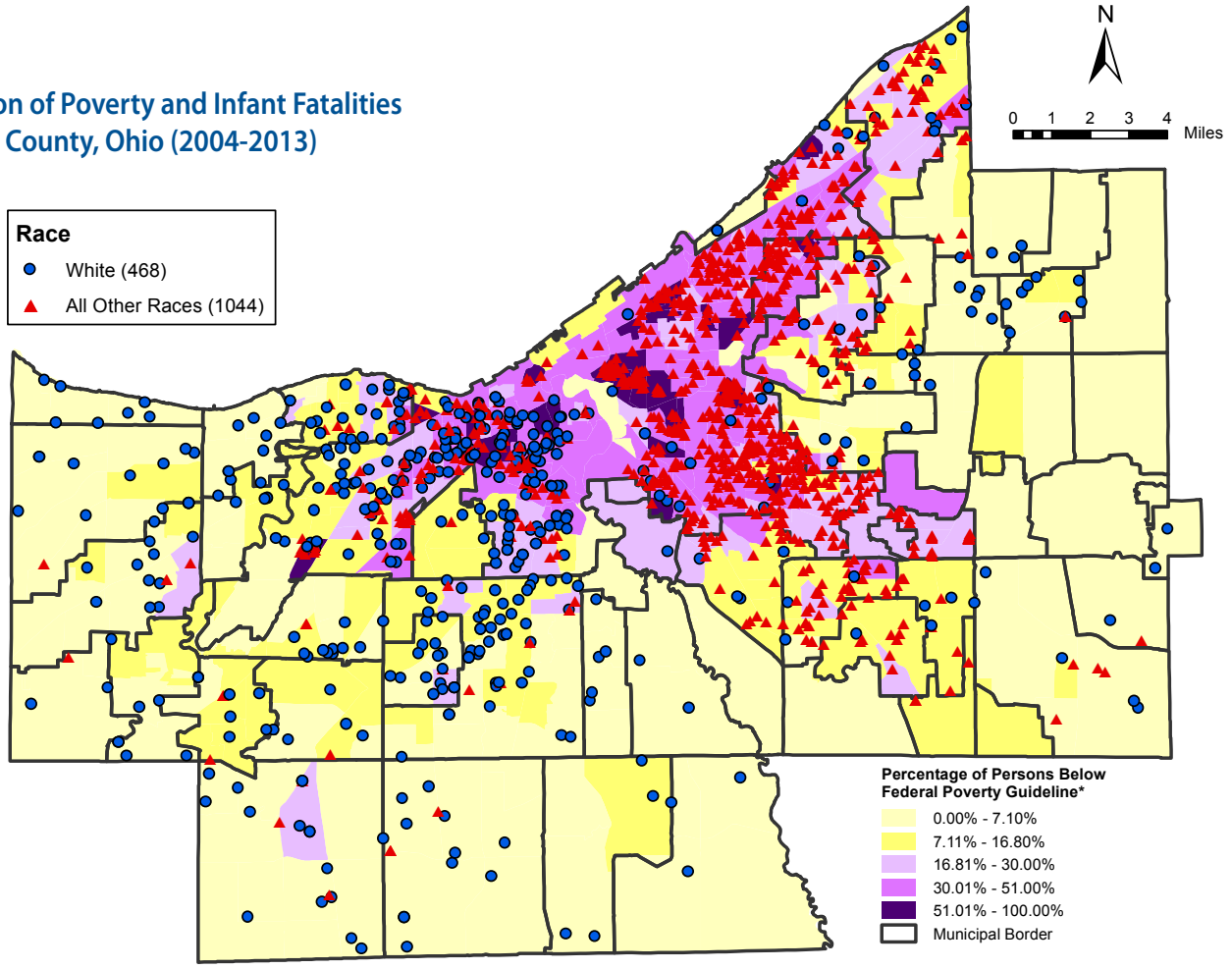
In 2013, Cuyahoga County, in conjunction with the city of Cleveland, began collaborating with ODH, CityMatCH, and seven other Ohio communities to establish the Ohio Institute for Equity in Birth Outcomes (OEI). The group was charged with improving the high infant mortality that exists in our communities, especially our high racial disparity ratios. This partnership began after the release of 2010 state-specific data showed that Ohio had the second-highest black IMR and the fourth-highest overall IMR in the country. In 2011, the state data showed Ohio was 50th, or had the highest black IMR in the US (15.5), and was 46th in overall IMR (7.9).[15] Our local data show we had over 1,000 minority infants die within the last ten years, but fewer than 500 white infants over the same time period (**Map 4**).

Our local OEI team consists of professionals from local health departments, hospital systems, local foundations, community service agencies, and active community members. We were tasked with developing a prevention (upstream strategy) and intervention (downstream strategy) approach to help combat the root causes that negatively impact the well-being of our infants and mothers, as well as attempting to create a safety net for those who might have slipped through the cracks. After completing an analysis of the infant death data, it was evident that prematurity and maternal health were the most significant reasons why infants die in our community.

The group decided to focus on family planning (such as birth spacing or long-acting reproductive contraception) as the upstream strategy, in an attempt to reduce the number of unintended pregnancies. Only 5% of the 3.1 million women in the US who had an unintended pregnancy were consistently using contraception.[16] Due to the lack or inconsistent use of

Map 4

Distribution of Poverty and Infant Fatalities Cuyahoga County, Ohio (2004-2013)



*Data obtained from the 2008-2012 American Community Survey, US Census Bureau. Percentage of poverty was calculated at the 2010 census tract level.

[15] Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. Deaths: Final data for 2011. Available online at http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_03.pdf (accessed August 12, 2014).

[16] Kost K. Unintended pregnancy rates at the state level: Estimates for 2002, 2004, 2006, and 2008. New York: Guttmacher Institute. 2013. Available online at http://www.guttmacher.org/pubs/StateUP08.pdf (accessed August 1, 2014).

contraception, a majority of births are unplanned. In 2008, 55% of all pregnancies in the state of Ohio were unintended.[17] It is important to note that unintended pregnancies are at greater odds for a preterm birth, which is the number-one cause of infant deaths in our county. Women living below the federal poverty guideline are more likely to have an unintended pregnancy, and these pregnancies have a major impact on government health care spending. Government insurance programs (such as Medicaid) spent nearly $485 million as a result of unintended pregnancies in Ohio in 2008.[18]

New data provides support to the notion that upfront funding for family planning programs can result in a net savings to our Medicaid system. A 2010 analysis found that $12.7 billion in gross savings resulted in public investment in family planning services.[19] A recent public health initiative in Colorado focused on providing teens with access to contraception. In four years this initiative decreased teen birth rates by 40%, reduced teen abortion rates by 35%, and saved the state $5.68 in Medicaid costs for every dollar spent.[20] In 2010, the state of Ohio saved $6.77 in Medicaid costs for every dollar spent.[21]

Our downstream strategy promotes CenteringPregnancy® (centering) as the standard of prenatal care in Cuyahoga County. Centering is a group model for prenatal care that incorporates health assessment, education, and support. It provides women (usually 8-12 per group) the opportunity to bond and support each other in a learning and sharing environment. One New York hospital system successfully implemented this model and significantly lowered its preterm birth rate from 8.3% to 1.8%.[22] This evidence-based approach decreased the system's preterm birth rate by 78%.

We are hopeful that these two initiatives will help reduce the high infant mortality that exists, especially the disproportionate number of deaths among minority infants. The following sections will discuss two major threats to any infant's survival in Cuyahoga County: prematurity and an unsafe sleep environment.

[17] Guttmacher Institute. Fact sheet: Unintended pregnancy in the United States. December 2013. Available online at http://www.guttmacher.org/pubs/FB-Unintended-Pregnancy-US.html (accessed August 1, 2014).

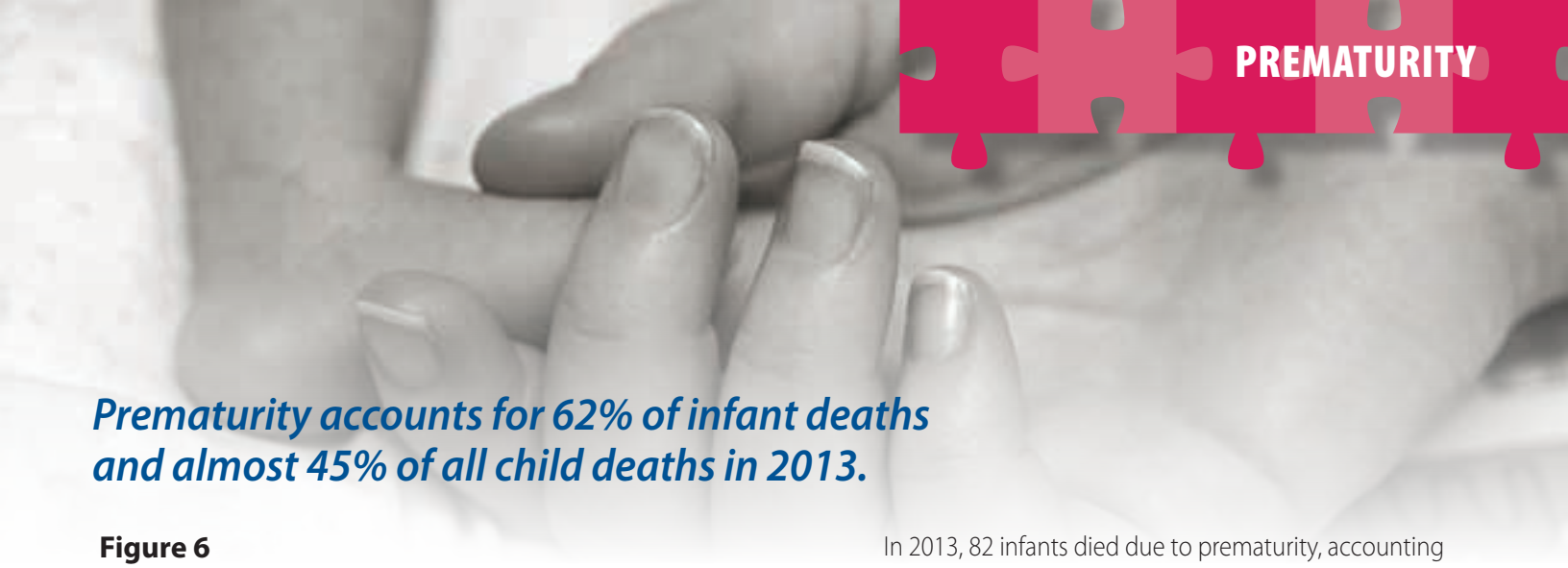
[18] Tsui AO, McDonald-Mosley R, & Burke AE. Family planning and the burden of unintended pregnancies. (April 2010) *Epidemiologic Reviews*; 32(1): 152-174. April 2010. Available online at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3115338/ (accessed August 1, 2014).

[19] Sonfield A and Kost K. Public costs from unintended pregnancies and the role of public insurance programs in paying for pregnancy and infant care: Estimates for 2008. New York: Guttmacher Institute. 2013. Available online at http://www.guttmacher.org/pubs/public-costs-of-UP.pdf (accessed August 1, 2014).

[20] Draper E. Colorado claims contraceptive program caused big drop in teen birth rates. (July 3, 2014) *The Denver Post*. Available online at http://www.denverpost.com/news/ci_26085784/colorado-teen-birth-rates-drop-state-hands-out?ok (accessed August 4, 2014).

[21] Frost JJ, Zolna MR, and Frohwirth L. Contraceptive needs and services, 2010. New York: Guttmacher Institute, 2013. Available online at http://www.guttmacher.org/pubs/win/contraceptive-needs-2010.pdf (accessed August 4, 2014).

[22] March of Dimes. March of Dimes Centering Pregnancy® grants show progress in reducing c-sections, preterm birth, and low-birthweight babies. (April 2010) Available online at http://www.marchofdimes.com/news/march-of-dimes-centering-pregnancy-grants-show-progress-in-reducing-c-sections-preterm-birth-and-low-birthweight-babies.aspx (accessed August 4, 2014).



Prematurity accounts for 62% of infant deaths and almost 45% of all child deaths in 2013.

Figure 6

The Impact of Prematurity on Child Deaths in 2013

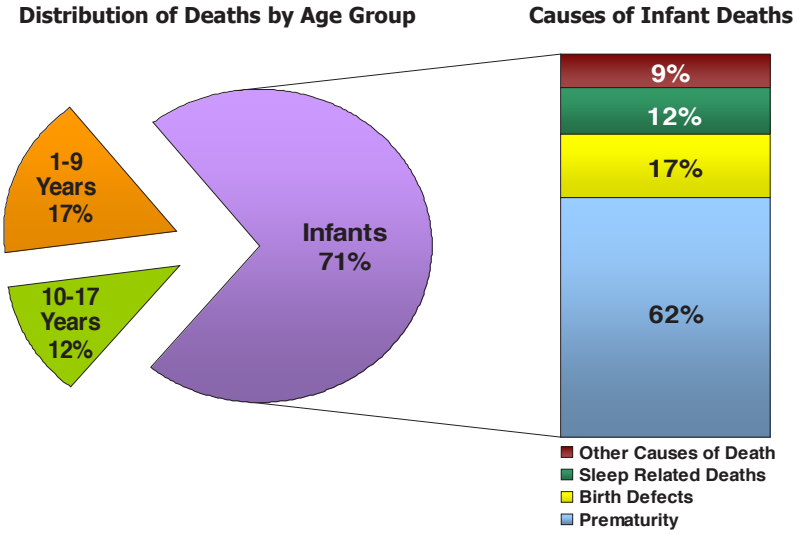
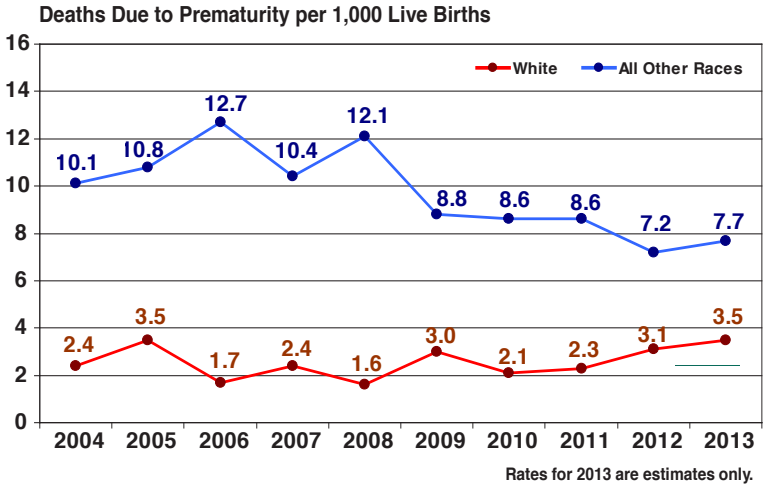


Figure 7

Rates of Infant Death Due to Prematurity by Race



In 2013, 82 infants died due to prematurity, accounting for 62% of the infant deaths (**Figure 6**). The 2013 cause-specific IMR for prematurity is 5.5 deaths per 1,000 live births.[23] Prematurity remains the single leading cause of death for children of all ages in Cuyahoga County (45% of the total).

