Child Fatalities 2012

Protecting Our Future

The Cuyahoga County Child Fatality Report
Sixteenth 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.

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 2012 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]

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[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, 2013).

Table of Contents

Index of Figures, Maps, and Tables

There were 179 child deaths in 2012, second lowest total number of deaths in past 20 years.

In 2012 we saw the second lowest number of child deaths in the county in 20 years. The total number decreased by eight from the 2011 total of 187. There was a 26% increase in the total number of children who died between 1 and 9 years old. The total number of child deaths for 2012 included 129 infants, 29 children between 1 and 9 years old, and 21 children between 10 and 17 years old. **Table 1** shows the number of deaths by age group since 2003.

Fifteen fewer infants died in 2012, lowest total number of infant deaths in past 20 years.

Birth defects accounted for the largest decrease in infant deaths (from 35 in 2011 to 25 in 2012). Other causes of deaths in infants that decreased included prematurity, sleep related, homicide, other perinatal complications, and unintentional injury. Infections (from 2 in 2011 to 4 in 2012) and cancer (from 0 in 2011 to 2 in 2012) both increased by two deaths. One infant drowning death occurred during 2012, one more than in 2011.

Six more deaths to children between 1 and 9 years.

Twenty-nine children between 1 and 9 years of age died in 2012. This resulted in a 26% increase from 2011, but still was the third lowest total number of deaths in this age group in the past ten years. Large increases in child deaths occurred in birth defects (from 2 in 2011 to 9 in 2012), and other medical causes (from 4 in 2011 to 8 in 2012) in this age group. Motor vehicle accident (from 1 in 2011 to 3 in 2012) and homicide (from 2 in 2011 to 4 in 2012) were two causes of death that increased by two deaths in 2012. Decreases occurred in five causes of death categories, which included prematurity, infections, cancer, other perinatal complications, and undetermined.

One more death in children between 10 and 17 years.

Twenty-one children between 10 and 17 years died in 2012. This was tied for the second lowest total number of deaths in this age group in the last 20 years. Homicide accounted for 43% of all deaths in this age group. Homicide, suicide, and cancer all had an increase of two deaths, while one more prematurity related death occurred in 2012. Infections had two fewer deaths in 2012 while birth defects, motor vehicle accident, drowning, and unintentional injury related deaths all decreased by one death.

Table 1   Annual Number of Deaths by Age Group

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Under 1 Year	136	161	164	166	162	171	141	140	144	129	**1514**
1 - 9 Years	32	30	30	31	33	30	42	16	23	29	**296**
10 - 17 Years	21	36	45	36	35	39	30	22	20	21	**305**
Total	**189**	**227**	**239**	**233**	**230**	**240**	**213**	**178**	**187**	**179**	**2115**

Map 1

Distribution of Poverty and Child Fatalities
Cuyahoga County, Ohio (2003-2012)
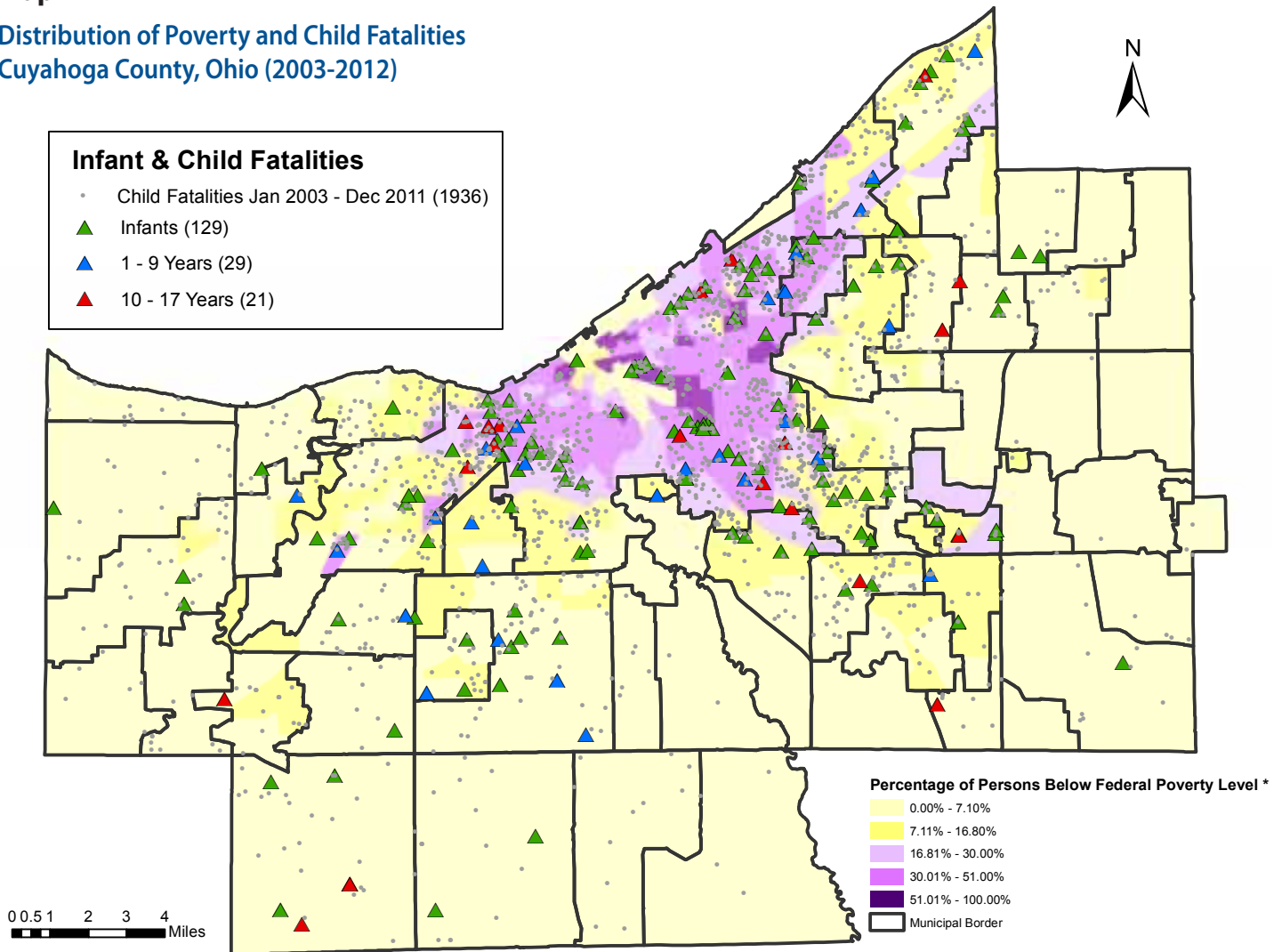
Infant & Child Fatalities

- · Child Fatalities Jan 2003 - Dec 2011 (1936)
- ▲ Infants (129)
- ▲ 1 - 9 Years (29)
- ▲ 10 - 17 Years (21)

N

Percentage of Persons Below Federal Poverty Level *

- 0.00% - 7.10%
- 7.11% - 16.80%
- 16.81% - 30.00%
- 30.01% - 51.00%
- 51.01% - 100.00%
- Municipal Border

0 0.5 1   2   3   4
Miles

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

Note: Based on 2000 socioeconomic data from the US Census Bureau, the most recent data available, darker regions represent higher numbers of persons per square mile living below the federal poverty level. Technical assistance and census data provided by Northern Ohio Data and Information Services, Maxine Goodman Levin College of Urban Affairs, Cleveland State University.

Map 1 above illustrates that the distributions of poverty and child deaths are closely related. Deaths from prior years are included to highlight that the distribution patterns of deaths appear to be more populated in geographic areas that tend to have a higher percentage of community members living below the federal poverty line. For example, the 2012 federal poverty rate for a family of four was $23,050.[2] 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.

[2] US Department of Health and Human Services. The 2012 HHS poverty guidelines. Available online at http://aspe.hhs.gov/poverty/12poverty.shtml#thresholds (accessed June 11, 2013).

Child death rate decreases slightly in 2012.

Figure 1 illustrates the stabilization of the rate of child deaths since 2001 as well as gives a historical perspective over the past 20 years. Eight fewer deaths in 2012 led to a 4.3% decrease in the overall number of child deaths in Cuyahoga County, which was the second lowest total number of deaths since 1993. Although the child population in Cuyahoga County has dropped by almost 60,000 between the 2000 census (347,990)[3] and the 2010 census (290,262),[4] the child death rates in the last three years have remained relatively consistent since 2001.

[3] 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, 2013).

[4] 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, 2012).

Figure 1

**Total Child Deaths (age 0-17)
Cuyahoga County (1993-2012)**

Deaths per 100,000 Children

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Rate	114.7	105.3	102.6	82.8	88.4	73.3	70.1	80.5	69.0	66.4	54.3	65.2	68.7	67.0	66.1	69.0	61.2	61.3	64.4	61.7
Count	388	356	347	280	299	248	237	280	240	231	189	227	239	233	230	240	213	178	187	179
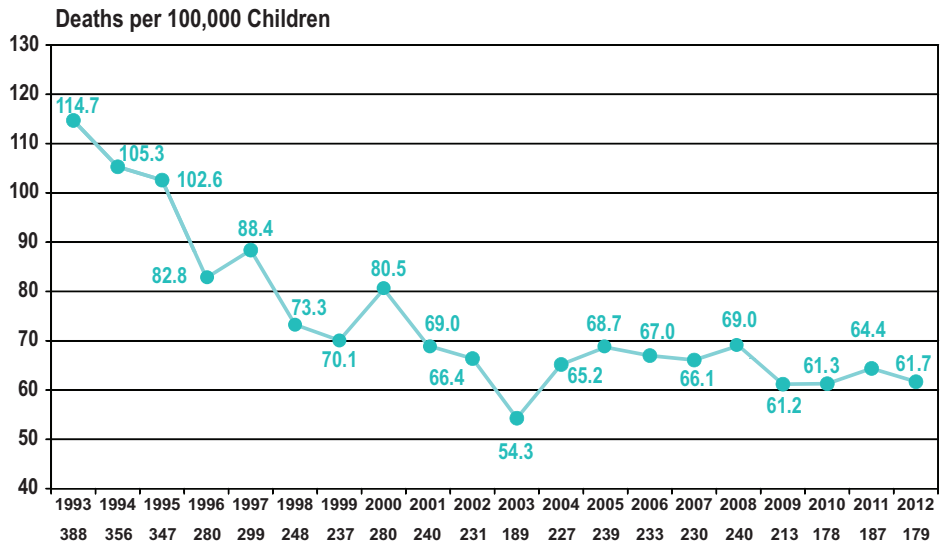
Table 2

Leading Causes of Death by Age Group in 2012

Cause of Death	Under 1 Year	1 - 9 Years	10 - 17 Years	Total
Prematurity	75	0	1	**76**
Birth Defects	25	9	1	**35**
Sleep Related	18	0	0	**18**
Homicide	1	4	9	**14**
Other Medical Causes	2	8	2	**12**
Cancer	2	1	3	**6**
Infections	4	1	0	**5**
Motor Vehicle Accident	0	3	1	**4**
Suicide	0	0	4	**4**
Drowning	1	1	0	**2**
Other Perinatal Complications	1	0	0	**1**
Undetermined - Injury Related	0	1	0	**1**
Fire	0	1	0	**1**
Total	**129**	**29**	**21**	**179**

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.

Prematurity and birth defects had the largest decreases in total number of deaths in 2012. Prematurity decreased from 81 in 2011 to 76 in 2012, and birth defects had 4 fewer deaths (from 39 in 2011 to 35 in 2012). There were 7 heart anomalies and 5 diaphragmatic hernia defects. Three fewer deaths occurred due to unintentional injury and other perinatal complications, and there were 2 fewer infection related deaths. One fewer death occurred in sleep related, poisoning, and undetermined deaths in 2012 compared to 2011.

There were 12 deaths due to other medical causes in 2012, which were 4 more than in 2011. Four of these deaths had heart related diseases, 4 more had respiratory complications, and 2 more were brain related. In 2012, homicide had 3 more child deaths, suicide and cancer each had 2 more child deaths, and motor vehicle accidents had 1 more child death. Deaths ruled as drowning and fire had the same number of deaths from 2011 to 2012. Unintentional injury, poisoning, and accidental gunshot wound were categories without any deaths in 2012.

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 second lowest all other races infant mortality 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), as well as the state as a whole.[5] These data presented were for 2011, the most current information available.

In 2011 Cuyahoga had the second lowest all other races infant mortality rate (IMR) and the lowest white IMR (**Figure 2**). Overall IMR for Cuyahoga was the same as Franklin and only lower than Hamilton. Even though Cuyahoga had a lower all other races IMR and white IMR than Montgomery and Summit, both counties had a lower overall IMR. This is true because Cuyahoga had a significantly higher percentage of minority births. In terms of child death rate, Cuyahoga also had the second lowest child death rate. While our 2011 data compare favorably to other Ohio urban counties, we must continue to work on eliminating disparities by creating health equity for all Cuyahoga County children.

