

Child Fatalities 2011

Protecting Our Future

**The Cuyahoga County Child Fatality Report
Fifteenth Edition**



**The Cuyahoga County
Child Fatality Review Committee**

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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.

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 2011 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.

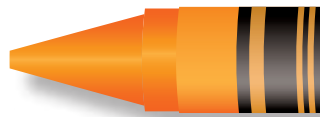


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There were 187 child deaths in 2011, second lowest total number of deaths in 20 years.

In 2011 we saw the second lowest number of child deaths in the county in 20 years. The total number increased by nine from the 2010 total of 178. There was a 44% increase in the total number of children who died between 1 and 9 years old compared to 2010. The total number of child deaths for 2011 included 144 infants, 23 children between 1 and 9 years old, and 20 children between 10 and 17 years old. **Table 1** shows the number of deaths by age group since 2002.

Table 1
Annual Number of Deaths by Age Group

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Under 1 Year	173	136	161	164	166	162	171	141	140	144	1558
1 - 9 Years	21	32	30	30	31	33	30	42	16	23	288
10 - 17 Years	37	21	36	45	36	35	39	30	22	20	321
Total	231	189	227	239	233	230	240	213	178	187	2167

Four more infants died in 2011

Birth defects accounted for the largest increase in infant deaths (from 20 in 2010 to 35 in 2011). Other causes of deaths in infants that increased included homicide, other perinatal complications, and unintentional injury. Sleep related deaths saw the largest decrease (from 28 in 2010 to 19 in 2011), other medical causes had a 70% decrease (from 7 in 2010 to 2 in 2011), and infections had a 50% decline (from 4 in 2010 to 2 in 2011).

Seven more deaths to children between 1 and 9 years

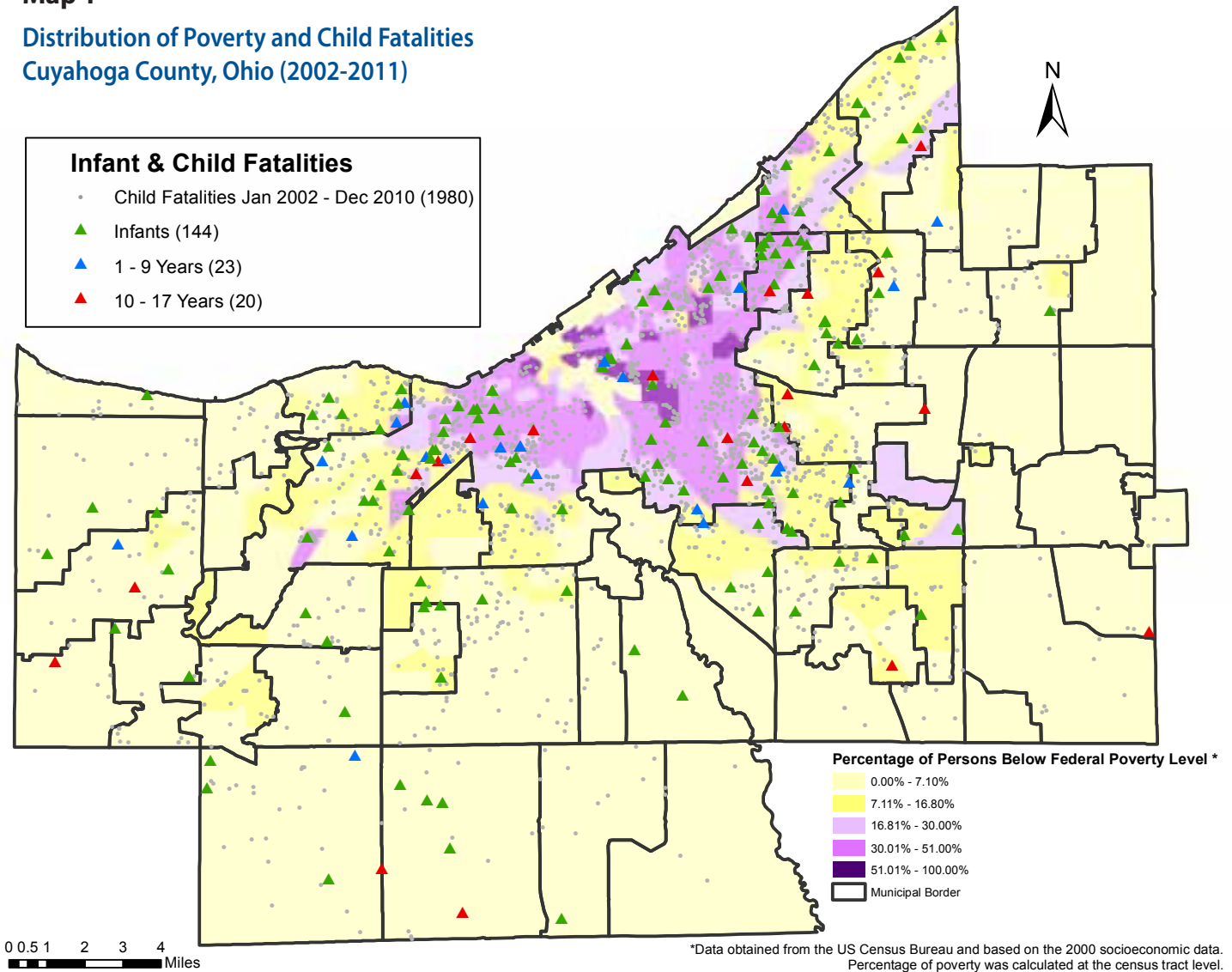
Twenty-three children between 1 and 9 years of age died in 2011. This resulted in a 44% increase from 2010, but still was the third lowest total number of deaths in this category in the past ten years. Increases occurred in nine causes of death categories, which included prematurity, other medical causes, infections, cancer, other perinatal complications, drowning, fire, poisoning, and undetermined. Five fewer deaths due to birth defects and one fewer motor vehicle accident death took place in this age group.

Two fewer deaths in children between 10 and 17 years

Twenty children between 10 and 17 years died in 2011. This was the lowest total number of deaths in this age group in the last twenty years. Homicide accounted for the largest number of deaths for the 10- to 17-year-olds and had the largest increase (from 3 in 2010 to 7 in 2011). Infections, drowning, and unintentional injury related deaths all increased by one death in 2011. In 2011 fewer deaths due to birth defects, other medical causes, cancer, and suicide were noted.

Map 1

Distribution of Poverty and Child Fatalities
Cuyahoga County, Ohio (2002-2011)



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.

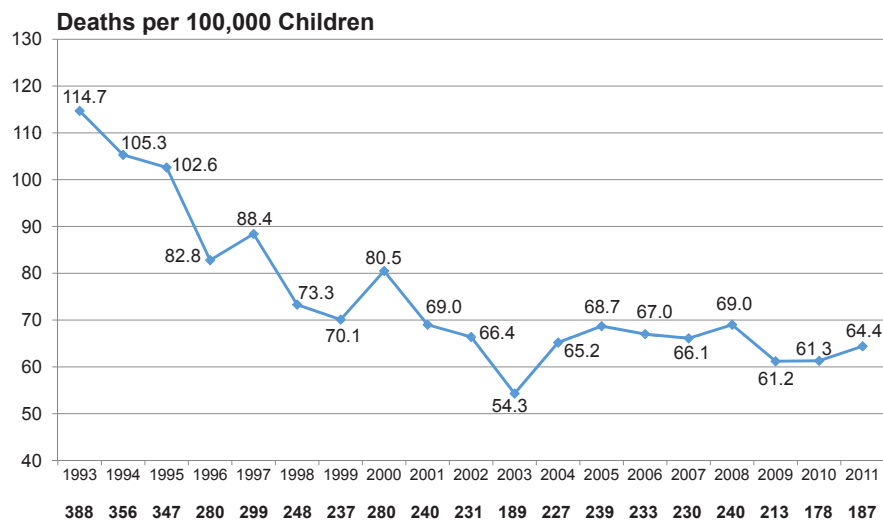
Map 1 above illustrates that the distributions of poverty and child deaths are closely related. Deaths from prior years are included to highlight that the distribution patterns of deaths appear to be more populated in geographic areas that tend to have a higher percentage of community members living below the federal poverty line. For example, the 2011 federal poverty rate for a family of four was \$22,350.¹ 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.

¹ US Department of Health and Human Services. The 2011 HHS poverty guidelines. Available online at <http://aspe.hhs.gov/poverty/11poverty.shtml> (accessed July 9, 2012).

Child death rate increases slightly in 2011.

Figure 1 illustrates the stabilization of the rate of child deaths since 2004 as well as gives a historical perspective. While nine more deaths led to a 5.1% increase in the overall number of child deaths in Cuyahoga County, this 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)² and the 2010 Census (290,262),³ the child death rates in the last two years have remained relatively consistent with the previous six years.

Figure 1
Total Child Deaths (age 0-17)
Cuyahoga County (1993-2011)



² US Census Bureau. 2000 Census of population and housing; Summary file 1. Available online at <http://factfinder.census.gov> (accessed July 5, 2012).

³ US Census Bureau. 2010 Census of population and housing; Summary file 1. Available online at <http://factfinder2.census.gov> (accessed July 5, 2012).

Table 2 provides a breakdown of the leading causes of death by age group. It shows that a large majority (76%) of deaths continues to be rooted in medical related causes such as prematurity, birth defects, cancer, infections, and other medical conditions. Of all deaths, 77% occurred in children under 1 year of age, which is the second highest ratio of infant deaths to total number of deaths in the last fifteen years.

There were 39 deaths due to birth defects in 2011, which were 10 more than in 2010. While the increase in deaths due to birth defects was almost 35%, the average number of birth defect related deaths from 2005 to 2009 was 39 deaths per year or equal to the 2011 total. Congenital abnormalities accounted for almost 80% (31) of birth defect deaths. Over half of all congenital abnormalities (55%) were fatal heart defects. The remaining 20% (8) were due to chromosomal anomalies. Similarly, homicides increased by 120% (from 5 in 2010 to 11 in 2011), but the total number of homicides in 2011 of 11 is 30% lower than the five-year average from 2005 to 2009 of 16. Prematurity, other perinatal complications, unintentional injury, and drowning had 2 more child deaths each in 2011. One more child death occurred in the following categories: infections, fire, and poisoning.

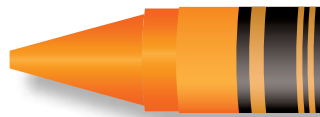
Sleep related deaths and other medical causes had the largest decreases in child deaths in 2011. Sleep related deaths decreased from 28 in 2010 to 19 in 2011, and other medical causes had 6 fewer deaths representing a 42% decrease. Cancer, motor vehicle accidents, and suicide had 1 fewer death each in 2011 compared to 2010. Death ruled as undetermined was the only category to have the same number of deaths from 2010 to 2011, and accidental gunshot wound was the only cause of death category without any deaths in 2011.

In the following pages, you will find a discussion of the specific causes of death and their associated risk factors. Also, we highlighted 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.



Table 2
Leading Causes of Death by Age Group in 2011

Cause of Death	Under 1 Year	1 - 9 Years	10 - 17 Years	Total
Prematurity	80	1	0	81
Birth Defects	35	2	2	39
Sleep Related	19	0	0	19
Homicide	2	2	7	11
Other Medical Causes	2	4	2	8
Infections	2	3	2	7
Cancer	0	3	1	4
Other Perinatal Complications	3	1	0	4
Motor Vehicle Accident	0	1	2	3
Unintentional Injury	1	1	1	3
Drowning	0	1	1	2
Suicide	0	0	2	2
Undetermined - Injury Related	0	2	0	2
Fire	0	1	0	1
Poisoning	0	1	0	1
Total	144	23	20	187

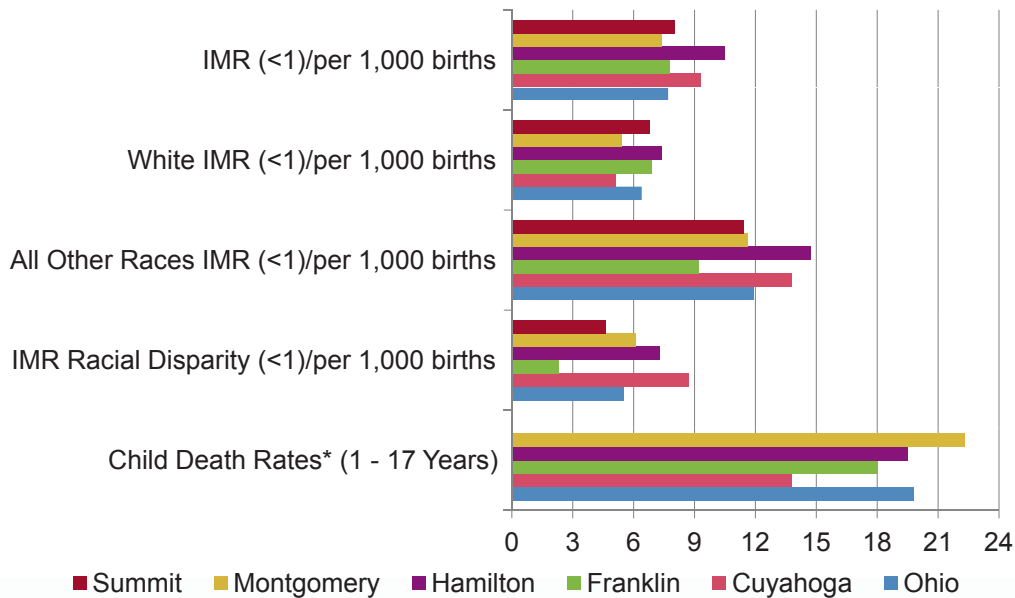


Cuyahoga County has the lowest child death rate.