The 2013 prematurity IMR of 5.5 is higher than in 2012 when it was 5.1 per 1,000 live births. This is tied for the highest prematurity IMR in the last five years, but is lower than the four-year average prematurity IMR of more than 6.0 from 2005-2008 (refer to **Table 13**). Part of this decrease may be attributed to an overall decrease in preterm births. The preterm birth rate for Cuyahoga County, Ohio, and the US all decreased in 2013. Cuyahoga County's preterm birth rate went from 14.2% in 2011 to a preliminary 2013 rate of 13.6%.[24] The state of Ohio rate remained stable, as the 2010 rate of 12.2 is similar to the 2012 estimated rate of 12.1%,[25] and the US rate decreased from 11.7% in 2011 to a 2013 preliminary rate of 11.4%.[26] Although the Cuyahoga County preterm birth rate decreased, we continue to have a much higher rate compared to the state and the nation.

The impact of prematurity and racial disparity is illustrated in **Figure 7**. In 2013, infants of all other races were more than twice as likely as white infants to die due to prematurity. The good news is that the all other race prematurity death rate of 7.7 is the second-lowest rate in the last 10 years. Prematurity deaths for all other races have decreased by 10% since the 2010 rate of 8.6; however, the white prematurity rate of 3.5 is 67% higher than the 2010 rate of 2.1. The white prematurity rate tied for the highest rate in the last ten years.

[23] (Center for Public Health Statistics and Informatics, July 14, 2014)

[24] Ibid.

[25] March of Dimes. 2013 Premature birth report card. Available online at http://www.marchofdimes.com/materials/premature-birth-report-card-ohio.pdf (accessed August 4, 2014).

[26] Hamilton BE, Martin JA, Osterman MJK, and Curtin SC. Births: Preliminary data for 2013. (May 2014) *National vital statistics reports*; (63)2

Poverty remained the most frequent risk factor associated with prematurity, with 65% of the cases having one or more economic risk indicators; however, this was an 18% decrease from 2012. Premature rupture of membranes was the second-most common risk factor among this group, occurring in 49% of the prematurity related fatalities. Incompetent cervix (47%) was a risk factor with the largest year-over-year increase (225%). Missed medical appointments (45%) and mother with a chronic health condition (33%) were the other two risk factors noted in at least 30% of all preterm related deaths. A previous history of sexually transmitted infections, placental abruption, parental tobacco use, intrauterine drug exposure, maternal history of mental health problems, and intrauterine tobacco exposure were risk factors that decreased by more than 25% from 2012 to 2013. Incompetent cervix, previous fetal loss, at-risk maternal age, and missed appointments were risk factors that increased by at least 20% in 2013. This was the first year that we differentiated between the type of illicit drug use (marijuana, cocaine, or opiate). The large majority of prematurity cases with illicit drug use as a risk factor was due to marijuana use. Obesity was the leading risk factor in the category "mother with a chronic health condition" and impacted 30% of mothers whose infants died from prematurity. High blood pressure was noted in 10% of all prematurity deaths. The most significant risk factors associated with prematurity are summarized in **Table 3**.

Of the 83 child deaths due to prematurity, 47 (57%) were male and 56 (67%) were of a minority race. Cleveland residents comprised 60% of the child deaths due to prematurity, 28% were from the first ring suburbs, while only 12% were residents in the outer ring suburbs. More than four out of five (82%) were born so early that they lived

Table 3

Common Risk Factors Associated with 83 Deaths Due to Prematurity

Risk Factor	#	%
Poverty	54	65.1
Premature rupture of membranes (PROM)	41	49.4
Incompetent cervix	39	47.0
Missed appointments	37	44.6
Mom with a chronic health condition	27	32.5
Previous preterm delivery	22	26.5
Parental tobacco use	19	22.9
Previous fetal loss	19	22.9
Maternal history of mental health problems	18	21.7
Intrauterine tobacco exposure	16	19.3
Placental abruption	14	16.9
Sexually transmitted infections - past history	13	15.7
Sexually transmitted infections - during pregnancy	12	14.5
Multiple gestation	12	14.5
At-risk maternal age	11	13.3
Parental illicit drug use	11	13.3
Multiple providers	10	12.0
Intrauterine drug exposure	9	10.8

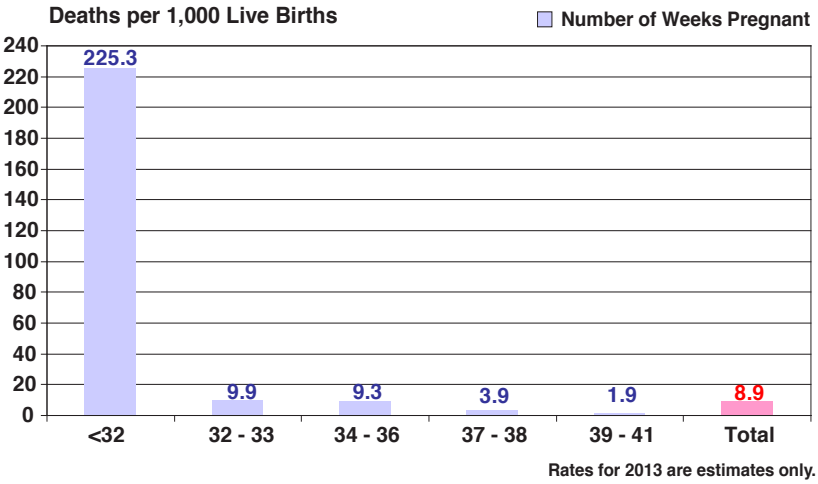
for less than 12 hours, and only 7 (8%) survived more than seven days. Furthermore, 66 (80%) were born prior to 24 weeks, usually considered to be the age of viability,[27] while another 2 were born at 24 weeks. The remaining 15 (18%) were born between the gestational ages of 25 and 27 weeks.

Prematurity also impacts the financial stability of our health care system. The average societal economic burden associated with preterm birth in 2005 was at least $51,600 per infant;[28] inflation calculations estimate that number to be almost $61,000 in 2013.[29] With over 2,000 preterm births in 2013, the total approximate cost for nurturing these preterm births was over $120 million. It is important to note that almost one in five (18%) African American babies born in 2013 were preterm and over 70% of all African American deliveries were paid by Medicaid.[30]

Figure 8 illustrates the 2013 infant mortality rate by gestational age (stated in number of weeks). The graph shows that more than one in four infants born before week 32 died. Any delivery before 32 weeks is considered a very preterm birth. Our rate of 225.3 is much higher than the national death rate of 166.7 infant deaths for every 1,000 live births in 2011 (the most recent data available).[31] Cuyahoga County's IMR for 32-33 weeks (9.9) is signifcantly lower than the national rate of 15.9, but the national IMR for 34-36 weeks of 7.1 is lower than our rate of 9.3. The infant mortality rate for full term infants, those born at 37 or more weeks of gestation, is 2.4 per 1,000 live births. Infants delivered at full term in Cuyahoga County are more than 90 times more likely to survive than those born at less than 32 weeks.

One way to help prevent premature births is the use of progesterone. Since 2003, progesterone has been administered to women who are pregnant with a singleton fetus and had at least one previous preterm delivery. A 2011 study found that daily progesterone gel given to pregnant women diagnosed with a short cervix (20 mm or less) by ultrasound, had significantly fewer deliveries before 33 weeks gestation compared to those who received a placebo.[32] It is important to have consistent prenatal care in order to determine if a woman has a short cervix because one in two pregnant mothers with this diagnosis will have a preterm birth. In Cuyahoga County in 2013, incompetent cervix was a noted risk factor in 47% of prematurity related death cases. Progesterone gel is used daily beginning at 20 to 23 weeks and used through the 36th week of gestation. Progesterone has not been found to help women who are pregnant with twins, triplets, or for previous preterm births that weren't spontaneous.

Figure 8 2013 Infant Mortality Rate by Gestational Age



[27] Seri I and Evans J. Limits of viability: Definition of the gray zone. (May 2008). *Journal of Perinatology*; 28: S4-S8.

[28] National Research Council. Preterm birth: Causes, consequences, and prevention. Washington, DC: National Academies Press 2007: 398-429. Available online from: http://www.nap.edu/catalog/11622.html (accessed August 11, 2014).

[29] Friedman M. The inflation calculator. Available online at http://www.westegg.com/inflation (accessed August 13, 2014).

[30] (Center for Public Health Statistics and Informatics, July 14, 2014)

[31] (CDC, User guide to the 2011 period linked birth/infant death public use file, August 4, 2014)

[32] Hassan SS, Romero R, Vidyadhari D, Fusey S, Baxter JK, Khandelwal M, Vijayaraghavan J, et al. Vaginal progesterone reduces the rate of preterm birth in women with a sonographic short cervix: a multicenter, randomized, double-blind placebo-control trial. (July 2011) *Ultrasound in Obstetrics & Gynecology*; (38)1: 18-31. July 2011. Available online at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3482512/#!po=56.8182 (accessed August 12, 2014).

SLEEP RELATED DEATHS

Tied for the fewest number of sleep related deaths in the last ten years.

There are three types of sleep related deaths: 1) Sudden Infant Death Syndrome (SIDS); 2) Accidental Suffocation; and 3) Sudden Unexplained Infant Death (SUID)/Undetermined. SIDS is a diagnosis of exclusion, meaning that after an extensive review of the infant's medical history, a complete autopsy, and a death scene investigation, no cause can be identified. Accidental suffocation is a result of another person lying on the baby, wedging of the baby, or the baby's face, in a soft surface such as a pillow, blanket, comforter, or bumper pad. SUID/Undetermined is ruled as the cause of death when an exact reason cannot be found, but the scene investigation indicates that there were dangers in the baby's sleep area. **Figure 9** illustrates the number and types of sleep related deaths that have occurred in Cuyahoga County over a ten year span.

In Cuyahoga County, there were 16 sleep related deaths in 2013, which was a 43% decrease from 2010, and 2 fewer deaths than in 2012. The total number of sleep related deaths was tied for the fewest in the last ten years, and has decreased for the third consecutive year. Accidental suffocation was associated with 6 deaths. This accounted for 38% of all sleep related deaths and the highest ratio in the past ten years. Ten were ruled SUID/undetermined due to potential hazards in the sleep environment. Of the 16 sleep related deaths, 12 of these involved bedsharing, which is the highest ratio in the last 15 years. All 16 sleep related deaths involved some type of sleep hazard (such as soft bed surface, position baby was placed, pillows, bumper pads, and other items in the sleep environment) (**Table 4**).

For the sixth straight year, no SIDS deaths occurred in Cuyahoga County. In other words a healthy baby who has slept alone, on his back, and in a bare naked crib has not died in the last six years. This may be a result of changes in diagnosis and death scene investigation as a result of the Sudden Unexplained Infant Death Investigation initiative recommended by the Centers for Disease Control and Prevention (CDC) in 2007. The data strongly support the importance of putting a baby to sleep by herself in a recommended sleeping place (bassinet, crib, or pack-n-play) and keeping hazards outside of the sleep environment so the baby is safe to sleep.

Figure 9 Sleep Related Deaths by Type

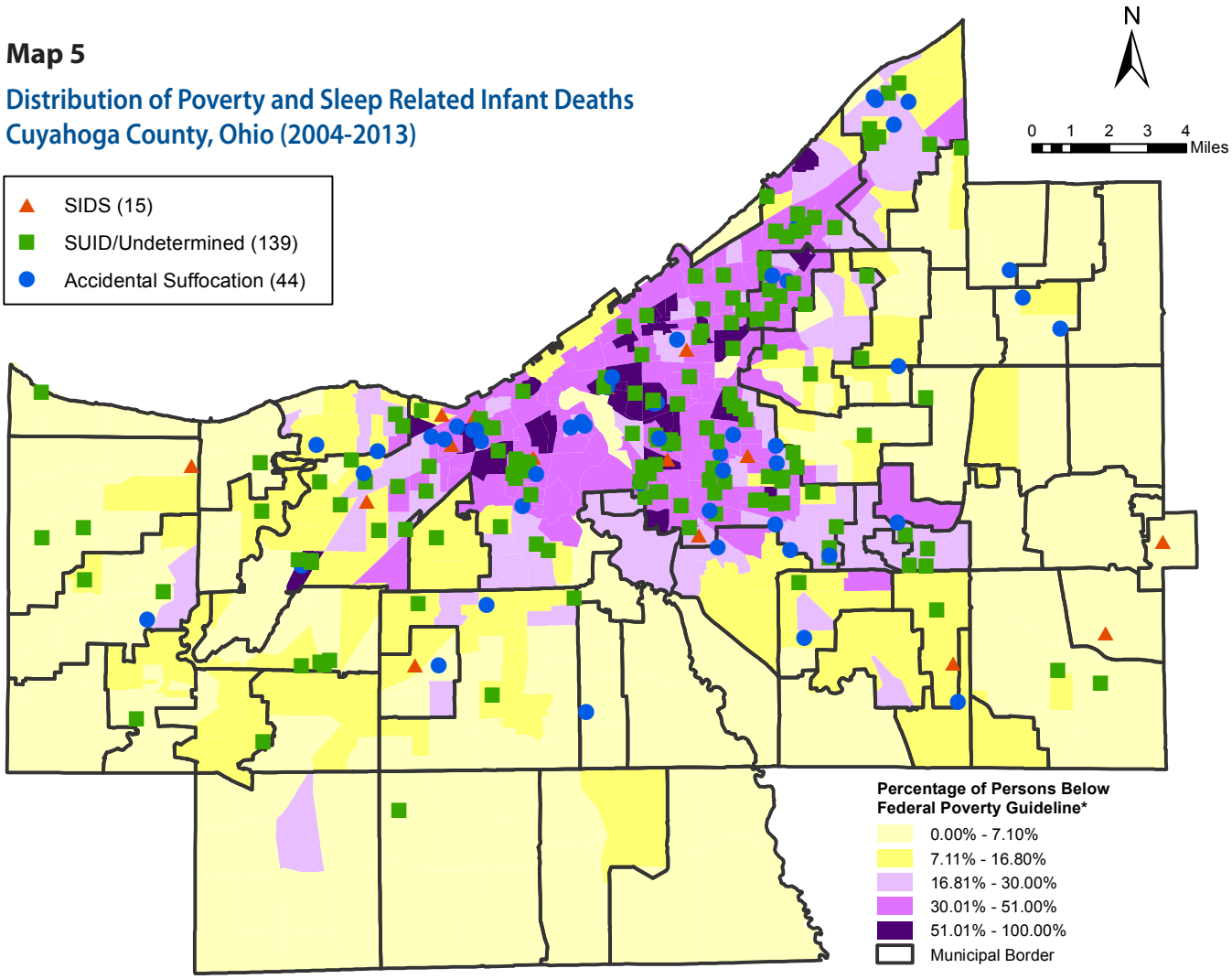
Table 4 Number of Sleep Related Deaths by Type and Presence of Risk Factors

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
SIDS	4	3	3	5	0	0	0	0	0	0	**15**
SUID/Undetermined	14	10	9	10	18	18	23	12	15	10	**139**
Accidental Suffocation	1	3	6	7	4	2	5	7	3	6	**44**
Total Number of Deaths	**19**	**16**	**18**	**22**	**22**	**20**	**28**	**19**	**18**	**16**	**198**
Risk Factors Present											
Bedsharing at time of death	9	10	12	12	11	11	18	9	13	12	**117**
Hazards in sleep area	12	14	14	20	22	20	28	19	18	16	**183**
Total Number of Risk Factors	**21**	**24**	**26**	**32**	**33**	**31**	**46**	**28**	**31**	**28**	**300**

Map 5 illustrates the distribution of these three types of deaths over the past ten years. Seventy percent of all cases were ruled as undetermined and more than 60% of the sleep related cases occurred in the city of Cleveland in areas where there are high concentrations of children and persons living below the federal poverty guideline.