Figure 2

Peer County Comparisons in 2011
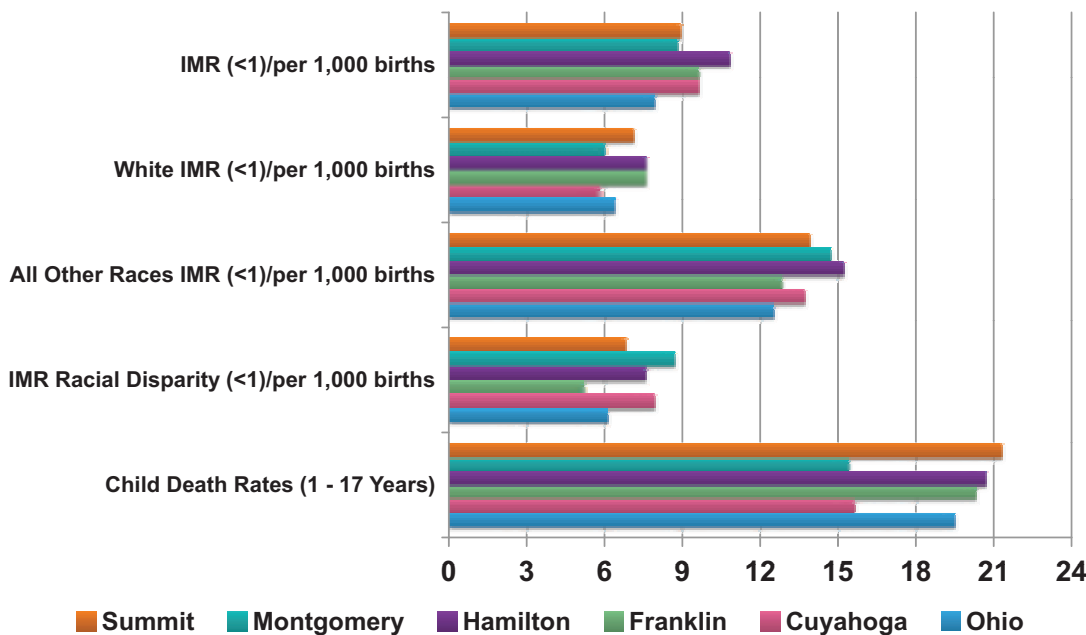
[5] Center for Public Health Statistics and Informatics, Ohio Department of Health. 2011 Infant and child mortality by county (accessed May 29, 2013). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

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

There was another reduction in the racial disparity between white and all other race children with a ratio of 2.0 in 2012, down 13% from 2.3 in 2011 (**Figure 3**). The ratio of 2.0 ties 2004 for the lowest racial disparity ratio in the last ten years. The sober truth is minority children are still twice as likely to die as white children, but the ratio has decreased by 44% from the peak in 2008 and decreased for the fourth consecutive year. For the first time since 2007, the infant death racial disparity ratio was lower than the child racial disparity ratio, but it is important to look at the disparity ratios for infants (birth to less than 1 year) and children (1 to 17 years) separately.

The racial disparity for both age groups is illustrated in **Figure 4**. In 2012 the racial disparity of infant deaths decreased for the fourth consecutive year since the peak in 2008 and was the lowest ratio in the last ten years. This is due to the lowest IMR in the last ten years to infants of all

Figure 3 Child Death Rates by Race (age 0-17)
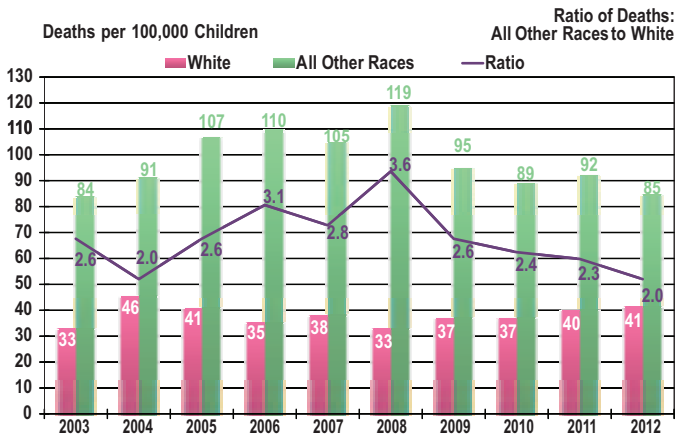
Figure 4 Racial Disparity Ratios

Rates for 2012 infants are estimates only.
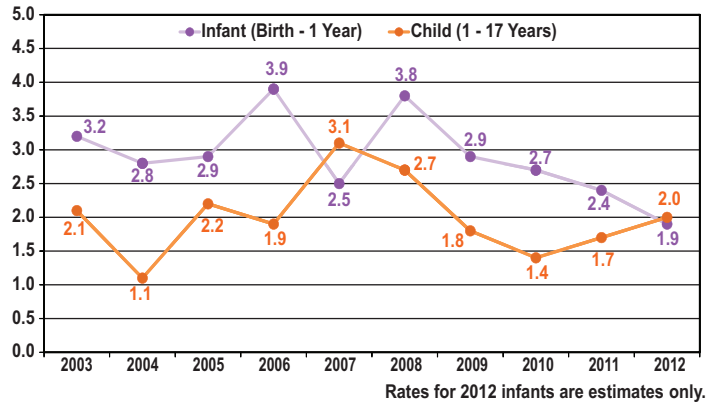
other races as well as the tied highest IMR of white infants in the last ten years (refer to **Table 15**). The preliminary infant death racial disparity ratio in the US for 2011 is 2.2,[6] which is the newest data available. While the decrease in infant disparity over the last four years is encouraging, we must improve to ensure that every child has an equal chance to reach their first birthday.

The graph also shows that for the first time since 2008 two minority children died for every one white child. The increase in the child racial disparity ratio from 1.7 in 2011 to 2.0 in 2012 was due to an increase in the number of deaths to children of all other races from 26 in 2011 to 31 in 2012. More than one-third (39%) of all minority children ages 1 to 17 who died in 2012 died from homicide while only 11% of white children died from the same manner.

As noted in previous reports, poverty and race have a tremendous impact on health outcomes in the US. Map 1 clearly illustrates the link between poverty and child death. Child deaths are clustered in areas where there are higher percentages of persons living below the poverty level. Additionally, **Map 2** 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 2. Wide-ranging political, socioeconomic, and discriminatory forces coupled with spatial patterns of industrialization and development have segregated people of color, particularly African Americans, into communities with some of the highest indices of urban

[6] Hoyert DL and Xu JQ. Deaths: Preliminary data for 2011. National vital statistics reports; vol 61, no 6. Hyattsville, MD: National Center for Health Statistics. 2013.

Map 2

Distribution of Poverty and Race for Child Fatalities Cuyahoga County, Ohio (2003-2012)
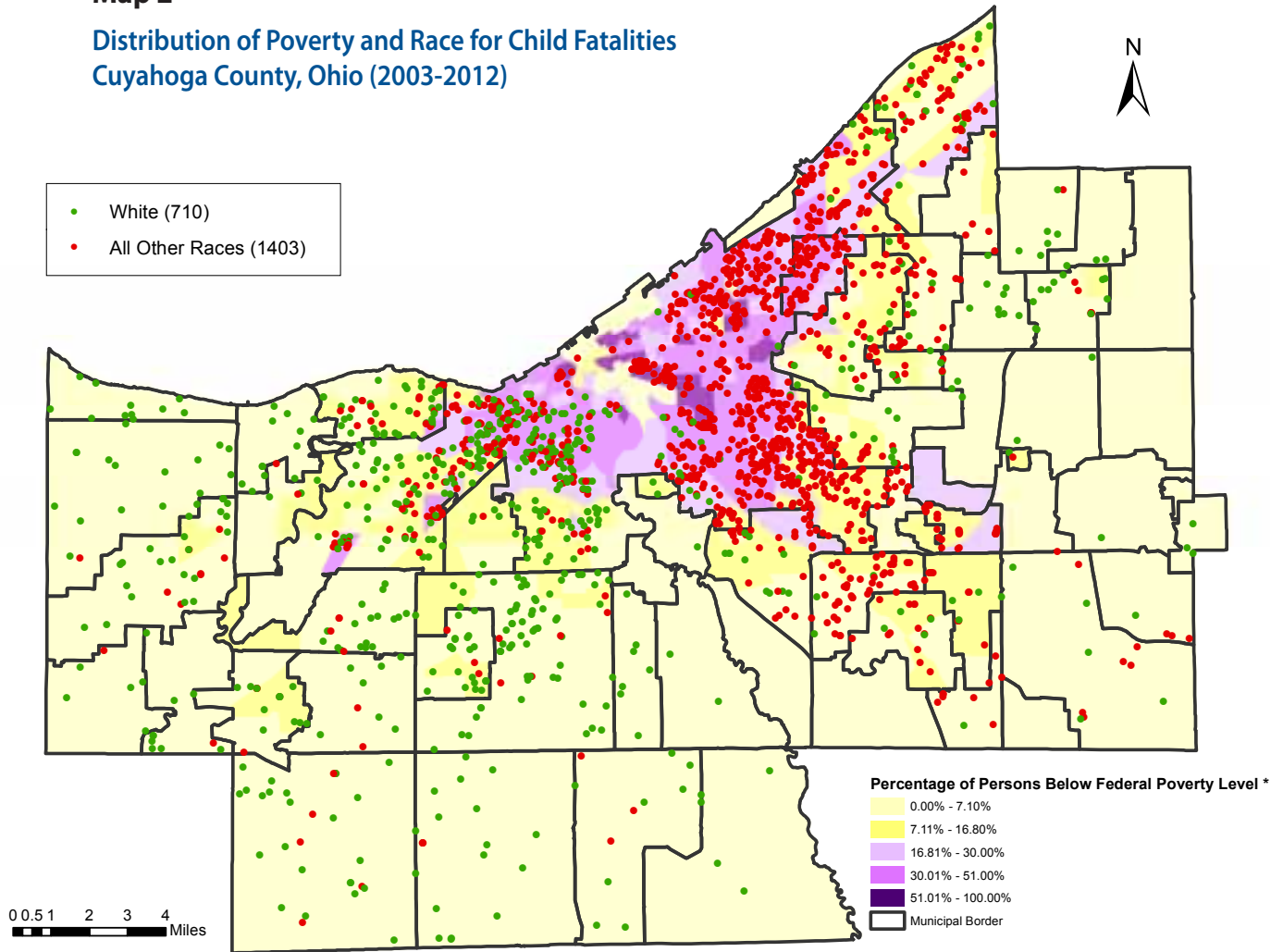
N

White (710)

All Other Races (1403)

Percentage of Persons Below Federal Poverty Level *

0.00% - 7.10%
7.11% - 16.80%
16.81% - 30.00%
30.01% - 51.00%
51.01% - 100.00%
Municipal Border

0 0.5 1   2   3   4
Miles

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

poverty and material deprivation.[7] Many of the segregated communities created in the late nineteenth century and early twentieth century were on the east side of the Cuyahoga River, which is currently the largest portion of Cuyahoga County that has at least 30% of people living in poverty.

This historical and current trend supports the idea of where one lives and works plays a larger role in one's health than their DNA. This idea of inequities based on economic, social, and political factors is called social determinants of health. When we think about social determinants of health, we must consider upstream and downstream effects. Upstream effects such as racism, housing, poverty, education, and employment are at the root of the positive or negative downstream effects noted in society. Downstream effects are typically medical or social issues such as chronic health,

income distribution, obesity, and infant mortality. If a community has a high infant mortality, for example, then it is often due to inequities in upstream effects such as poverty, education, and housing.

Cuyahoga County in conjunction with the city of Cleveland is working with the Ohio Department of Health and CityMatCH in the Ohio Equity Institute (OEI) to improve birth outcomes. The OEI has nine urban cities and/or counties involved to learn strategies to improve upstream and downstream effects to create equity among all citizens in our jurisdiction and increase the number of infants that get to celebrate their first birthday. In short, we must be proactive, collaborative, inclusive, and deliberate as we advance the use of a social-determinants approach to reducing health inequities among and between populations.[8]

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[7] Morello-Frosch R and Shenassa ED. The environmental "riskscape" and social inequality: Implications for explaining maternal and child health disparities. (2006). *Environmental Health Perspectives*; 114(8): 1150-1153.

[8] Satcher D. Include a social determinants of health approach to reduce health inequities. (2010). *Public Health Reports*; 125(supp 4): 6-7.

Infant mortality rate is the lowest since 2003.

There was a significant decrease in infant mortality in 2012 and it was the lowest rate since 2003 (**Figure 5**). The 2012 IMR estimate of 8.7 deaths per 1,000 births[9] is based on 129 infant deaths among 14,757 live births according to preliminary data received from the Ohio Department of Health. Our local IMR of 8.7 remains significantly higher than the Ohio rate of 7.5 in 2012[10] and the estimated US rate of 6.1 for 2011[11] (most recent data available). In order to match the Ohio infant death rate, we need the survival of more than one baby for every seven infants who died.

Figure 4 shows the large racial disparity of infant deaths although we have made progress in this area. We have improved the racial disparity ratio by 50% from 3.8 in 2008 to 1.9 in 2012. In Figure 5 the IMR of 11.6 for all other races is the lowest rate in the last ten years and continues to trend lower for a fourth consecutive year. Since 2008, when the all other races IMR was 17.9, the rate has dropped by 35%. The white IMR has increased 28% during the same time period, but the 2012 white IMR of 6.0 matches the Healthy People 2020 goal for overall IMR for the United States.[12]

The most frequent causes of infant death continued to be prematurity (75), birth defects (25), and sleep related deaths (18) – see Table 2. The top three causes accounted for 91% of all infant deaths, which is lower than in 2011 (93%) but is equal to the ten-year average. The following sections will discuss two major threats to any infant's survival in Cuyahoga County: prematurity and unsafe sleep environment.

Figure 5

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

Rates for 2012 are estimates only.
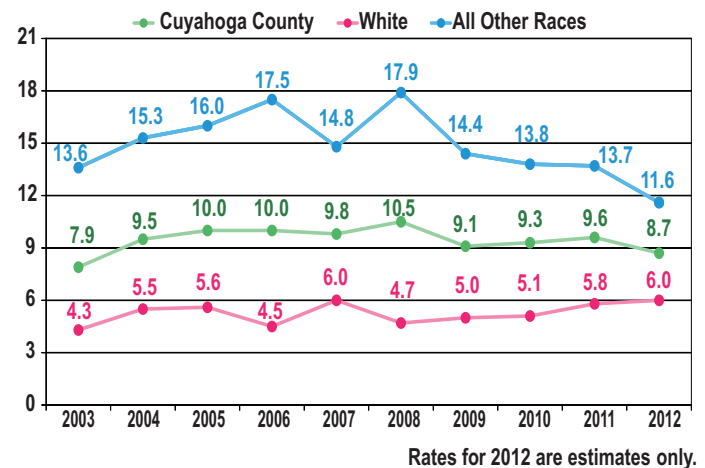
[9] Data on 2012 births are estimates only. The estimates are derived from unconfirmed delivery hospital data and historical patterns of geographic and racial distributions. Past experience indicates that the estimation technique used is quite accurate and provides a reasonable projection well in advance of the availability of state data for confirmed rates. Center for Public Health Statistics and Informatics, Ohio Department of Health (accessed June 3, 2013). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

[10] James A. "Infant mortality and the community." Unpublished preliminary data presented at Every Baby Matters! Infant Mortality Summit, Akron, OH, June 2013.