The Child Fatality Review Committee 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.⁴ The data presented are for 2010, the most current information available.

Cuyahoga County had the lowest child death rate in 2010 (Figure 2). Cuyahoga County also had the lowest white infant mortality rate (IMR), but was only lower than Hamilton County in the all other races IMR category. Due in part to the significantly lower white IMR rate, Cuyahoga County had the largest racial disparity for infant deaths for the third consecutive year. We need to further investigate the high rate in which infants of all other races are dying and work to eliminate racial disparities in Cuyahoga County.

Figure 2
Peer County Comparisons in 2010



* Summit County's child death rate was not available.

⁴ Center for Public Health Statistics and Informatics, Ohio Department of Health. 2010 Infant and child mortality by county (accessed July 10, 2012). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.





Minority children are more than twice as likely to die.

There was a small reduction in the racial disparity between white and all other race children with a ratio of 2.3 in 2011 down slightly from 2.4 in 2010 (Figure 3). Unfortunately, this decrease in disparity is attributable to the increase in the death rate of white children, which was greater than the increase in the death rate for children of all other races (shown as bars in Figure 3). The sober truth is minority children are still more than twice as likely to die as white children, but it appears that the ratio of deaths is starting to trend lower from the peak in 2008. Since infant deaths contributed disproportionately to the overall mortality rates and are the primary component of racial disparity, it is important to look at the disparity ratios for infants (birth to less than 1 year) and children (1 to 17 years) separately.

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

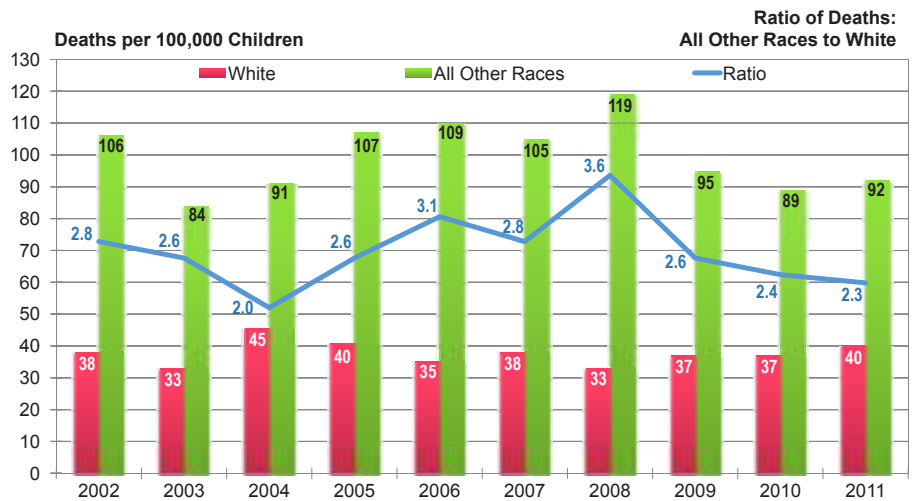
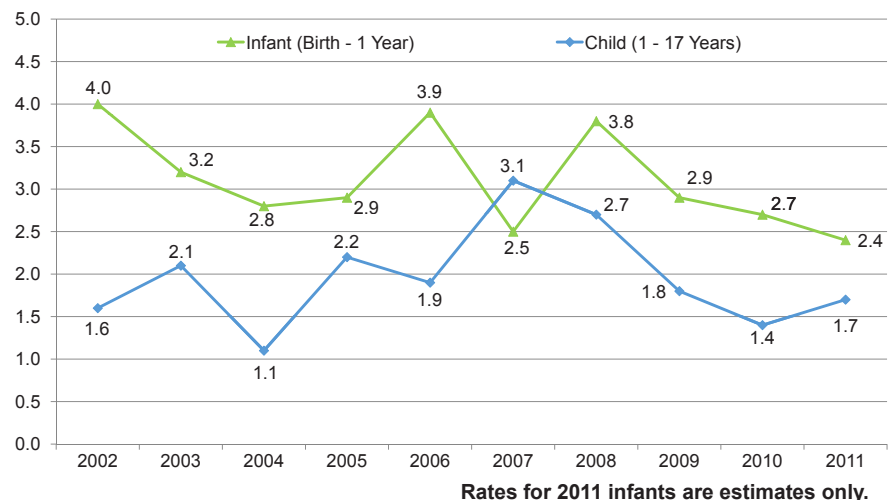
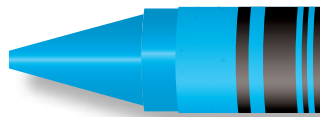


Figure 4 Racial Disparity Ratios





The racial disparity for both age groups is illustrated in **Figure 4**. In 2011 the racial disparity of infant deaths decreased for the third consecutive year since the peak in 2008 and was the lowest ratio in the last ten years. This is due to the third lowest number of deaths in ten years to infants of all other races in 2011 with the highest number of white infant deaths in the last four years (refer to **Table 14**). The preliminary infant death racial disparity ratio in the US for 2010 is 2.2,⁵ which is the newest data available. While the decrease in infant disparity over the last three years is encouraging, innovative strategies must be employed to ensure that racial disparities are eliminated.

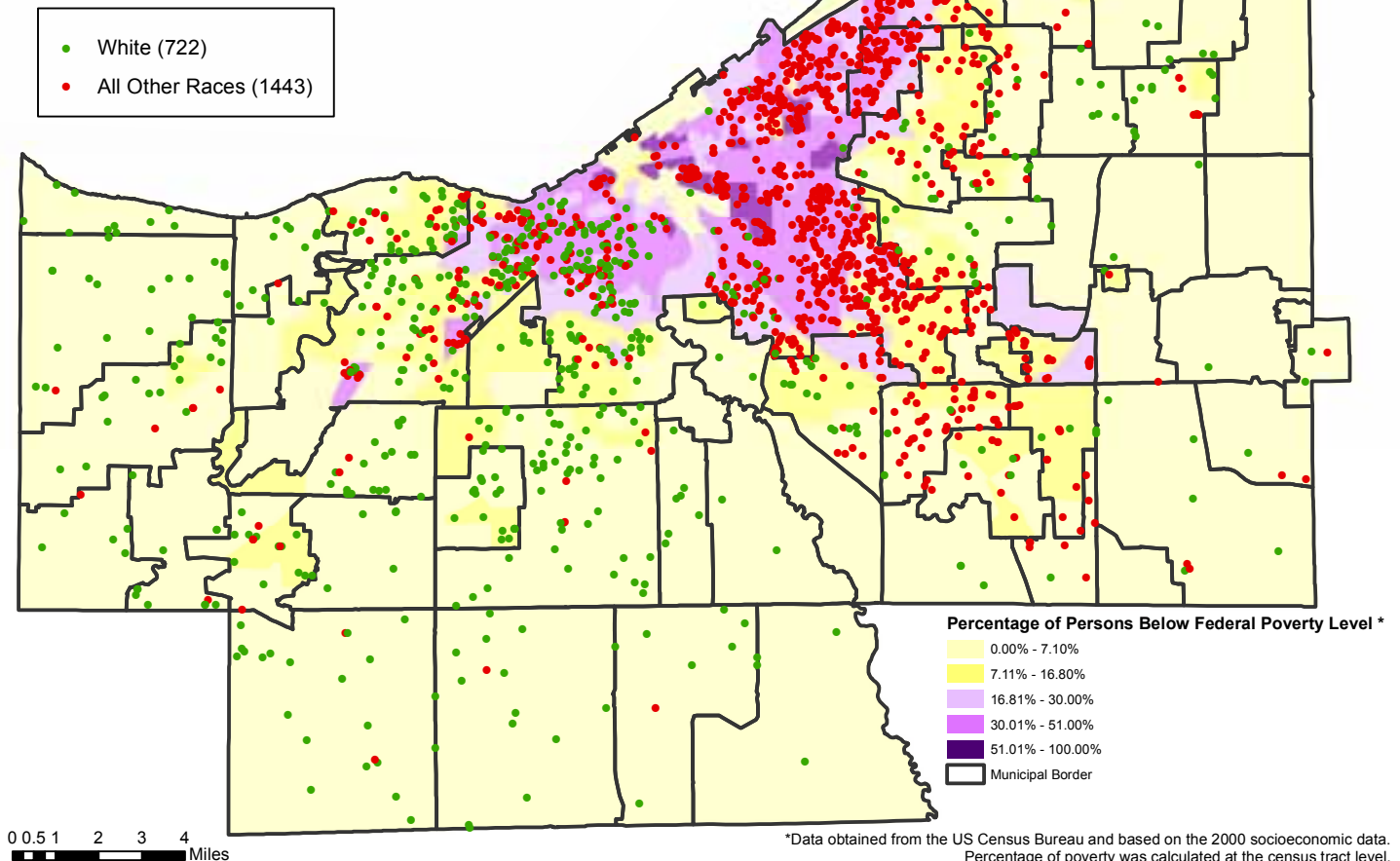
The graph also shows that almost two minority children died for every one white child. The increase in the child racial disparity ratio from 1.4 in 2010 to 1.7 in 2011 was due to an increase in

the number of deaths to children of all other races from 21 in 2010 to 26 in 2011. This is the first time in the last ten years that the child racial disparity ratio has remained below 2.0 for three consecutive years.

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.

Map 2

Distribution of Poverty and Race for Child Deaths Cuyahoga County, Ohio (2002-2011)



⁵ Murphy SL, Xu JQ, and Kochanek KD. Deaths: Preliminary data for 2010. National vital statistics reports; vol 60, no 4. Hyattsville, MD: National Center for Health Statistics. 2012.

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

Infant mortality rate increases 0.3% in 2011.

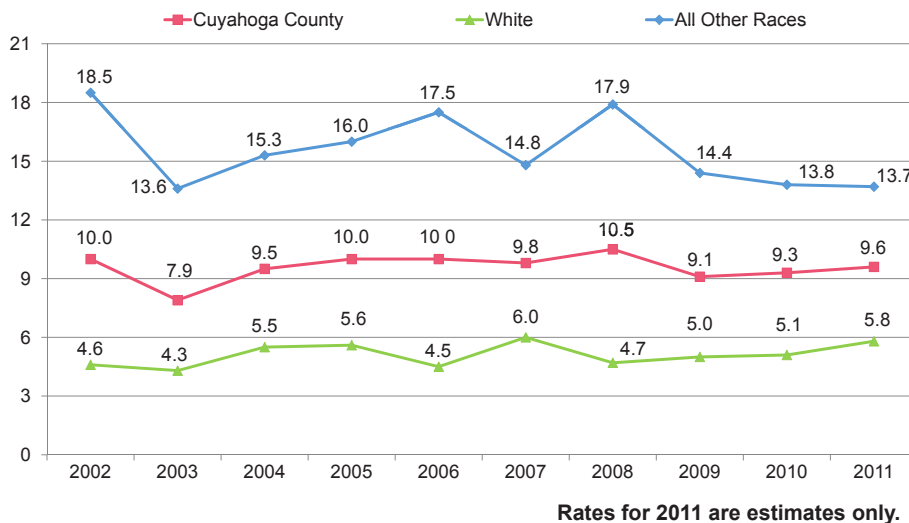
There was a slight increase in infant mortality for the second straight year (Figure 5). The 2010 estimated IMR for Cuyahoga County of 8.8 was updated to a finalized rate of 9.3. The updated IMR used a final live birth count that is less than the estimated total number of live births. The 2011 IMR estimate of 9.6 deaths per 1,000 births⁶ is based on 144 infant deaths among 14,972 live births according to preliminary data received from the Ohio Department of Health. Our local IMR of 9.6 remains significantly higher than the Ohio rate of 7.7 in 2010⁷ and the estimated US rate of 6.1 for 2010⁸ (most recent data available). In Cuyahoga County for every five infants who died, we need one of them to survive to equal the Ohio IMR rate. In order to match the US infant death rate, we need the survival of more than one baby for every three infants who died.

Figure 4 shows the large racial disparity of infant deaths although we have made some progress in this area. We have improved the racial disparity ratio by 40% from 4.0 in 2002 to 2.4 in 2011. In Figure 5 the IMR of 13.7 for all other races is the second lowest rate in the last ten years and continues to trend lower for a third consecutive year.

The most frequent causes of infant death continued to be prematurity (80), birth defects (35), and sleep related deaths (19) – see Table 2. The top three causes accounted for 93% of all infant deaths, which is more than 2% higher than 2010 and the second highest ratio in the last nine years. The following sections will discuss two major threats to any infant’s mortality in Cuyahoga County: prematurity and unsafe sleep environment.

Figure 5

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



⁶ Data on 2011 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 May 22, 2012). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

⁷ Center for Public Health Statistics and Informatics, Ohio Department of Health. 2010 Infant mortality by county (accessed July 10, 2012). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

⁸ (Murphy, 2012)



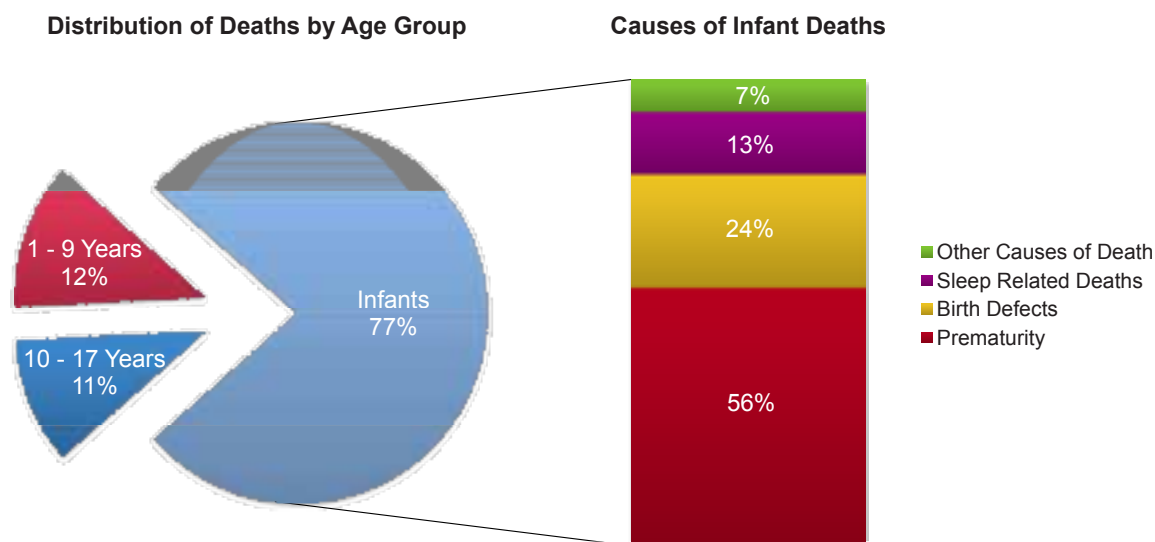
Prematurity accounts for 56% of infant deaths and 43% of overall child deaths in 2011.

