MASSACHUSETTS
CHILD FATALITY REVIEW PROGRAM

A Multi-Disciplinary Approach to the Prevention of Child Deaths

2009-2012

Office of the Chief Medical Examiner,
Henry M. Nields, MD, PhD, Chief Medical Examiner

Massachusetts Department of Public Health
Cheryl Bartlett, RN, Commissioner of Public Health

2014

Massachusetts State Child Fatality Review Team Members

Chief Medical Examiner (Co-Chair)

Commissioner of Dept. of Public Health (Co-Chair)

Mandated State Child Fatality Review Team

Attorney General

Commissioner of Dept. of Elementary and Secondary Education

Commissioner of Dept. of Mental Health

Commissioner of Dept. of Developmental Services

Commissioner of Dept. of Children and Families

Commissioner of Dept. of Youth Services

Representative of Mass. District Attorney's Association

Colonel of State Police

Director of Mass. Center for Sudden Infant Death Syndrome (SIDS)

Representative of the Mass. chapter of the American Academy of Pediatrics with experience in child abuse and neglect

Representative of the Mass. Hospital Association

Chief justice of the juvenile division of the trial court

President of Mass. Chiefs of Police Association

Child Advocate

Anyone else with information relevant to cases under review

Mandated Local Child Fatality Review Team Members

Chief justice of the juvenile division of the trial court, or designee

Commissioner of Dept. of Public Health, or designee

Commissioner of Dept. of Children and Families, or designee

District Attorney of county (chair)

Director of Mass. Center for Sudden Infant Death Syndrome (SIDS), or designee

Pediatrician with experience in child abuse and neglect

Local police officer from the community where the fatality occurred

State law enforcement officer

Anyone else with information relevant to cases under review

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Massachusetts Child Fatality Review Program:
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Executive Summary

A child's death is a sentinel event that should urge communities to identify other children at risk for illness or injury.[1] The purpose of Child Fatality Review is to conduct a comprehensive, multi-disciplinary review of child deaths, to better understand how and why children die, and to use the findings to take action that can prevent other deaths and improve the health and safety of children.[2] In Massachusetts, local Child Fatality Review Teams review deaths under their jurisdiction to determine if the death was preventable and formulate recommendations outlining education, policy, and prevention action steps to take to prevent similar deaths in the future. These local recommendations inform the statewide prevention efforts of the State Child Fatality Review Team.

During 2009-2012, Local teams reviewed over 350 child deaths and made more than 120 recommendations to the State team. In 2009-2010, the State team developed detailed guidelines for local teams on case review and formulating effective recommendations. In 2010, the State Team developed a sudden unexpected infant death (SUID) investigation form based on national standards and worked collaboratively with the Executive Office of Public Safety and State and Local Police to implement use of the form for all sudden unexpected deaths in children up to age 3. As a result, our understanding of the circumstances of sudden unexpected deaths has improved. In 2012, the State Team drafted and voted on a recommendation clarifying the 51A reporting process for when a child unexpectedly dies for use by mandated reporters. The recommendation, which will be distributed to mandated reporters statewide, states that any unexplained death of a child establishes reasonable suspicion of abuse or neglect and advises reporting these deaths to the Department of Children and Family services.

The Child Fatality Review process was not without challenges during 2009-2012. At both the state and local level, Child Fatality Review is an unfunded mandate. Local team coordinators continue to struggle with balancing existing work responsibilities with coordinating local team meetings, developing local team guidelines, gathering records for the review, and submitting data to the State Team. Delays in both death certificate and surveillance data also affect Local and State teams' abilities to focus prevention efforts and measure progress.

Looking forward, the State team will continue to work closely with local Child Fatality Review teams to improve the quality of reviews and submit data in a more efficient manner. The State team will also work collaboratively with other agencies and key stakeholders to implement some of the key recommendations put forth in this report, and to continue the current work of collecting data on the circumstances of sudden unexpected infant death to inform prevention efforts. In 2014, the 51A recommendation will be distributed to mandated reporters including emergency department staff, EMS, local hospitals, MA Chiefs of Police, and others. Finally, following the convening of a working group to examine ways to improve reviews of infant deaths due to medical causes in 2010, the Review of Infant Mortality process will be piloted in 2014.