[11] MacDorman MF, Hoyert DL, and Mathews TJ. Recent declines in infant mortality in the United States, 2005–2011. National center for health statistics data brief; no 120. Hyattsville, MD: National Center for Health Statistics. 2013.

[12] 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, 2013).

Prematurity accounts for 58% of infant deaths and 42% of overall child deaths in 2012.

In 2012, 75 infants died due to prematurity, accounting for 58% of the infant deaths (**Figure 6**). The 2012 cause-specific IMR for prematurity is 5.1 deaths per 1,000 live births.[13] Prematurity remains the single leading cause of death for children of all ages in Cuyahoga County (42% of the total).

14.1%.[14] The state of Ohio rate remained stable, as the 2009 rate is equal to the 2012 estimated rate of 12.3%,[15] and the US rate decreased from 12.2% in 2009 to 11.7% in 2011,[16] the most current data available. Although the Cuyahoga County preterm birth rate decreased, we continue to have a higher rate than the state and the nation.

Figure 6

The Impact of Prematurity on Child Deaths in 2012

Distribution of Deaths by Age Group

Causes of Infant Deaths

- 1 - 9 Years 16%
- 10 - 17 Years 12%
- Infants 72%
- 9%
- 14%
- 19%
- 58%

- **Other Causes of Death** (green)
- **Sleep Related Deaths** (purple)
- **Birth Defects** (teal)
- **Prematurity** (orange)

The impact of prematurity and racial disparity is illustrated in **Figure 7**. In 2012, infants of all other races were more than twice as likely to die due to prematurity as white infants (this was calculated by dividing the prematurity infant death rate among all other races by the prematurity infant death rate among whites). The good news is that the all other race prematurity death rate of 7.2 is the lowest rate in the last 15 years. Prematurity deaths for all other races have decreased by 40% since the 2008 rate of 12.1; however, the white prematurity rate of 3.1 is the second highest in the last ten years.

The 2012 prematurity IMR of 5.1 is lower than in 2011 when it was 5.3 per 1,000 live births. This is the lowest prematurity IMR in the last nine years (**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. Cuyahoga County's preterm birth rate went from 14.3% in 2009 to a 2012 preliminary rate of

Figure 7

Rates of Infant Death Due to Prematurity by Race

Deaths Due to Prematurity per 1,000 Live Births

White — All Other Races

All Other Races: 7.5 (2003), 10.1 (2004), 10.8 (2005), 12.7 (2006), 10.4 (2007), 12.1 (2008), 8.8 (2009), 8.6 (2010), 8.6 (2011), 7.2 (2012)

White: 2.5, 2.4, 3.5, 1.7, 2.4, 1.6, 3.0, 2.1, 2.3, 3.1

Rates for 2012 are estimates only.
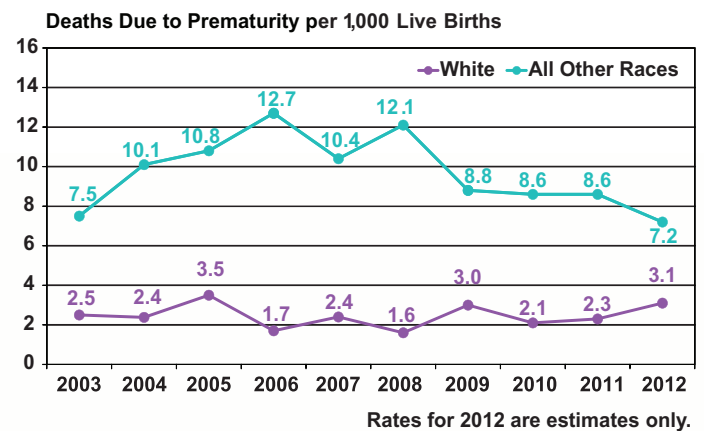
[13] (Center for Public Health Statistics and Informatics, June 3, 2013)

[14] Ibid.

[15] Ibid.

[16] Martin JA, Hamilton BE, Ventura SJ, Osterman MJK, and Matthews TJ. Births: Final data for 2011. National vital statistics reports; vol 62, no 1. Hyattsville, MD: National Center for Health Statistics. 2013.

Table 3

Common Risk Factors Associated with 76 Deaths Due to Prematurity

Risk Factor	#	%
Poverty	60	78.9
Premature rupture of membranes (PROM)	35	46.1
Missed appointments	28	36.8
Previous preterm delivery	25	32.9
Parental tobacco use	24	31.6
Intrauterine tobacco exposure	24	31.6
Sexually transmitted infections - past history	22	28.9
Maternal history of mental health problems	22	28.9
Mom with a chronic health condition	21	27.6
Placental abruption	20	26.3
Multiple gestation	13	17.1
No prenatal care	12	15.8
Illicit drug abuse	12	15.8
Previous fetal loss	12	15.8
Intrauterine alcohol exposure	11	14.5
Incompetent cervix	11	14.5
Parental education less than high school	11	14.5
Parental alcohol use	11	14.5
Sexually transmitted infections - during pregnancy	10	13.2
History of domestic violence	10	13.2
At-risk maternal age	8	10.5

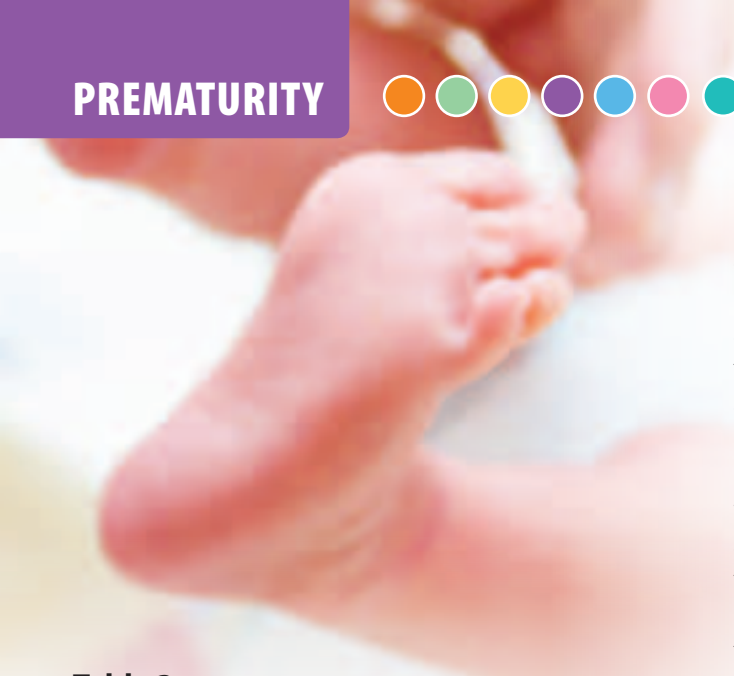Poverty remained the most frequent risk factor associated with prematurity, with almost 80% of the cases having one or more economic risk indicators. This was a 10% increase over 2011. Premature rupture of membranes was the second most common risk factor among this group and occurred in 46% of the prematurity related fatalities. More than one in three (37%) missed medical appointments, and one in three had a previous preterm delivery (33%). The risk factor "previous preterm delivery" had the largest year-over-year increase (48%). Parents who used tobacco and intrauterine tobacco exposure were tied for the fifth most common risk factor. Incompetent cervix and at-risk maternal age were two risk factors that decreased by more than 50% from 2011 to 2012. Mom with a chronic health condition, sexually transmitted infections during pregnancy, and previous fetal loss also saw declines greater than 20% in 2012. The risk factor maternal chronic health condition occurred in 28% of cases. This was the first year that we distinguished between the types of chronic diseases, which included obesity, diabetes, and hypertension. Obesity was the leading risk factor in this category and impacted one in five mothers whose infants died from prematurity. The most significant risk factors associated with prematurity are summarized in **Table 3**.

Of the 76 child deaths due to prematurity, 38 (50%) were male and 53 (70%) were of a minority race. One infant's gender could not be identified. Cleveland residents comprised 62% of the child deaths due to prematurity, 28% were from the first ring suburbs, while only 10% were residents in the outer ring suburbs. Almost three out of four (72%) were born so early that they only lived for twelve hours or less, and only 10 (13%) survived more than seven days. Furthermore, 58 (76%) were born prior to 24 weeks, usually considered to be the age of viability,[17] while another 6 were born at 24 weeks. The remaining 12 (16%) were born between the gestational ages of 24 and 36 weeks, but only 1 infant was born after week 28.

Prematurity also impacts the financial stability of our health care systems. The average cost of a pregnancy and delivery of a preterm birth is almost $65,000 per infant, compared to $15,000 for those with no complications.[18] With over 2,000 preterm births in 2012 the total approximate cost for supporting Cuyahoga County mothers for these preterm births was over $130,000,000. It is important to note that almost one in five (18%) African American babies born in 2012 were preterm and over 70% of all African American deliveries were paid by Medicaid.[19] This demonstrates the significance of poverty as a social determinant of health that affects the well-being of our African American population. Lowering the African American preterm birth rate would cause a significant savings to the Medicaid system.

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

[18] Reinberg S. Tiniest babies carry biggest costs: Businesses urged to help lower health costs and prevent preterm births. (2009). *U.S. News & World Report*. Available online at http://health.usnews.com/health-news/family-health/womens-health/articles/2009/03/17/tiniest-babies-carry-biggest-costs (accessed July 16, 2012).

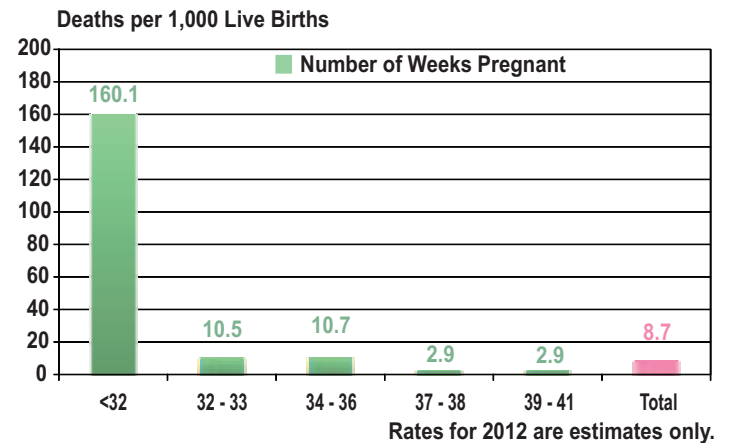[19] (Center for Public Health Statistics and Informatics, June 3, 2013)

Figure 8 illustrates the 2012 infant mortality rate by gestational age (stated in number of weeks). The graph shows that almost one in six infants born before week 32 died. Any delivery before 32 weeks is considered a very preterm birth. Our rate of 160.1 is lower than the national death rate of 172.2 infant deaths for every 1,000 live births in 2009 (the most recent data available).[20] Cuyahoga County's IMR for 32-33 weeks (10.5) is significantly lower than the national rate of 16.1, but the national IMR for 34-36 weeks of 7.1 is significantly lower than our rate of 10.7. The infant mortality rate for full term infants, those born at least at 37 weeks of gestation, is 2.9 per 1,000 live births. Infants in Cuyahoga County are more than 55 times more likely to survive if they are a full term delivery than those born less than 32 weeks!

One way to help prevent premature births is the use of progesterone (the brand name is Makena or the more commonly used name is 17P). Since 2003, 17P has been used by women who are pregnant with one baby and had a previous preterm delivery. Progesterone is a hormone that helps the uterus grow in the early part of the pregnancy and keeps it from contracting.[21] A progesterone injection is given to the pregnant mother weekly starting at 16 to 20 weeks until week 37 when the birth would no longer be considered preterm. Progesterone gel can also be used by women who have a diagnosis of a short cervix, which can be found by an ultrasound. 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. Progesterone gel is used daily beginning at 20 to 23 weeks. Progesterone may not help women who are pregnant with twins, triplets, or more or for previous preterm births that weren't spontaneous.

Figure 8

2012 Infant Mortality Rate by Gestational Age

Deaths per 1,000 Live Births. Number of Weeks Pregnant. <32: 160.1; 32-33: 10.5; 34-36: 10.7; 37-38: 2.9; 39-41: 2.9; Total: 8.7. Rates for 2012 are estimates only.

Several organizations in Cuyahoga County are fortunate to be a part of the new Prematurity Research Center – Ohio Collaborative funded by the March of Dimes to "solve the mystery of premature birth." This collaboration with many partners in Ohio also includes Case Western Reserve University, University Hospitals MacDonald Women's Hospital, Rainbow Babies & Children's Hospital, and MetroHealth System. The focus of the research includes genetics, evolution and molecular development of pregnancy, progesterone signaling in pregnancy, and the sociobiology of racial disparities in preterm births. This is an exciting opportunity to understand how biogenetics and social determinants of health impact prematurity.

[20] Mathews TJ and MacDorman MF. Infant mortality statistics from the 2009 period linked birth/infant death data set. National vital statistics reports; vol 61, no 8. Hyattsville, MD: National Center for Health Statistics. 2013.

[21] March of Dimes. Progesterone treatment to prevent preterm birth. Available online at http://www.marchofdimes.com/pregnancy/progesterone-treatment-to-prevent-preterm-birth.aspx (accessed July 23, 2013).

Fewest number of sleep related deaths in the last six 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.