In 2011, 80 infants died due to prematurity accounting for 56% of the infant deaths (**Figure 6**). The 2011 cause-specific IMR for prematurity is 5.3 deaths per 1,000 live births.⁹ Prematurity remains the single leading cause of death for children of all ages in Cuyahoga County (43% of the total).

The 2011 prematurity IMR of 5.3 is slightly higher than 2010 when it was 5.2 per 1,000 live births. This is the second lowest prematurity IMR in the last eight years (**Table 11**). 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 2011 preliminary rate of 13.7%.¹⁰ The state of Ohio rate decreased from 12.3% in 2009 to a 2011 estimated rate of 11.1%,¹¹ and the US rate decreased from 12.2% in 2009 to 12.0% in 2010,¹² 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 2011



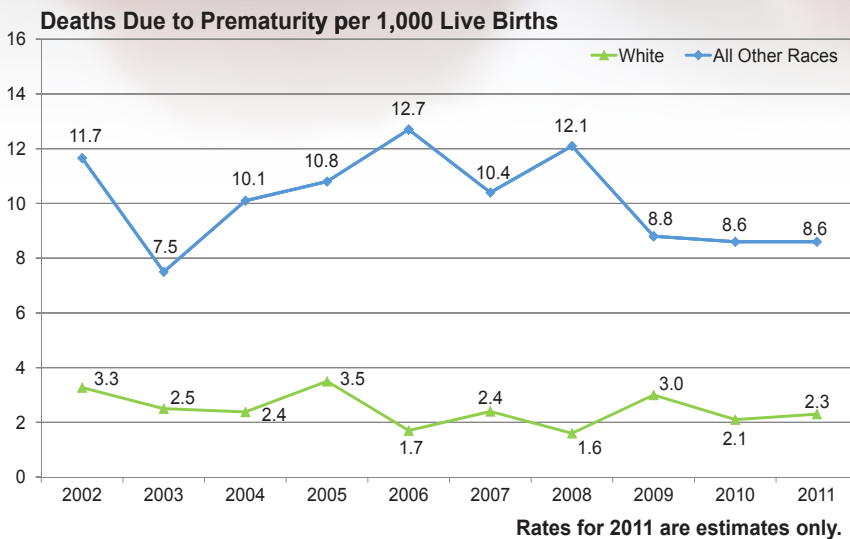
⁹ Data on 2011 births are estimates only. Center for Public Health Statistics and Informatics, Ohio Department of Health (accessed June 28, 2012). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

¹⁰ (Center for Public Health Statistics and Informatics, June 28, 2012)

¹¹ Data on 2011 births are estimates only. Center for Public Health Statistics and Informatics, Ohio Department of Health (accessed April 3, 2012). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

¹² Hamilton BE, Martin JA, and Ventura SJ. Births: Preliminary data for 2010. National vital statistics reports; vol 60, no 2. Hyattsville, MD: National Center for Health Statistics. 2011.

Figure 7 Rates of Infant Death Due to Prematurity by Race

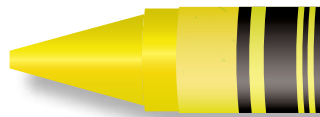


The impact of prematurity and racial disparity is illustrated in **Figure 7**. In 2011, infants of all other races were more than three and one-half times more likely to die due to prematurity than white infants (this was calculated by dividing the prematurity infant death rate among all other races by the prematurity infant death rate among whites). The all other race prematurity death rate of 8.6 matches the 2010 figure and is tied for the lowest rate since 2003. Prematurity deaths for all other races have decreased by almost 30% since the 2008 rate of 12.1.

Poverty remained the most frequent risk factor associated with prematurity with over 70% of the cases having one or more economic risk indicators. This was almost a 10% increase over 2010. Premature rupture of membranes (PROM) was the second most common risk factor among this group and occurred in more than half (53%) of the prematurity related fatalities. Two in five deaths due to prematurity had parents who used tobacco, and just as many had a mother with a chronic health condition. The fifth most common risk factor was a tie between intrauterine tobacco exposure and a past history of sexually transmitted infections. These risk factors were found in more than one in three of these deaths, and intrauterine tobacco exposure increased by almost 40%. The risk factors for bacterial vaginosis and at-risk maternal age more than doubled from 2010 to 2011, while placental abruption increased by 95%. Multiple gestation and late entry into prenatal care both had over a 30% decline as a risk factor to premature deaths in 2011. The most significant risk factors associated with prematurity are summarized in **Table 3**.

Of the 81 child deaths due to prematurity, 45 (56%) were male and 63 (78%) were of a minority race. One infant's gender could not be identified. Cleveland residents comprised 48% of the child deaths due to prematurity, 37% were from the first ring suburbs, while only 15% were residents in the outer ring suburbs. Almost four out of five (79%) were born so early that they only lived for twelve hours or less and only 14 (17%) survived more than seven days. Furthermore, 43 (53%) were born prior to 23 weeks, usually considered to be the age of viability,¹³ while another 17 were born at 23 weeks. The remaining 21 (26%) were born between the gestational ages of 24 and 36 weeks, but only 1 infant was born after week 29.

¹³ Seri I and Evans J. Limits of viability: Definition of the gray zone. (2008). *Journal of Perinatology*; 28: S4-S8.

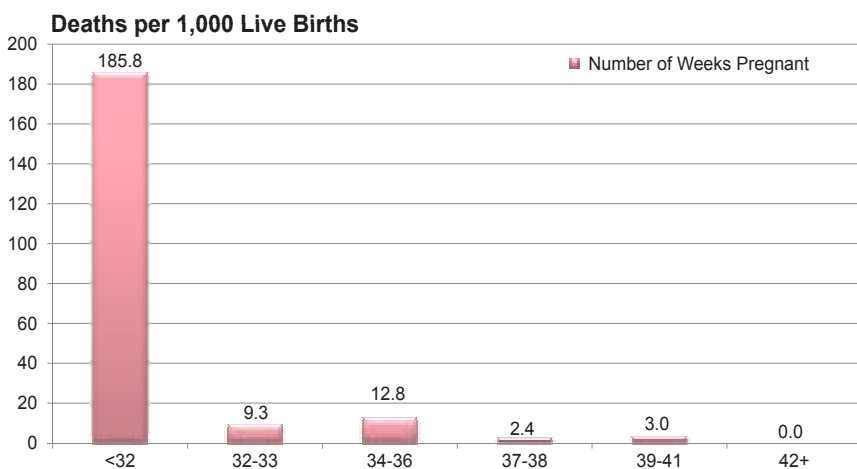


Prematurity also impacts the financial stability of our health care systems. The average cost of a pregnancy and delivery of a preterm birth is almost \$65,000 per infant compared to \$15,000 for those with no complications.¹⁴ With over 2,000 preterm births in 2011 the total approximate cost for supporting Cuyahoga County mothers for these preterm births was over \$130,000,000.

Figure 8 illustrates the 2011 infant mortality rate by gestational age (stated in number of weeks). The graph shows that almost one in five infants born before week 32 died. Any delivery before 32 weeks is considered a very preterm birth. Our rate of 185.8 is higher than the national death rate of 175 infant deaths for every 1,000 live births in 2008 (the most recent data available).¹⁵ The IMR by gestational age lowered significantly in the two preterm birth categories of 32-33 weeks (9.3) and 34-36 weeks (12.8). The infant mortality rate for full term infants, those born at least 37 weeks of gestation, is 2.6 per 1,000 live births. Infants in Cuyahoga County are more than 70 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 and had a previous preterm delivery. In 2011 KV Pharmaceuticals (makers of Makena) was granted seven years of market exclusivity by the FDA. The pharmaceutical company immediately increased the price from \$20 per injection to \$1,500 per injection. This drug is to be used weekly for 20 weeks; therefore, the cost of this drug increased by 7500% from \$400 to \$30,000 per pregnancy. The FDA made a public statement allowing pharmacies to continue making a generic progesterone compound that breaks the FDA exclusivity agreement given to KV Pharmaceuticals.¹⁶ In April 2011, the company reduced its price to \$690 per injection or \$13,800 per pregnancy. KV Pharmaceuticals then filed a lawsuit in 2012 against the FDA for allowing pharmacies to break the exclusivity agreement and claimed the generic progesterone compounds made by other pharmacies were not as potent or pure as its drug.¹⁷ The results of this case will have an impact on the number of preterm births across the country and the health care system as a whole.

Figure 8 2011 Infant Mortality Rate by Gestational Age



Rates for 2011 are estimates only.

Table 3

Common Risk Factors Associated with 81 Deaths Due to Prematurity

Risk Factor	#	%
Poverty	58	71.6
Premature rupture of membranes (PROM)	43	53.1
Mom with a chronic health condition	33	40.7
Parental tobacco use	33	40.7
Intrauterine tobacco exposure	28	34.6
Sexually transmitted infections - past history	28	34.6
Incompetent cervix	24	29.6
Chorioamnionitis (Uterine infection)	23	28.4
At-risk maternal age	21	25.9
Maternal history of mental health problems	19	23.5
Previous fetal loss	18	22.2
Previous preterm delivery	18	22.2
Placental abruption	16	19.8
Sexually transmitted infections - during pregnancy	14	17.3
Prescription drug use	13	16.0
Bacterial vaginosis	12	14.8
Multiple gestation	12	14.8
Parental education less than high school	12	14.8
Parental alcohol abuse	10	12.3
History of domestic violence	9	11.1
Late entry into prenatal care	9	11.1
Oligohydramnios (Low amniotic fluid levels)	9	11.1

¹⁴ 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).

¹⁵ Mathews TJ and MacDorman MF. Infant mortality statistics from the 2008 period linked birth/infant death data set. National vital statistics reports; vol 60, no 5. Hyattsville, MD: National Center for Health Statistics. 2012.

¹⁶ Lowe D. KV Pharmaceuticals and Makena: The FDA's move. (2011). Available online at http://pipeline.corante.com/archives/2011/03/30/kv_pharmaceuticals_and_makena_the_fdas_move.php (accessed July 23, 2012).

¹⁷ Silverman E. KV Pharma sues FDA over Makena compounding. (2012). Available online at <http://www.pharmalot.com/2012/07/kv-pharma-sues-fda-over-makena-compounding> (accessed July 23, 2012).

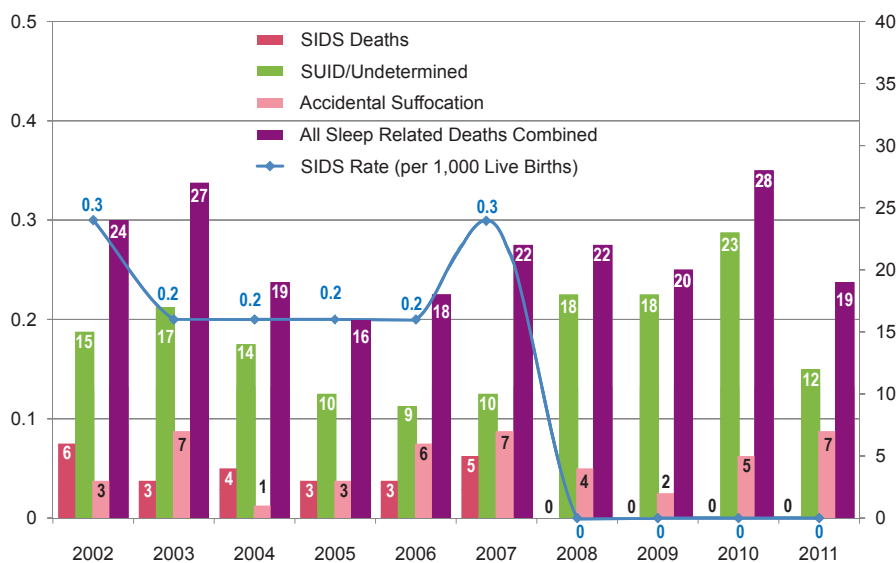


Fewest number of sleep related deaths in the last five years.

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 sudden, unexplained death of an infant less than one 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. Accidental suffocation is a result of another person lying on the baby, wedging of the baby, or the baby's face in a soft surface such as a pillow, blanket, comforter, or bumper pad. SUID/Undetermined is ruled as the cause of death when an exact reason cannot be found, but the scene investigation indicates that there were dangers in the baby's sleep area. **Figure 9** illustrates the number and types of sleep related deaths that have occurred in Cuyahoga County over a ten-year span.