[1] National MCH Center for Child Death Review, Michigan Public Health Institute, September 2005. Retrieved from: http://www.childdeathreview.org/cdrprocess.htm ©
[2] Ibid.

Introduction

The Child Fatality Review program in Massachusetts was authorized by MGL, Chapter 38: Section 2A. The purpose of Child Fatality Review (CFR) is to conduct a comprehensive, multi-disciplinary review of child deaths, to better understand how and why children die, and use the findings to take action that can prevent other deaths and improve the health and safety of children.[3] This report:

- Describes the multi-disciplinary approach to the prevention of child deaths in Massachusetts;
- Provides the epidemiology of Massachusetts child deaths in 2009 and 2010, the two most recent years for which death data is available;
- Summarizes the State and Local Child Fatality Review Team activities from 2009-2012;
- Describes challenges to the child fatality review process;
- Focuses on five of the leading preventable causes of death among Massachusetts children in 2009 and 2010 and recommendations made by state and local CFR teams to reduce the numbers of deaths in these areas; and
- Provides the reader with further information on CFR structure and recommendations, as well as detailed data tables, in the Appendices.

A Multi-Disciplinary Approach to the Prevention of Child Deaths

A child's death is a sentinel event that should urge communities to identify other children at risk for illness or injury.[4] To be most effective, a child death review requires multidisciplinary participation from the community.[5] In Massachusetts, both state and local CFR teams are structured by statute to use a multidisciplinary, multi-agency approach in determining the factors and circumstances involved in a child's death. This method allows for a range of perspectives to assist in identifying relevant social, medical, economic, familial, and agency factors that may have played a role in a child's death,[6] including a wider focus of what it means to protect all children. As a result of this approach, Massachusetts State and Local CFR teams have developed practical recommendations for policy and system change and raised awareness of prevention methods to communities, child-caring agencies, and government. Multidisciplinary review teams in Massachusetts include representatives from:

- The medical community (doctors, mental health care providers, nurses, etc)
- The Department of Public Health
- The Department of Mental Health
- The Department of Children and Families
- The Department of Youth Services
- District Attorneys' Offices
- Educators
- The MA Hospital Association
- The MA State Police and MA Chiefs of Police Association
- The Massachusetts Sudden Infant Death (SIDS) Center
- The Office of the Child Advocate

[3] National MCH Center for Child Death Review, Michigan Public Health Institute, September 2005. Retrieved from: http://www.childdeathreview.org/cdrprocess.htm ©
[4] Ibid.
[5] Ibid.
[6] Elster, N. and Alcalde, M.G. (2003) Child Fatality Review: Recommendations for State Coordination and Cooperation, The Journal Of Law, Medicine and Ethics, 31 (2), 303-307.

The Child Fatality Review Process in Massachusetts

The Massachusetts Child Fatality Review law establishes a State Team, under the direction of the Chief Medical Examiner and 11 Local Teams, each directed by a District Attorney.[7] The State Team has been co-chaired by the Department of Public Health since 2008. By law, local teams are required to hold a minimum of four meetings per year. There is no meeting requirement for the State Team, but in practice the team meets bimonthly.

The Massachusetts Child Fatality Review State Team has two primary objectives established by law:

- It develops an understanding of how and why children die based on Local Team experience;
- It advises the governor, the legislature and the public on changes in law, policy and practice that will prevent child deaths.