Map 5

Distribution of Poverty and Sleep Related Infant Deaths
Cuyahoga County, Ohio (2004-2013)



*Data obtained from the 2008-2012 American Community Survey, US Census Bureau.
Percentage of poverty was calculated at the 2010 census tract level.

SLEEP RELATED DEATHS

Table 5 shows the demographics for the 179 infants who died in a sleep environment in the last nine years. Overall, 62% of all sleep related deaths occurred in Cleveland (111) with 26% in the first ring suburbs (46) and 12% in the outer ring suburbs (22). In 2013 the eight first ring suburbs had more sleep related deaths than Cleveland for the first time. The eight deaths occurred in six first ring suburbs, with two municipalities having two sleep related deaths. The first ring suburbs are all municipalities that have one portion of their border touching the city of Cleveland, while outer ring suburbs are municipalities that have no boundaries touching the border of Cleveland. **Appendix A** shows the list of municipalities that are in the first ring and outer ring suburbs.

The data paint a clear picture for possible targeted safe sleep education outreach. Less than 50% of infants born in 2013 were of all other races,[33] but 75% of sleep related deaths occurred to minority infants, which is tied for the third-highest percentage in the last nine years. In 2013 half the sleep related infants were female, which is the highest ratio since 2008. It was encouraging to note that over 60% of infants were placed on their backs and this was tied for the third-highest percentage in the past nine years. These data suggest that bedsharing and sleep hazards are real and present dangers that, if removed, should significantly reduce the number of this most preventable type of death for children under the age of 18 in our county.

These data have helped us to reach out to community partners on targeting the safe sleep message. In Cuyahoga County we use the A, B, C message: "I sleep alone, on my back, in a bare naked crib" (see right). This message is being sent to the community in many forms: billboards promoting the safe sleep message in the highest risk areas; safe sleep education to faith-based groups to target parents and grandparents on the importance of safe sleep; and education at local hospitals on the significance of a consistent message to antepartum and postpartum mothers and their families. We are hopeful that our continued prevention efforts will deliver fewer sleep related deaths in the future.

Table 5
Sleep Related Death Demographics (n=179)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Neighborhood										
Cleveland	12	9	13	15	14	18	11	12	7	**111**
First Ring	3	3	6	6	3	7	6	4	8	**46**
Outer Ring	1	6	3	1	3	3	2	2	1	**22**
Infant's Gender										
Female	9	9	13	13	9	11	6	6	8	**84**
Male	7	9	9	9	11	17	13	12	8	**95**
Mom's Age										
< 20 Years	2	4	3	7	3	5	1	3	3	**31**
20 - 29 Years	10	9	14	12	12	15	12	11	11	**106**
30 - 39 Years	1	4	2	2	4	7	5	4	1	**30**
≥ 40 Years	0	1	0	0	1	0	0	0	1	**3**
Unknown	3	0	3	1	0	1	1	0	0	**9**
Infant's Race										
All Other Races	12	10	10	16	16	21	12	14	12	**123**
White	4	8	12	6	4	7	7	4	4	**56**
Sleep Position[1]										
Back	9	10	14	13	10	18	9	12	10	**105**
Stomach	4	3	2	7	5	7	6	4	2	**40**
Side	3	3	6	2	5	3	4	2	4	**32**

[1]In 2006 two cases had unknown sleep position.

[33] (Center for Public Health Statistics and Informatics, July 14, 2014)

Figure 10 graphically shows that almost 95% of sleep related deaths occurred within the first six months of the infants' lives. Almost 60% of sleep related deaths occurred when the infants were one month to three months old. Nearly 25% occurred when the infants were two months old, which was the age with the highest percentage of sleep related deaths.

Table 6 shows the number of sleep related deaths per year by age of the infant at the time of death. For the sixth consecutive year, we had an infant who was older than 6 months old die in a sleep related environment. From 2008 to 2013, we had 10 sleep related deaths that occurred when the infants were 7-11 months old. No such deaths occurred between 2005 and 2007. In 2013, 31% of deaths were among infants 5-6 months old, which is the highest percentage in that age group in the last nine years. One month olds accounted for 25% of all sleep related deaths in 2013, which is tied for the second-highest percentage in this age group. The data clearly show that parents must ensure that all infants under 1 year of age be placed in a safe sleeping environment to give their child the best opportunity to celebrate their first birthday.

The breakdown in **Figure 11** examines whether differences exist between where an infant lives and the economic, medical, and environmental risk factors that may contribute to an infant's death. From 2005 to 2013 almost 80% of Cleveland infants were born into poverty while less than 20% of outer ring infants had similar economic hardships. In 2013, 13 of 16 infants lived below the federal poverty guideline. Medical factors were similar between locations in Cuyahoga County from 2005 to 2013, as more than four in five infants (82%) were full term babies (37 weeks or later) and almost four in five infants (79%) were born at or above a normal birth weight (approximately 5 lbs. 8 oz.).

After analyzing three environmental risk factors (bedsharing, extra bedding, and parental tobacco use), it appears that these risk factors play a major role in the demise of an infant when they are sleeping. Over 60% of Cleveland and first ring suburban infants slept with someone else when they died in their sleep. Over 90% of first ring infants and 80% of Cleveland infants slept with extra bedding (pillow, blanket, or comforter) while less than 65% of outer ring infants had the same risk factor. In 2013 every infant had at least one piece of extra bedding in their sleep environment. Over 70% of Cleveland infants who died in their sleep had at least one parent who smoked, while 50% of five first ring and 46% of outer ring infants had the same risk factor. It appears that the economic and environmental risk factors play a stronger role than medical risk factors for infants who die in their sleep in Cuyahoga County.

Figure 10
2005-2013 Sleep Related Deaths by Age of Infant (n=179)

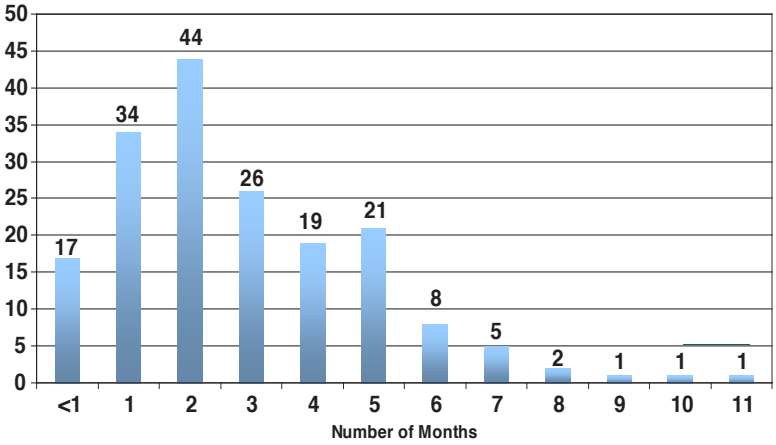
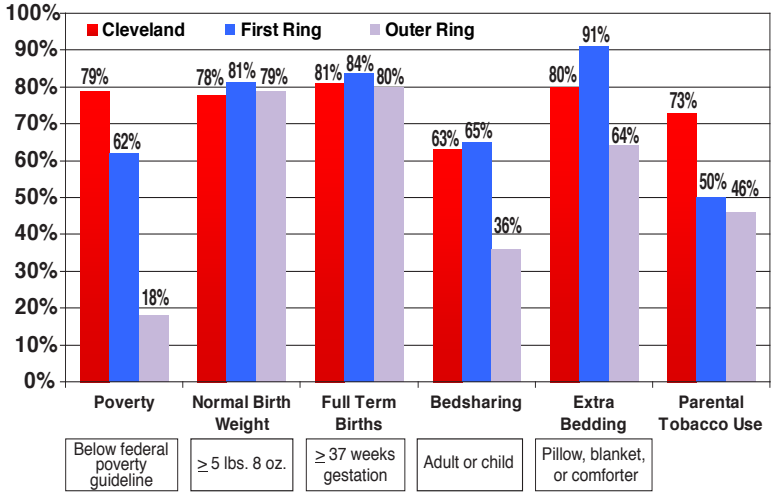


Table 6
Sleep Related Deaths by Age and Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
<1 Month	1	1	2	5	3	2	2	1	0	**17**
1 Month	4	4	4	4	3	9	1	1	4	**34**
2 Months	3	3	8	8	6	5	4	6	1	**44**
3 Months	3	1	2	1	0	7	6	2	4	**26**
4 Months	1	5	1	2	2	1	3	3	1	**19**
5 Months	4	2	4	0	2	2	1	4	2	**21**
6 Months	0	2	1	1	0	0	1	0	3	**8**
7 Months	0	0	0	0	3	1	0	0	1	**5**
8 Months	0	0	0	1	1	0	0	0	0	**2**
9 Months	0	0	0	0	0	0	0	1	0	**1**
10 Months	0	0	0	0	0	0	1	0	0	**1**
11 Months	0	0	0	0	0	1	0	0	0	**1**
Total	**16**	**18**	**22**	**22**	**20**	**28**	**19**	**18**	**16**	**179**

Figure 11
2005-2013 Sleep Related Factors by Neighborhood



Third consecutive increase in number of child deaths but lower than the ten-year average.

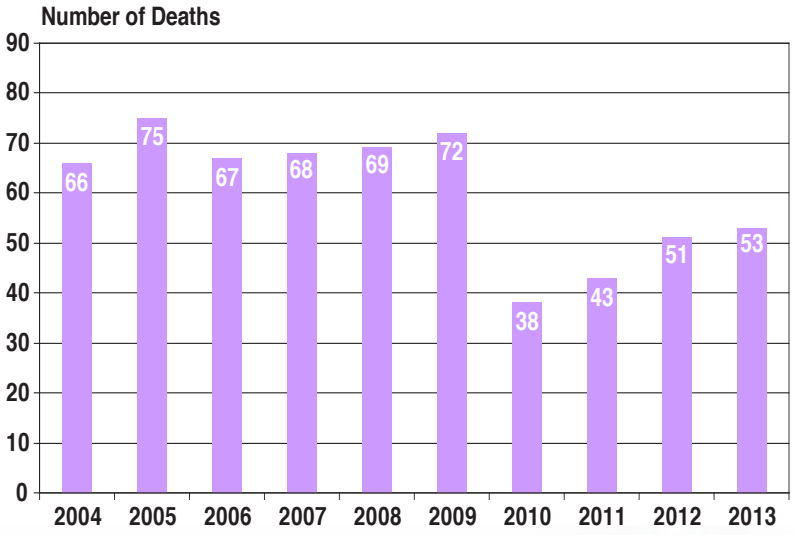
Fifty-three children aged 1 to 17 died in 2013, representing a 4% increase in deaths in this age group over the previous year and a 39% increase over three years ago (**Figure 12**). From 2005 to 2009, the five-year average number of child deaths in this age group was 70, but the 2010 to 2013 four-year average was only 46, which is a 34% decrease.

In 2013, 30 injury related deaths accounted for 57% of all fatalities for 1- to 17-year-olds, which is the highest total number of deaths in this category in the last four years. These injury related deaths were attributed to: homicide (12), suicide (5), motor vehicle accident (4), drowning (4), accidental injury related (2), undetermined injury related (1), undetermined other (1) and fire (1) (Table 2). The number of children in this age group who died as a result of suicide, drowning, accidental injury related, and undetermined other increased, and the number of deaths due to homicide decreased. The number of fire and undetermined injury related deaths remained the same.

The number of medical related deaths (23) tied for the second-lowest total in the last ten years. The causes of all medical related deaths in this age group were birth defects (12), other medical causes (5), cancer (3), infections (1), other perinatal complications (1), and prematurity (1) (Table 2). Child deaths from birth defects and other perinatal complications increased in 2013, prematurity and infection related deaths remained the same, and deaths from cancer and other medical causes decreased.

Figure 12

Total Child Deaths per Year (age 1-17)



Eight more unintentional injury deaths occur in 2013.

In 2013, 18 children of all ages died as a result of unintentional injuries, which is an 80% increase compared to 2012 but equal to the 2011 total. Of the 18 children, 15 were of all other races and 3 were white. A small majority were female (10), and 8 were male. These 18 deaths include: 8 accidental suffocations, 4 motor vehicle accidents (MVAs), 4 drownings, 1 gunshot wound, and 1 fire. Six of the eight accidental suffocation deaths were related to unsafe sleep environments (infants were found with face in soft bedding and/or pillows), while 1 death involved a child choking on food, and another possible overlay with their parent during sleep (was at least 1 year old so not considered a sleep related death). Two deaths due to fire were ruled as homicides. **Figure 13** provides a graphic illustration of this breakdown.

Figure 13

Unintentional Injury Deaths in Cuyahoga County (2013)

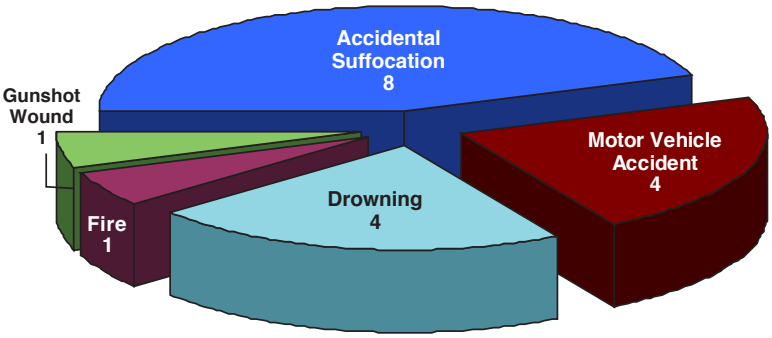
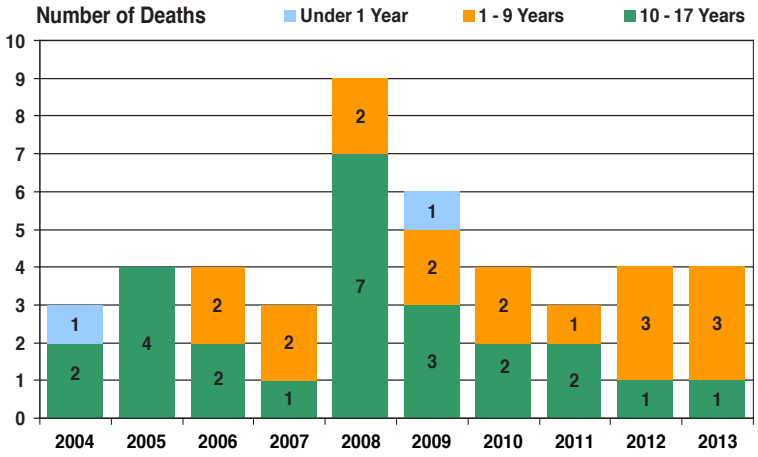


Figure 14

Total Motor Vehicle Deaths by Age Group per Year



Case reviews revealed that the most common risk factors identified in these deaths were poverty (15), drug and/or alcohol use by a parent (8), history of reports for suspected domestic violence or child abuse (8), inadequate supervision (6), parental criminal history (6), history of custody removal (6), and history of maternal mental illness (5).