In Cuyahoga County, there were 19 sleep related deaths in 2011, which is a 30% decrease from 2010 and the fewest sleep related deaths in the last five years. For the fourth straight year, no SIDS related fatalities occurred. This may be a result of changes in diagnosis and death scene investigation as a result of the Sudden Unexplained Infant Death Investigation (SUIDI) initiative recommended by the CDC. For the first time since 2004, we had less than 50% of the sleep related deaths involving bedsharing with an adult or children. Accidental suffocation was associated with 7 deaths. This accounted for almost 40% of all sleep related deaths and the highest ratio in the past ten years. Twelve were ruled undetermined due to potential hazards in the sleep environment. Of the 19 sleep related deaths, 9 of these involved bedsharing and all 19 involved some type of sleep hazard (such as soft bed surface, position baby was placed, pillows, bumper pads, and other items in sleep environment) (**Table 4**).

Figure 9 Sleep Related Deaths by Type



Map 3 illustrates the distribution of these three types of death over the past ten years. Two-thirds of all cases were ruled as undetermined and a majority 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.

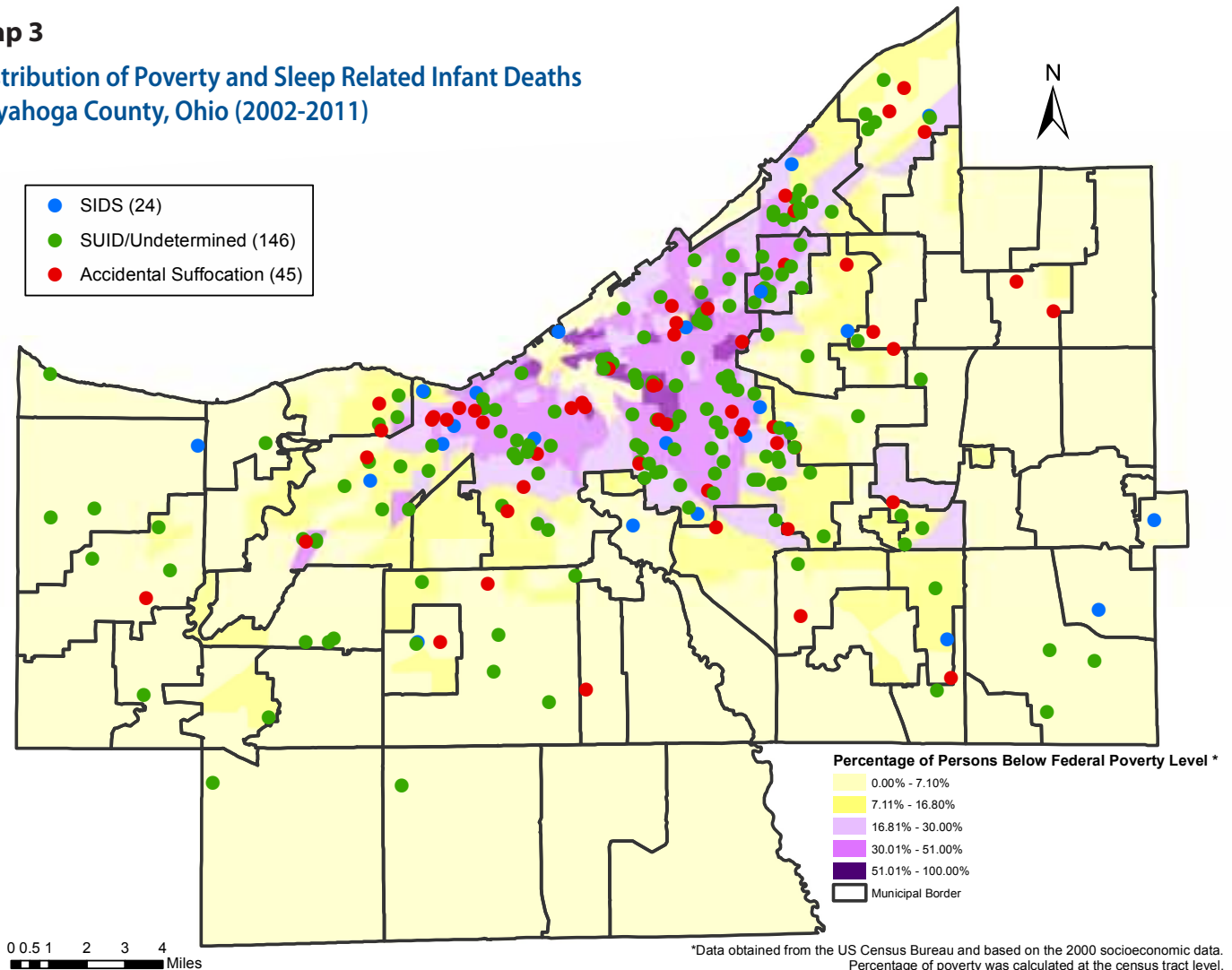


Table 4 Number of Sleep Related Deaths by Type and Presence of Risk Factors

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
SIDS	6	3	4	3	3	5	0	0	0	0	24
SUID/Undetermined	15	17	14	10	9	10	18	18	23	12	146
Accidental Suffocation	3	7	1	3	6	7	4	2	5	7	45
Total Number of Deaths	24	27	19	16	18	22	22	20	28	19	215
Risk Factors Present											
Bedsharing at time of death	12	13	9	10	12	12	11	11	18	9	117
Hazards in sleep area	15	23	12	14	14	20	22	20	28	19	187
Total Number of Risk Factors	27	36	21	24	26	32	33	31	46	28	304

Map 3

Distribution of Poverty and Sleep Related Infant Deaths
Cuyahoga County, Ohio (2002-2011)



*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 shows that three out of five sleep related deaths occurred in Cleveland (92) with fewer deaths in the first ring suburbs (34) and outer ring suburbs (19). In 2011 almost one in three occurred in the first ring, which is the highest percentage in the first ring in the last seven years. 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 paints a clear picture for possible targeted safe sleep education outreach. Four out of five infants (80%) 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 three out of five total births.¹⁸ While less than 50% of infants born in 2011 were of all other races,¹⁸ 63% of sleep related deaths occurred to minority infants. For the third consecutive year, more males died than females. In 2011 more than two out of three infants who died were male, which is the highest ratio in the last seven years. Although the Back To Sleep campaign has existed for more than 20 years, we still found that more than 50% of the infants who died this year in sleep related deaths were placed on their stomach or side to sleep.

One reason caregivers choose to place an infant on his stomach is they believe it will prevent the baby from choking if he spits up.¹⁹ Actually, stomach sleeping puts babies in more danger to choke. This can be explained by showing a picture of the upper airway in **Figure 10**. When babies are on their stomachs the esophagus or “food pipe” is located above the trachea or “windpipe.” When babies spit, the fluid collects at the opening of the windpipe due to gravity. This puts babies more at risk to choke. However, if babies are placed on their backs, the trachea is above the esophagus so that any liquid would have to go against gravity to get into the windpipe. Therefore, it is easier for babies to spit and swallow safely when on their backs.

Figure 10 Anatomy of Upper Airway



Table 5
Sleep Related Death Demographics (n=145)

	2005	2006	2007	2008	2009	2010	2011	Total
Neighborhood								
Cleveland	12	9	13	15	14	18	11	92
First Ring	3	3	6	6	3	7	6	34
Outer Ring	1	6	3	1	3	3	2	19
Infant's Gender								
Female	9	9	13	13	9	11	6	70
Male	7	9	9	9	11	17	13	75
Mom's Age								
< 20 Years	2	4	3	7	3	5	1	25
20 - 29 Years	10	9	14	12	12	15	12	84
30 - 39 Years	1	4	2	2	4	7	5	25
≥ 40 Years	0	1	0	0	1	0	0	2
Unknown	3	0	3	1	0	1	1	9
Infant's Race								
All Other Races	12	10	10	16	16	21	12	97
White	4	8	12	6	4	7	7	48
Sleep Position¹								
Back	9	10	14	13	10	18	9	83
Stomach	4	3	2	7	5	7	6	34
Side	3	3	6	2	5	3	4	26

¹In 2006 two cases had unknown sleep position.

In the fall of 2011, the Task Force on Sudden Infant Death Syndrome compiled a comprehensive meta-analysis regarding safe sleep and published it in *Pediatrics*, the journal of the American Academy of Pediatrics (AAP). They included over 350 peer-reviewed articles to establish guidelines and recommendations for medical staff, caregivers, and guardians to ensure the infant has the best chance of survival while sleeping during the first year of life. The authors established 18 recommended guidelines to follow.²⁰

¹⁸ (Center for Public Health Statistics and Informatics, May 22, 2012)

¹⁹ Moon RY, Oden RP, Joyner BL, and Ajao TI. Qualitative analysis of beliefs and perceptions about sudden infant death syndrome in African-American mothers: Implications for safe sleep recommendations. (2010). *Journal of Pediatrics*; 157(1): 92-97.

²⁰Task Force on Sudden Infant Death Syndrome. SIDS and other sleep-related infant deaths: Expansion of recommendations for a safe infant sleeping environment. (2011). *Pediatrics*; 128(5): 1030-1039.



Table 6 Safe Sleep Top 10

1. Place baby on back for every sleep
2. Use a firm surface such as a crib, bassinet, or pack-n-play
3. Bare naked crib with only a fitted sheet
4. Baby sleeps alone – room sharing, no bedsharing
5. Smoke-free pregnancy and in the home for the baby
6. Breastfeed the baby, especially in the first six months
7. No alcohol or drugs during pregnancy or after the baby is born
8. Avoid overheating the baby
9. Offer a pacifier at nap time and bedtime
10. Regular prenatal care for mom while pregnant

We put together a “Top 10” list based on the highest recommendations to ensure the safety of our most vulnerable population (**Table 6**). Babies should be placed on their backs on a firm surface (crib, bassinet, or pack-n-play). Since the 1992 AAP “Back To Sleep” recommendation, the SIDS rate has dropped over 50%²¹ although a recent study found that one in four mothers put their babies to sleep on their stomachs by the first month of an infant’s life.²² The firm surface should be free of objects (bumper pads, pillows, and stuffed animals) and loose bedding (blankets and comforters). While it is recommended that parents sleep in the same room as the infant; adults or other children should sleep on a separate sleep surface than the infant.

The mother should avoid tobacco, alcohol, and illicit drugs during the pregnancy as well as after the birth of the baby. Smoke exposure is the second largest contributing risk factor to SIDS and it is estimated that one-third of all SIDS deaths could be prevented if all maternal smoking during pregnancy was stopped.²³ Smoke exposure is known to affect the infant’s brain and makes it more difficult for the baby to arouse. Another study reported SIDS was 6-8 times more likely in cases of maternal alcohol use and 2-5 times more likely when the mother used opiates such as heroin.²⁴

²¹Task Force on Sudden Infant Death Syndrome. SIDS and other sleep-related infant deaths: Expansion of recommendations for a safe infant sleeping environment. (2011). *Pediatrics*; 128(5): e1341-e1367.

²²Hauck FR, Signore C, Fein SB, and Raju TNK. Infant sleeping arrangements and practices during the first year of life. (2008). *Pediatrics*; 122(2): S113-S120.

²³(Task Force on Sudden Infant Death Syndrome, 2011, e1353-e1354)

²⁴Athanasakis E, Karavasiliadou S, and Styliadis I. The factors contributing to the risk of sudden infant death syndrome. (2011). *Hippokratia*: 15(2): 127-131.

It is important that we give the correct message regarding safe sleep to the public. One study found that in magazines targeting childbearing women, one-third of the pictures with sleeping babies showed an inappropriate sleep position and two-thirds of the pictures did not follow the current AAP recommendations.²⁵ Because of the popularity of magazines and mass media today, we must combat the negative images presented by providing the correct message that hits home, targets all caregivers, and is repeated often. Below is our message for role modeling safe sleep in Cuyahoga County.

What Does Safe Sleep Look Like?

Baby sleeps in crib, bassinet, or pack-n-play.

Use a firm mattress with a fitted sheet.

Baby sleeps alone.

Baby sleeps on his back.

Use a one-piece sleeper.

Make a bare naked sleep area – NO pillows, blankets, bumper pads, or toys.

²⁵ Joyner BL, Gill-Bailey C, and Moon RY. Infant sleep environments depicted in magazines targeted to women of childbearing age. (2009). *Pediatrics*; 124(3): e416-e422.

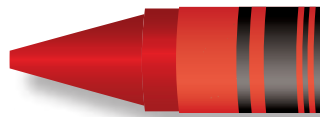


Figure 11 graphically shows that over 90% or nine in ten sleep related deaths occurred in the first six months of the child's life. Seven in ten (70%) of all sleep related deaths occurred while the infants were 3 months old or younger with the highest number of infants dying in their second month of life.

Table 7 shows the number of sleep related deaths by year and age of the infant at the time of death. From 2008 to 2011, we had 8 sleep related deaths that occurred when the infants were 7-11 months old. No such deaths occurred between 2005 through 2007. While the number of sleep related deaths increased for older infants, the number of deaths in the fourth and fifth month decreased. From 2005 to 2007, 17 sleep related deaths occurred to babies 4-5 months old, but only 11 deaths from 2009 to 2011, which is a decrease by more than 35%.

The breakdown in **Figure 12** examines whether differences exist in the economic, medical, or environmental risk factors that may contribute to a child's death. More than seven in ten infants in Cleveland were born into poverty while only one in ten of outer ring infants had similar economic hardships. Medical factors are similar between locations in Cuyahoga County as approximately three in four infants were full term babies (37 weeks or later) and about the same number were born at or above a normal birth weight (about 5 lbs. 8 oz.).