A principal responsibility of the State Team is to review recommendations submitted by the Local Teams, provide additional input where necessary, and advance the final recommendations to the governor, legislature, appropriate agencies and organizations, and the public. A second responsibility is to provide ongoing advice and support for the 11 Local Teams through training and the dissemination of information pertinent to the protection of children. In 2012, a part-time State Child Fatality Review coordinator was hired by the MA Department of Public Health. Her role is to coordinate all of the State Team meetings, serve as point person for Local Team coordinators, and follow up with State Team members on action steps identified at meetings.

The Local Teams have four objectives established by law:

- Collect information on individual child deaths;
- Discuss case information in team meetings and develop an understanding of the incidence and preventable causes of child deaths;
- Through the review process, promote collaboration among the agencies that respond to child deaths and provide services to family members; and
- Advise the State Team by making recommendations for changes in law, policy and practice that will prevent child deaths.

In practice, the CFR process may vary depending on local protocols and the needs of the community. An example of how a review may occur is as follows:

[7] A list of Local Teams and coordinators can be found in Appendix A.

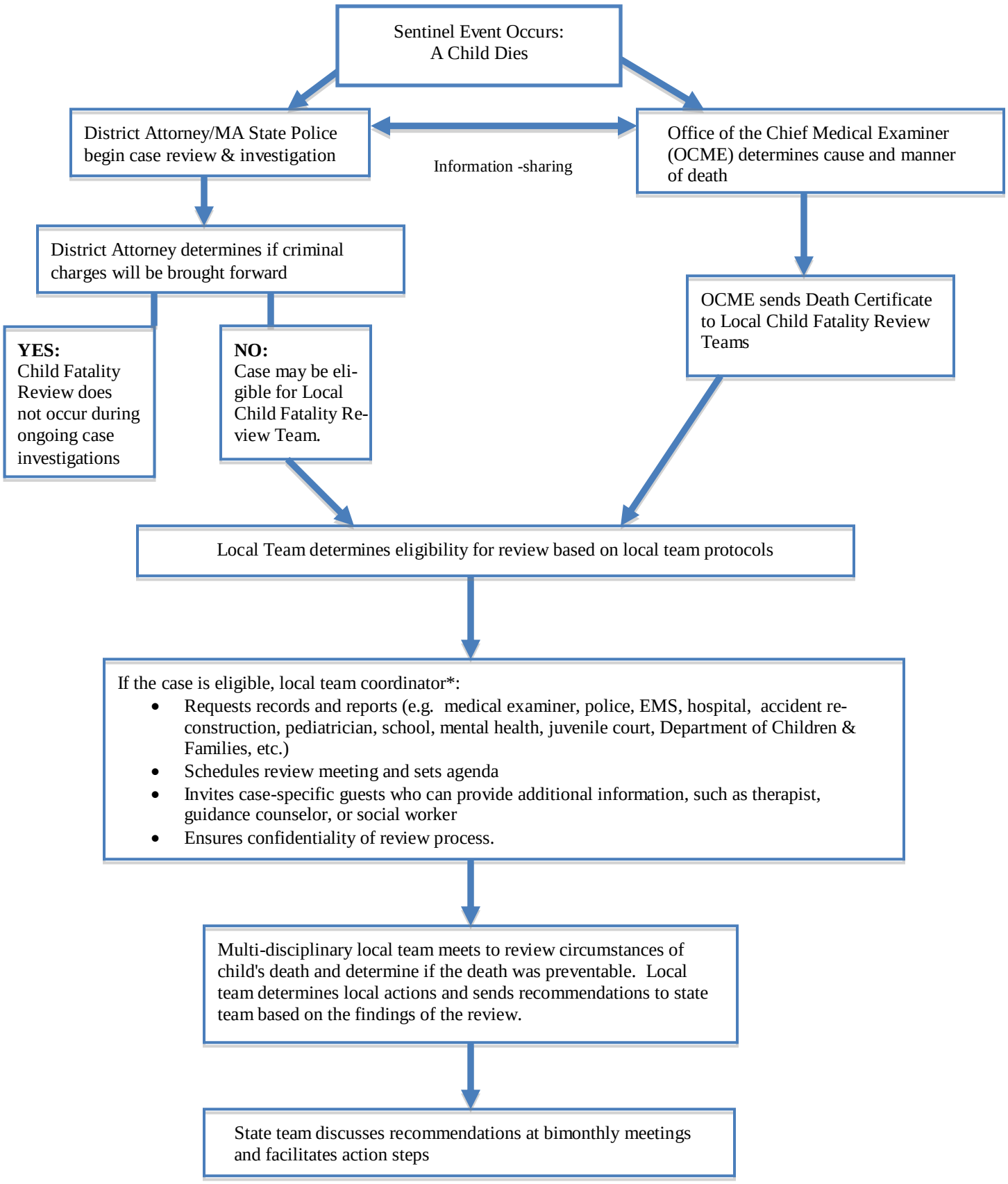
Example Review of a Drowning Death*

The local CFR team met to review the circumstances of the death of a 10 year-old boy due to drowning. The team reviewed records that were gathered by the local team coordinator from the responding police department, the State Police, the paramedics, and from the Office of the Chief Medical Examiner. In addition to the usual multidisciplinary team members, the local team invited a representative from the Environmental Police. During the review, the team identified risk factors for drowning, such as the child not having taken swimming lessons, swimming out to deeper water to fetch a ball without adult supervision, and a lack of awareness about what drowning looks like. The representative from the Environmental Police shared that unfortunately, drowning often does not look like drowning we see on television; it is almost always a deceptively quiet event. The team realized it was likely the child drowned right in front of his family and friends without them realizing it. The team recommended to the State Team that a media campaign be launched by the Department of Public Health to educate adults to actively supervise swimming children at all times, to promote swimming lessons for children and adults who are inexperienced swimmers, and to educate the public on the signs of drowning.