Figure 14 gives a historical perspective on the age distribution of traffic related fatalities. This year is tied with four other years for the second-lowest number of MVAs. There were 3 deaths in the 1-9 years group, which is tied with last year for the most number of deaths in this age group. One death occurred in the 10-17 years group, which is tied with 2007 and last year for the fewest number of deaths for the oldest age group. For the fourth consecutive year, no infants died in a motor vehicle accident.

Of the 4 motor vehicle deaths, 2 were passengers and 2 were pedestrians. Both passengers died in an accident that was caused by a driver who was under the influence of drugs and alcohol. One pedestrian darted out into the street in the early morning hours to catch a school bus and was hit accidentally. The other pedestrian was hit while attempting to cross a busy intersection. The driver was under the influence of alcohol. This is the sixth consecutive year in which at least one pedestrian died who was hit unintentionally by a vehicle.

In the United States in 2011, unintentional injury was the number-one cause of death for children in the 1-17 years group (most recent data available).[34] Motor vehicle accident related deaths account for 48% of all unintentional injury deaths in this age group.[35] In 2011 (the most recent data available), deaths from motor vehicle accidents among children ages 1-17 years in the United States was 3.2 per 100,000 children.[36, 37] Cuyahoga County's 2013 rate is less than half the national rate, at 1.5 per 100,000 children.[38]

Figure 15 illustrates the number of drowning deaths over the past decade. Since 2004, 37 children drowned in Cuyahoga County. In 2013, there were 4 children who drowned. This is the highest number of drowning deaths in the last four years. Lack of child supervision was identified in three of the four cases and the deaths could have been prevented if safety measures had been followed. Drowning was the second-leading cause of unintentional injury related deaths for 1- to 17-year-olds in 2011 in the United States[39] (most recent data available) and was tied with motor vehicle accidents as the leading cause of this type of death in 2013.

As shown in **Figure 16**, there was 1 accidental fire related death in 2013, which brings the total number of accidental fire deaths to 16 for the last ten years. Fire is tied for the fourth-leading cause of unintentional deaths in our county for 2013 for 1- to 17-year-olds and is the fourth leading cause in the US for the same age group (most recent data available).[40] Smoke alarms were present, but not operating due to missing batteries. An adult was burned in the attempt to save the child, but unfortunately could not locate the victim. It is important that all smoke alarms are present, working properly, and have batteries in them. The batteries and smoke alarms should be checked at least twice a year to ensure they are in working order.

Figure 15
Total Drowning Deaths per Year

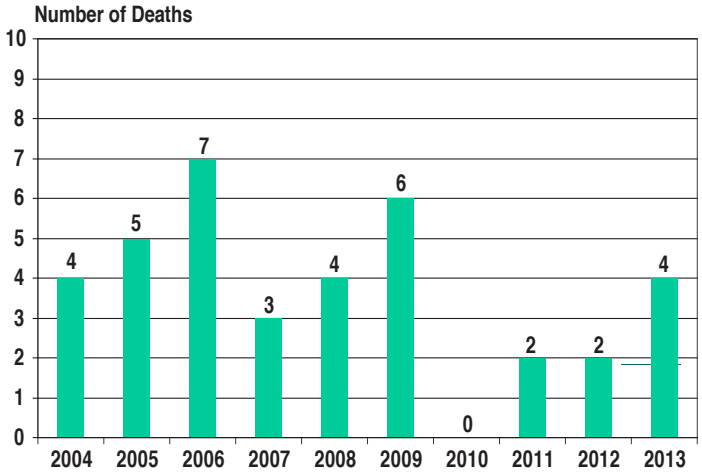
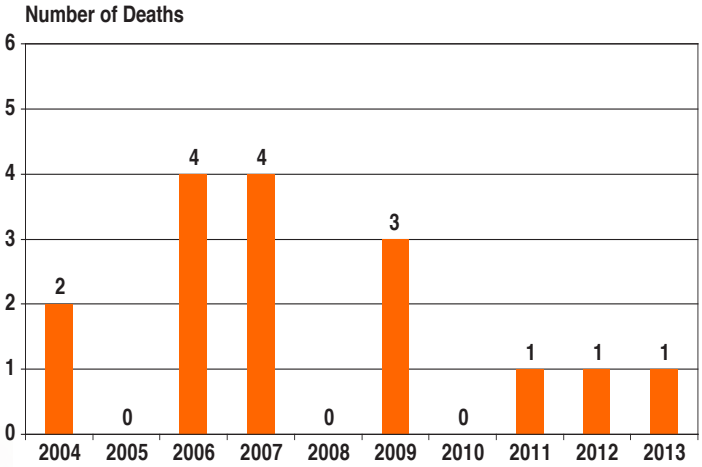


Figure 16
Total Accidental Fire Deaths per Year



[34] Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). 10 Leading Causes of Death Reports for ages 1-17, National and Regional, 1999-2011. Available online at http://www.cdc.gov/injury/ (accessed July 17, 2014).

[35] Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). 10 Leading Causes of Unintentional Injury Deaths Reports for ages 1-17, National and Regional, 1999-2011. Available online at http://www.cdc.gov/injury/wisqars/ (accessed July 17, 2014).

[36] Ibid.

[37] US Census Bureau. 2010 Census of population and housing; Summary file 1. Available online at http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml (accessed July 3, 2014).

[38] Ibid.

[39] (CDC, Unintentional Injury Deaths for ages 1-17, July 17, 2014)

[40] Ibid.

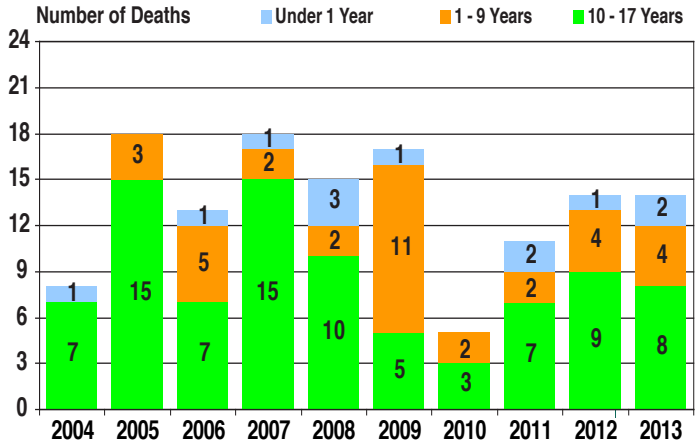
The total number of suicides and homicides is the highest in the last four years.

Intentional injury deaths include homicide and suicide. **Figure 17** illustrates that 2 infants, 4 children between the ages of 1 and 9, and 8 children between the ages of 10 and 17 died due to homicide in 2012. The 14 homicides in 2013 equals the total number of children killed in 2012. The total number of infant homicides was tied for the most in the last five years.

Homicide remained the fourth-leading cause of death among all age groups for the third consecutive year. The majority of homicide deaths usually occur in the 10-17 years age group, and in 2013, 57% of all homicides fell into this age category, making it the leading cause of death in this age group. Homicide was also the leading cause of injury related deaths among 1- to 9-year-olds for the fifth straight year, and the leading cause of injury related deaths for infants. In the United States, homicide is the third-leading cause of death for children 1-17 years and the fourth-leading cause of death for the 10-17 years age groups.[41, 42]

Among the homicide victims were 7 boys and 7 girls, with 13 of the 14 being minority children. The ages of the children were less than 1 year (2), 2 years (2), 3 years (1), 7 years (1), 12 years (1), 16 years (3), and 17 years (4). Seven of 8 homicides in the 10-17 years age group were gun related. The remaining homicides were due to physical abuse (3), fire (2), medical neglect (1), and poisoning (1).

Figure 17
Total Child Homicide Deaths by Age Group per Year



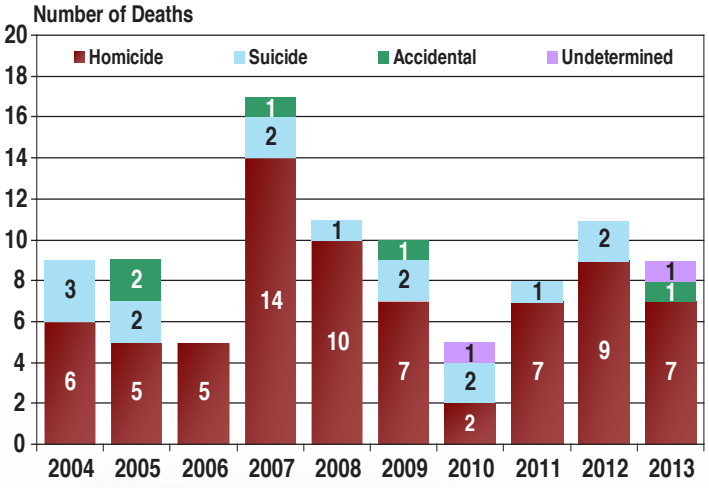
[41] (CDC, 10 Leading Causes of Deaths for ages 1-17, July 17, 2014)

[42] Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). 10 Leading Causes of Death Reports for ages 10-17, National and Regional, 1999-2011. Available online at http://www.cdc.gov/injury/wisqars/ (accessed July 17, 2014).

The leading risk factor associated with homicide was family history of domestic violence. Parental and/or child alcohol or drug use and poverty were tied for the second-most common risk factor, while "At-risk child" was the third-most noted risk factor. These data suggest that a child's home life and the physical environment in which a child lives play a major role in the outcome of a child's life.

Figure 18 is a graphic depiction of the number of firearm deaths by manner (homicide, suicide, accidental, and undetermined) over a ten-year span. In 2013 there were 9 firearm deaths, which was the third-highest total in the past five years. Seven gun related deaths were homicides, 1 accidental shooting, and 1 undetermined. All victims of gun related homicides were 16 or 17 years old, and 3 were gang related. Since easy access to a gun is a known risk factor in Cuyahoga County, this reinforces the need for safety awareness and tighter controls to ensure that it is not easy for our children to have access to purchasing or acquiring a gun.

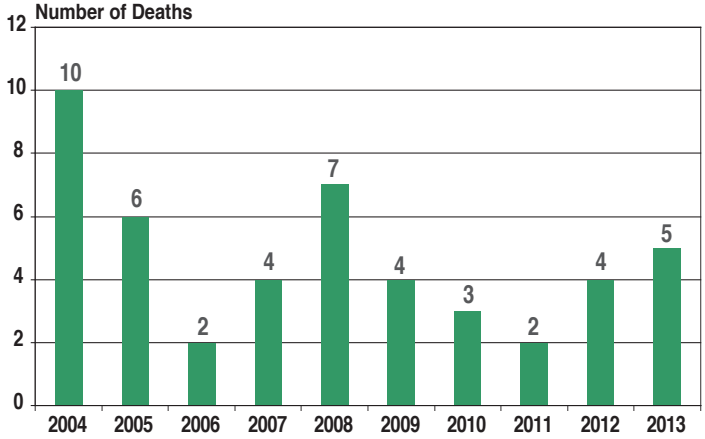
Figure 18 **Total Firearm Deaths by Manner per Year**



There were 5 suicides in 2013, which is the highest number in the last five years and the second consecutive increase in the total number of suicides (**Figure 19**). All completed suicides were among children from 11 to 17 years old, and 3 of them were males. The method for all five suicides was by hanging. Risk factors noted in at least 50% of the cases include: victim lived in poverty, history of suspected domestic violence or child abuse, negative influence of friends or family, and parental history of abuse or neglect as a child.

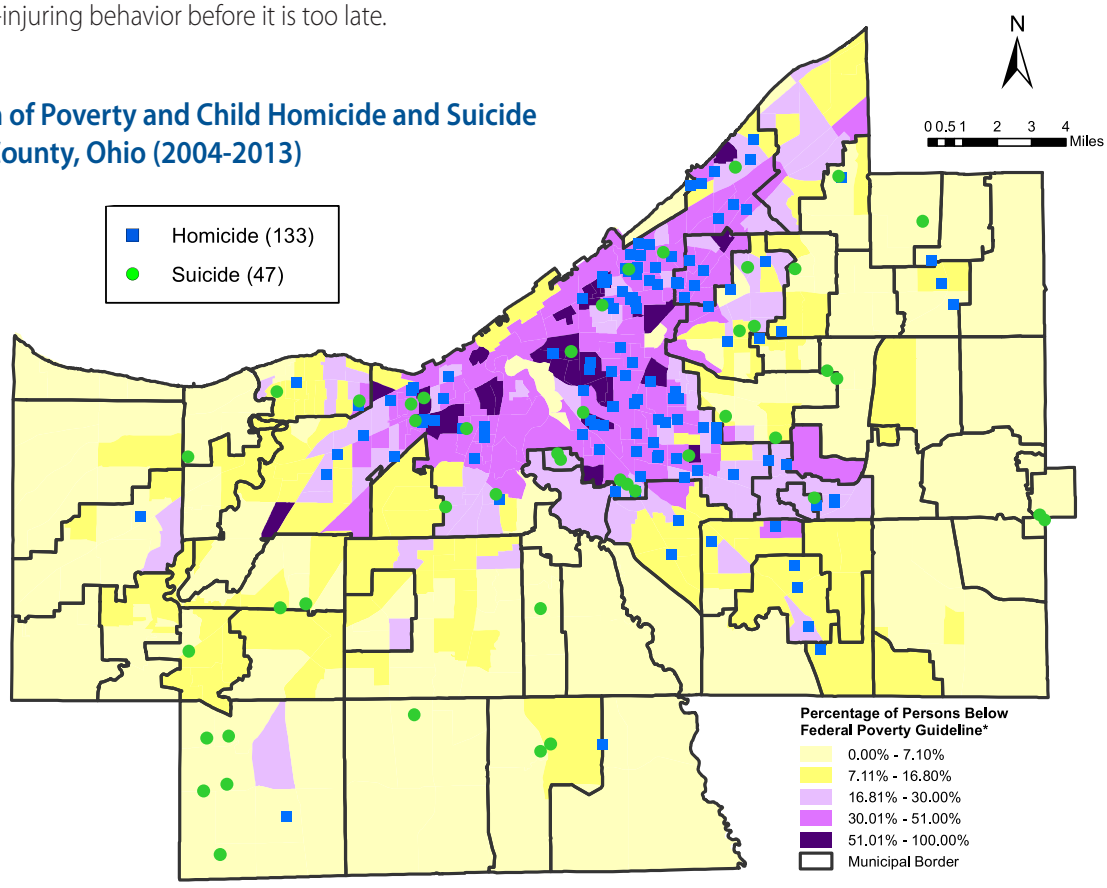
These tragic events do not fully show the gravity of suicide in the adolescent population. According to the CDC, suicide is the second-leading cause of death for 10- to 17-year-olds[43] and the fourth-leading cause of death for children ages 1 to 17 years.[44] Nearly 90% of all suicides in the United States in the 10-17 years age group are completed by strangulation or firearm.[45] More than one in eight Cuyahoga County high school students has seriously considered attempting suicide and one in ten attempted suicide.[46] If a child comes to an adult to discuss a problem, it is likely that it is much more serious than the child describes. Don't minimize the issue, but take action if a child is being bullied, feels depressed, or mentions self-injuring behavior before it is too late.