Figure 9　**Sleep Related Deaths by Type**
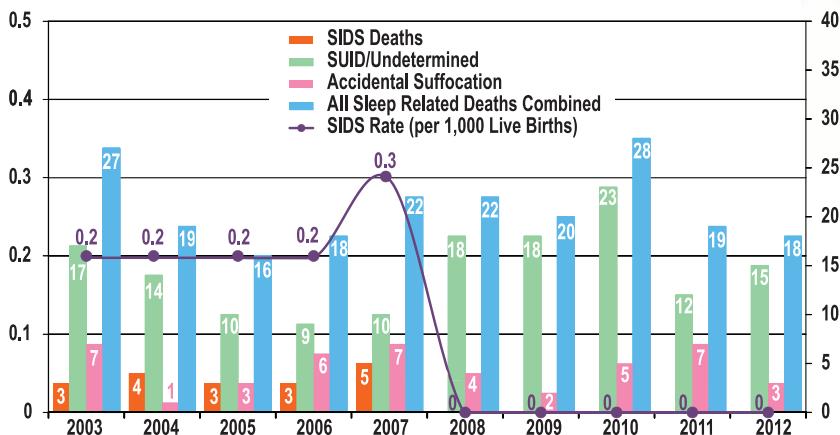
Table 4　**Number of Sleep Related Deaths by Type and Presence of Risk Factors**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
SIDS	3	4	3	3	5	0	0	0	0	0	**18**
SUID/Undetermined	17	14	10	9	10	18	18	23	12	15	**146**
Accidental Suffocation	7	1	3	6	7	4	2	5	7	3	**45**
Total Number of Deaths	**27**	**19**	**16**	**18**	**22**	**22**	**20**	**28**	**19**	**18**	**209**
Risk Factors Present											
Bedsharing at time of death	13	9	10	12	12	11	11	18	9	13	**118**
Hazards in sleep area	23	12	14	14	20	22	20	28	19	18	**190**
Total Number of Risk Factors	**36**	**21**	**24**	**26**	**32**	**33**	**31**	**46**	**28**	**31**	**308**

In Cuyahoga County, there were 18 sleep related deaths in 2012, which was a 36% decrease from 2010 and one fewer death than 2011. The total number of sleep related deaths was tied for the fewest in the last seven years and tied for the second lowest total in the last ten years. Accidental suffocation was associated with 3 deaths. This accounted for almost 17% of all sleep related deaths and the third lowest ratio in the past ten years. Fifteen were ruled undetermined due to potential hazards in the sleep environment. Of the 18 sleep related deaths, 13 of these involved bedsharing, which is the highest ratio in the last 15 years. All 18 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 fifth straight year, no SIDS deaths occurred in Cuyahoga County. In other words a healthy baby has not died that slept alone, on its back, and in a bare naked crib in the last five 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 alone 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.

Map 3 illustrates the distribution of these three types of death 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 at or below the poverty level.

Map 3

Distribution of Poverty and Sleep Related Infant Deaths Cuyahoga County, Ohio (2003-2012)
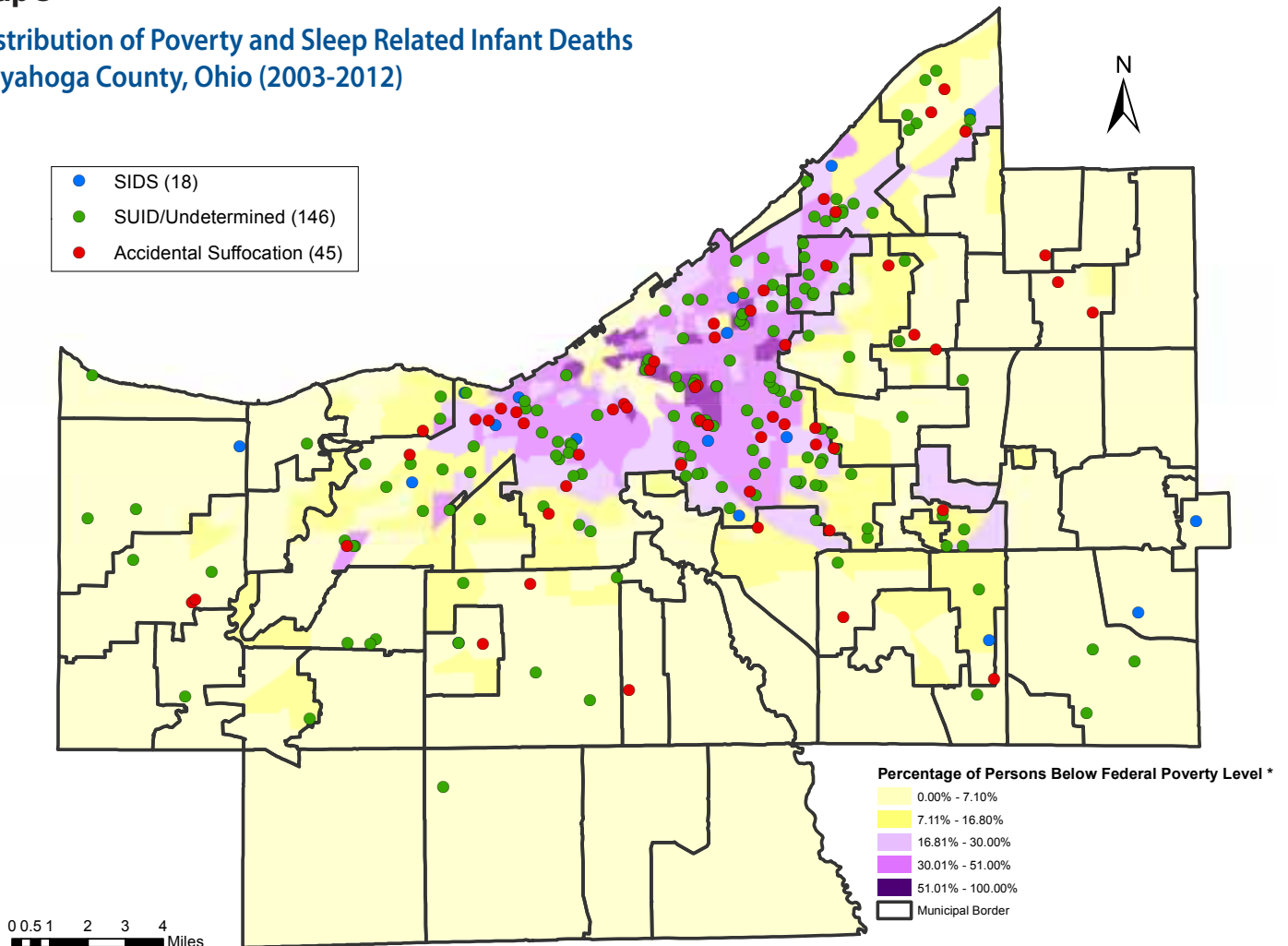
Legend:
- SIDS (18)
- SUID/Undetermined (146)
- Accidental Suffocation (45)

Percentage of Persons Below Federal Poverty Level *
- 0.00% - 7.10%
- 7.11% - 16.80%
- 16.81% - 30.00%
- 30.01% - 51.00%
- 51.01% - 100.00%
- Municipal Border

0 0.5 1   2   3   4 Miles

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

Table 5
Sleep Related Death Demographics (n=163)

	2005	2006	2007	2008	2009	2010	2011	2012	Total
Neighborhood									
Cleveland	12	9	13	15	14	18	11	12	**104**
First Ring	3	3	6	6	3	7	6	4	**38**
Outer Ring	1	6	3	1	3	3	2	2	**21**
Infant's Gender									
Female	9	9	13	13	9	11	6	6	**76**
Male	7	9	9	9	11	17	13	12	**87**
Mom's Age									
< 20 Years	2	4	3	7	3	5	1	3	**28**
20 - 29 Years	10	9	14	12	12	15	12	11	**95**
30 - 39 Years	1	4	2	2	4	7	5	4	**29**
≥ 40 Years	0	1	0	0	1	0	0	0	**2**
Unknown	3	0	3	1	0	1	1	0	**9**
Infant's Race									
All Other Races	12	10	10	16	16	21	12	14	**111**
White	4	8	12	6	4	7	7	4	**52**
Sleep Position[1]									
Back	9	10	14	13	10	18	9	12	**95**
Stomach	4	3	2	7	5	7	6	4	**38**
Side	3	3	6	2	5	3	4	2	**28**

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

Table 5 shows the demographics for the 163 infants who have died in a sleep environment in the last eight years. Overall, 64% of all sleep related deaths occurred in Cleveland (104) with 23% in the first ring suburbs (38) and 13% in the outer ring suburbs (21). In 2012 two out of three sleep related deaths occurred in the city of Cleveland, which is the highest percentage since 2009. 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. Almost four out of five infants (78%) who died from sleep related issues were born to mothers under the age of 30. This is important to note because women less than 30 years of age in Cuyahoga County accounted for 61% of delivering mothers.[22] Less than 50% of infants born in 2012 were of all other races,[23] but 78% of sleep related deaths occurred to minority infants, which represents the second highest percentage in the last eight years. In 2012 two out of three infants who died were male, which is the second highest ratio in the last eight years. It was encouraging to note that two out of three infants were placed on their backs and this was the highest percentage in the past eight years. This 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 infants in our county.

Since the city of Cleveland, when compared to its suburbs, had the highest percentage of sleep related deaths in the last eight years, we thought it was important to look at the neighborhoods where the majority of these deaths occurred. **Map 4** shows the distribution of sleep related deaths in the 36 Cleveland neighborhoods over the past eight years, with an average of 13 infants dying per year. The three neighborhoods in red (Detroit Shoreway, Clark-Fulton, and Central) are averaging approximately one sleep related death per year. The southeast quadrant has seven neighborhoods (North Broadway, South Broadway, Union-Miles Park, Mt. Pleasant, Woodland Hills, Kinsman, and Corlett) where four or five sleep related deaths occurred, or an average of one death every two years. Over 50% of all sleep related deaths in the city of Cleveland in the last eight years occurred in these 10 neighborhoods.

[22] (Center for Public Health Statistics and Informatics, June 3, 2013)
[23] Ibid.

Map 4

Distribution of Sleep Related Infant Deaths by Neighborhood Cleveland, Ohio (2005-2012)

N

Sleep Related Infant Deaths (n=104)

▢	0 - 1
▢	2 - 3
▢	4
▢	5
▢	6 - 9

North Collinwood
South Collinwood
Euclid-Green
Forest Hills
Glenville
St. Clair-Superior
Goodrich-Kirtland Park
Hough
University
Downtown
Central
Fairfax
Ohio City/Near West Side
Industrial Valley
Woodland Hills
Buckeye-Shaker
Edgewater
Detroit-Shoreway
Kinsman
Cudell
Tremont
North Broadway
West Boulevard
Stockyards
Clark-Fulton
Mt. Pleasant
Jefferson
Brooklyn Centre
Union-Miles Park
South Broadway
Corlett
Kamm's Corners
Lee-Miles
Old Brooklyn
Puritas-Longmead
Riverside

0   0.75   1.5   3 Miles

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 at 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 need to use as many forums as possible to get the message out to the maximum number of people in order to reduce the number of sleep related deaths.

Keep your baby safe. It's as simple as A, B, C.
I sleep... **A**lone
on my **B**ack
in a bare naked **C**rib

Figure 10
2005-2012 Sleep Related Deaths by Age of Infant (n=163)
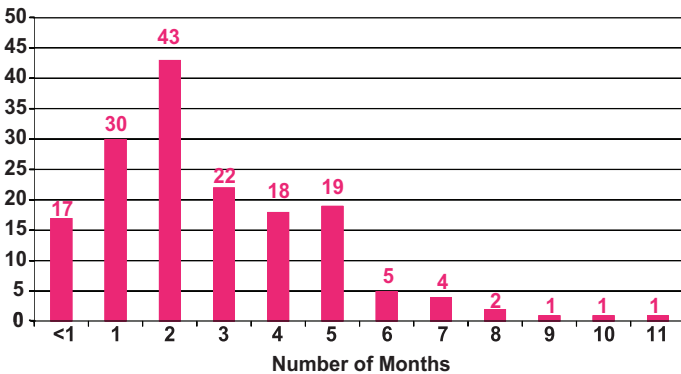
Table 6
Sleep Related Deaths by Age and Year

	2005	2006	2007	2008	2009	2010	2011	2012	Total
<1 Month	1	1	2	5	3	2	2	1	**17**
1 Month	4	4	4	4	3	9	1	1	**30**
2 Months	3	3	8	8	6	5	4	6	**43**
3 Months	3	1	2	1	0	7	6	2	**22**
4 Months	1	5	1	2	2	1	3	3	**18**
5 Months	4	2	4	0	2	2	1	4	**19**
6 Months	0	2	1	1	0	0	1	0	**5**
7 Months	0	0	0	0	3	1	0	0	**4**
8 Months	0	0	0	1	1	0	0	0	**2**
9 Months	0	0	0	0	0	0	0	1	**1**
10 Months	0	0	0	0	0	0	1	0	**1**
11 Months	0	0	0	0	0	1	0	0	**1**
Total	16	18	22	22	20	28	19	18	**163**

Figure 11
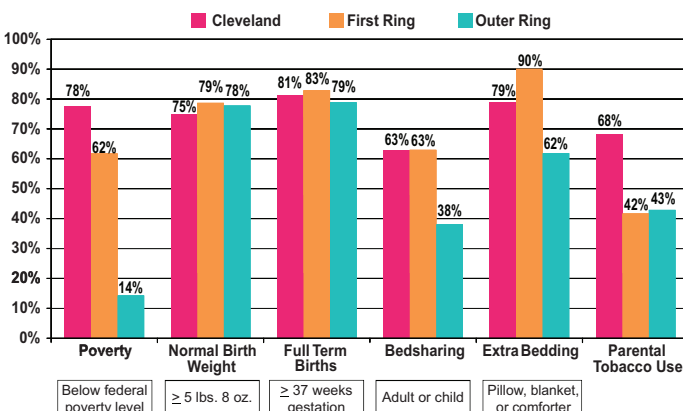**2005-2012 Sleep Related Factors by Neighborhood**

Figure 10 graphically shows that almost 95% or 19 in 20 sleep related deaths occurred within the first six months of the infants' lives. Almost seven in ten (69%) of all sleep related deaths occurred while the infants were 3 months old or younger, with the highest number of infants dying in their second month of life.