**While the case details described may resemble those of actual cases, the case described is fictitious.*

Figure 1 on page 5 describes the State and Local Child Fatality Review processes in detail.

Figure 1: The Child Fatality Review Process in Massachusetts



**Not all teams have a local team coordinator.*

Methods

This report uses data from multiple sources. Mortality data, inclusive of counts of deaths, demographics of decedents among Massachusetts residents, and mechanism of death (i.e. firearm, hanging, source of water in the case of drowning) is from the Massachusetts Department of Public Health's (MDPH) Registry of Vital Records and Statistics. Data on hospital stay and emergency room visit data is from the Massachusetts Center for Health Information and Analysis's Inpatient Hospital, Outpatient Observation Stay and Emergency Department Discharge Databases. National death rates are sourced from the Center for Disease Control's National Center for Health Statistics. Data on circumstances of Massachusetts occurring homicides and suicides is from the Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health.

National data on circumstances of motor vehicle occupant injuries is from the Fatality Analysis Reporting System (FARS) maintained by the National Highway Traffic Safety Administration. Data on seat belt usage is from the National Occupant Protection Use Survey (NOPUS). Data from the Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) is used to describe infant safe sleep practices. Data from the Massachusetts Youth Risk Behavior Survey (YRBS) conducted by the MA Department of Elementary and Secondary Education is used to describe factors associated with youth suicide.

Rates were calculated using population estimates from the Missouri Census Data Center online query tool (http://mcdc.missouri.edu/websas/estimates_by_age.shtml). The Missouri Census Data Center uses intercensal estimates for years 2000 to 2009 as released by National Center for Health Statistics 10-26-12. The estimates for 2010 and later are the latest 2010 post-censal figures as of July 2013; the population tables used were downloaded in July 2013.

95% confidence intervals were calculated for all death rates to determine statistical significance. The methodology used is the same as the methodology described in National Vital Statistics Reports, Vol. 52, No. 10, December 17, 2003.

Data presented is presented by select race/ethnicity in some sections. Not all races and ethnicities are represented in these sections; those with the highest counts of deaths were selected to calculate rates that may describe racial/ethnic disparities.