Figure 11 2005-2011 Sleep Related Deaths by Age of Infant (n=145)

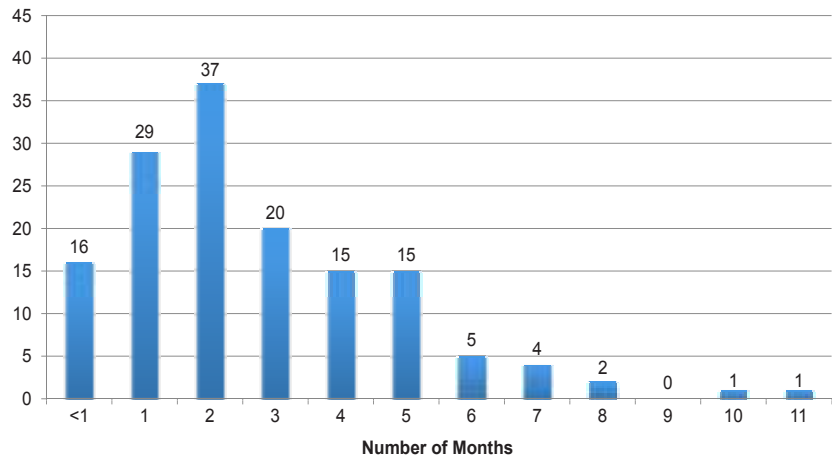
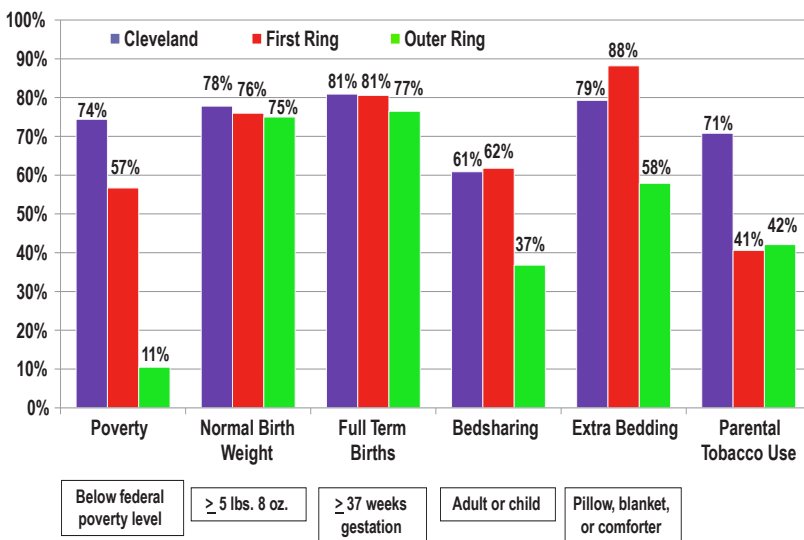


Table 7 Sleep Related Deaths by Month

	2005	2006	2007	2008	2009	2010	2011	TOTAL
<1 Month	1	1	2	5	3	2	2	16
1 Month	4	4	4	4	3	9	1	29
2 Months	3	3	8	8	6	5	4	37
3 Months	3	1	2	1	0	7	6	20
4 Months	1	5	1	2	2	1	3	15
5 Months	4	2	4	0	2	2	1	15
6 Months	0	2	1	1	0	0	1	5
7 Months	0	0	0	0	3	1	0	4
8 Months	0	0	0	1	1	0	0	2
9 Months	0	0	0	0	0	0	0	0
10 Months	0	0	0	0	0	0	1	1
11 Months	0	0	0	0	0	1	0	1
TOTAL	16	18	22	22	20	28	19	145

Figure 12 2005-2011 Sleep Related Factors by Neighborhood



More than one out of three outer ring suburban infants who died in sleep related cases were sleeping with another person while three out of five Cleveland and first ring suburban infants slept with someone else. Almost 90% of first ring infants and more than three out of four Cleveland infants slept with extra bedding (pillow, blanket, or comforter) while less than 60% of outer ring infants had the same risk factor. Seven in ten infants in Cleveland had at least one parent who smoked, while only four in ten 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 sleep related deaths in Cuyahoga County.

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

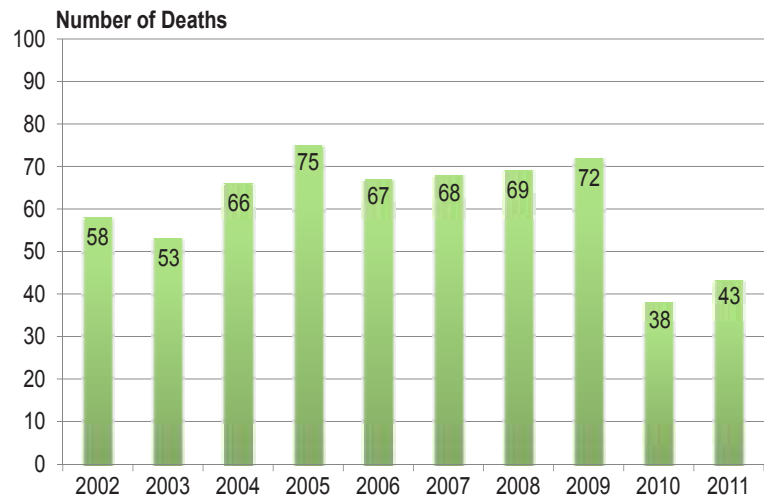
Forty-three children aged 1 to 17 died in 2011 representing a 13% increase in this age group over the previous year. From 2005 to 2009, the five-year average number of child deaths in this age group was 70 (Figure 13). The number of child deaths in 2010 and 2011 were the two lowest totals in the last twenty years.

In 2011, deaths due to injury related causes accounted for 51% of deaths in this age group. These 22 injury related deaths were attributed to: homicide (9); motor vehicle accident (3); unintentional injury (2); drowning (2); suicide (2); undetermined (2); fire (1); and poisoning (1) (Table 2). The number of children in this age group who died as a result of homicide, unintentional injury, drowning, fire, and poisoning increased and the number of deaths due to motor vehicle accidents and suicide decreased. The number of undetermined deaths remained the same in 2011.

There were 21 medical related deaths to 1- to 17-year-olds in 2011, which is the lowest number of deaths in this category in the last ten years. The causes of all medical related deaths in this age group were other medical causes (6); infections (5); cancer (4); birth defects (4); prematurity (1); and other perinatal complications (1) (Table 2). Child deaths from prematurity, infections, and other perinatal complications all increased in 2011 while all other medical related deaths decreased.

Figure 13

Total Child Deaths per Year (age 1-17)



Two more unintentional injury deaths occur in 2011.

In 2011, 18 children of all ages died as a result of unintentional injuries, which is a 13% increase compared to 2010. Of the 18 children, 5 were female and 13 were male and the race of these children was evenly split (9 white and 9 all other races). These 18 deaths include: 7 accidental suffocations, 3 motor vehicle accidents (MVAs), 2 traumas, 2 drownings, 1 premature infant death (the mother had a positive toxicology at the time of delivery), 1 SUID, 1 fire, and 1 poisoning. All 7 accidental suffocation deaths were related to unsafe sleep environments (infants were found with face in soft bedding and/or pillows). **Figure 14** provides a graphic illustration of this breakdown.

Case reviews revealed that the most common risk factors identified in these deaths were poverty (14); drug and/or alcohol use by either a parent or the child victim (12); history of reports for suspected domestic violence or child abuse (11); and parental criminal history (8).

Figure 14
Unintentional Injury Deaths in Cuyahoga County (2011)

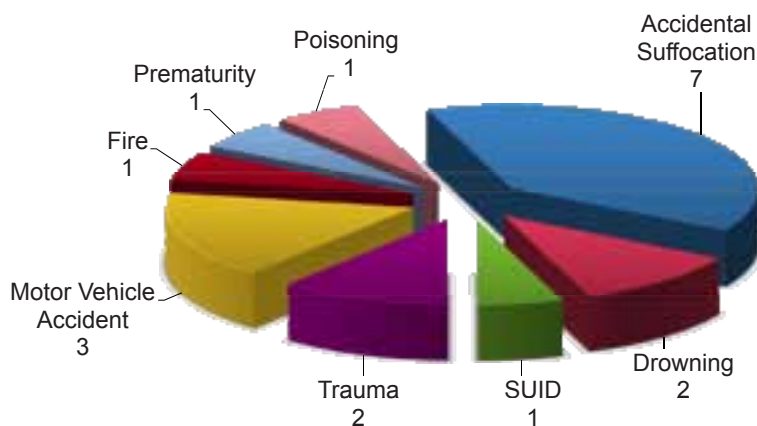


Figure 15
Total Motor Vehicle Deaths by Age Group per Year

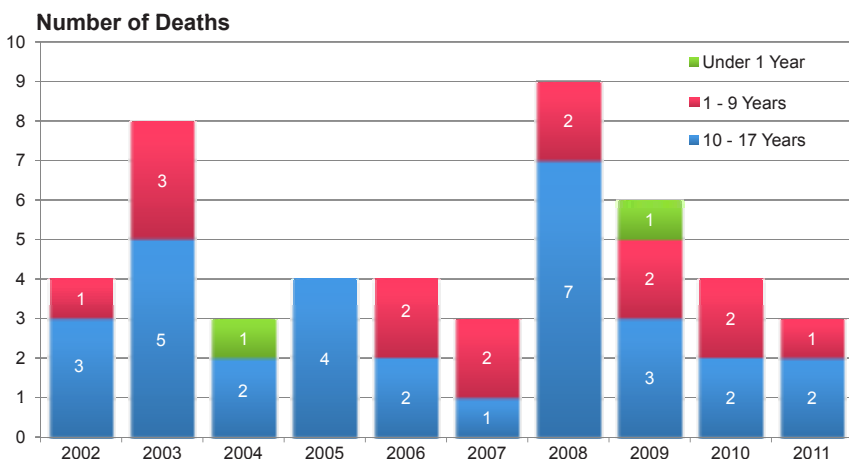


Figure 15 gives a historical perspective on the age distribution of traffic related fatalities. This year is tied with 2004 and 2007 for the lowest number of MVAs. There was 1 death in the 1-9 years group and 2 deaths in the 10-17 years group. The total number of deaths in each group tied for the second lowest total in the last ten years. For the second consecutive year, no infants died in a motor vehicle accident. Deaths due to MVAs remain a problem both locally and nationally. In 2009 (the most recent data available), motor vehicle accidents were the leading cause of injury related deaths among children ages 1-17 years in the United States.²⁶

²⁶ Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). Leading Causes of Death Reports, National and Regional, 1999-2009. Available online at http://webappa.cdc.gov/sasweb/ncipc/leadcaus10_us.html (accessed on August 10, 2012).

Figure 16

Total Drowning Deaths per Year

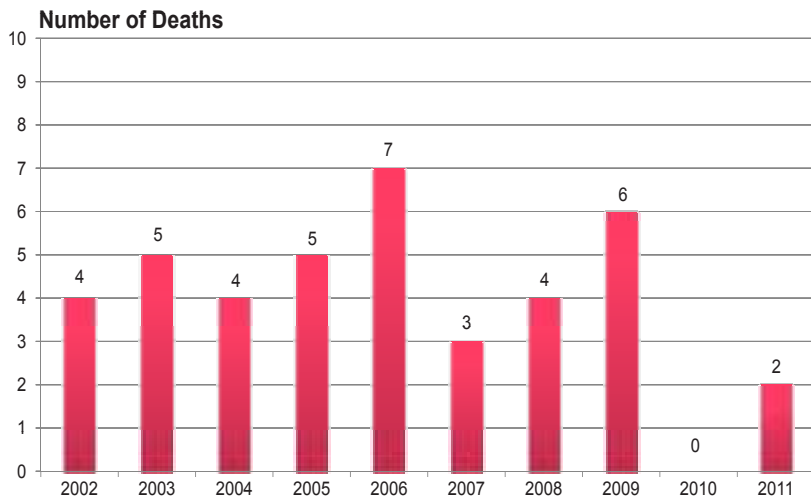
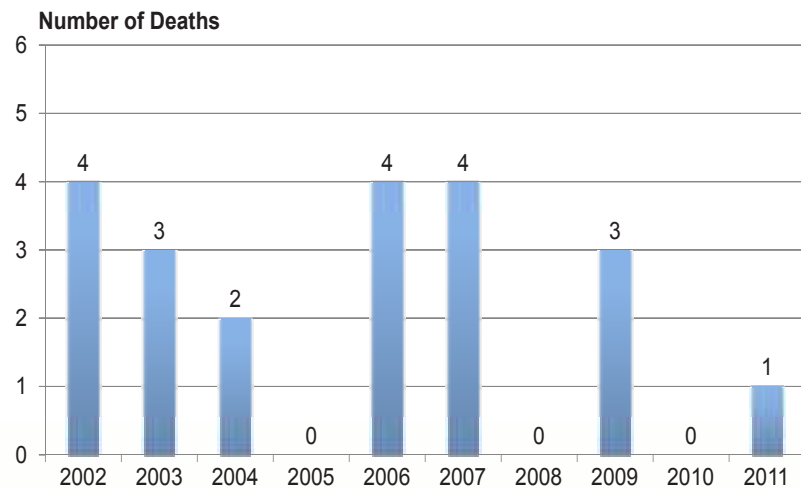


Figure 17

Total Accidental Fire Deaths per Year



²⁷ (CDC, August 10, 2012)

Of the 3 motor vehicle deaths, 2 were pedestrians and 1 was a passenger. One pedestrian darted between two parked cars, ran into the street, and was then hit by oncoming traffic. The other pedestrian was walking along a road and was struck by a car. The passenger who perished was sitting in the passenger seat when the vehicle was hit from behind and caught fire. This is the fourth consecutive year in which two pedestrians were unintentionally hit and succumbed to their injuries. The public must make sure to practice defensive driving, especially when children are present and around sunset when visibility is often affected by the diminishing light.

Figure 16 illustrates the number of drowning deaths over the past decade. Since 2002, 40 children drowned in Cuyahoga County. Drowning is the third leading cause of injury related deaths for children ages 1 to 17 years in the United States.²⁷ In 2011, 2 children drowned in Cuyahoga County. This is the second lowest number of drowning deaths in the last ten years. Lack of child supervision was identified in one case while the other case was a child attempting to save a family member in an unauthorized swimming area. Both cases could have been prevented if safety measures had been followed.