Table 6 shows the number of sleep related deaths per year by age of the infant at the time of death. For the fifth consecutive year, we had an infant who was older than 6 months old die in a sleep related environment. We had 9 sleep related deaths that occurred when the infants were 7-11 months old from 2008 to 2012. No such deaths occurred between 2005 through 2007. In 2012, 7 deaths were to infants 4-5 months old, which is tied for the highest total in that age group in the last eight years. In 2012 there were 2 sleep related deaths for infants under 2 months old, which is the lowest occurrence in that age group in the last eight years. 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, or environmental risk factors that may contribute to an infant's death. From 2005 to 2012 more than seven in ten Cleveland infants were born into poverty while only one in seven outer ring infants had similar economic hardships. In 2012, 17 of the 18 infants lived below the federal poverty level. Medical factors were similar between locations in Cuyahoga County from 2005 to 2012 as more than four in five infants (81%) were full term babies (37 weeks or later) and more than three in four infants (76%) 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. Almost 40% of outer ring suburban infants who died were sleeping with another person, while over 60% of Cleveland and first ring suburban infants slept with someone else when they died in their sleep. Nine out of ten first ring infants and almost 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 2012 every infant had at least one piece of extra bedding in their sleep environment. Almost 70% of Cleveland infants who died in their sleep had at least one parent who smoked, while more than two in five first ring and 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.

Third fewest deaths in this age group in the last 20 years.

Fifty children aged 1 to 17 died in 2012 representing a 16% increase in deaths in this age group over the previous year and a 32% increase over two 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 2012 three-year average was only 44, which is a 37% decrease.

In 2012, 26 medical related deaths accounted for 52% of all fatalities for 1- to 17-year-olds, which is the highest total number of deaths in this category in the last three years. The causes of all medical related deaths in this age group were birth defects (10), other medical causes (10), cancer (4), infections (1), and prematurity (1) (Table 2). Child deaths from birth defects and other medical causes increased in 2012, prematurity and cancer deaths remained the same, and child deaths from infections and other perinatal complications decreased.

Twenty-four injury related causes accounted for 48% of deaths in this age group. These injury related deaths were attributed to: homicide (13), motor vehicle accident (4), suicide (4), drowning (1), undetermined (1), and fire (1) (Table 2). The number of children in this age group who died as a result of homicide, motor vehicle accident, and suicide increased and the number of deaths due to unintentional injury, drowning, poisoning, and undetermined injury decreased. The number of fire related deaths remained the same.

Figure 12

Total Child Deaths per Year (age 1-17)

Number of Deaths

Year	Deaths
2003	53
2004	66
2005	75
2006	67
2007	68
2008	69
2009	72
2010	38
2011	43
2012	50
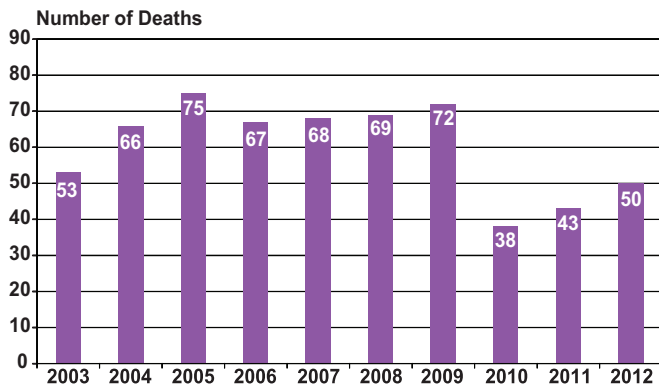
Eight fewer unintentional injury deaths occur in 2012.

In 2012, 10 children of all ages died as a result of unintentional injuries, which is a 44% decrease compared to 2011. Of the 10 children, 7 were male and 3 were female and the race of these children was evenly split (5 white and 5 all other races). These 10 deaths include: 4 motor vehicle accidents (MVAs), 3 accidental suffocations, 2 drownings, and 1 fire. All 3 accidental suffocation deaths were related to unsafe sleep environments (infants were found with face in soft bedding and/or pillows). One MVA was ruled as a homicide and not included. **Figure 13** provides a graphic illustration of this breakdown.

Case reviews revealed that the most common risk factors identified in these deaths were poverty (5), drug and/or alcohol use by a parent (4), history of reports for suspected domestic violence or child abuse (4), inadequate supervision (4), history of maternal mental illness (2), and parental criminal history (2).

[24] Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). 5 Leading Causes of Unintentional Injury Deaths Reports for ages 1-17, National and Regional, 1999-2010. Available online at http://www.cdc.gov/injury/wisqars/index.html (accessed July 17, 2013).

[25] Ibid.

[26] (US Census Bureau, 2010 Census of population and housing, July 15, 2013)

[27] Ibid.

Figure 13

Unintentional Injury Deaths in Cuyahoga County (2012)
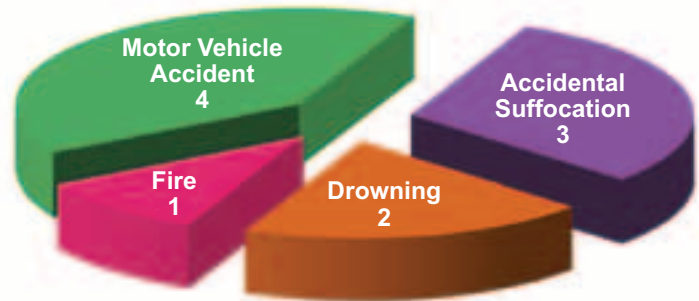
Figure 14 gives a historical perspective on the age distribution of traffic related fatalities. This year is tied with three other years for the second lowest number of MVAs. There were 3 deaths in the 1-9 years group, which is tied with 2003 for the most number of deaths in this age group. One death occurred in the 10-17 years group, which is tied with 2007 for the fewest number of deaths for the oldest age group. For the third consecutive year, no infants died in a motor vehicle accident.

In the United States in 2010, unintentional injury was the number one cause of death for children in the 1-17 years group (most recent data available). Motor vehicle accident related deaths account for 48% of all unintentional injury deaths in this age group.[24] In 2010 (the most recent data available), deaths from motor vehicle accidents among children ages 0-17 years in the United States was 3.18 per 100,000 children.[25, 26] Cuyahoga County's 2012 rate is less than half the national rate at 1.37 per 100,000 children, and our 2011 rate is almost one-third the US rate at 1.03.[27]

Figure 14

Total Motor Vehicle Deaths by Age Group per Year
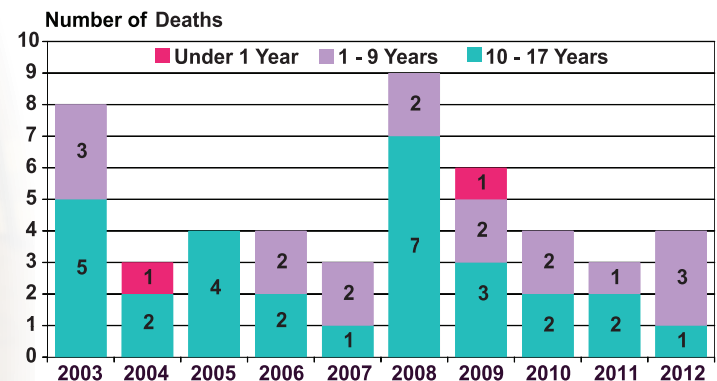
Of the 4 motor vehicle deaths, 2 were passengers, 1 was a pedestrian, and 1 was an unintentional entanglement. One passenger was riding on a moped/minibike that didn't stop and was hit by oncoming traffic. The other passenger was sitting in the backseat and was rear-ended as the victim's parent was driving in reverse on the highway in an attempt to get back to an exit ramp. One pedestrian darted out into the street and was then accidentally hit. The other accident occurred as the victim was in a family dispute between the victim's parents and the victim's partner. The victim chased after her boyfriend, grabbed on to the car door, became entangled, and was inadvertently dragged down the street. This is the fifth consecutive year in which at least one pedestrian died who was unintentionally hit by a vehicle.

Figure 15 illustrates the number of drowning deaths over the past decade. Since 2003, 38 children drowned in Cuyahoga County. In 2012, there were 2 children who drowned. This is tied for the second lowest number of drowning deaths in the last ten years. Lack of child supervision was identified in both cases and 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 2010 in the United States[28] (most recent data available) and this is also true in Cuyahoga County for 2012.

As shown in **Figure 16**, there was 1 fire related death in 2012, which brings the total number of accidental fire deaths to 18 for the last ten years. Fire is the third leading cause of unintentional deaths in our county for 2012 and in the United States in 2010 for 1- to 17-year-olds (most recent data available).[29] A fire alarm was present and worked on the main floor but no detector was on the floor where the fire originated. The adults in the house assumed the alarm sounding was due to an adult cooking and not a real fire that was accidentally set by the victim. It is important to ensure the following: have a working smoke detector on every floor, investigate that a fire doesn't exist in the house when an alarm goes off, and appropriately supervise children at all times.

[28] (CDC, Unintentional Injury Deaths Reports for ages 1-17, July 17, 2013)

[29] Ibid.

Figure 15

Total Drowning Deaths per Year

Figure 16

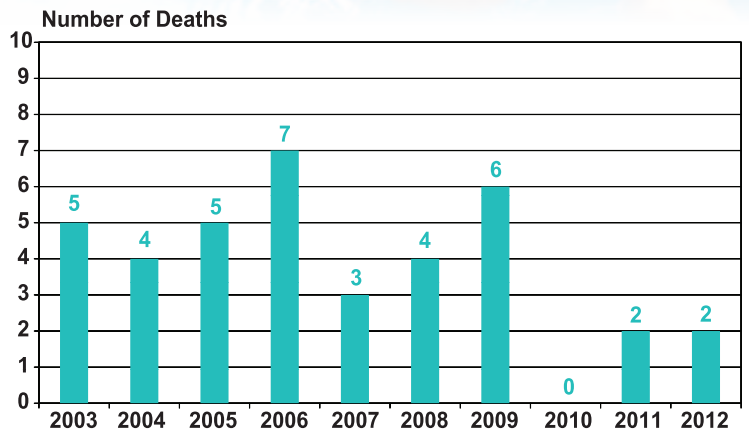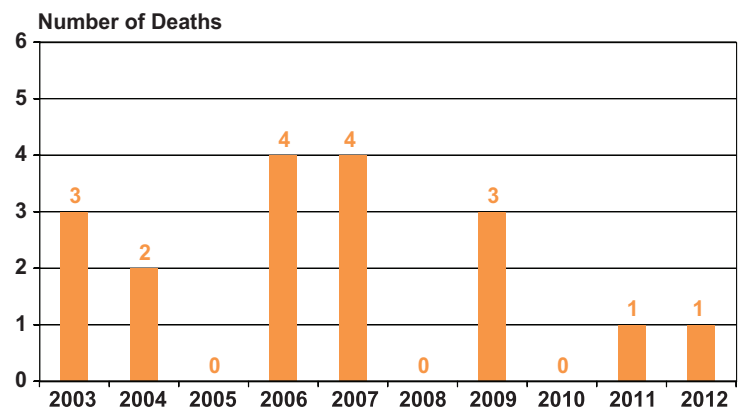**Total Accidental Fire Deaths per Year**

Total number of suicides and homicides highest since 2009.

Intentional injury deaths include homicide and suicide. **Figure 17** illustrates that 1 infant, 4 children between the ages of 1 and 9, and 9 children between the ages of 10 and 17 died due to homicide in 2012. The 14 homicides in 2012 was an increase of 27% over 2011, and this number is higher than the previous nine-year average of 12.6 from 2003 to 2011. The total number of homicides in both the 1-9 years and 10-17 years age groups were three-year highs.

Figure 17 **Total Child Homicide Deaths by Age Group per Year**

Number of Deaths

■ Under 1 Year ■ 1 - 9 Years ■ 10 - 17 Years
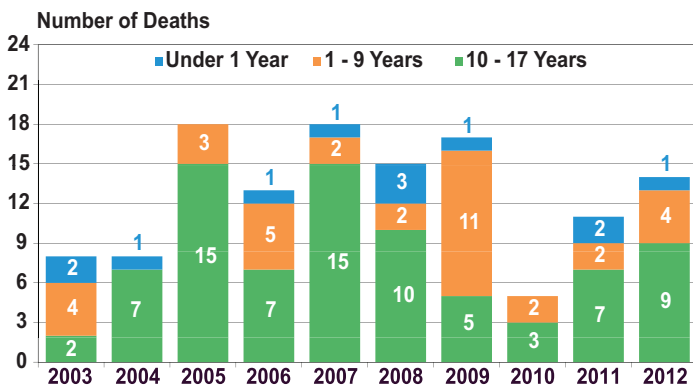
Homicide remained the fourth leading cause of death among all age groups for the second consecutive year. Typically, the majority of homicide deaths occur in the 10-17 years age group, and in 2012 almost 65% of all homicides fell into this age category making it the leading cause of death in this age group. Homicide was also the leading cause of injury related deaths among 1- to 9-year-olds for the fourth straight year and tied for leading cause of injury related deaths for infants. In the United States, homicide is the third leading cause of death for the 1-17 years and the 10-17 years age groups.[30, 31]

Among the homicide victims were 7 boys and 7 girls, with 12 of the 14 being minority children. The ages of the children were less than 1 year (1), 1 year (1), 3 years (2), 6 years (1), 10 years (4), 14 years (1), 15 years (1), 16 years (2), and 17 years (1). Seven of 9 homicides in the 10-17 years age group and 2 out of 4 homicides in the 1-9 years age group were gun related. The remaining homicides were due to physical abuse (2), motor vehicle accident (1), medical neglect (1), and physical altercation (1).