This report uses different time periods for reporting data depending on data availability. The majority of data presented is for the 2-year time period of 2009-2010. When reporting rates for specific causes of death by sex, age, and race/ethnicity, 10-year counts (2001-2010) were used in order to generate more stable rates. Data from the Massachusetts Violent Death Reporting System uses a five-year time period (2006-2010). All data presented refers to children aged 0-17 years unless otherwise specified.

Epidemiology of Child Fatalities in Massachusetts[8]

Child Deaths in Massachusetts (2009-2010)

Magnitude of Child Deaths

In 2009-2010, a total of 1,044 (543 in 2009 and 501 in 2010) Massachusetts children from birth through 17 years of age died. The average annual death rate was 36.8 per 100,000 children, compared with 54.3 per 100,000 among U.S. children.[9] The MA child death rate declined from 43.5 to 35.3 per 100,000 children from 2001 through 2010.

Risk of death is not constant throughout childhood. Children experience different risks for illness, injury, and death at different ages. Infants are extremely vulnerable to perinatal conditions such as preterm birth and congenital malformations, particularly during the first month of life. Infants are also vulnerable to Sudden Unexpected Infant Death (SUID). Consequently, the highest number of Massachusetts child deaths, by far, is among infants under 1 year. The risk of death due to injury is elevated among children aged 1-4 years as they begin exploring their environments, which may have potential hazards. Youth aged between the ages of 15-17 years old experience the greatest risk for injury death as they begin to drive and potentially experience conflicts that may lead to youth violence or suicide. These risks are represented in child death rates (i.e. the number of deaths in an age group divided by the population count in that age group). During 2009-2010, infants less than one year of age and youth aged 15-17 years had the highest death rates among Massachusetts children; children 5-9 years and youth 10-14 years had the lowest death rates (see Figure 2).

In 1999, the National Institutes for Health defined health disparities as differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States[10]. Disparities in child deaths by race/ethnicity and geography exist in Massachusetts. The 2009-2010 death rate among Black non-Hispanic children (76.5 per 100,000 persons) was more than twice the rate of White non-Hispanic and Asian non-Hispanic children, and 1.5 times the rate of Hispanic children. See Appendix 7 for a detailed breakdown of disparities in child deaths.

Leading Causes of Child Deaths

Figure 2 shows the leading causes of death among MA children by age group. During the two year period[11] 2009-2010, 545 (52%) of all child deaths were due to congenital anomalies and perinatal conditions; 331 (32%) were due to other medical causes; and 168 (16%) were from intentional and unintentional injuries.

[8] All MA data in this chapter is from the MA Registry of Vital Records and Statistics, MDPH

[9] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on Jul 1, 2013

[10] http://crchd.cancer.gov/disparities/defined.html

[11] All numbers in this chapter are the total for the 2 year period 2009-2010; all rates are average annual rates, unless otherwise stated.

Figure 2: Leading Causes of Death among MA Children 0-17 Years, By Age Group, 2009-2010*

Rank	<1 year	1-4 years	5-9 years	10-14 years	15-17 years	All Children 0-17 years
1	Short gestation/LBW (151)	Unintentional Injury (19)	Cancer and in situ neoplasms (18)	Cancer and in situ neoplasms (15)	Unintentional Injury (41)	Perinatal Conditions (413)
2	Congenital malformations (107)	Cancer and in situ neoplasms (15)	Congenital malformations (6)	Unintentional Injury (11)	Homicide (24)	Congenital Malformations (132)
3	SIDS** (68)	Congenital malformations (9)	Unintentional Injury (5)	Suicide (5)	Suicide (16)	Unintentional Injury (84)
4	Pregnancy Complications (58)	Homicide (8)	Homicide (4)	Heart Disease (5)	Cancer and in situ neoplams (8)	SIDS** (70)
5	Complications of placenta (42)	Other infections (4)	Anemias (2)	Influenza and Pneumonia (5)	Heart Disease (7)	Cancer and in situ neoplasms (58)
6	Respiratory Distress (20)	Injuries of Undetermined Intent (3)	Perinatal Conditions (2)	Congenital malformations (4)	Congenital malformations (6)	Homicide (45)
7	Bacterial Sepsis of newborn (19)	Perinatal Conditions (2)	Heart disease (2)	Injuries of Undetermined Intent (3)	Injuries of Undetermined Intent (3)	Suicide (21)
8	Neonatal Hemorrhage (14)	SIDS* (2)		Homicide (3)	Appendix Disease (2)	Heart Disease (21)
9	Necrotizing entercolitis (10)	Heart Disease (2)		Medical Complication (2)		Injuries of Undetermined Intent (15)
10	Unintentional injury (8)	Stroke (2)		Pregnancy (1)		Stroke (7)
Total Deaths All causes	**685**	**93**	**59**	**79**	**128**	**1044**
Death Rates† per 100,000 children	**462.4**	**15.4**	**7.6**	**9.8**	**24.6**	**36.8**