Figure 19 Total Child Suicide Deaths per Year



Map 6 shows the distribution of homicide and suicide over a period of ten years. In 2013, 11 of the 14 homicides (79%) and 3 of the 5 suicides (60%) were residents of Cleveland. The majority of the homicides and suicides in 2013 occurred in areas with a high density of families and individuals living below the poverty guideline.

Map 6
Distribution of Poverty and Child Homicide and Suicide Cuyahoga County, Ohio (2004-2013)



*Data obtained from the 2008-2012 American Community Survey, US Census Bureau. Percentage of poverty was calculated at the 2010 census tract level.

[43] Ibid.

[44] (CDC, 10 Leading Causes of Deaths for ages 1-17, July 17, 2014)

[45] (CDC, 10 Leading Causes of Deaths for ages 10-17, July 17, 2014)

[46] Prevention Research Center for Healthy Neighborhoods. 2013 Cuyahoga County high school youth risk behavior survey results: Grades 9-12. Available online at http://www.prchn.org/YRBSResults.aspx (accessed August 8, 2014).

Lowest rate of abuse and neglect related deaths in past three years.

In 2013, the county rate of child abuse or neglect deaths was 2.1 per 100,000 children, which is the lowest rate in the last three years. In 2012 (the most recent data available), the national rate for child fatalities due to abuse or neglect was 2.2 per 100,000 children.[47]

In 2013, there were 6 abuse or neglect related child deaths, which is the lowest number of deaths in this category in the last three years (**Figure 20**). Five of the 6 cases were females and all 6 deaths were to minority children. Three of the 6 deaths were residents of Cleveland. The ages ranged from less than 1 day old to 12 years old, with 4 of the deaths occurring in children 3 years old or younger. One neglect case involved medical neglect (the child died due to sepsis) and the other case involved a young child finding a gun that was left under a mattress and accidentally discharging the firearm. Of the 4 child abuse homicides, 2 were due to blunt trauma, 1 was an intentional suffocation, and one was a poisoning.

We reviewed the abuse and neglect cases in the last three years to see if common risk factors existed in these types of cases and the relationship of the perpetrator to the victim in the 22 cases (**Table 7**). Almost 70% of all cases involved the biological parent as the perpetrator. Five of the 14 abuse cases involved a parent's partner or acquaintance to the victim. Criminal history and history of intimate partner violence as a perpetrator was noted as the most common risk factor in almost half (45%) the cases. Disability or chronic illness, history of child maltreatment as a perpetrator, and history of substance abuse were noted in 8 cases. Five perpetrators were actually victims of child maltreatment, which talks to the importance of curbing child maltreatment or the cycle of abuse is likely to persist in future generations. The Cuyahoga County Defending Childhood Initiative is a means to assist these children. This project not only seeks to prevent violence, but also to identify and treat children of all ages who have been exposed to violence in their homes, schools, or communities.

Figure 20 Child Deaths Due to Abuse and Neglect

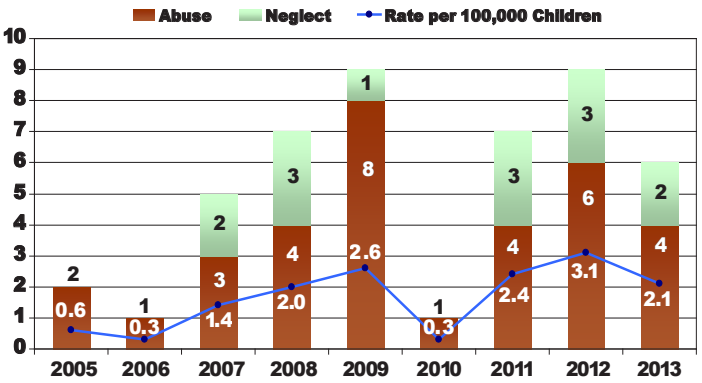


Table 7 Characteristics of Persons Responsible for Child Deaths that Occurred as a Result of Abuse or Neglect, Cuyahoga County (2011-2013)

	Abuse (n=14)	Neglect (n=8)	Total (n=22)
Relationship to Child			
Biological parent	9	6	15
Parent's partner	3	0	3
Friend or acquaintance	2	1	3
Adoptive parent	0	1	1
Background of Person Responsible[1]			
Criminal history			10
History of intimate partner violence as perpetrator			10
Disability or chronic illness			8
History of child maltreatment as perpetrator			8
History of substance abuse			8
History of child maltreatment as victim			5
History of intimate partner violence as victim			3
Drug/alcohol impaired at time of incident			2

[1] Background information was missing in 8 cases.

[47] US Department of Health and Human Services; Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2013) Child maltreatment 2012. Available online at http://www.acf.hhs.gov/sites/default/files/cb/cm2012.pdf (accessed July 16, 2014).

Seventy-six percent of families who lost a child have received some level of public assistance.

Community service agencies worked with 76% of families who had a child who died in 2013. This is a 3% increase from 2012 but a 3% decrease from 2011. This marks the first year, after four consecutive years of decreasing percentage of services received, that more children who died or their family members received support from at least one service agency.

59 victims or family members were served by only one service agency

45 by two agencies

27 by three agencies

10 by four agencies

1 by five agencies

Table 8
Service Involvement by Agency and Age Group

Type of Involvement	Under 1 Year	1 - 9 Years	10 - 17 Years	Total
DCFS* involved at time of death	8	2	1	**11**
DCFS involvement in prior 12 months	17	6	4	**27**
DCFS involvement ever (mom or child)	73	22	15	**110**
DCFS conducted investigation of death	10	9	6	**25**
Help Me Grow (child)	23	15	0	**38**
Help Me Grow (sibling)	39	9	1	**49**
WIC (mom or child)	17	14	0	**31**
MomsFirst involved at time of death	5	0	0	**5**
MomsFirst involvement ever (mom, child, or sibling)	13	8	0	**21**
Juvenile Justice involved with child	0	0	10	**10**
Juvenile Justice involved with parent	22	5	3	**30**
Total Number of Deaths	**133**	**31**	**22**	**186**
Total Number Served by at Least 1 Agency	**95**	**30**	**17**	**142**
Percent of Children/Families Served	**71%**	**97%**	**77%**	**76%**

* Division of Children and Family Services

Almost one in two (45%) victims or family members were served by two or more agencies. One in five (20%) were involved with at least three community service agencies within Cuyahoga County. This represents an 83% increase from the number of victims or family members who received similar services in 2012, but a 28% decrease from 2011. The 1-9 years group had the highest percentage (97%) of children or families served. The 10-17 years group had the next highest percentage involved in any services (77%) and infants had the fewest percentage of people who were involved with our service agencies (71%). **Table 8** provides a breakdown of services by agency or program and age group.

Identified risk factors increased by 3% in 2013.

Table 9 summarizes the total number of families by category of risk. **Appendix B** presents a summary of risk factors within each category. Overall, 97% of the families had one or more documented medical indicators; 70% had poverty indicators; 55% had behavioral risk factors; 38% had some history of domestic violence (child abuse or neglect, partner abuse, custody removal, or other household violence); 36% of children and/or parents used cigarettes, alcohol, or drugs; and 32% of children and/or parents had some history of mental health problems.

The complexity of each individual profile is illustrated by Table 9. The column headed "Total Cases" indicates how many of the 186 families had one or more risk factors in each of the nine different categories. The last three columns show how many families had no additional risk factors in other categories, risk factors in 1-4 other categories, or risk factors in 5-8 other categories. For example, among the 181 families with a medical risk factor, 45 also had risk factors in 5-8 other categories.

Throughout this report the leading risk factors for different causes of death are listed. For nine years in a row, the number of cases that identified economic risk factors (131 in 2013), such as poverty, surpassed the number of behavioral factors such as late or missed prenatal care, inadequate supervision, drug use, and limited parenting skills. Moderate decreases in risk factors were seen in the following categories: environmental (25%) and mental health (20%). Small decreases in risk factors were seen in the following categories: substance abuse (7%) and social (6%). Small increases in risk factors were seen in the following categories: system (9%) and behavioral (9%). Medical, economic, and violence related risk factors remained relatively stable compared to 2012.

While the risk factors affecting families are complex issues that place them in a multiple-risk-factor profile, we must strive for success in providing and assisting those who need us. Thus, cohesive collaboration is necessary at this time when significant reductions of our resources exist in Cuyahoga County. We must ensure the health and well-being of the next generation of future leaders and truly demonstrate our commitment to *Protecting Our Future*.

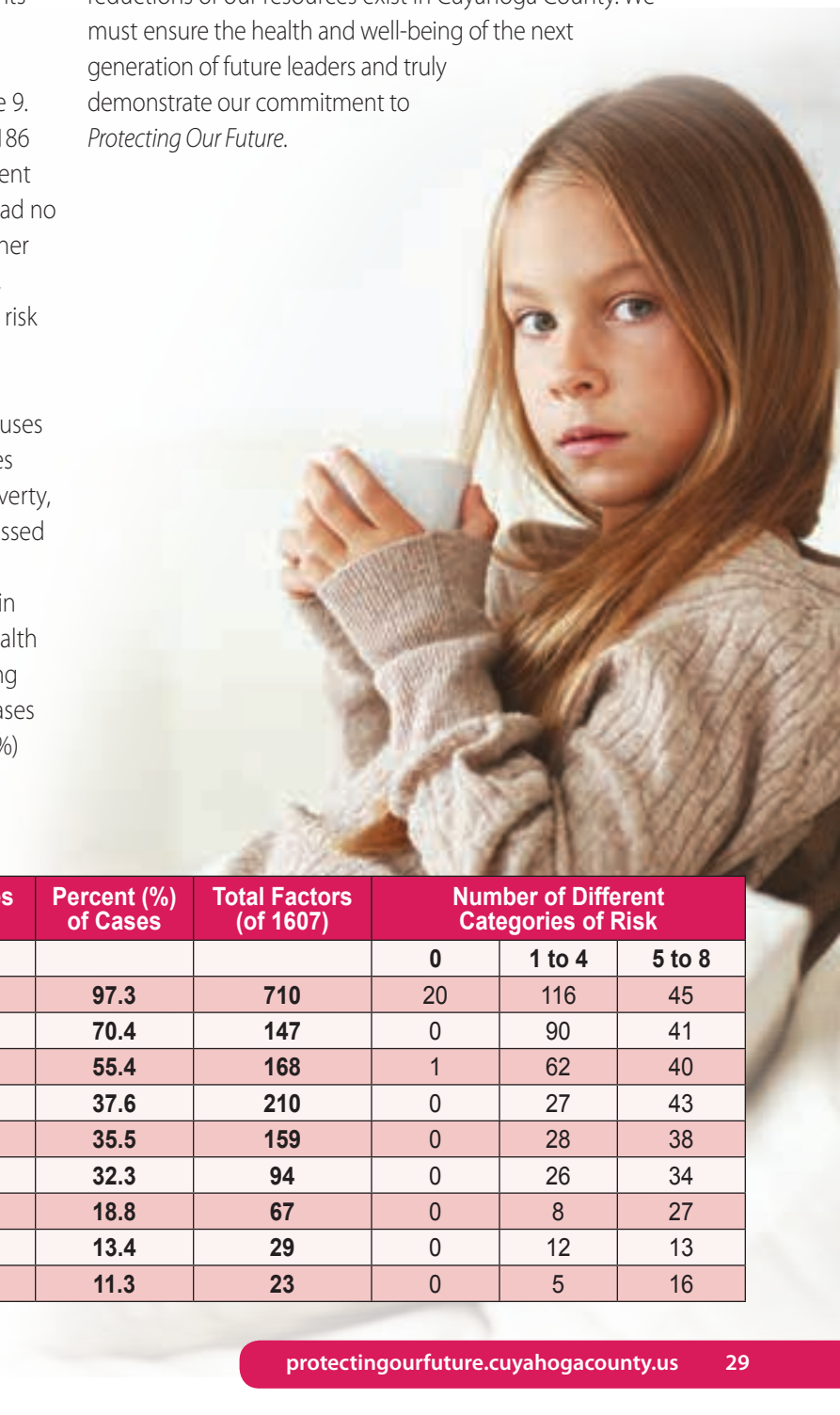


Table 9 Categories of Risk Factors Identified

	Total Cases (of 186)	Percent (%) of Cases	Total Factors (of 1607)	Number of Different Categories of Risk		
				0	1 to 4	5 to 8
Medical	**181**	**97.3**	**710**	20	116	45
Economic	**131**	**70.4**	**147**	0	90	41
Behavioral	**103**	**55.4**	**168**	1	62	40
Violence Related	**70**	**37.6**	**210**	0	27	43
Substance Abuse (parent and/or child)	**66**	**35.5**	**159**	0	28	38
Mental Health	**60**	**32.3**	**94**	0	26	34
Social	**35**	**18.8**	**67**	0	8	27
System	**25**	**13.4**	**29**	0	12	13
Environmental	**21**	**11.3**	**23**	0	5	16

The following community actions represent ongoing efforts to reduce preventable deaths in children while others represent new initiatives that build and strengthen existing outreach, education, and service delivery systems.

Prematurity and Infant Mortality

- Beginning with prenatal care through an infant's second year of life, the Cleveland MomsFirst project is designed to improve birth outcomes and ensure a healthy start for babies by providing support to high-risk pregnant women and teens. Core services include outreach, case management, health education, and interconception care. The project also provides screening and referral for perinatal and postpartum depression.

- The goal of MomsFirst is to reduce disparities in infant mortality. The participants are primarily high-risk African American pregnant women and teens. Cleveland's 2012 overall infant mortality rate (IMR) was 12.9 infant deaths per 1,000 live births with a white IMR of 11.8 and a black IMR of 15.7. MomsFirst's IMR for participants in 2012 was 6.2 and in 2013 was 5.6. Given that MomsFirst participants are reflective of those women at the highest risk for poor birth outcomes, these data provide strong evidence of a successful program to reduce infant mortality.

    - Program capacity has been increased through annual Invest In Children funding to serve an additional 300 families prenatally.

    - All MomsFirst sites hold neighborhood consortia meetings to educate the community at large about the following topics: preterm labor, safe sleep, smoking cessation, substance abuse, family planning, STD/HIV/AIDS prevention and testing, and perinatal depression.