The leading risk factors associated with homicide were family history of domestic violence and parental and/or child alcohol or drug use. "At-risk child" was the second most common risk factor, while poverty and parental and/or child criminal history were the third most noted risk factors. The data suggest that a child's home life and the physical environment the child lives in 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 2012 there were 11 firearm deaths, which resulted in a tie for the second highest total in the past ten years. Nine gun related deaths were homicides and 2 were suicides. Four gunshot victims were females, 10 years old or younger, who were involved in three separate domestic violence disputes (two sisters died in the same dispute). In all three cases, the perpetrator also killed the victims' mothers, and then two committed suicide and one was killed by police. Gang related shootings killed 3 males between 15 and 17 years old and 1 female was an innocent bystander who was hit by a stray bullet during a gang shooting. Since gun access is a known risk factor in Cuyahoga County, this reinforces the need for safety awareness and the need for tighter controls to ensure that guns are removed from those involved in partner disputes. Legislation has been introduced to the state senate to require individuals who are under a domestic violence temporary protection order to hand over all guns to police officials within one day of being served.

[30] Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). 5 Leading Causes of Death Reports for ages 1-17, National and Regional, 1999-2010. Available online at http://www.cdc.gov/injury/wisqars/index.html (accessed July 17, 2013).
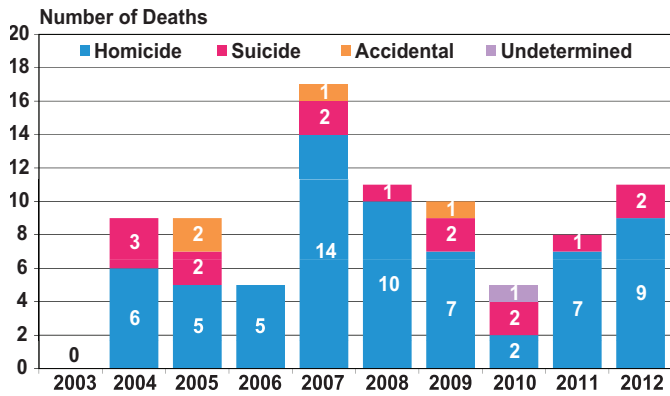
[31] Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). 5 Leading Causes of Death Reports for ages 10-17, National and Regional, 1999-2010. Available online at http://www.cdc.gov/injury/wisqars/index.html (accessed July 17, 2013).

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

Figure 19 **Total Child Suicide Deaths per Year**

There were 4 suicides in 2012, which is the highest number in the last three years and the first increase in the total number of suicides since 2008 (**Figure 19**). All completed suicides were teenagers age 13 to 17 years and 3 of them were females. The method of suicide included self-inflicted gunshot wound (2) and hanging (2). Risk factors noted in 50% of the cases include parent with substance abuse problems, victim had problems at school, and victim lived in poverty.

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[32] and the fourth leading cause of death for children ages 1 to 17 years.[33] Ninety percent of all suicides in the United States in the 10-17 years age group are completed by strangulation or firearm.[34] One in eight Cuyahoga County high school students has seriously considered attempting suicide.[35] 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 multiply it and take action if a child is being bullied, feels depressed, or mentions self-injuring behavior.

Map 5 shows the distribution of homicide and suicide over a period of ten years. In 2012, 9 of the 14 homicides (64%) and 3 of the 4 suicides were residents of Cleveland. The majority of the homicides and suicides in 2012 occurred in areas with a high density of families and individuals living below the poverty level.

[32] Ibid.

[33] (CDC, 5 Leading Causes of Death Reports for ages 1-17, July 17, 2013)

[34] (CDC, 5 Leading Causes of Death Reports for ages 10-17, July 17, 2013)

[35] Prevention Research Center for Healthy Neighborhoods. (2011). 2011 Cuyahoga County high school youth risk behavior survey report: Grades 9-12. Available online at http://www.prchn.org/Reports.aspx (accessed August 19, 2013).

Map 5

Distribution of Poverty and Child Homicide and Suicide Cuyahoga County, Ohio (2003-2012)

- Homicide (127)
- Suicide (42)

Percentage of Persons Below Federal Poverty Level *
- 0.00% - 7.10%
- 7.11% - 16.80%
- 16.81% - 30.00%
- 30.01% - 51.00%
- 51.01% - 100.00%
- Municipal Border

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

Highest rate of abuse and neglect related deaths in past eight years.

In 2012, the county rate of child abuse or neglect deaths was 3.1 per 100,000 children, which is the highest rate in the last eight years. In 2010 and 2011 (the most recent data available), the national rate for child fatalities due to abuse or neglect was 2.1 per 100,000 children.[36, 37]

In 2012, there were 9 abuse or neglect related child deaths, which ties for the highest number of deaths in this category in the last eight years (**Figure 20**). Six of the 9 cases were females and 7 of the 9 deaths were to minority children. Four of the 9 deaths were residents of Cleveland. The ages ranged from 3 months to 16 years old with 4 of the deaths occurring to children 3 years old or younger. One neglect case involved medical neglect (the child died due to pneumonia), 1 case was an MVA homicide where the child was hit by a car driven by a person who was stabbed by the child's mother, and the final case involved guardians driving the child to fight another person and the child died during the altercation. Of the 6 child abuse homicides, 4 were due to gun violence and 2 were due to blunt trauma.

The leading risk factor in deaths due to abuse or neglect was parental substance use, which was found in 7 cases (**Table 7**). Maternal or paternal history of mental illness, partner abuse, and being an at-risk child were noted in 6 cases. Five of the 9 children lived in poverty, and parental criminal history was found in 4 cases.

Figure 20   Child Deaths Due to Abuse and Neglect
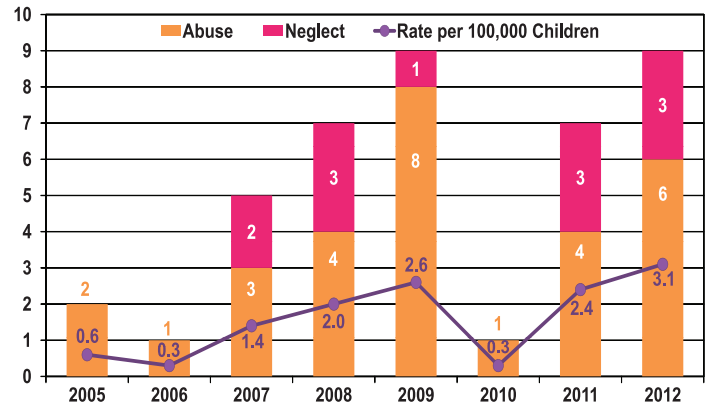
36 US Department of Health and Human Services; Administration for Children and Families; Administration on Children, Youth and Families; Children's Bureau. (2011). Child maltreatment 2010. Available online at http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#can (accessed July 11, 2013).

37 US Department of Health and Human Services; Administration for Children and Families; Administration on Children, Youth and Families; Children's Bureau. (2012). Child maltreatment 2011. Available online at http://www.acf.hhs.gov/sites/default/files/cb/cm11.pdf (accessed June 13, 2013).

Table 7   Risk Factors Associated with 9 Deaths Due to Abuse or Neglect

Risk Factor	#	%
Substance use by parent	7	77.8
Maternal or paternal history of mental illness	6	66.7
History of domestic violence	6	66.7
At-risk child	6	66.7
Poverty	5	55.6
Parental criminal history	4	44.4

In the last eight years, 41 children and infants in Cuyahoga County have died as a result of abuse or neglect. We wanted to look at the characteristics of the person responsible as well as the following risk behaviors: violence, substance abuse, and chronic or mental illness. Thirty out of the 41 perpetrators were either the father or mother of the victim and 6 others were the mother's partner. Seven out of ten people responsible were male.

[38] Doumas D, Margolin G, and John RS. The intergenerational transmission of aggression across three generations. (1994). *Journal of Family Violence;* 9(2): 157-175.

When we review the background of the people responsible, we see that over half of the perpetrators had a criminal history and more than half had a history of substance abuse (61%) (**Table 8**). Almost half (53%) had a history of child maltreatment as a perpetrator and more than one-third was the person responsible during a domestic violence dispute. Eleven had been the victims of domestic violence, and 8 were victims of maltreatment when they were children. The apparent "passing down" of child abuse and family violence is often called multigenerational trauma. In one study, aggression that occurred to males during the first generation (grandparents) was predictive of child abuse and domestic violence that occurred in the second and third generations, (children and grandchildren of the first generation).[38] Females who observed domestic violence from their parents were more likely to also be in a violent relationship. Violent behavior needs to be addressed by having children who witnessed/experienced it in the home receive treatment and support to understand the following: this behavior is unacceptable, violence is not the way to communicate and/or show love, and they are not responsible for the abuse or neglect that occurred. The Cuyahoga County Defending Childhood Initiative is a means to assist these children. This project not only seeks to prevent violence, but to also identify and treat children of all ages who have been exposed to violence in their homes, schools, or communities.

Table 8

Characteristics of Persons Responsible for Child Deaths that Occurred as a Result of Abuse or Neglect, Cuyahoga County (2005-2012)

	Abuse (n=29)	Neglect (n=12)	Total (n=41)
Relationship to Child			
Biological parent	19	11	30
Parent's partner	6	0	6
Other relative	2	1	3
Friend or acquaintance	1	0	1
Missing	1	0	1
Gender[1]			
Male	20	11	31
Female	8	4	12
Gender missing	1	0	1
Background of Person Responsible[2]			
Criminal history			22
History of substance abuse			22
History of child maltreatment as perpetrator			19
History of intimate partner violence as perpetrator			14
History of intimate partner violence as victim			11
History of child maltreatment as victim			8
Disability or chronic illness			6
Drug/alcohol impaired at time of incident			3

[1] In three of the neglect cases, both the mother and father were responsible. Therefore, the total number of males and females responsible for neglect is greater than 12.

[2] Background information was missing in 5 cases.

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

Community service agencies worked with 74% of families who had a child who died in 2012. This is a 5% decrease from 2011 and an 8% decrease from 2010. This marks the fifth year in a row that fewer children who died or their family members received support from at least one service agency.

> 61 victims or family members were served by one service agency
>
> 51 by two agencies
>
> 16 by three agencies
>
> 3 by four agencies
>
> 1 by five agencies

Two out of five (40%) victims or family members were served by two or more agencies and only 11% were involved with at least three community service agencies within Cuyahoga County. This is a 62% decrease from the number of victims or family members in 2011 who received similar services. The 10-17 years group had the highest percentage (81%) of children or families served. This is important to note because in previous years the most served age group was either the infant or 1-9 years group. **Table 9** provides a breakdown of services by agency or program and age group.

Table 9   **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	19	4	4	**27**
DCFS involvement in prior 12 months	29	11	5	**45**
DCFS involvement ever (mom or child)	67	17	14	**98**
DCFS conducted investigation of death	12	5	3	**20**
Help Me Grow (child)	22	8	5	**35**
Help Me Grow (sibling)	40	10	3	**53**
WIC (mom or child)	26	6	4	**36**
MomsFirst involved at time of death	5	2	1	**8**
MomsFirst involvement ever (mom, child, or sibling)	24	5	2	**31**
WVSC** involved at time of death (mom or child)	1	0	1	**2**
WVSC involvement ever (mom or child)	1	1	1	**3**
Juvenile Justice involved with child	4	4	7	**15**
Juvenile Justice involved with parent	43	10	7	**60**
Total Number of Deaths	**129**	**29**	**21**	**179**
Total Number Served by at Least 1 Agency	**96**	**19**	**17**	**132**
Percent of Children/Families Served	**74%**	**66%**	**81%**	**74%**

 * Department of Children and Family Services
** Witness/Victim Service Center

Risk factors decreased by 4% in 2012.

Table 10 summarizes the total number of families by category of risk. **Appendix B** presents a summary of risk factors within each category. Overall, 99% of the families had one or more documented medical indicators; 70% had poverty indicators; 51% had behavioral risk factors; 40% of children and/or parents had some history of mental health problems; 38% of children and/or parents used cigarettes, alcohol, or drugs; and 37% had some history of domestic violence (child abuse or neglect, partner abuse, custody removal, or other household violence).

The complexity of each individual profile is illustrated by Table 10. The column headed "Total Cases" indicates how many of the 179 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, additional factors in 1-4 other categories, or additional factors in 5-8 other categories. For example, among the 177 families with a medical risk factor, 46 also had risk factors in 5-8 other categories.

Throughout this report the leading risk factors for different causes of death are listed. For eight years in a row the number of cases that identified economic risk factors (125 in 2012), such as poverty, surpassed the number of behavioral factors such as late or missed prenatal care, inadequate supervision, drug use, and limited parenting skills. Significant increases in risk factors were seen in the following categories: social (50%), environmental (41%), and behavioral (30%). Moderate increases in risk factors were seen in the following categories: mental health (19%), system (15%), violence related (15%), medical (6%), and economic (5%). A decrease was only seen in the substance abuse category (12%).

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 10   Categories of Risk Factors Identified

	Total Cases (of 179)	Percent (%) of Cases	Total Factors (of 1555)	Number of Different Categories of Risk		
				0	1 to 4	5 to 8
Medical	177	98.9	639	24	109	46
Economic	125	69.8	144	0	83	42
Behavioral	91	50.8	151	0	48	43
Mental Health	72	40.2	110	0	37	35
Substance Abuse (parent and/or child)	68	38.0	196	0	27	41
Violence Related	67	37.4	201	0	21	46
Social	36	20.1	62	0	7	29
Environmental	27	15.1	28	0	4	23
System	22	12.3	24	0	7	15

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 interconceptional care.

- 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 2010 overall infant mortality rate (IMR) was 14.6 infant deaths per 1,000 live births with a white IMR of 6.2 and a black IMR of 21.0. MomsFirst's IMR for participants in 2010 was 2.6 and in 2011 was 1.3. 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.

  - Funding from the Mt. Sinai Foundation supported "Breast For Success," an initiative to support mothers in their decision to breastfeed. Preliminary data show improvements in breastfeeding rates among the postpartum participants, particularly those exclusively breastfeeding at one month. Specific infant benefits include greater immunity, fewer infections, protection from SIDS, higher intelligence, less diabetes, and less childhood obesity, as well as other long-term health effects.

  - To improve interconceptional care services around healthy weight, MomsFirst is focused on building linkages and partnerships with agencies whose focus is on healthy weight, exercise, and nutrition. Obesity adds the burden of chronic disease and potential health risks to mother and baby, such as hypertension, gestational diabetes, birth defects, and preterm birth.