*Source: Registry of Vital Records and Statistics, MDPH, 2009 & 2010

**SIDS or Sudden Infant Death Syndrome may include deaths classified by the Medical Examiner as sudden unexpected infant death (SUID).

†The rates shown are 2-year average annual age-specific rates for 2009-2010.

Infant Mortality in Massachusetts

Magnitude of Infant Mortality

In 2009-2010, a total of 685 (366 in 2009 and 319 in 2010) Massachusetts infants less than one year of age died. Of these deaths, 514 (75%) occurred during the neonatal period, defined as the first 27 days of life, and 171 (25%) occurred during the post neonatal period (28-364 days). The 2009-2010 average annual infant mortality rate was 4.7 per 1,000 infants, compared with 6.4 among U.S. infants.[12]

Although the overall infant mortality rate during 2009-2010 was low compared to the national average, disparities by race/ethnicity and city/town of residence exist. During 2009-2010 the Black non-Hispanic infant mortality rate (7.9 deaths per 1,000 live births) was two times greater than the rate White non-Hispanic and Asian non-Hispanic infant mortality rates (both 3.8 deaths per 1,000 live births). The Hispanic infant mortality rate (6.6 deaths per 1,000 live births) was more than 1.5 times greater than the White non-Hispanic and Asian non-Hispanic rates. More than half of all 2009-2010 infant deaths occurred among infants residing in Middlesex (23%), Worcester (15%) and Suffolk (13%) districts. Several cities have 5-year average annual 2006-2010 infant mortality rates higher than the state average, including Springfield (8.7 per 1,000 births), Brockton (7.8 per 1,000 births), Worcester (7.4 per 1,000 births), and Lowell (6.9 per 1,000 births). See Appendix 6 for a detailed breakdown of disparities in infant mortality.

Leading Causes of Infant Mortality

During the two year period 2009-2010, 413 (60%) of MA infant deaths were due to perinatal conditions[13]; 132 (19%) were due to congenital anomalies; and 70 (10%) were due to SIDS. Leading causes of death during the neonatal period and post-neonatal period differed. During the neonatal period, 396 (77%) deaths were due to perinatal conditions; 79 (16%) were due to congenital malformations; and 14 (3%) were due to SIDS. During the post-neonatal period, 54 (32%) deaths were due to SIDS; 28 (16%) deaths were due to congenital malformations; and 13 (8%) deaths were due to perinatal conditions. Injuries accounted for 12 (7%) deaths (6 homicides and 6 unintentional injury) during the post-neonatal period compared to 2 deaths (both unintentional) during the neonatal period.

[12] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on Jul 1, 2013

[13] Perinatal conditions include: Newborn affected by maternal conditions that might be unrelated to present pregnancy; Newborn affected by maternal complications of pregnancy; Newborn affected by complications of placenta, cord and membrane; Newborn affected by other complications of labor and delivery; Disorders relating to short gestation and low birth weight; Birth trauma; Intrauterine hypoxia and birth asphyxia; Respiratory distress of newborn; Other respiratory conditions of newborn; Infections specific to the perinatal period; Neonatal hemorrhage; Other and ill-defined conditions originating in the perinatal period.