    - MomsFirst continues to distribute the Baby Basics health literacy curriculum to all mothers enrolled in the project. Baby Basics is a prenatal health guide based on the best selling book *What to Expect When You're Expecting*. The book provides interactive, culturally sensitive prenatal education for expecting moms and also addresses and supports their need for literacy training and education.

    - MomsFirst, in collaboration with a number of community partners, hosted three citywide events in recognition of National Infant Mortality Awareness Month. These events were successful in reaching expectant mothers, fathers, new parents, grandparents, and caregivers with interactive educational activities and exhibits promoting prenatal education, safe sleep practices, health literacy, nutrition, benefits of breastfeeding, child development, fatherhood services, and community resources relevant to parenting.

    - The women served by MomsFirst are at an elevated risk for depression due to both pregnancy and socioeconomic factors. Depression can affect a pregnant woman's functional status and her ability to obtain prenatal care, eat properly, and avoid dangerous behaviors. Untreated depression during pregnancy is associated with spontaneous abortion, preterm delivery, and other adverse effects. The Cleveland Regional Perinatal Network developed a systemwide approach to screen and refer women identified at risk for perinatal depression by establishing universal screening and referral protocols at several health care institutions and community agencies.

- The mission of the March of Dimes is to improve the health of babies by reducing infant mortality, preventing birth defects and decreasing the rate of premature births. The Ohio campaign continues to focus on increasing public awareness of the severity of prematurity and educating expectant parents on the warning signs of preterm labor. Additionally, March of Dimes grants are awarded to programs and research that focus on this mission.

    - In 2013, the Ohio March of Dimes provided funds for two CenteringPregnancy® programs in Cuyahoga County. The goal of these programs is to improve birth outcomes such as low birth weight and preterm delivery for primarily low income women.

    - In 2013, the March of Dimes successfully advocated for funding in the Ohio executive budget to reduce infant mortality by including smoking cessation services and treatment of high-risk pregnant women through the Progesterone Prematurity Prevention Project.

    - In 2014, MetroHealth Medical Center was awarded funds that support the Mother and Child Dependency Program in the care of opiate dependent pregnant mothers and their babies.

- MetroHealth Medical Center offers a high-risk prematurity clinic to help parents of fragile preterm babies avoid sleep related deaths, optimize infant development, and develop positive parenting and feeding skills.

- Invest In Children works to ensure a comprehensive early childhood system for families with young children by funding organizations that work with pregnant parents to improve birth outcomes and reduce infant mortality. They also provide newborn visits to low income families. Messages for parents are woven throughout all of their programs, including information about prenatal and interconception health, safe sleep, and environmental tobacco smoke.

Prematurity and Infant Mortality *(cont.)*

- The Cuyahoga County Board of Health provides training sessions for MomsFirst staff members and educational classes for MomsFirst and Stork's Nest clients on the topics of infant mortality, preterm labor, prematurity, and safe sleep.
- The CCBH also has representation on the Ohio Collaborative to Prevent Infant Mortality. Its mission is to prevent infant mortality and improve the health of women and children throughout Ohio with the use of evidence-based approaches and education.
- CCBH has also partnered with the Cleveland Department of Public Health, the Ohio Department of Health, and CityMatCH to become members of the Ohio Institute for Equity in Birth Outcomes (OEI). This three-year initiative is exploring public health strategies to eliminate health inequities in birth outcomes and improve local and state infant mortality rates. The Cuyahoga County OEI team has selected strategies that include CenteringPregnancy® as the downstream approach and awareness and utilization of family planning as the upstream approach.
- The Division of Children and Family Services continues to maintain its Sobriety, Treatment, and Recovery Team (START) department which focuses on children born exposed to or addicted to drugs or alcohol. The staff has additional training and expertise in the area of chemical dependency and addiction to provide these families with support and assistance.

Birth Defects

- The Ohio Chapter of the March of Dimes advocacy efforts in Ohio include the continuation of Ohio's Birth Defects Registry (Ohio Connections for Children with Special Needs), recommendations to improve and expand the Newborn Screening Program, the use of folic acid to prevent neural tube defects, and screening all newborns for critical congenital heart disease.
- Invest In Children funds organizations that: 1) work with pregnant parents to improve birth outcomes; 2) provide support to families with a child with a delay or disability; and 3) provide support to families and childcare providers working with children with special needs.
- The Rainbow Injury Prevention Center is home to the first and only special needs car seat program in Northeast Ohio. Many special needs children have challenges that prevent them from fitting correctly into a conventional child restraint, placing them at risk for additional injury. Rainbow provides specialized car seats to patients on a loaner basis or at a reduced cost.

Sleep Related Deaths

- In 2013-2014 the Cuyahoga County Board of Health (CCBH), as outreach for the Child Fatality Review Board, continued the effort to educate the medical and nursing staff in maternity and pediatric hospitals about the importance of role modeling safe sleep in the hospital. This is a critical component to ensure that parents will continue to provide a safe sleep environment at home. It was also emphasized that providing information was not enough. Role modeling and eliciting a discussion of safe sleep with parents and family members prior to discharge were essential. Seven safe sleep presentations were given at hospitals throughout the county with 70 staff attending.
- CCBH became a "Safe to Sleep Champion®" by completing the training and educational outreach activities that were required by the Eunice Kennedy Shriver National Institute of Child Health and Human Development.
- CCBH has been an active member of the statewide Ohio Injury Prevention Partnership's safe sleep subcommittee, which was responsible for the development of the Ohio safe sleep campaign that was introduced in May 2014.
- The "safe sleep cards" and "safe sleep posters" with local data about sleep related deaths and a picture of a safe sleep environment continue to be circulated throughout Cuyahoga County. Over 10,000 cards or posters have been distributed to hospitals, home visiting programs, community recreation centers, neighborhood clinics, churches, and family serving agencies.
- In 2013-2014 the CCBH participated in one maternity licensure visit at a local birthing hospital. Areas of discussion included the number of sleep related deaths in the county, the importance of role modeling safe sleep in the hospital, and incorporating a discussion of safe sleep with parents and family members before discharge. A tour of the nursery and patients' rooms also provided opportunities for education.
- CCBH also provided safe sleep presentations to foster parents and in-home daycare providers in partnership with the Ohio Department of Job and Family Services, Starting Point, and the Division of Children and Family Services.
- The WIC Program continues to provide safe sleep information to their clients during visits.
- The Division of Children and Family Services implemented a procedure to ensure that all DCFS-involved families with children under the age of one receive a safe sleep presentation from their DCFS worker. Pack-n-plays were also distributed to families identified as being in need of a safe sleep environment.

Sleep Related Deaths *(cont.)*

- In response to the number of sleep related deaths in Greater Cleveland, the Rainbow Injury Prevention Center designed a safe sleep postcard that is given to new parents at University Hospitals MacDonald Women's Hospital as a part of the hospital's child safety rounding project. During 2013 the staff visited 3,102 new mothers.
- MomsFirst provides safe sleep education to all participants in the program with over 2,000 families served in 2013. The project continues to assist families in need of a safe sleep environment in obtaining a pack-n-play.
- In 2013 MomsFirst's safe sleep campaign included 25 safe sleep billboards in the ten neighborhoods with the highest number of sleep related deaths and public service announcements about safe sleep that were aired throughout the year.
- MomsFirst distributed safe sleep materials to senior adults through the City of Cleveland Department of Aging and safe sleep tool kits to the faith-based community in greater Cleveland.
- In 2013-2014 safe sleep fliers were included with birth certificates that were mailed to parents.
- The nurses from the CCBH Welcome Home Newborn Visiting program discuss safe sleep and how to calm a crying baby during their visits with families. From 2013-2014 there were 2,222 newborn visits completed.
- CCBH has become a lead agency in the Ohio Department of Health's efforts to reduce infant mortality as a distribution center for pack-n-plays for agencies that service low income families in need of a safe sleep environment.

Unintentional Injuries

- The Rainbow Injury Prevention Center is dedicated to preventing unintentional injuries. The Center's mission is threefold: 1) to work directly with children and families through education and outreach to decrease injury risk and improve well-being; 2) to share creative ideas, resources, and information with all members of the Greater Cleveland community; and 3) to advance the body of knowledge in unintentional injury prevention research.
  - As Greater Cleveland's child passenger safety experts, the staff operates a free Car Seat Inspection Station; provides low-cost car seat distribution for income-qualified families; offers infant car seat consultations for expectant parents; develops educational campaigns such as "Face the Facts/ Face the Back" to keep children rear facing until at least 2 years of age; conducts free car seat checkup events; leads booster seat promotion efforts; and designs seat belt promotion campaigns aimed at tweens and teens.
  - The Center promoted child pedestrian safety by coordinating the International Walk to School Day activities in 42 local schools for more than 11,000 students.
  - The teen seat belt program, "My Ride, My Rules," reached young people at local high schools through battle-of-the-band competitions and a local radio contest. All of the messages encouraged seat belt use and responsible driving behavior. Other teen-oriented programming included "The Science of Attention," which focused on the dangers of distracted driving, "Seat Belt Survivor," and "Click for a Ticket," to encourage seat belt use.
  - The Center collaborates with the Northern Ohio Poison Control Center to increase community awareness about the dangers of poisoning for children. The staff distributes a poison prevention curriculum for students from kindergarten through sixth grade. The Center also received a grant to provide presentations to parents, grandparents, and others caring for young children that reviewed safe dosing, safe storage, and safe disposal of medications.
  - During 2013, the Rainbow Injury Prevention Center had a fire safety partnership with South Euclid Fire Department and distributed 100 smoke detectors free of charge to local residents.
  - In 2013 the staff visited over 3,100 new mothers at MacDonald Women's Hospital to provide safety information about car seats and childproofing the home.
  - The Rainbow Injury Prevention Center also uses Facebook and Twitter to spread safety messages to a wide audience.
- The Protecting Our Future website provides injury prevention newsletters on topics such as water, fire, and gun safety; supervision of children; and safe sleep for infants.
- MetroHealth providers include education on safe infant sleep and adequate adult supervision of children as part of well-child checkups.

Unintentional Injuries (cont.)

- The Cleveland Division of Police and its Bureau of Community Policing donated gun locks to Help Me Grow that can be given to families when gun safety issues are identified in the home. Education on safe gun storage is also provided.
- The Cuyahoga County Witness/Victim Service Center provides information and education to clients who access services regarding mental health alerts in children, general child safety, adequate adult supervision, safe gun storage, and intergenerational domestic violence.

Homicide

- The Division of Children and Family Services (DCFS) incorporates the Family to Family Four Core Principles into their practice model: 1) A child's safety is paramount; 2) Children belong in families; 3) Families need the support of strong communities; and 4) Public child-welfare systems must partner with the broader community to achieve strong, positive outcomes for children.
    - DCFS currently contracts with 14 neighborhood collaborative sites. These partnerships play a vital role in prevention efforts that allow children and families to be served safely in their home.
    - The Special Investigation Unit at the DCFS, in conjunction with the Practice Evaluation Unit, continues to perform a comprehensive record review for all fatalities in which the deceased child was involved with the agency at the time of the fatality and/or during the previous 12 months. Lessons learned from investigations contribute to ongoing staff development throughout the agency, particularly in the areas of safety planning and prevention.
    - DCFS continues to contract with three evidence-based parenting programs. Parent Child Interaction Therapy (PCIT) is an evidence-based parent training intervention that teaches caregivers of children ages 2-7 years specific behavior management techniques as they play with their child. PCIT focuses on improving the caregiver-child relationship and increasing children's positive behaviors. Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is an evidence-based child-and-parent-focused therapy designed to help children and adolescents ages 3-17 years face and overcome the effects of trauma, and to engage the parent/caregiver as an effective support and partner in their child's recovery. Alternatives for Families-Cognitive-Behavioral Therapy (AF-CBT) is an in-home/outpatient-based therapy used to treat trauma in families with physically coercive/abusive parents and their children ages 5-18 years. This program is designed for physically abused children who present with behavior and adjustment problems, poor social competence, and deficits in relationship skills.
    - DCFS has added a program to provide Multi-Systemic Therapy (MST) to families with at-risk teens. MST services provide intensive, in-home therapy-based services to the family for up to six months.
    - The Cuyahoga Tapestry System of Care has expanded and serves more families with at-risk youth. Tapestry uses wraparound services to meet a family's needs. The focus is on building a team of natural and formal supports in the community to "wrap around" the family and develop a plan of care.
    - DCFS has developed a Multi-System Kids (MSK) unit to focus on youth who are involved in multiple county systems.
    - The Medical Investigations Unit at the DCFS serves families with medically fragile children or children who have suffered severe abuse. The workers in this unit have advanced training and experience with complicated medical issues and have developed relationships with the medical providers. This enables them to ensure that the children's needs are being met. The unit has re-educated staff on chronic health issues such as asthma and diabetes.

Homicide *(cont.)*

- DCFS is implementing trauma-focused interventions in partnership with the county's Defending Childhood Initiative. DCFS uses a trauma screening tool for every child who is the subject of an investigation to identify children in need of trauma-informed services. Through clinical consultations this has assisted the staff to find and implement the most effective services for families.

- The Cuyahoga County Witness/Victim Service Center (WVSC) is an official site of the US Department of Justice's Defending Childhood Initiative. The focus of this project is to not only prevent violence, but also to identify and treat children who are experiencing trauma as a result of exposure to violence in their homes, schools, or communities. More than 150 professionals have been trained to assess for trauma in children and over 16,000 children have been screened to determine if services for evidence-based treatment are needed. The DCFS and the Cuyahoga County Common Pleas Court, Juvenile Division, have been key partners to ensure that children are screened and referred appropriately.
  - WVSC manages the Children Who Witness Violence program, which provides immediate crisis stabilization to children in the aftermath of exposure to violence.
  - WVSC promotes child and family safety by being the home of the Violence Against Women Safe Havens Grant, a program providing supervised visitation and safe exchange services through a contract with the Domestic Violence & Child Advocacy Center.
  - WVSC is available for outreach and education in the community. Presentations to schools, human/social service providers, medical personnel, and law enforcement are a means of linking the Center to the needs of the community.
- The Cleveland Division of Police has made it a policy to refer all children who witness any violent situation to the Children Who Witness Violence program.
- The MetroHealth departments of pediatrics and social work present information on domestic violence, child abuse and neglect, substance abuse, and mental health issues for the medical providers throughout the system.
- The Cuyahoga County Family Drug Court works with parents whose children are alleged to be abused or neglected, and who are at risk of losing their children because of drug dependency. This intensive program is designed to reduce the time that a child may spend in placement while the parent receives treatment.
- In concert with the Defending Childhood Initiative, the Alcohol, Drug Addiction and Mental Health Services (ADAMHS) Board of Cuyahoga County has a network of adolescent treatment agencies specializing in services to teenagers, in addition to its school-based and community prevention programming.
- The ADAMHS Board has taken an active role in the community awareness campaign for the Defending Childhood Initiative, which involves RTA placards, posters, billboards, and kiosks. The message is "We have the power to stop the violence," and it directs children and adults to call United Way's 211/First Call For Help.
- In 2013, the Cuyahoga County Board of Health gave a grand rounds presentation about child abuse and neglect deaths for Cleveland Clinic social workers.
- The Cuyahoga County Juvenile Court has many interventions and programs to assist youth who are in their system.
  - The Juvenile Detention Alternatives Initiative is a nationwide program that is being used in Cuyahoga County to develop options other than the use of a detention center for court-involved youth.
  - Effective Practices in Community Supervision is a new intervention method used by probation officers to help offenders make positive changes in their thinking and behavior so they will be less likely to commit a new crime.
  - Juvenile Court has a School-Based Probation Unit. In this partnership with the schools, school-based probation officers provide control, supervision, and incentives that delinquent youth often need to attend school regularly and comply with school rules.
  - Cognitive Behavioral Therapy is a day treatment program for youth who are struggling to meet the conditions of their probation. This year a parenting component was added to address the needs of the parents whose children are in this program.