As shown in **Figure 17**, there was 1 fire related death in 2011, which brings the total number of accidental fire deaths to 21 for the last ten years. A fire alarm was present, but it did not have a working battery. Authorities suggest people check all fire monitoring devices twice a year when we change our clocks – an easy way to remember to do it.



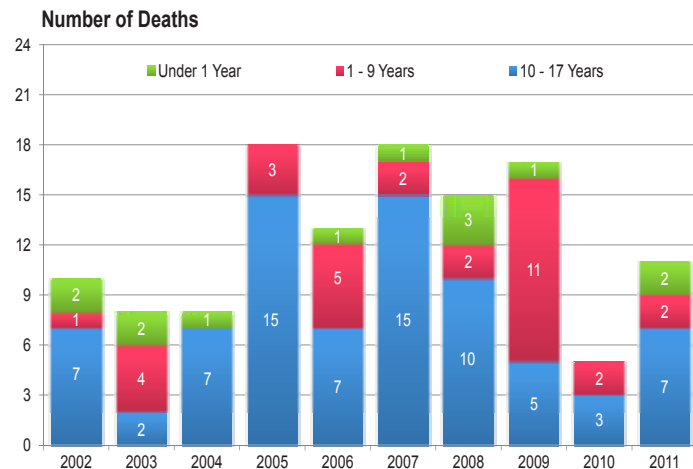
In 2011, homicides increase by six; suicides tie for second lowest in last ten years.

Intentional injury deaths include homicide and suicide.

Figure 18 illustrates that 2 infants, 2 children between the ages of 1 and 9, and 7 children between the ages of 10 and 17 died due to homicide in 2011. The number of homicides in 2011 was an increase of 120% over 2010, but the 11 homicides is lower than the eight-year average of 13 from 2002 to 2009. The total number of homicides in the infant and 10-17 years old categories were three-year highs.

Homicide went from the sixth (in 2010) to the fourth leading cause of death among all age groups. Typically, the majority of homicide deaths occur in the 10-17 years old group, and in 2011 almost 65% of all homicides fell into this age category making it the leading cause of death in this age group. Homicide was the leading cause of injury related death among 1- to 9-year-olds for the third consecutive year.

Figure 18
Total Child Homicide Deaths by Age Group per Year



Among the homicide victims were 9 boys and 2 girls, with 10 of the 11 being minority children. The ages of the children were less than 1 year (2), 2 years (1), 5 years (1), 15 years (1), 16 years (3), and 17 years (3). All 7 homicides in the 10-17 years age group were gun related. The remaining homicides were due to physical abuse (2), stab wound (1), and asphyxia (1).

The leading risk factor associated with homicide was poverty, while family history of domestic violence was second. Parental or child alcohol or drug use was the third most common risk factor. The data suggest that a child's home life has a major impact on the outcome of a child's life.

Figure 19 **Total Firearm Deaths by Manner per Year**

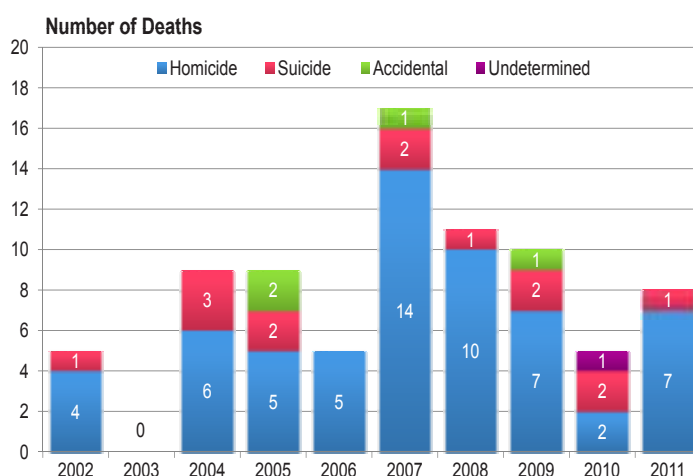


Figure 19 is a graphic depiction of the number of firearm deaths by manner (homicide, suicide, accidental) over a ten-year span. In 2011, there were 8 firearm deaths which included 7 homicides and 1 suicide. Two gun related homicides included gang related shootings of 16-year-old males and another two gun deaths were related to robbery. Since gun access is a known risk factor in Cuyahoga County, this reinforces the need for safety awareness and proper safekeeping of guns for both children and adults.

There were 2 suicides in 2011, which is the second lowest number in the last ten years (**Figure 20**). Both completed suicides were teenage boys. The method of suicide included self-inflicted gunshot wound (1) and hanging (1). Both cases had a history of substance abuse with one case also having a history of depression and a previous suicide attempt.



INTENTIONAL INJURY DEATHS

These tragic events do not fully show the gravity of suicide in the adolescent population. According to the American Academy of Child & Adolescent Psychiatry, completed suicide is the third leading cause of death for 15- to 24-year-olds and fourth leading cause of death for children ages 10-14 years.²⁸ Almost one in five high school students have seriously considered killing themselves while one in seven students made actual plans for committing suicide.²⁹

Map 4 shows the distribution of homicides and suicides over a period of ten years. In 2011, 7 of the 11 homicides (64%) were residents of Cleveland and both suicides resided outside of Cleveland. The majority of the homicides occurred in areas with a high density of families and individuals living below the poverty level. Suicide deaths were more evenly distributed among areas with a high density of poverty and areas with a low density of poverty.

Map 4
Distribution of Poverty and Child Homicide and Suicide
Cuyahoga County, Ohio (2002-2011)

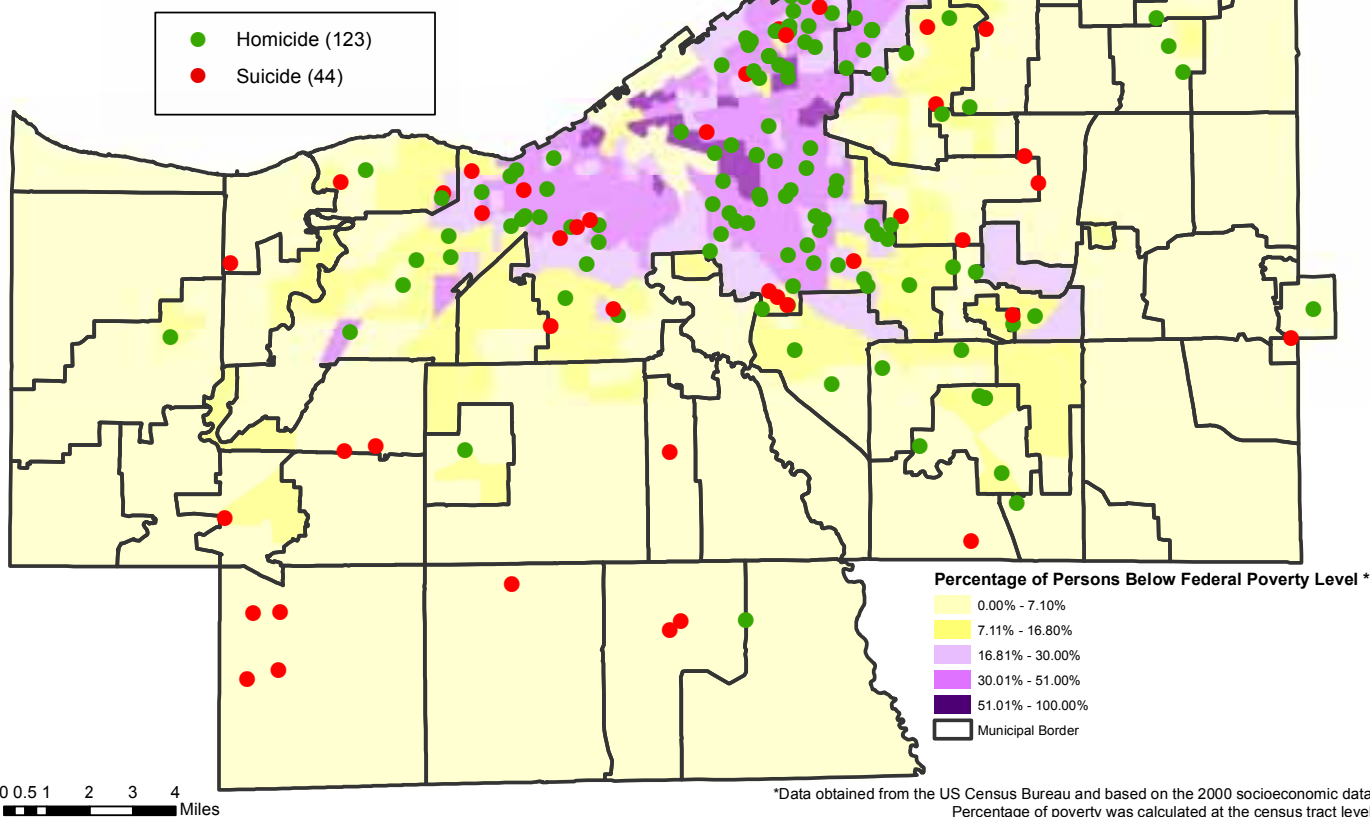
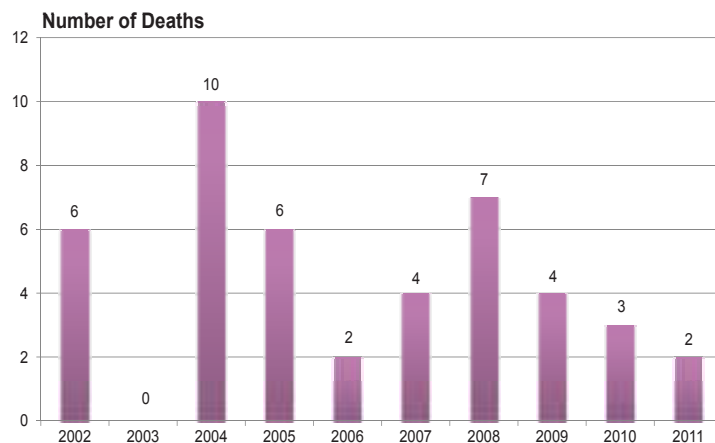


Figure 20
Total Child Suicide Deaths per Year



²⁸ American Academy of Pediatrics. Some things you should know about preventing teen suicide. Available online at <http://www.aap.org/advocacy/childhealthmonth/preventeensuicide.htm> (accessed July 10, 2012).

²⁹ TeenHelp.org. Teen suicide facts. Available online at <http://www.teensuicidestatistics.com/statistics-facts.html> (accessed June 24, 2012).

Significant increase in deaths due to abuse and neglect.

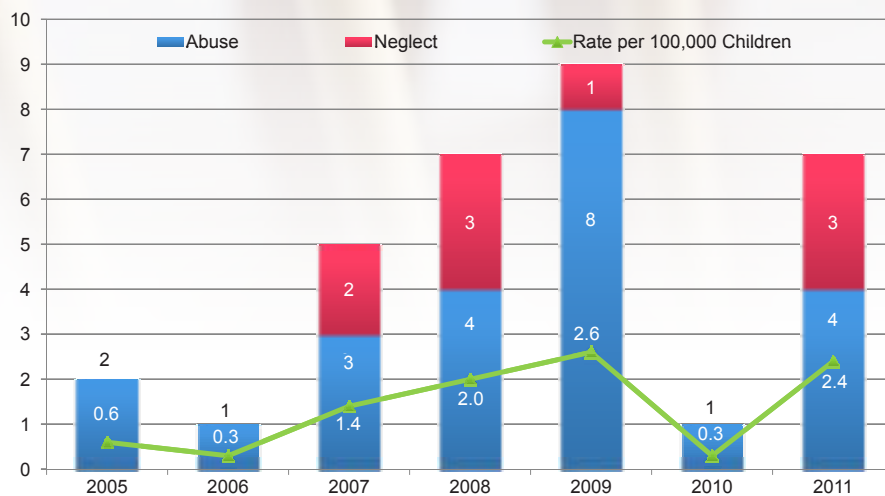
In 2011, the county rate of child abuse or neglect deaths was 2.4 per 100,000 children. In 2010 (the most recent data available), the national rate for child fatalities due to abuse or neglect was 2.1 per 100,000 children, which is lower than the 2009 figure of 2.3.^{30,31}

In 2011, there were 7 abuse or neglect related child deaths (Figure 21). Five of the seven cases were males of all other races and the other two deaths occurred to white females. Five of the seven deaths were residents of Cleveland. The ages ranged from 5 months to 14 years old with 4 of the deaths occurring to children 2 years old or younger. Two of the three neglect cases involved

medical neglect (one died due to asthma and the other child died of pneumonia) while the third case of neglect involved an accidental overdose/poisoning of a 1-year-old. Of the 4 child abuse homicides, 2 were due to intentional suffocation, 1 was a stabbing, and 1 was due to blunt trauma.

The leading risk factor in deaths due to abuse or neglect was poverty, which was found in 6 out of the 7 cases, while partner abuse occurred in 5 of the 7 cases. Parental drug use, maternal history of mental illness, and parental criminal history were found in 3 of the 7 cases.

Figure 21 Child Deaths Due to Abuse and Neglect



³⁰ 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, 2012).

³¹ US Department of Health and Human Services; Administration for Children and Families; Administration on Children, Youth and Families; Children's Bureau. (2010). Child maltreatment 2009. Available online at http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#can (accessed July 11, 2012).

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

Community service agencies worked with 78% of families that had a child who died in 2011. This is a 2% decrease from 2010 and a 6% decrease from 2009. This marks the fourth year in a row that fewer children who died or their family members received support from at least one service agency.