Child Injury Deaths in Massachusetts

Injuries are thought to be the most preventable of all child deaths and many local Child Fatality Review Teams focus their case reviews on injury deaths. Sudden Unexpected Infant Death (SUID) is also described in this section. While not all sudden unexpected infant deaths are classified as injury deaths, many SUID cases have been identified by child fatality review teams to be associated with unsafe sleep position or unsafe sleep environments and thus potentially preventable through injury prevention methods.

Magnitude of Child Injury Deaths

In 2009-2010, a total of 168 Massachusetts children (76 in 2009 and 92 in 2010) from birth to 17 years died due to injury. The average annual injury death rate was 5.9 per 100,000 children 0-17 years, compared with 12.6 per 100,000 U.S. children.[14] The MA child injury death rate declined[15] from 8.0 per 100,000 in 2001 to 6.5 per 100,000 in 2010.

During the same time period, 90 infants (49 in 2009 and 41 in 2010) died due to Sudden Unexpected Infant Death (SUID). SUID here is defined as deaths among infants less than one year of age due to Sudden Infant Death Syndrome (SIDS); suffocation in bed; and undetermined causes.[16]

The average annual injury death rate during 2009-2010 among Massachusetts male children was nearly twice the rate of females (7.7 compared to 4.0 per 100,000 persons respectively). Males also had higher rates of homicide and unintentional injury death. By age subgroup, injury death rates among youth 15-17 years and among infants were higher than rates among other age groups. By race and ethnicity, Black non-Hispanic children had an injury death rate (16.2 per 100,000 persons) that was two times higher than the rate among Hispanic and Asian non-Hispanic children, and over three times higher than the rate among White non-Hispanic children.

Leading Causes of Child Injury Deaths

Figure 3 shows the leading types of injury deaths in 2009-2010 among Massachusetts children by age group. Of the 168 injury deaths among children ages 0-17 years, 84 (50%) were unintentional, 45 (27%) were homicide, 21 (13%) were suicide, and 18 (11%) were undetermined intent, legal intervention or an adverse effect of medical/surgical care. Homicide and transportation-related deaths were the leading types of injury death among the overall 0-17 year old population (n=45 each). Among transportation-related fatalities, 64% (n=29) were to occupants of motor vehicles (including motorcyclists); 24% were to pedestrians. Suicide ranked as the third leading type of injury death among children 0-17 years (n=21). Unintentional drowning ranked fourth overall, with 15 deaths.

[14] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on Jul 2, 2013 11:17:23 AM

[15] The decline was not statistically significant.

[16] These causes of death correspond to the following ICD-10 codes: R95, R99 (manner not pending), W75, W84

Figure 3: Leading Types of Injury Deaths by Age Group, MA Children 0-17 Years, 2009 and 2010*