Suicide

- The purpose of the Alcohol, Drug Addiction and Mental Health Services (ADAMHS) Board of Cuyahoga County's suicide prevention awareness campaign is to reach as many citizens of Cuyahoga County with the message: "Do you know someone thinking about suicide?" The campaign directs people who are in need of help or more information to the ADAMHS Board of Cuyahoga County's 24-hour Suicide Prevention, Mental Health Crisis, Information and Referral Hotline for adults and children – 216-623-6888. This hotline is operated by FrontLine Service. Crisis Chat is a new online emotional support program for anyone who is depressed or thinking of suicide. This new tool is particularly appealing to children and teens. Suicide is the third-leading cause of death among teenagers and young adults ages 10-24, and is the fifth-leading cause of death among 5- to 14-year-olds. Accordingly, the campaign targets all age groups, including children and their families.
    - The ADAMHS Board is the lead agency for the coordination of school-based mental health and prevention services. The mental health needs of students are identified and addressed by on-site clinicians who provide counseling, community support services, assessment, prevention, and consultation. This collaboration between community agencies, public systems, and school personnel increases the opportunity to prevent more serious difficulties, including suicide.
    - The ADAMHS Board of Cuyahoga County has taken the lead within the schools, in collaboration with school districts, community mental health agencies, and substance abuse prevention services. Through these services, youth with emotional or behavioral problems or who are at risk for substance abuse are identified earlier, and access to services is improved. The program provides prevention and early intervention to enhance social/emotional development and prevent more serious problems.
    - The ADAMHS Board contract agencies provide school-based mental health services and work with school personnel to coordinate referrals and services. In addition, substance abuse prevention programs are offered throughout the county and reach tens of thousands of youth each year.
- Cuyahoga County Juvenile Court has a Mental Health Court that targets youth who have been identified with mental health issues. These children are provided intensive supervision and service coordination.
- The Behavioral Health Juvenile Justice program is an initiative designed to reduce the potential for deeper involvement in the juvenile court system by implementing comprehensive evidence-based treatment for identified youth at risk, ages 12-17 years.

Interagency Actions

As a result of the Child Fatality Review Program, interagency communication and collaboration have been strengthened.

- The partnership between Help Me Grow (HMG) and the Division of Children and Family Services (DCFS) continues to benefit from the creation of a liaison position for the two systems. This individual is responsible for ensuring referrals contain needed information to successfully engage families; troubleshooting system-to-system issues; increasing the sharing of information between systems; and ultimately helping families to stay engaged in services longer.
- The Early Childhood Mental Health (ECMH) centralized system is a cooperative effort with Help Me Grow, the Alcohol, Drug Addiction and Mental Health Services Board, the Cuyahoga County Board of Developmental Disabilities, Invest in Children, the Educational Service Center of Cuyahoga County, and DCFS. This serves as a single point of entry for children, from birth to 6 years, who may be experiencing emotional, behavioral, and social problems.
- HMG, MomsFirst, and the Ohio Infant Mortality Reduction Initiative collaborate in their roles and responsibilities to support the joint service delivery system for expectant families and families with young children.
- MetroHealth hosts a quarterly meeting with DCFS to improve collaboration between the two agencies and to update policy information.
- Children in foster care are often survivors of abuse or unsafe living arrangements. To meet the needs of these special youngsters, MetroHealth and DCFS initiated a Medical Home for Children in Foster Care program. Since November 2013, nearly 1,000 children have been seen by MetroHealth staff and enrolled in a coordinated tracking program designed to improve their current and long-term health and well-being.
- A meeting with DCFS and hospital social workers is planned to discuss medical compliance issues for at-risk children.

Infant Mortality and Disparities

1. Incorporate the recommendations of the Ohio Collaborative to Prevent Infant Mortality into Cuyahoga County initiatives.

2. Promote the strategies of the Ohio Institute for Equity in Birth Outcomes to eliminate racial disparities and improve birth outcomes in Cuyahoga County.

Prematurity

1. Support the efforts of the March of Dimes in the areas of research and public awareness regarding the causes, risk factors, and lifelong effects of prematurity. Continue to educate women and expectant parents about the warning signs of preterm labor and the importance of a "Life Course Perspective" to decrease the risks of preterm births.

2. Support promising and evidence-based practices that decrease preterm births, such as CenteringPregnancy® and the use of progesterone for high-risk women.

3. Encourage child and family serving agencies to incorporate interconception care and a reproductive life plan as core components of their programs.

4. Promote a seamless system for perinatal services that also addresses the complex needs of many pregnant women by linking them to services for chronic health problems, drug treatment, and mental health counseling.

Birth Defects

1. Encourage programs that encompass a "Life Course Perspective" that identify and modify medical, social, and behavioral risks throughout a woman's life that can impact future pregnancies.

2. Support the use of folic acid to prevent neural tube defects, newborn screening to identify and treat rare disorders, and genetic counseling for couples at risk for a genetic abnormality prior to pregnancy.

Sleep Related Deaths

1. Continue to educate the childbirth instructors and the staff at maternity and pediatric hospitals in Cuyahoga County about the importance of role modeling safe sleep in the hospital and educating all caregivers. Encourage the development of hospital safe sleep policies and a review of safe sleep discharge teaching.

2. Provide data to the birthing hospitals regarding the number of sleep related deaths for infants born at their facility.

Sleep Related Deaths *(cont.)*

3. Increase family serving agencies' awareness of the components of a safe infant sleep environment by providing staff training on risk factors, local sleep related fatality data, and the most recent American Academy of Pediatrics safe sleep recommendations.

4. Partner with family serving agencies to provide safe sleep education to other infant caregivers such as grandparents, relatives, and friends, with a focus on providing a safe sleep environment in any location.

5. Promote the Ohio safe sleep campaign and its educational resources in Cuyahoga County.

Unintentional Injuries

1. Support the Safe Kids/Safe Communities Coalition in their comprehensive efforts to prevent injuries and educate the community on safety issues that include child passenger seats/restraints; teen drivers; pedestrian, bus, and bicycle safety; unintentional poisoning; and fire, water, and sports safety.

2. Partner with child/family agencies to disseminate the message stressing the importance of adequate and appropriate adult supervision of children in homes, around water, and in neighborhoods.

3. Reinforce the importance of gun safety in the home – unloaded, locked, and out of the reach of children.

Homicide

1. Promote the use of 24-hour parenting hotlines as a safe and confidential resource for parents in crisis.

2. Support educational programs that assist parents and guardians in understanding age appropriate behaviors, using alternative methods of discipline, and choosing suitable caregivers.

3. Support domestic and teen dating violence education and programs that help families identify warning signs, outline actions to take, especially for escalating behaviors, provide access to counseling and emergency shelter, and initiate early intervention to limit the effects on children in the home.

4. Advocate for community-based safe haven centers for teens, to provide supervised activities and programs after school and on weekends.

Suicide

1. Support school programs for depression awareness, bullying, and suicide prevention that also include resources for assistance.


DATA
TABLES

Table 10 Annual Number of Gun Related Deaths by Manner, Age, and Gender

BOYS Cause of Death	Age	Year										Total
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Undetermined	14	0	0	0	0	0	0	1	0	0	0	1
	16	0	0	0	0	0	0	0	0	0	1	1
Total		0	0	0	0	0	0	1	0	0	1	2
Accidental	3	0	1	0	0	0	0	0	0	0	0	1
	15	0	0	0	0	0	1	0	0	0	0	1
	16	0	1	0	1	0	0	0	0	0	0	2
Total		0	2	0	1	0	1	0	0	0	0	4
Suicide	13	0	0	0	0	0	1	0	0	0	0	1
	14	0	0	0	2	0	0	0	0	0	0	2
	15	0	1	0	0	0	1	0	0	0	0	2
	16	1	0	0	0	0	0	0	0	1	0	2
	17	0	1	0	0	0	0	2	1	0	0	4
Total		1	2	0	2	0	2	2	1	1	0	11
Homicide	2	0	0	0	0	0	2	0	0	0	0	2
	10	0	0	0	0	0	0	0	0	1	0	1
	11	0	1	1	0	0	0	0	0	0	0	2
	13	0	0	0	1	1	0	0	0	0	0	2
	14	1	0	1	0	0	0	0	0	0	0	2
	15	0	1	0	1	2	0	0	0	1	0	5
	16	1	1	1	2	2	1	0	3	1	2	14
	17	3	2	1	9	2	3	2	3	1	4	30
Total		5	5	4	13	7	6	2	6	4	6	58
TOTAL ALL BOYS		6	9	4	16	7	9	5	7	5	7	75

GIRLS Cause of Death	Age	Year										Total
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Accidental	6	0	0	0	0	0	0	0	0	0	1	1
Total		0	0	0	0	0	0	0	0	0	1	1
Suicide	14	1	0	0	0	0	0	0	0	0	0	1
	16	0	0	0	0	0	0	0	0	1	0	1
	17	1	0	0	0	1	0	0	0	0	0	2
Total		2	0	0	0	1	0	0	0	1	0	4
Homicide	1	0	0	0	0	0	0	0	0	1	0	1
	5	0	0	0	0	0	1	0	0	0	0	1
	6	0	0	1	0	0	0	0	0	1	0	2
	10	0	0	0	0	0	0	0	0	2	0	2
	11	0	0	0	0	1	0	0	0	0	0	1
	12	0	0	0	1	0	0	0	0	0	0	1
	14	0	0	0	0	0	0	0	0	1	0	1
	15	0	0	0	0	1	0	0	1	0	0	2
	16	0	0	0	0	0	0	0	0	0	1	1
	17	1	0	0	0	1	0	0	0	0	0	2
Total		1	0	1	1	3	1	0	1	5	1	14
TOTAL ALL GIRLS		3	0	1	1	4	1	0	1	6	2	19

TOTAL CHILDREN		9	9	5	17	11	10	5	8	11	9	94

Table 11 Demographic Profiles and Cause Specific Rates[1]

	2010 Census Data	
	Population Under 18 Years	Percent of Population Under 18
Cuyahoga County (Total)	290,262	23
Cuyahoga County (White)	154,615	19
Cuyahoga County (All Other Races)	135,647	29
City of Cleveland	97,657	25

Percent of Total County Child Population in Cleveland	**34**
Percent of Total County Child Population All Other Races	**47**

Annual Birth Data[2]	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cuyahoga County	16,932	16,354	16,682	16,450	16,249	15,525	15,108	14,993	14,783	14,899
% White	59.6	57.7	57.9	56.1	56.0	56.4	51.9	51.7	51.9	51.3

Annual Death Data	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Annual Child Deaths	227	239	233	230	240	213	178	187	182	186
Annual Infant Deaths	161	164	166	162	171	141	140	144	131	133
% Deaths to Infants	70.9	68.6	71.2	70.4	71.3	66.2	78.7	77.0	72.0	71.5
Child Mortality / 100,000 Children	65.2	68.7	67.0	66.1	69.0	61.2	61.3	64.4	62.7	64.1
Annual Total Medical Death Rate	48.3	52.6	49.1	49.4	50.3	42.8	46.5	49.3	46.5	47.5
Cancer	3.7	2.9	2.3	2.9	3.2	2.6	1.7	1.4	2.1	1.4
Annual Total Injury Death Rate	17.0	16.1	17.8	16.7	18.7	18.4	14.8	15.2	15.2	16.5
Homicide	2.0	5.2	3.7	5.7	4.3	4.9	1.7	3.8	4.8	4.8
Motor Vehicle Accident	2.3	1.1	1.1	0.9	2.6	1.7	1.4	1.0	1.4	1.4
Fire	0.9	0.0	1.1	1.1	0.0	0.9	0.0	0.3	0.3	0.3
Drowning	1.1	1.4	2.0	1.1	1.1	1.7	0.0	0.7	0.7	1.4
Suicide	2.9	1.7	0.6	1.1	2.0	1.1	1.0	0.7	1.4	1.7
Infant Mortality / 1,000 Births	9.5	10.0	10.0	9.8	10.5	9.1	9.3	9.6	8.9	8.9
Neonatal Mortality / 1,000 Births	7.1	7.9	7.3	6.8	7.2	6.5	6.4	6.4	6.5	6.7
Postneonatal Mortality / 1,000 Births	2.4	2.1	2.7	3.0	3.3	2.6	2.9	3.2	2.4	2.2
Prematurity	5.5	6.5	6.3	5.9	6.3	5.5	5.2	5.3	5.1	5.5
SIDS Only	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
SIDS and Sleep Related	1.1	1.0	1.1	1.3	1.4	1.3	1.9	1.3	1.2	1.1

[1] Yellow shaded boxes are 2013 birth estimates provided by the Ohio Department of Health.

[2] Ohio Department of Health, Ohio Public Health Information Warehouse. Available online at https://odhgateway.odh.ohio.gov/EDWS/DataCatalog (accessed July 8, 2014).

Table 12 Annual Number of Child Deaths Due to Injury and Medical Causes by Age Group

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Total Injury Related Deaths											
Under 1 Year	25	17	24	21	30	27	28	22	20	18	**232**
1 - 9 Years	9	10	16	12	9	19	5	9	10	14	**113**
10 - 17 Years	25	29	22	25	26	18	10	13	14	16	**198**
Total	**59**	**56**	**62**	**58**	**65**	**64**	**43**	**44**	**44**	**48**	**543**
Total Deaths from Medical Causes											
Under 1 Year	136	147	142	141	141	114	112	122	111	115	**1281**
1 - 9 Years	21	20	15	21	21	23	11	14	20	17	**183**
10 - 17 Years	11	16	14	10	13	12	12	7	7	6	**108**
Total	**168**	**183**	**171**	**172**	**175**	**149**	**135**	**143**	**138**	**138**	**1572**
Total All Causes	**227**	**239**	**233**	**230**	**240**	**213**	**178**	**187**	**182**	**186**	**2115**

NOTE: Injury related deaths include sleep related accidental suffocation and “undetermined” deaths of infants, but not SIDS deaths.