- 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 the fifth annual Happy Healthy Babies event in September 2012, in recognition of National Infant Mortality Awareness Month. This event was successful in reaching expectant mothers, dads, 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 mission of the March of Dimes is to improve the health of babies by preventing birth defects, premature birth, and infant mortality. 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 May 2013, the March of Dimes announced funding for an Ohio research collaborative to find the causes of premature births. Partners in Cuyahoga County include Case Western Reserve University, University Hospitals MacDonald Women's Hospital, Rainbow Babies & Children's Hospital, and MetroHealth System.

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

Prematurity and Infant Mortality *(cont.)*

- 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 provide newborn visits to low income families.

- The Cuyahoga County Board of Health (CCBH) 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 city of Cleveland, the Ohio Department of Health, and CityMatCH to become members of the Ohio Institute for Equity in Birth Outcomes. This three-year initiative is looking at public health strategies to eliminate health inequities in birth outcomes and improve local and state infant mortality rates.

- Families served prenatally continue to benefit from the Help Me Grow home visiting curriculum that emphasizes healthy prenatal habits, the importance of prenatal care, and preparing for childbirth.

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, and the use of folic acid to prevent neural tube defects.

- 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 2012-2013 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. Eight safe sleep presentations were given at hospitals throughout the county with 200 staff attending.

- Beginning in September 2011, the Child Fatality Review Program and the Cuyahoga County Department of Health and Human Services partnered with MetroHealth Medical Center in a year-long safe sleep campaign. The campaign included safe sleep education sessions for staff, local data regarding sleep related deaths, safe sleep posters displayed throughout the hospital, and handouts for patients. Safe sleep information and interviews with pediatricians were also included on the MetroHealth website. The educational programs for the staff continued into 2012 with 14 presentations provided by the CCBH to 280 maternity, NICU, and pediatric nurses. There were also trainings for 20 pediatric residents. The outcome of this initiative on the maternity, pediatric, and NICU units is that infants are using sleep sacks, the staff is role modeling safe sleep, and safe sleep education is being done with all parents and caregivers.

- A letter encouraging physicians to educate families about the dangers of an unsafe sleep environment was drafted by the Cuyahoga County Medical Examiner and Child Fatality Review Board. In April 2012 the letter was distributed to 900 pediatricians, obstetricians, and family practice physicians in the county.

Sleep Related Deaths (cont.)

- The CCBH continues to present safe sleep educational programs to infant care specialists and nanny students at the Alexandria School.

- The "safe sleep cards" were redesigned and printed with local data about sleep related deaths on one side and a picture of a safe sleep environment on the other side. The cards were also printed as posters. 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 2012-2013 the CCBH participated in four maternity licensure visits at local hospitals. 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 a safe sleep presentation to Ohio Jobs and Family Services daycare providers.

- The WIC Program continues to provide safe sleep information to their clients during visits.

- Safe sleep education for the staff at the Department of Children and Family Services was a priority for the agency in 2012. Since the staff interacts with families that have infants, they can provide current information about safe sleep. A CCBH nurse provided 13 trainings for 340 staff members.

- In response to the number of sleep related deaths in Greater Cleveland, the Rainbow Babies & Children's Hospital Injury Prevention Center designed a safe sleep postcard that is given to new parents at MacDonald Women's Hospital as a part of the hospital's child safety rounding project. During 2012 the staff visited 2,700 new mothers.

- Help Me Grow continues to distribute safe sleep information to over 4,000 families participating in their ongoing services each year.

  - Families receiving home visitation services complete a health and safety checklist focusing on a safe sleeping environment.

  - Presentations on safe sleep are offered to parent groups.

- MomsFirst provides safe sleep education to all participants in the program with over 2,000 families served in 2012. The project continues to assist families in need of a safe sleep environment obtain a portable sleeping unit (pack-n-play).

- In 2012 MomsFirst created a safe sleep video that was aired on Cleveland's Channel 20 cable station. As a part of the prevention campaign, public service announcements about safe sleep were also aired throughout the year.

- In 2012 a CCBH nurse was interviewed by a local television station for a segment about bedsharing and safe sleep for infants. This segment is also being used by the Cribs for Kids learning kiosk.

- The nurses from the CCBH newborn visiting program discuss safe sleep and how to calm a crying baby during their visits with families. From 2012-2013 there have been 2,360 newborn visits.

- The CCHB and Help Me Grow conducted focus groups to gather input from families in the community about the safe sleep message. Feedback from these groups will be used in revisions of the messaging and marketing plan.

Unintentional Injuries

- The Rainbow Babies & Children's Hospital 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 seat classes for expectant parents, 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 30 local schools for more than 9,000 students.

Unintentional Injuries (cont.)

- The teen seat belt program, *My Ride, My Rules,* reached young people at local high schools through battle-of-the-band competitions, two commercials with local teens, "tux cards" during prom season, and a local radio contest. All of the messages encouraged seat belt use and responsible driving behavior. The preteen program, *Just Get It Across,* engaged parents to enforce seat belt use with tweens.

- 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 presence of a working smoke detector can mean the difference between life and death when a fire breaks out in a house or an apartment, yet residents of the highest risk areas – low income, urban neighborhoods – are the least likely to have working smoke alarms. During 2012, the Rainbow Injury Prevention Center distributed 500 smoke detectors free of charge to families in these neighborhoods.

- In 2012 the staff visited over 2,700 new mothers at MacDonald Women's Hospital to provide safety information about car seats and poison prevention.

- 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.

- A health and safety checklist is completed by all families in the Help Me Grow program in order to identify potential household and environmental hazards. The home visiting curriculum also addresses appropriate supervision of infants and young children.

- MetroHealth providers include education on safe infant sleep and adequate adult supervision for children as part of well-child checkups.

- MomsFirst partners with Fire and EMS personnel to promote fire safety and provide installation of smoke detectors to at-risk Cleveland families with young children.

Homicide

- The Department of Children and Family Services (DCFS) incorporates the Family to Family Four Core Principles into their operations: 1) A child's safety is paramount; 2) Children belong in families; 3) Families need strong communities; and 4) Public child-welfare systems need partnerships with the community and with other agencies to achieve strong outcomes for children.

  - DCFS currently contracts with 14 neighborhood collaborative sites. This is part of a prevention effort that allows children and families to be served safely in their home.

  - The Special Investigation Unit at the DCFS 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 prevention and safety planning.

  - The DCFS began two new evidence-based parenting programs in 2011. PCIT is an evidence-based parent training intervention that teaches caregivers specific behavior management techniques as they play with their child. PCIT focuses on improving the caregiver-child relationship and increasing children's positive behaviors. TF-CBT is an evidence-based child and parent focused therapy, designed to help children and adolescents face and overcome the effects of trauma, and to engage the parent/caregiver as an effective support and partner in their child's recovery.

  - The 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 also joined the DCFS and is expanding to be able to serve more families with at-risk youth. Tapestry System of Care 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.

Homicide (cont.)

- The Medical Investigations Unit at the DCFS services families with medically fragile children or children who have suffered severe abuse. The social workers in this unit have advanced training regarding 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 staff is currently receiving additional training on chronic child health issues such as asthma and diabetes.

- DCFS is implementing Trauma Focused Interventions with the assistance of the Defending Childhood Initiative's screening tool. Through clinical consultations this has assisted the staff to find and implement the most effective services for families.

- The 2010 task force for the DCFS submitted their recommendations regarding decision points related to the reunification process. The three main areas included team decision making meetings, reunification/permanency planning, and continuum of services and support. The DCFS is currently working on the implementation of these recommendations to improve the agency's practice.

- The Cuyahoga County Witness/Victim Service Center (WVSC) was instrumental in convening multiple partners in the US Department of Justice 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. From 2012-2013 more than 150 professionals were trained to assess for trauma in children and over 7,000 children have been screened to determine if services for evidence-based treatment are needed. DCFS and the Cuyahoga County Common Pleas Court, Juvenile Division have been key partners to ensure that children are screened and referred appropriately.

- The WVSC hosted the planning process for creating a one-stop shop for family violence victims in Cuyahoga County. The Family Justice Center, scheduled to open in 2013, will reduce homicides, increase victim safety, strengthen empowerment for victims, and reduce re-victimization through more effective collaboration of services and increased prosecution of offenders.

- WVSC also manages the Children Who Witness Violence program which provides immediate crisis stabilization to children in the aftermath of exposure to violence.

- The 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.

- The 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 at large.

- The Family Drug Court works with parents, whose children are alleged to be abused or neglected, who are at risk of losing their children because of drug dependency.

- 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 Cleveland Police Department has made it a policy to refer all children who witness any violent situation to the Children Who Witness Violence Program.

- 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 social media. 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 2011, the Cuyahoga County Board of Health presented "Child Abuse and Neglect Fatalities in an Urban Setting" at the American Public Health Association national conference. This presentation incorporated five years of local data and recognized that child fatality review teams were a best practice to assess the number, circumstances, and risk factors for child maltreatment deaths. In 2012, this presentation along with the annual Child Fatality Report were given at the statewide Ohio School Nurses Conference.

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 information, and referral line for adults and children – 216-623-6888. This hotline is operated by FrontLine Service. Crisis Chat is a new online emotional support for anyone who is depressed or thinking of suicide. This new tool in combating suicide or other mental health concerns is particularly appealing to children and teens. Suicide is the third leading cause of death among teenagers and young adults ages 15-24, 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.

- The Behavioral Health and Juvenile Justice Project is a community-based model alternative to secure care in detention environments for adolescent female juvenile offenders with serious behavioral issues. Female youth are served in this project in lieu of out-of-home placement. This is a collaboration among Juvenile Court, the ADAMHS Board, Family and Children First Council, and the Department of Children and Family Services.

- Delinquency Drug Court is a voluntary program for nonviolent youth with substance abuse issues. New services have been added for youth exhibiting mental health symptoms as well as substance abuse disorders.

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 Department 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. DCFS continues to be the largest referral source to HMG.

- 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 the DCFS have funded the Early Childhood Mental Health (ECMH) coordinator position to improve the ECMH referral process for children and their families across the system. The ECMH coordinator serves as the 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.

- Through MomsFirst's leadership concerning perinatal depression, the staff at MetroHealth and DCFS who encounter pregnant and postpartum women, were trained in screening for perinatal depression and implementing a care path to ensure that women experiencing perinatal depression are referred to a mental health provider.

Infant Mortality and Disparities

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

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®, the use of progesterone for high-risk women, and Ohio's 39-Week Project to reduce deliveries before 39 weeks of gestation.

3. Encourage child and family serving agencies to incorporate interconception care as a core component 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 staff at maternity and pediatric hospitals in Cuyahoga County about the importance of role modeling safe sleep in the hospital. 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.

5. Use local data to identify neighborhoods at risk and partner with community leaders for interventions.

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 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.

Homicide

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

2. Support domestic 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.

3. Encourage primary care physicians to use a hospital's child protection program for assistance in the evaluation of medical compliance and the reporting of medical neglect.

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.

Table 11   Annual Number of Gun Related Deaths by Manner, Age, and Gender

BOYS	Cause of Death	Age	Year										Total
			2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Undetermined		14	0	0	0	0	0	0	0	1	0	0	1
Total			0	0	0	0	0	0	0	1	0	0	1
Accidental		3	0	0	1	0	0	0	0	0	0	0	1
		15	0	0	0	0	0	0	1	0	0	0	1
		16	0	0	1	0	1	0	0	0	0	0	2
Total			0	0	2	0	1	0	1	0	0	0	4
Suicide		13	0	0	0	0	0	0	1	0	0	0	1
		14	0	0	0	0	2	0	0	0	0	0	2
		15	0	0	1	0	0	0	1	0	0	0	2
		16	0	1	0	0	0	0	0	0	0	1	2
		17	0	0	1	0	0	0	0	2	1	0	4
Total			0	1	2	0	2	0	2	2	1	1	11
Homicide		2	0	0	0	0	0	0	2	0	0	0	2
		10	0	0	0	0	0	0	0	0	0	1	1
		11	0	0	1	1	0	0	0	0	0	0	2
		13	0	0	0	0	1	1	0	0	0	0	2
		14	0	1	0	1	0	0	0	0	0	0	2
		15	0	0	1	0	1	2	0	0	0	1	5
		16	0	1	1	1	2	2	1	0	3	1	12
		17	0	3	2	1	9	2	3	2	3	1	26
Total			0	5	5	4	13	7	6	2	6	4	52
TOTAL ALL BOYS			0	6	9	4	16	7	9	5	7	5	68

GIRLS	Cause of Death	Age	Year										Total
			2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Suicide		14	0	1	0	0	0	0	0	0	0	0	1
		16	0	0	0	0	0	0	0	0	0	1	1
		17	0	1	0	0	0	1	0	0	0	0	2
Total			0	2	0	0	0	1	0	0	0	1	4
Homicide		1	0	0	0	0	0	0	0	0	0	1	1
		5	0	0	0	0	0	0	1	0	0	0	1
		6	0	0	0	1	0	0	0	0	0	1	2
		10	0	0	0	0	0	0	0	0	0	2	2
		11	0	0	0	0	0	1	0	0	0	0	1
		12	0	0	0	0	1	0	0	0	0	0	1
		14	0	0	0	0	0	0	0	0	0	1	1
		15	0	0	0	0	0	1	0	0	1	0	2
		17	0	1	0	0	0	1	0	0	0	0	2
Total			0	1	0	1	1	3	1	0	1	5	13
TOTAL ALL GIRLS			0	3	0	1	1	4	1	0	1	6	17

| TOTAL CHILDREN | | | 0 | 9 | 9 | 5 | 17 | 11 | 10 | 5 | 8 | 11 | 85 |

Table 12   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	**Percent of Total County Child Population in Cleveland**	**34**
Cuyahoga County (White)	154,615	19		
Cuyahoga County (All Other Races)	135,647	29	**Percent of Total County Child Population All Other Races**	**47**
City of Cleveland	97,657	25		