- 43 victims or family members were served by one service agency
- 48 by two agencies
- 32 by three agencies
- 12 by four agencies
- 8 by five agencies
- 3 by six agencies

Table 8
Service Involvement by Agency and Age Group

Type of Involvement	Under 1 Year	1 - 9 Years	10 - 17 Years	Total
DCFS* involved at time of death	14	8	1	23
DCFS involvement in prior 12 months	24	12	2	38
DCFS involvement ever (mom or child)	55	13	13	81
DCFS conducted investigation of death	58	16	13	87
Help Me Grow (child)	17	11	5	33
Help Me Grow (sibling)	55	10	4	69
WIC (mom or child)	30	12	0	42
MomsFirst involved at time of death	1	1	0	2
MomsFirst involvement ever (mom, child, or sibling)	12	4	1	17
WVSC** involved at time of death (mom or child)	0	0	3	3
WVSC involvement ever (mom or child)	17	5	2	24
Juvenile Justice involved with child	1	2	4	7
Juvenile Justice involved with parent	63	9	4	76
Total Number of Deaths	144	23	20	187
Total Number Served by at Least 1 Agency	108	22	16	146
Percent of Children/Families Served	75%	96%	80%	78%

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

More than half (55%) of the victims or family members were served by two or more agencies and 30% were involved with at least three community service agencies within Cuyahoga County. This is a 25% decrease from the number of victims or family members in 2010 that received similar services. **Table 8** provides a breakdown of services by agency or program and age group.



Risk factors increase by 15% in 2011.

Table 9 summarizes the total number of families by category of risk. **Appendix B** presents a summary of risk factors within each category. Overall, 93% of the families had one or more documented medical indicators; 66% had poverty indicators; 43% of children and/or parents used cigarettes, alcohol, or drugs; 39% had behavioral risk factors; 34% of children and/or parents had some history of mental health problems; and 33% 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 9. The column headed “Total Cases” indicates how many of the 187 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 174 families with a medical risk factor, 28 also had risk factors in 5-8 other categories.

Throughout this report the leading risk factors for different causes of death are listed. For seven years in a row the number of cases that identified economic risk factors (124 in 2011), such as poverty, surpassed the number of behavioral factors such as late or missed prenatal care, inadequate supervision, drug use, and limited parenting skills. Increases in risk factors were seen in the following categories: system (91%), mental health (9%), violence related (8%), substance use (7%), and medical (1%). Decreases were seen in environmental (24%), behavioral (7%), social (4%), and economic (1%) risk factors.

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 that need us. Thus, cohesive collaboration is necessary at this time when significant reductions of our resources exist in Cuyahoga County. We must ensure the health and well-being of the next generation of future leaders and truly demonstrate our commitment to *Protecting Our Future*.

Table 9
Categories of Risk Factors Identified

	Total Cases (of 187)	Percent (%) of Cases	Total Factors (of 1620)	Number of Different Categories of Risk		
				0	1 to 4	5 to 8
Medical	174	93.0	786	34	112	28
Economic	124	66.3	135	0	94	30
Substance Abuse (parent and/or child)	81	43.3	195	0	52	29
Behavioral	73	39.0	129	2	42	29
Mental Health	63	33.7	97	0	39	24
Violence Related	61	32.6	196	4	28	29
Social	25	13.4	35	0	8	17
Environmental	20	10.7	21	2	4	14
System	20	10.7	26	0	7	13

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. Therefore, the participants are primarily high-risk African American pregnant women and teens. The success of the MomsFirst project is evident in the data. The 2009 Cleveland infant mortality rate was 19.7 for infants of all other races, and in 2010 it was 11.5. The 2009 IMR for MomsFirst clients was 8.5, and in 2010 it was 2.6.
 - 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 was received from the Mt. Sinai Foundation to support "Breast For Success," a new initiative to support mothers in their decision to breastfeed. A certified lactation counselor has been hired and components have been built in for fathers and breastfeeding doulas. Overall, breastfeeding promotes health and helps to prevent disease. 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 guide 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 fourth annual Happy Healthy Babies event in September 2011 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 care, safe sleep, stress reduction and management, fatherhood services, and infant mortality awareness.
- 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 2012, the Ohio March of Dimes provided funds for three 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.
 - Funding was awarded to the Stephanie Tubbs Jones Community Health Center for enhancement of prenatal education classes for expectant mothers and fathers through the Stork's Nest and Boot Camp for Dads programs.
 - A grant was given to the Ohio Perinatal Quality Collaborative to support efforts to reduce deliveries before 39 completed weeks of gestation without medical indication in Cuyahoga County and throughout the state.
 - Research grants were awarded to Case Western Reserve University, MacDonald Women's Hospital, and MetroHealth Medical Center to develop treatments to stop preterm labor and prevent PPROM-related premature deliveries.

Prematurity and Infant Mortality (cont.)

- **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.
- **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** provides training sessions for MomsFirst staff members and educational classes for MomsFirst clients on the topics of preterm labor, prematurity deaths, and safe sleep.
- 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) and recommendations to improve Ohio's Newborn Screening Program.
- **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 2011-2012 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 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. Nine 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. There were fifteen educational programs provided by the CCBH to 250 maternity, NICU, and pediatric nurses. There were also two trainings for 25 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**. The letter was distributed to 900 pediatricians, obstetricians, and family practice physicians in the county.
- The CCBH continues to present safe sleep educational programs to infant care specialists and nanny students at the Alexandria School.
- In September 2011 the CCBH partnered with **MomsFirst** during National Infant Mortality Awareness Month to provide safe sleep education to pregnant or parenting women, fathers, and family members.

Sleep Related Deaths *(cont.)*

- 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. Over 8,000 cards have been distributed to hospitals, home visiting programs, and family serving agencies.
- In 2011-2012 the CCBH participated in 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.
- 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** is a priority for the agency in 2012. The CCBH provided 10 trainings for 278 staff members.
- **Help Me Grow** continues to distribute safe sleep information to over 5,000 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.
- MomsFirst provides safe sleep education to all participants in the program with over 2,100 families served in 2011. 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.
- Using data from the CCBH, a local television station aired a segment about bedsharing and safe sleep for infants.
- In 2011 the CCBH provided safe sleep education for clients and staff of the Stork’s Nest program. This is a program funded by the **March of Dimes** and sponsored by a local sorority to provide education, supplies, and resources to pregnant and parenting underserved women in the county.
- Help Me Grow and the CCBH 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, and leads booster seat promotion efforts.
 - The Center promoted child pedestrian safety by coordinating Walk Safely to School Week activities in 20 local schools. A grant was obtained to improve child pedestrian safety with a focus on the physical environment. Improvements included a raised crosswalk, new signage, lighting, and an increased police presence to enforce school zone speeds.
 - The teen driving programs reach young people at local high schools and through social media with messages that encourage seat belt use and responsible driving behavior. The preteen program reminds younger children to always buckle up and ride in the back seat.
 - 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 2011, the Rainbow Injury Prevention Center provided 356 smoke detectors free of charge to greater Clevelanders and provided fire safety education programs to 6,000 Cleveland area children through appearances at Safety Towns, schools, and recreation centers. The staff also presented *Learn Not to Burn* which discusses how smoke alarms work, how fires start, and how to evacuate a burning building for children in kindergarten through fourth grade.

Unintentional Injuries *(cont.)*

- In 2011 the staff visited over 2,000 new mothers at MacDonald Women's Hospital to provide safety information about car seats and poison prevention.
- 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.
- The **Cuyahoga County Witness/Victim Service Center** provides information and education to clients who access services regarding mental health alerts in children, general child safety, adequate adult supervision, safe gun storage, and intergenerational domestic violence.

Homicide

- The **Department of Children and Family Services (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.
- In 2010 a task force for the DCFS was created that involved a panel of thirty professionals from a wide variety of social service and legal fields. Their charge was to develop specific recommendations focusing on decision points related to the reunification process; a review of and recommendations on permanency; as well as recommendations to expand the agency's service delivery model related to evidence-based practice. The DCFS is currently implementing many of the recommendations for the reunification process.



Homicide (cont.)

- The **Cuyahoga County Witness/Victim Service Center (WVSC)** was instrumental in convening multiple partners in the Defending Childhood Initiative. The focus of this project is to identify, prevent, and treat children regarding exposure to all forms of violence in their homes, schools, or communities. In July 2012 the Defending Childhood Service System was launched in order to identify children exposed to violence and provide linkages to appropriate evidence-based treatment.
- The WVSC hosted the planning process for creating a one-stop shop for family violence victims in Cuyahoga County. The **Family Justice Center** will hopefully reduce homicides, increase victim safety, strengthen empowerment for victims, and reduce re-victimization, through more effective collaboration of services and increased prosecution of offenders.
- The WVSC also serves as an agency participant on the Cuyahoga County Domestic Violence Coordinating Council and participates in presentations and facilitation of discussion groups at various high schools on topics of domestic violence and violence in teen relationships.
- The WVSC promotes child 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 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 and 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.
- 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 and conducts special workgroups to promote understanding of issues such as family and community violence.

- 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?" and direct 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 **Mental Health Services, Inc.** 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.
- Through the 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.

Suicide (cont.)

- 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 and presentations are provided throughout the county in an effort to eliminate substance abuse as a factor in suicide.
- A video produced by the ADAMHS Board, *Living With It: Youth Talk About Depression*, continues to be distributed to schools and organizations. The video is part of a kit that gives suggestions for use, fact sheets, and recommended actions for teachers to take if they suspect a child is depressed. The **Parent to Parent Network** continues to sponsor events about youth and depression that feature the video followed by a question and answer session with panel experts.
- **Cuyahoga County Juvenile Court** has a Mental Health Court that targets youth who have been identified with mental health issues.
- The Behavioral Health / 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 non-violent 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. For example:

- 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 (ADAMHS) Board**; and the DCFS plan to create a liaison position between HMG and ADAMHS to improve cross-system services for families.
- **MetroHealth** hosts a quarterly meeting with DCFS to improve collaboration between the two agencies and to update policy information.
- The **Witness/Victim Service Center (WVSC)** collaborates with the DCFS in developing enhanced strategies such as the requirement to assess for domestic violence related issues at the time of initial contact with a family, and then continuously throughout that family's involvement with the DCFS. As the home of the **Children Who Witness Violence** program, the WVSC staff participates in DCFS workers' training in recognizing trauma. The training is offered by **Mental Health Services, Inc.**

Prematurity

1. Support the efforts of the March of Dimes to increase public awareness of the severity of prematurity and the need to educate expectant parents about the warning signs of preterm labor.
2. Encourage child and family serving agencies to incorporate interconception care as a core component of their programs.
3. 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.

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.
2. 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.
3. Partner with family serving agencies to provide safe sleep education to other infant caregivers such as grandparents, relatives, and friends.
4. Conduct a focus group study with mothers and other caregivers to identify concerns and barriers that impede families from following the safe sleep guidelines and to use as a source for input in the refinement of the safe sleep message for Cuyahoga County.

Unintentional Injuries

1. Support the Safe Kids / Safe Communities Coalition in their comprehensive efforts to prevent injuries and educate the community on safety issues that include child passenger seats/restraints; teen drivers; pedestrian 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. Support parental and community education to increase awareness of the importance of selecting a safe and appropriate person to care for your child.
2. Promote the use of 24-hour parenting hotlines as a safe and confidential resource for parents in crisis.
3. Advocate for community-based safe haven centers for teens that 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.



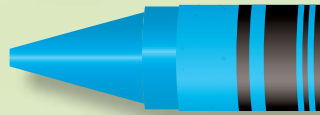


Table 10 Annual Number of Gun Related Deaths by Manner, Age, and Gender

BOYS	Cause of Death	AGE	YEAR										Total
			2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Undetermined	14	0	0	0	0	0	0	0	0	0	1	0	1
	Total	0	0	0	0	0	0	0	0	0	1	0	1
Accidental	3	0	0	0	1	0	0	0	0	0	0	0	1
	15	0	0	0	0	0	0	0	1	0	0	0	1
	16	0	0	0	1	0	1	0	0	0	0	0	2
	Total	0	0	0	2	0	1	0	1	0	0	0	4
Suicide	13	0	0	0	0	0	0	0	1	0	0	0	1
	14	0	0	0	0	0	2	0	0	0	0	0	2
	15	1	0	0	1	0	0	0	1	0	0	0	3
	16	0	0	1	0	0	0	0	0	0	0	0	1
	17	0	0	0	1	0	0	0	0	0	2	1	4
	Total	1	0	1	2	0	2	0	2	2	2	1	11
Homicide	2	0	0	0	0	0	0	0	2	0	0	0	2
	11	0	0	0	1	1	0	0	0	0	0	0	2
	13	0	0	0	0	0	1	1	0	0	0	0	2
	14	0	0	1	0	1	0	0	0	0	0	0	2
	15	0	0	0	1	0	1	2	0	0	0	0	4
	16	4	0	1	1	1	2	2	1	0	3	3	15
	17	0	0	3	2	1	9	2	3	2	3	3	25
	Total	4	0	5	5	4	13	7	6	2	6	6	52
TOTAL ALL BOYS		5	0	6	9	4	16	7	9	5	7	68	

GIRLS	Cause of Death	AGE	YEAR										Total
			2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Suicide	14	0	0	1	0	0	0	0	0	0	0	0	1
	17	0	0	1	0	0	0	1	0	0	0	0	2
	Total	0	0	2	0	0	0	1	0	0	0	0	3
Homicide	5	0	0	0	0	0	0	0	1	0	0	0	1
	6	0	0	0	0	1	0	0	0	0	0	0	1
	11	0	0	0	0	0	0	1	0	0	0	0	1
	12	0	0	0	0	0	1	0	0	0	0	0	1
	15	0	0	0	0	0	0	1	0	0	1	0	2
	17	0	0	1	0	0	0	1	0	0	0	0	2
Total	0	0	1	0	1	1	3	1	0	1	1	8	
TOTAL ALL GIRLS		0	0	3	0	1	1	4	1	0	1	11	
TOTAL CHILDREN		5	0	9	9	5	17	11	10	5	8	79	