Table 13 Cause of Death by Age Group and Year

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total per Cause
Prematurity											**916**
Under 1 Year	93	107	105	97	102	85	79	80	76	82	
1 - 9 Years	1	1	0	1	2	1	0	1	0	1	
10 - 17 Years	1	0	0	0	0	0	0	0	1	0	
Birth Defects											**358**
Under 1 Year	26	26	28	31	31	28	20	35	25	23	
1 - 9 Years	0	11	5	6	9	6	5	2	9	9	
10 - 17 Years	0	2	2	3	3	3	4	2	1	3	
SIDS and Sleep Related Deaths											**199**
Under 1 Year	20	16	18	22	22	20	28	19	18	16	
Cancer and Other Medical Conditions											**312**
Under 1 Year	20	15	10	9	13	5	13	7	10	10	
1 - 9 Years	21	9	11	14	10	16	6	11	11	7	
10 - 17 Years	10	14	13	7	10	9	8	5	5	3	
Homicide											**133**
Under 1 Year	1	0	1	1	3	1	0	2	1	2	
1 - 9 Years	0	3	5	2	2	11	2	2	4	4	
10 - 17 Years	7	15	7	15	10	5	3	7	9	8	
Suicide											**47**
1 - 9 Years	0	0	0	0	0	0	0	0	0	0	
10 - 17 Years	10	6	2	4	7	4	3	2	4	5	
Motor Vehicle Accident											**44**
Under 1 Year	1	0	0	0	0	1	0	0	0	0	
1 - 9 Years	0	0	2	2	2	2	2	1	3	3	
10 - 17 Years	2	4	2	1	7	3	2	2	1	1	
Accidental Suffocation											**8**
Under 1 Year [1]	0	0	0	0	0	0	0	0	0	0	
1 - 9 Years	4	1	0	2	0	0	0	0	0	0	
10 - 17 Years	0	0	0	0	0	0	1	0	0	0	
Drowning											**37**
Under 1 Year	0	0	1	0	0	0	0	0	1	0	
1 - 9 Years	2	2	4	2	2	2	0	1	1	3	
10 - 17 Years	2	3	2	1	2	4	0	1	0	1	
Fire [2, 3]											**16**
Under 1 Year	0	0	0	0	0	1	0	0	0	0	
1 - 9 Years	2	0	3	3	0	2	0	1	1	1	
10 - 17 Years	0	0	1	1	0	0	0	0	0	0	
Other Accidents [4]											**45**
Under 1 Year	0	0	3	2	0	0	0	1	0	0	
1 - 9 Years	0	3	1	1	3	2	1	4	1	3	
10 - 17 Years	4	1	7	3	0	2	1	1	0	1	
Total per Year	**227**	**239**	**233**	**230**	**240**	**213**	**178**	**187**	**182**	**186**	**2115**

[1] Excludes those related to sleep environment.

[2] In 2005 there were 8 fire deaths in a single arson fire which are included in Homicide.

[3] In 2006 there were 8 fire deaths, with 4 of those caused by a single arson (included in Homicide) and 4 caused accidentally (included in Fire).

[4] Includes falls, poisoning, violence of undetermined origin, and other accidents.

Table 14 Annual Number of Child Deaths by Race and Age Group[1]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Race and Age Group											
White											
Under 1 Year	55	53	43	55	43	43	40	45	46	45	**468**
1 - 9 Years	17	16	12	10	10	19	4	11	13	6	**118**
10 - 17 Years	20	13	16	11	13	12	13	6	7	9	**120**
Total	**92**	**82**	**71**	**76**	**66**	**74**	**57**	**62**	**66**	**60**	**706**
All Other Races											
Under 1 Year	105	111	123	107	128	98	100	99	85	88	**1044**
1 - 9 Years	13	14	18	23	20	23	12	12	17	25	**177**
10 - 17 Years	16	32	20	24	26	18	9	14	14	13	**186**
Total	**134**	**157**	**161**	**154**	**174**	**139**	**121**	**125**	**116**	**126**	**1407**
Total All	**226**	**239**	**232**	**230**	**240**	**213**	**178**	**187**	**182**	**186**	**2113**
Missing Race Info	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Rates of Death											**Average**
Crude Death Rate White[2]	45.7	40.8	35.3	37.8	32.8	36.8	36.9	40.1	42.7	38.8	**38.8**
Crude Death Rate All Other Races[3]	91.3	107.0	109.7	104.9	118.5	94.7	89.2	92.2	85.5	92.9	**98.6**
Ratio of All Other Races to White	2.0	2.6	3.1	2.8	3.6	2.6	2.4	2.3	2.0	2.4	**2.6**
Death Rate (excl Infants) White[4]	15.1	14.6	10.9	12.0	16.0	15.4	11.0	11.6	13.6	10.2	**13.0**
Death Rate (excl Infants) All Other Races[5]	32.9	27.2	33.7	33.0	29.4	27.9	15.5	20.2	24.1	29.6	**27.4**
Ratio of All Other Races to White (excl Infants)	1.1	2.2	1.9	3.1	2.7	1.8	1.4	1.7	1.8	2.9	**2.1**
Infant Mortality / 1,000 Births White[6]	5.5	5.6	4.5	6.0	4.7	5.0	4.9	5.8	6.1	5.9	**5.4**
Infant Mortality / 1,000 Births All Other Races[7]	15.3	16.0	17.5	14.8	17.9	14.4	13.1	13.7	11.8	12.2	**14.7**
Ratio of All Other Races to White IMR	2.8	2.9	3.9	2.5	3.8	2.9	2.7	2.4	1.9	2.1	**2.8**

[1] Yellow shaded boxes are based on adjusted estimates from unconfirmed delivery hospital data.

[2] Total White deaths/154,615 x 100,000 (2010 census data in Table 11)

[3] Total All Other Races deaths/135,647 x 100,000 (2010 census data in Table 11)

[4] Total White deaths (excl Infants)/154,615 minus White live births x 100,000 (2010 census data in Table 11)

[5] Total All Other Races deaths (excl Infants)/135,647 minus All Other Races live births x 100,000 (2010 census data in Table 11)

[6] Total Infant White deaths/total White live births x 1,000 (annual birth data in Table 11)

[7] Total Infant All Other Races deaths/total All Other Races live births x 1,000 (annual birth data in Table 11)

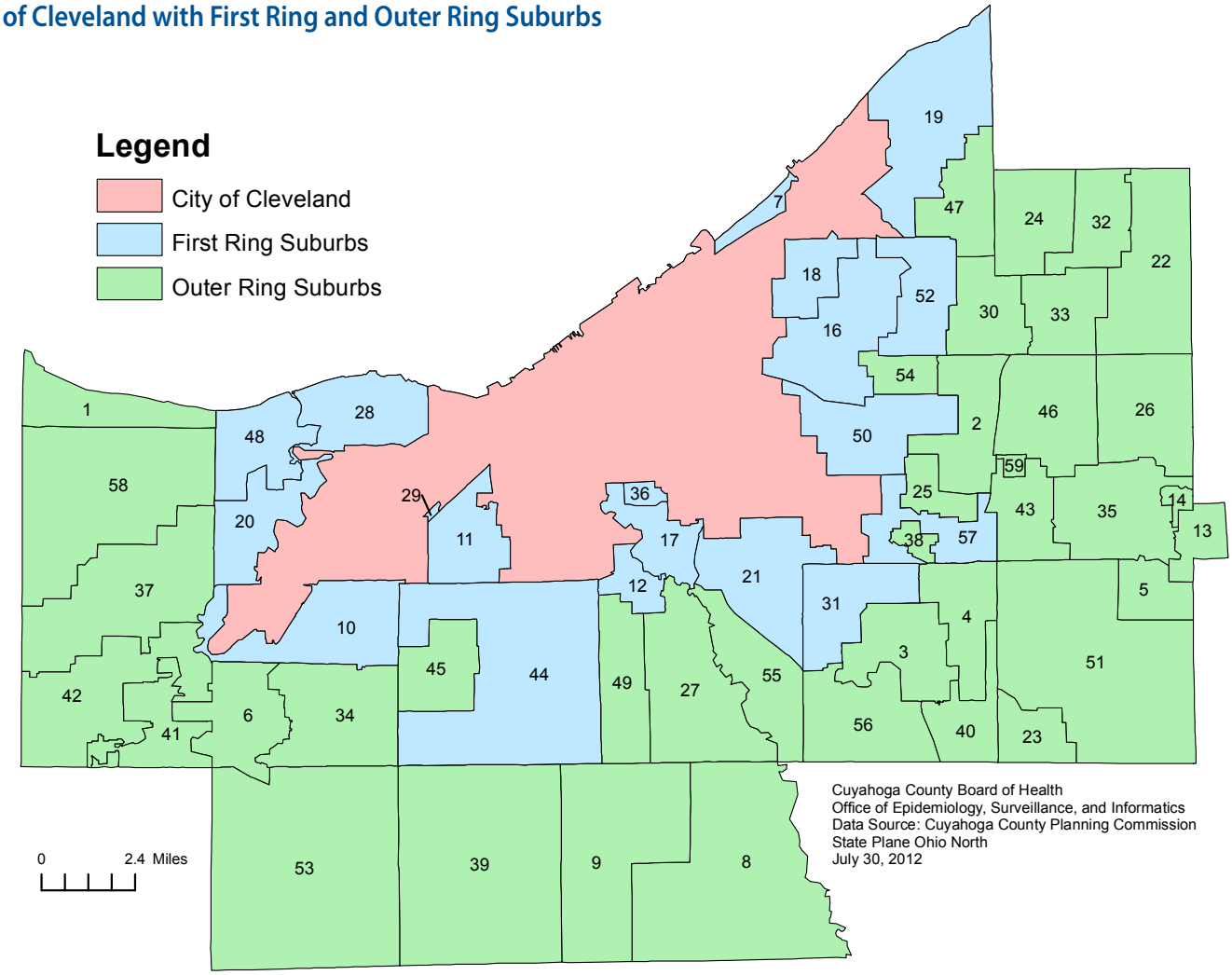
Table 15 Annual Number of Child Deaths by Gender and Age Group

	2004	2005	2006*	2007	2008	2009	2010	2011*	2012*	2013	Total
Gender and Age Group											
Male											
Under 1 Year	87	95	91	93	94	74	71	81	78	69	**833**
1 - 9 Years	13	15	15	16	15	26	6	11	12	16	**145**
10 - 17 Years	21	36	23	26	24	15	15	15	11	14	**200**
Total	**121**	**146**	**129**	**135**	**133**	**115**	**92**	**107**	**101**	**99**	**1178**
Female											
Under 1 Year	74	69	74	69	77	67	69	63	52	64	**678**
1 - 9 Years	17	15	16	17	15	16	10	11	18	15	**150**
10 - 17 Years	15	9	13	9	15	15	7	5	10	8	**106**
Total	**106**	**93**	**103**	**95**	**107**	**98**	**86**	**79**	**80**	**87**	**934**
TOTAL ALL	**227**	**239**	**232**	**230**	**240**	**213**	**178**	**186**	**181**	**186**	**2112**

* In 2006, 2011, and 2012, one infant had unknown gender.

APPENDIX A

City of Cleveland with First Ring and Outer Ring Suburbs



Number	Municipality	Number	Municipality	Number	Municipality
1	Bay Village	22	Gates Mills	41	Olmsted Falls
2	Beachwood	23	Glenwillow	42	Olmsted Township
3	Bedford	24	Highland Heights	43	Orange
4	Bedford Heights	25	Highland Hills	44	Parma
5	Bentleyville	26	Hunting Valley	45	Parma Heights
6	Berea	27	Independence	46	Pepper Pike
7	Bratenahl	28	Lakewood	47	Richmond Heights
8	Brecksville	29	Linndale	48	Rocky River
9	Broadview Heights	30	Lyndhurst	49	Seven Hills
10	Brook Park	31	Maple Heights	50	Shaker Heights
11	Brooklyn	32	Mayfield	51	Solon
12	Brooklyn Heights	33	Mayfield Heights	52	South Euclid
13	Chagrin Falls	34	Middleburg Heights	53	Strongsville
14	Chagrin Falls Township	35	Moreland Hills	54	University Heights
16	Cleveland Heights	36	Newburgh Heights	55	Valley View
17	Cuyahoga Heights	37	North Olmsted	56	Walton Hills
18	East Cleveland	38	North Randall	57	Warrensville Heights
19	Euclid	39	North Royalton	58	Westlake
20	Fairview Park	40	Oakwood	59	Woodmere
21	Garfield Heights				

*Summary of Risk Factors in 2013**

Mother's Medical Risk Factors

Chronic illness
- -Obesity
- -Hypertension
- -Diabetes

Preterm labor
Premature rupture of membranes (PROM)
Previous fetal loss
Previous infant loss
Previous preterm delivery
Prior history of sexually transmitted infections (STI)
STI – during current pregnancy
Chorioamnionitis
At-risk maternal age
Bacterial vaginosis
Positive beta strep
Multiple gestation
Pre-eclampsia (PET)
Incompetent cervix
Abruption
Oligohydramnios
Polyhydramnios

Pediatric Medical Risk Factors

Intrauterine growth retardation (IUGR)
Prematurity
Failure to thrive
Congenital anomalies
Infection
Chronic illness
Technologically dependent
Developmentally delayed
Apnea spells
Recent upper respiratory infection
Cancer
Injury/trauma

Economic Risk Factors

No insurance
Medicaid eligibility issues
Poverty
Frequent moves
Living in public shelter
Homeless

Behavioral Risk Factors

No prenatal care
Late entry into prenatal care
Missed appointments, mother
Missing immunizations
Missed appointments, child
Self medication, child
Early onset parenting
Current parent less than 18 years old
Refused services offered
Bedsharing
Inadequate supervision
Poor parenting
Unsafe sleep arrangement
Lack of child safety
Car restraint not used
Truancy, child
Delinquency, child
Aggression, child
Family planning not used, unplanned pregnancy

Parental Substance Use

Tobacco
Alcohol
Illicit drugs
Prescription drugs

Child Substance Abuse

Tobacco
Alcohol
Illicit drugs
Prescription drugs
Intrauterine drug exposure
Intrauterine tobacco exposure

Violence Related Risk Factors

Partner abuse
Child abuse
Child neglect
Medical neglect
History of reports for suspected domestic violence or child maltreatment
History of custody removal
History of child exposure to violence within the family
Evidence of previous unexplained injuries
Parental criminal history
Child criminal history
Parental history of abuse or neglect as a child
Parental history of custody removal as a child
Multigenerational reported abuse, neglect, or domestic violence

Mental Health Risk Factors

Maternal history of mental illness
Paternal history of mental illness
Parental education less than high school
Multiple family stresses
School problems, child
ADD/ADHD, child
Depression, child
History of suicide attempts, child
Self-injurious behavior, child
Child psychiatric diagnosis
Sexual identity issues, child

Environmental Risk Factors

No functional smoke detector
Secondhand smoke
Deplorable housing
Transportation inadequate

Social Risk Factors

Lack of support of family/friends
Negative influence of family/friends
Gang involvement
At-risk child
Social isolation
Lack of paternal involvement
Language difficulties
Cultural beliefs about health
Gun access

System Risk Factors

Multiple providers/sites, mother
Multiple providers/sites, child
At-risk, no toxicology screen, parent
Inadequate patient/child education
Dissatisfaction with system
Inadequate medical assessment
Inadequate reunification
Daycare concerns
Systems issues (health care, Division of Children and Family Services, law enforcement, school, juvenile court, mental health, etc.)

* In addition to the risk factors listed here, there is an "Other" option for each category for unlisted risk factors.

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