Annual Birth Data[2]	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cuyahoga County	17,252	16,932	16,354	16,682	16,450	16,249	15,525	15,108	14,993	14,757
% White	61.2	59.6	57.7	57.9	56.1	56.0	56.4	51.9	51.7	51.1

Annual Death Data	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Annual Child Deaths	189	227	239	233	230	240	213	178	187	179
Annual Infant Deaths	136	161	164	166	162	171	141	140	144	129
% Deaths to Infants	72.0	70.9	68.6	71.2	70.4	71.3	66.2	78.7	77.0	72.1

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Child Mortality / 100,000 Children	54.3	65.2	68.7	67.0	66.1	69.0	61.2	61.3	64.4	61.7
Annual Total Medical Death Rate	39.9	48.3	52.6	49.1	49.4	50.3	42.8	46.5	49.3	46.5
Cancer	2.6	3.7	2.9	2.3	2.9	3.2	2.6	1.7	1.4	2.1
Annual Total Injury Death Rate	14.4	17.0	16.1	17.8	16.7	18.7	18.4	14.8	15.2	15.2
Homicide	2.3	2.0	5.2	3.7	5.7	4.3	4.9	1.7	3.8	4.8
Motor Vehicle Accident	2.3	2.3	1.1	1.1	0.9	2.6	1.7	1.4	1.0	1.4
Fire	0.9	0.9	0.0	1.1	1.1	0.0	0.9	0.0	0.3	0.3
Drowning	1.4	1.1	1.4	2.0	1.1	1.1	1.7	0.0	0.7	0.7
Suicide	0.0	2.9	1.7	0.6	1.1	2.0	1.1	1.0	0.7	1.4

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Infant Mortality / 1,000 Births	7.9	9.5	10.0	10.0	9.8	10.5	9.1	9.3	9.6	8.7
Neonatal Mortality / 1,000 Births	4.9	7.1	7.9	7.3	6.8	7.2	6.5	6.4	6.4	6.3
Postneonatal Mortality / 1,000 Births	3.0	2.4	2.1	2.7	3.0	3.3	2.6	2.9	3.2	2.4
Prematurity	4.4	5.5	6.5	6.3	5.9	6.3	5.5	5.2	5.3	5.1
SIDS Only	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0
SIDS and Sleep Related	1.6	1.1	1.0	1.1	1.3	1.4	1.3	1.9	1.3	1.2

[1] Yellow shaded boxes are 2012 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 April 4, 2013).

Table 13 Annual Number of Child Deaths Due to Injury and Medical Causes by Age Group

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Total Injury Related Deaths											
Under 1 Year	26	25	17	24	21	30	27	28	22	20	**240**
1 - 9 Years	13	9	10	16	12	9	19	5	9	10	**112**
10 - 17 Years	11	25	29	22	25	26	18	10	13	14	**193**
Total	50	59	56	62	58	65	64	43	44	44	545
Total Deaths from Medical Causes											
Under 1 Year	110	136	147	142	141	141	114	112	122	109	**1274**
1 - 9 Years	19	21	20	15	21	21	23	11	14	19	**184**
10 - 17 Years	10	11	16	14	10	13	12	12	7	7	**112**
Total	139	168	183	171	172	175	149	135	143	135	1570
Total All Causes	189	227	239	233	230	240	213	178	187	179	2115

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

Table 14 Cause of Death by Age Group and Year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total per Cause
Prematurity											**908**
Under 1 Year	76	93	107	105	97	102	85	79	80	75	
1 - 9 Years	0	1	1	0	1	2	1	0	1	0	
10 - 17 Years	0	1	0	0	0	0	0	0	0	1	
Birth Defects											**346**
Under 1 Year	15	26	26	28	31	31	28	20	35	25	
1 - 9 Years	6	0	11	5	6	9	6	5	2	9	
10 - 17 Years	2	0	2	2	3	3	3	4	2	1	
SIDS and Sleep Related Deaths											**210**
Under 1 Year	27	20	16	18	22	22	20	28	19	18	
Cancer and Other Medical Conditions											**327**
Under 1 Year	16	20	15	10	9	13	5	13	7	9	
1 - 9 Years	13	21	9	11	14	10	16	6	11	10	
10 - 17 Years	8	10	14	13	7	10	9	8	5	5	
Homicide											**127**
Under 1 Year	2	1	0	1	1	3	1	0	2	1	
1 - 9 Years	4	0	3	5	2	2	11	2	2	4	
10 - 17 Years	2	7	15	7	15	10	5	3	7	9	
Suicide											**42**
1 - 9 Years	0	0	0	0	0	0	0	0	0	0	
10 - 17 Years	0	10	6	2	4	7	4	3	2	4	
Motor Vehicle Accident											**48**
Under 1 Year	0	1	0	0	0	0	1	0	0	0	
1 - 9 Years	3	0	0	2	2	2	2	2	1	3	
10 - 17 Years	5	2	4	2	1	7	3	2	2	1	
Accidental Suffocation											**9**
Under 1 Year [1]	0	0	0	0	0	0	0	0	0	0	
1 - 9 Years	1	4	1	0	2	0	0	0	0	0	
10 - 17 Years	0	0	0	0	0	0	0	1	0	0	
Drowning											**38**
Under 1 Year	0	0	0	1	0	0	0	0	0	1	
1 - 9 Years	2	2	2	4	2	2	2	0	1	1	
10 - 17 Years	3	2	3	2	1	2	4	0	1	0	
Fire [2, 3]											**18**
Under 1 Year	0	0	0	0	0	0	1	0	0	0	
1 - 9 Years	3	2	0	3	3	0	2	0	1	1	
10 - 17 Years	0	0	0	1	1	0	0	0	0	0	
Other Accidents [4]											**42**
Under 1 Year	0	0	0	3	2	0	0	0	1	0	
1 - 9 Years	0	0	3	1	1	3	2	1	4	1	
10 - 17 Years	1	4	1	7	3	0	2	1	1	0	
Total per Year	**189**	**227**	**239**	**233**	**230**	**240**	**213**	**178**	**187**	**179**	**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 15   Annual Number of Child Deaths by Race and Age Group[1]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Race and Age Group											
White											
Under 1 Year	45	55	53	43	55	43	43	40	45	45	**467**
1 - 9 Years	14	17	16	12	10	10	19	4	11	12	**125**
10 - 17 Years	7	20	13	16	11	13	12	13	6	7	**118**
Total	**66**	**92**	**82**	**71**	**76**	**66**	**74**	**57**	**62**	**64**	**710**
All Other Races											
Under 1 Year	91	105	111	123	107	128	98	100	99	84	**1046**
1 - 9 Years	18	13	14	18	23	20	23	12	12	17	**170**
10 - 17 Years	14	16	32	20	24	26	18	9	14	14	**187**
Total	**123**	**134**	**157**	**161**	**154**	**174**	**139**	**121**	**125**	**115**	**1403**
Total All	**189**	**226**	**239**	**232**	**230**	**240**	**213**	**178**	**187**	**179**	**2113**
Missing Race Info	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Rates of Death											**Average**
Crude Death Rate White[2]	32.8	45.7	40.8	35.3	37.8	32.8	36.8	36.9	40.1	41.4	**38.0**
Crude Death Rate All Other Races[3]	83.8	91.3	107.0	109.7	104.9	118.5	94.7	89.2	92.2	84.8	**97.6**
Ratio of All Other Races to White	2.6	2.0	2.6	3.1	2.8	3.6	2.6	2.4	2.3	2.0	**2.6**
Death Rate (excl Infants) White[4]	10.4	18.4	14.4	13.9	10.4	11.4	15.4	11.0	11.6	12.9	**13.0**
Death Rate (excl Infants) All Other Races[5]	21.8	19.8	31.3	25.9	32.0	31.3	27.9	15.5	20.2	24.1	**25.0**
Ratio of All Other Races to White (excl Infants)	2.1	1.1	2.2	1.9	3.1	2.7	1.8	1.4	1.7	1.9	**2.0**
Infant Mortality / 1,000 Births White[6]	4.3	5.5	5.6	4.5	6.0	4.7	5.0	5.1	5.8	6.0	**5.2**
Infant Mortality / 1,000 Births All Other Races[7]	13.6	15.3	16.0	17.5	14.8	17.9	14.4	13.8	13.7	11.6	**14.9**
Ratio of All Other Races to White IMR	3.2	2.8	2.9	3.9	2.5	3.8	2.9	2.7	2.4	1.9	**2.9**

[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 12)

[3] Total All Other Races deaths/135,647 x 100,000 (2010 census data in Table 12)

[4] Total White deaths (excl Infants)/154,615 minus White live births x 100,000 (2010 census data in Table 12)

[5] Total All Other Races deaths (excl Infants)/135,647 minus All Other Races live births x 100,000 (2010 census data in Table 12)

[6] Total Infant White deaths/total White live births x 1,000 (annual birth data in Table 12)

[7] Total Infant All Other Races deaths/total All Other Races live births x 1,000 (annual birth data in Table 12)

Table 16   Annual Number of Child Deaths by Gender and Age Group

|	2003	2004	2005	2006*	2007	2008	2009	2010	2011*	2012*	Total
Gender and Age Group											
Male											
Under 1 Year	80	87	95	91	93	94	74	71	81	77	**843**
1 - 9 Years	17	13	15	15	16	15	26	6	11	12	**146**
10 - 17 Years	16	21	36	23	26	24	15	15	15	11	**202**
Total	**113**	**121**	**146**	**129**	**135**	**133**	**115**	**92**	**107**	**100**	**1191**
Female											
Under 1 Year	56	74	69	74	69	77	67	69	63	51	**669**
1 - 9 Years	15	17	15	16	17	15	16	10	11	17	**149**
10 - 17 Years	5	15	9	13	9	15	15	7	5	10	**103**
Total	**76**	**106**	**93**	**103**	**95**	**107**	**98**	**86**	**79**	**78**	**921**
TOTAL ALL	**189**	**227**	**239**	**232**	**230**	**240**	**213**	**178**	**186**	**178**	**2112**

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

City of Cleveland with First Ring and Outer Ring Suburbs

Legend

- City of Cleveland
- First Ring Suburbs
- Outer Ring Suburbs

0   2.4 Miles
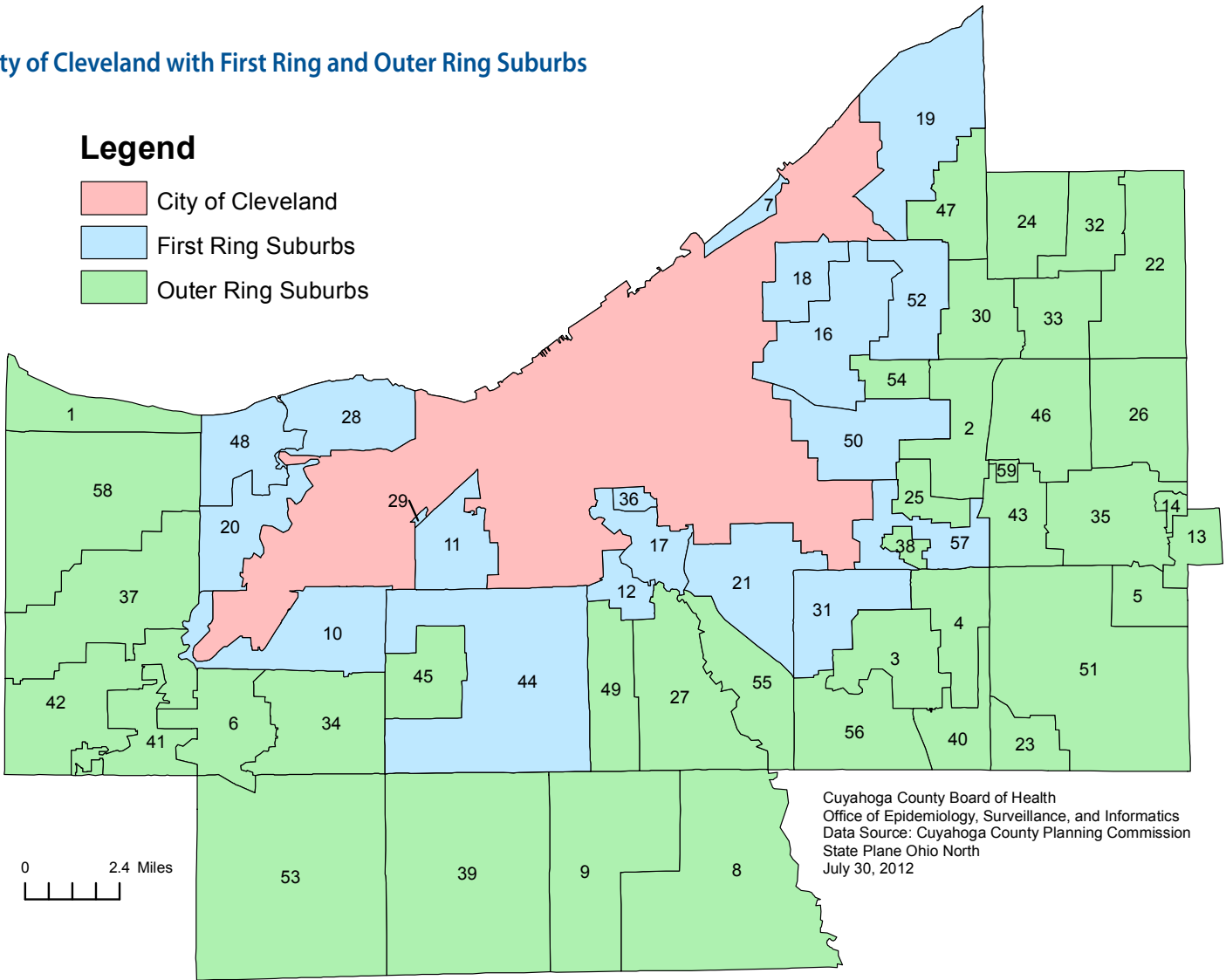
Cuyahoga County Board of Health
Office of Epidemiology, Surveillance, and Informatics
Data Source: Cuyahoga County Planning Commission
State Plane Ohio North
July 30, 2012

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 2012*

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
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
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, Department 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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