Table 11 Demographic Profiles and Cause Specific Rates¹

	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	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Cuyahoga County	17,375	17,252	16,932	16,354	16,682	16,450	16,249	15,525	15,108	14,972
% White	61.5	61.2	59.6	57.7	57.9	56.1	56.0	56.4	51.9	51.7

Annual Death Data	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Annual Child Deaths	231	189	227	239	233	230	240	213	178	187
Annual Infant Deaths	173	136	161	164	166	162	171	141	140	144
% Deaths to Infants	74.9	72.0	70.9	68.6	71.2	70.4	71.3	66.2	78.7	77.0

Child Mortality / 100,000 Children	66.4	54.3	65.2	68.7	67.0	66.1	69.0	61.2	61.3	64.4
Annual Total Medical Death Rate	52.6	39.9	48.3	52.6	49.1	49.4	50.3	42.8	46.5	49.3
Cancer	2.6	2.6	3.7	2.9	2.3	2.9	3.2	2.6	1.7	1.4
Annual Total Injury Death Rate	13.8	14.4	17.0	16.1	17.8	16.7	18.7	18.4	14.8	15.2
Homicide	2.9	2.3	2.0	5.2	3.7	5.7	4.3	4.9	1.7	3.8
Motor Vehicle Accident	1.1	2.3	2.3	1.1	1.1	0.9	2.6	1.7	1.4	1.0
Fire	1.1	0.9	0.9	0.0	1.1	1.1	0.0	0.9	0.0	0.3
Drowning	1.1	1.4	1.1	1.4	2.0	1.1	1.1	1.7	0.0	0.7
Suicide	1.7	0.0	2.9	1.7	0.6	1.1	2.0	1.1	1.0	0.7

Infant Mortality / 1,000 Births	10.0	7.9	9.5	10.0	10.0	9.8	10.5	9.1	9.3	9.6
Neonatal Mortality / 1,000 Births	7.4	4.9	7.1	7.9	7.3	6.8	7.2	6.5	6.4	6.4
Postneonatal Mortality / 1,000 Births	2.6	3.0	2.4	2.1	2.7	3.0	3.3	2.6	2.9	3.2
Prematurity	7.0	4.4	5.5	6.5	6.3	5.9	6.3	5.5	5.2	5.3
SIDS Only	0.3	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.0
SIDS and Sleep Related	1.4	1.6	1.1	1.0	1.1	1.3	1.4	1.3	1.9	1.3

¹ Shaded boxes are 2011 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 June 10, 2012).

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Total Injury Related Deaths											
Under 1 Year	20	26	25	17	24	21	30	27	28	22	240
1 - 9 Years	7	13	9	10	16	12	9	19	5	9	109
10 - 17 Years	21	11	25	29	22	25	26	18	10	13	200
Total	48	50	59	56	62	58	65	64	43	44	549
Total Deaths from Medical Causes											
Under 1 Year	153	110	136	147	142	141	141	114	112	122	1318
1 - 9 Years	14	19	21	20	15	21	21	23	11	14	179
10 - 17 Years	16	10	11	16	14	10	13	12	12	7	121
Total	183	139	168	183	171	172	175	149	135	143	1618
Total All Causes	231	189	227	239	233	230	240	213	178	187	2167

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

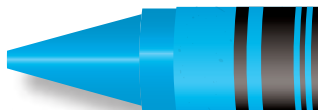


Table 13 Cause of Death by Age Group and Year

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total per Cause
Prematurity											954
Under 1 Year	121	76	93	107	105	97	102	85	79	80	
1 - 9 Years	1	0	1	1	0	1	2	1	0	1	
10 - 17 Years	0	0	1	0	0	0	0	0	0	0	
Birth Defects											333
Under 1 Year	18	15	26	26	28	31	31	28	20	35	
1 - 9 Years	2	6	0	11	5	6	9	6	5	2	
10 - 17 Years	2	2	0	2	2	3	3	3	4	2	
SIDS and Sleep Related Deaths											216
Under 1 Year	24	27	20	16	18	22	22	20	28	19	
Cancer and Other Medical Conditions											336
Under 1 Year	8	16	20	15	10	9	13	5	13	7	
1 - 9 Years	11	13	21	9	11	14	10	16	6	11	
10 - 17 Years	14	8	10	14	13	7	10	9	8	5	
Homicide											123
Under 1 Year	2	2	1	0	1	1	3	1	0	2	
1 - 9 Years	1	4	0	3	5	2	2	11	2	2	
10 - 17 Years	7	2	7	15	7	15	10	5	3	7	
Suicide											44
1 - 9 Years	1	0	0	0	0	0	0	0	0	0	
10 - 17 Years	5	0	10	6	2	4	7	4	3	2	
Motor Vehicle Accident											48
Under 1 Year	0	0	1	0	0	0	0	1	0	0	
1 - 9 Years	1	3	0	0	2	2	2	2	2	1	
10 - 17 Years	3	5	2	4	2	1	7	3	2	2	
Accidental Suffocation											9
Under 1 Year ¹	0	0	0	0	0	0	0	0	0	0	
1 - 9 Years	0	1	4	1	0	2	0	0	0	0	
10 - 17 Years	0	0	0	0	0	0	0	0	1	0	
Drowning											40
Under 1 Year	0	0	0	0	1	0	0	0	0	0	
1 - 9 Years	0	2	2	2	4	2	2	2	0	1	
10 - 17 Years	4	3	2	3	2	1	2	4	0	1	
Fire ^{2,3}											21
Under 1 Year	0	0	0	0	0	0	0	1	0	0	
1 - 9 Years	3	3	2	0	3	3	0	2	0	1	
10 - 17 Years	1	0	0	0	1	1	0	0	0	0	
Other Accidents ⁴											43
Under 1 Year	0	0	0	0	3	2	0	0	0	1	
1 - 9 Years	1	0	0	3	1	1	3	2	1	4	
10 - 17 Years	1	1	4	1	7	3	0	2	1	1	
Total per Year	231	189	227	239	233	230	240	213	178	187	2167

¹ Excludes those related to sleep environment.

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

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

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

Table 14 Annual Number of Child Deaths by Race and Age Group¹

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Race & Age Group											
White											
Under 1 Year	49	45	55	53	43	55	43	43	40	45	471
1 - 9 Years	11	14	17	16	12	10	10	19	4	11	124
10 - 17 Years	16	7	20	13	16	11	13	12	13	6	127
Total	76	66	92	82	71	76	66	74	57	62	722
All Other Races											
Under 1 Year	124	91	105	111	123	107	128	98	100	99	1086
1 - 9 Years	10	18	13	14	18	23	20	23	12	12	163
10 - 17 Years	21	14	16	32	20	24	26	18	9	14	194
Total	155	123	134	157	161	154	174	139	121	125	1443
Total All	231	189	226	239	232	230	240	213	178	187	2165
<i>Missing Race Info</i>	0	0	1	0	1	0	0	0	0	0	2
Rates of Death											Average
Crude Death Rate White ²	37.8	32.8	45.7	40.8	35.3	37.8	32.8	36.8	36.9	40.1	37.7
Crude Death Rate All Other Races ³	105.6	83.8	91.3	107.0	109.7	104.9	118.5	94.7	89.2	92.2	99.7
Ratio of All Other Races to White	2.8	2.6	2.0	2.6	3.1	2.8	3.6	2.6	2.4	2.3	2.7
Death Rate (excl Infants) White ⁴	13.4	10.4	18.4	14.4	13.9	10.4	11.4	15.4	11.0	11.0	13.0
Death Rate (excl Infants) All Other Races ⁵	21.1	21.8	19.8	31.3	25.9	32.0	31.3	27.9	15.5	19.2	24.6
Ratio of All Other Races to White (excl infants)	1.6	2.1	1.1	2.2	1.9	3.1	2.7	1.8	1.4	1.7	2.0
Infant Mortality/1,000 Births White ⁶	4.6	4.3	5.5	5.6	4.5	6.0	4.7	5.0	5.1	5.8	5.1
Infant Mortality/1,000 Births All Other Races ⁷	18.5	13.6	15.3	16.0	17.5	14.8	17.9	14.4	13.8	13.7	15.6
Ratio of All Other Races to White IMR	4.0	3.2	2.8	2.9	3.9	2.5	3.8	2.9	2.7	2.4	3.1

¹ Shaded boxes are based on adjusted estimates from unconfirmed delivery hospital data.

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

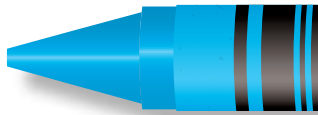
³ Total All Other Races deaths/135,647 x 100,000 (2010 Census data in Table 11)

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

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

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

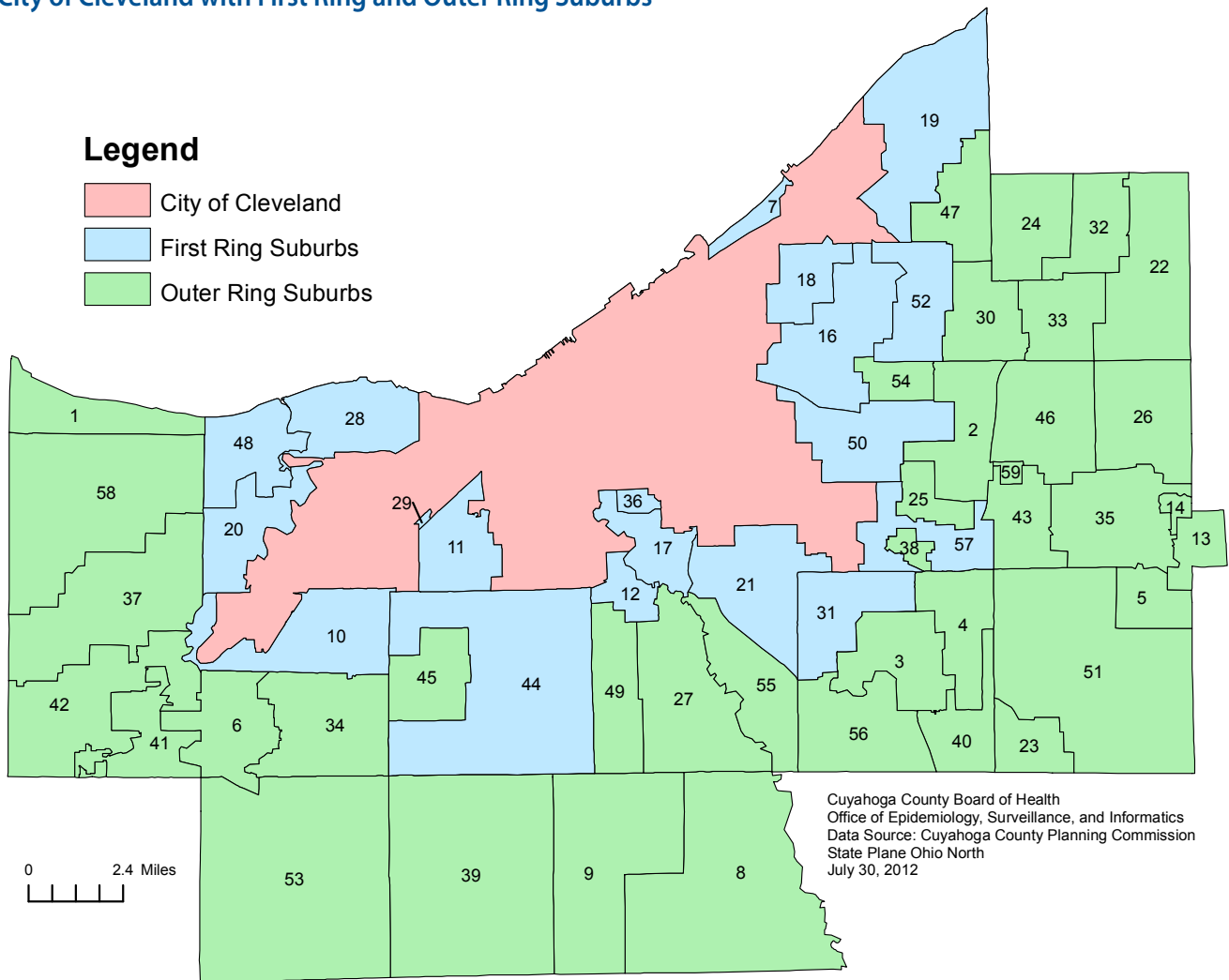
⁷ Total Infant All Other Races deaths/total All Other Races live births x 1,000 (annual birth data in Table 11)

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

	2002	2003	2004	2005	2006*	2007	2008	2009	2010	2011*	Total
Gender & Age Group											
Male											
Under 1 Year	90	80	87	95	91	93	94	74	71	81	856
1 - 9 Years	15	17	13	15	15	16	15	26	6	11	149
10 - 17 Years	25	16	21	36	23	26	24	15	15	15	216
Total	130	113	121	146	129	135	133	115	92	107	1221
Female											
Under 1 Year	83	56	74	69	74	69	77	67	69	63	701
1 - 9 Years	6	15	17	15	16	17	15	16	10	11	138
10 - 17 Years	12	5	15	9	13	9	15	15	7	5	105
Total	101	76	106	93	103	95	107	98	86	79	944
TOTAL ALL	231	189	227	239	232	230	240	213	178	186	2165

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

City of Cleveland with First Ring and Outer Ring Suburbs



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

Summary of Risk Factors in 2011*

Mother's

Medical Risk Factors

Chronic illness
 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 Child 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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protectingourfuture.cuyahogacounty.us