Rank	Under 1 Year	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total 0-17 Years
1	Homicide (n=6)	Homicide (n=8)	Homicide (n=4)	Suicide (n=5)	Homicide (n=24)	**Homicide (n=45)**
2	Injuries of Undetermined Intent – (n=6; 4 unspecified cause; 1 poisoning , 1 other specified, unclassifiable)	Unintentional Drowning (n=6)	Unintentional MV Occupant** (n=1)	Homicide (n=3)	Unintentional MV Occupant** (n=22)	**Unintentional MV Occupant (n=29)**
3	Unintentional suffocation† (n=4)	Unintentional Pedestrian (n=4)	Unintentional Pedestrian (n=1)	Unintentional Drowning (n=3)	Suicide (n=16)	**Suicide (n=21)**
4	Unintentional Drowning (n=1)	Unintentional MV Occupant** (n=3)	Unintentional Pedal Cyclist (n=1)	Injuries of undetermined intent (n=3; 2 suffocation, 1 poisoning)	Unintentional Pedestrian (n=5)	**Unintentional Drowning (n=15)**
5	Unintentional MV Occupant** (n=1)	Unintentional Fire/Flame (n=3)	Unintentional Fall (n=1)	Unintentional MV Occupant** (n=2)	Unintentional Drowning (n=5)	**Injuries of Undetermined Intent*** (n=15)**
6	Unintentional Fire/Flame (n=1)	Injuries of Undetermined Intent (n=3; 2 unspecified cause, 1 drowning)	Unintentional struck by/against (n=1)	Adverse event (n=2)	Injuries of Undetermined Intent*** (n=3; 2 poisoning , 1 drowning)	**Unintentional Pedestrian (n=11)**
7	Adverse event (n=1)	Unintentional Fall (n=2)		Unintentional injuries – other specified not elsewhere classifiable (n=2)	Unintentional Fire/Flame (n=2)	**Unintentional Fire/Flame (n=6)**
8	Unintentional – unspecified cause of injury (n=1)	Unintentional – unspecified cause of injury (n=1)	–	Unintentional Pedestrian (n=1)	Unintentional Pedal Cyclist (n=1)	**Unintentional Suffocation (n= 4)**
All Other	0	0	0	3	6	**11**
Total	**21**	**30**	**9**	**24**	**84**	**168**

*Source: Registry of Vital Records and Statistics, MDPH, 2009 & 2010

†Unintentional suffocation among infants under 1 year of age may be classified as Sudden Unexpected Infant Death (SUID) by the Massachusetts Office of the Chief Medical Examiner.

** MV occupant deaths include occupants of cars, trucks, or motorcycles.

*** Injuries of undetermined intent included poisoning, drowning, suffocation, unclassifiable and unspecified causes.

Local and State Child Fatality Review Team Activities

Local Child Fatality Review Team Activities (2009-2012)

In addition to holding meetings, reviewing deaths, and making recommendations to the State Team, key local team activities included[17]:

Essex:

- Recommended that local codes should be uniform and in line with the federal code regarding pool covers, perimeter enclosures. The Team also recommended that pools should not be directly accessed from the house.
- Reviewed the Department of Early, Education and Care's licensing requirements, monitored a small number family day care centers located in homes, and provided education to these day care centers regarding safe sleep environments.
- Recommended developing SUID educational outreach materials and the increasing public recognition of the prevalence of sudden unexpected infant deaths.
- Invited a sergeant to present to the team about recent legislation regarding Human Trafficking and the current perspectives regarding identifying and managing cases of this nature.

Middlesex:

- Developed "Splash Into a Safe Swim Season" cards that were distributed to families in county hospitals, YMCAs, and at local town events
- Attended Winchester Hospital's "Shaken Baby Syndrome Task Force" meeting to present an overview of their child fatality review work. During this meeting, Middlesex team members also had the opportunity to speak to pediatricians and pediatric nurses about sudden unexpected infant deaths occurring in unsafe sleep environments. The Team urged pediatricians to check with parents to make sure that they are practicing safe sleep with their infants.
- Circulated a drowning prevention press release from the District Attorney, informing the public of our efforts and reminding families about water safety.
- Produced and distributed a trifold educational brochure covering the topics of water safety, window safety, and car safety. In reviewing child deaths and near-deaths in regards to window safety, the team came up with tips, like "Open windows from the top down," "Keep climbable furniture away from windows," and other tips to prevent window falls. The "Car Safety" portion of the brochure reminds parents to not leave their children in the car alone, especially in the warm weather. The brochure was distributed to families at local DCF offices, YMCAs, and other community locations.
- Presented at the 2011 at the Statewide Child Fatality Review Team Conference and during the "Splash into a Safe Swim Season" Campaign 2012.

Norfolk:

- Initiated an agreement that 51As will be filed in all cases of unexplained child deaths which enhanced the communication between state police, local police,

[17] Local team activities are representative of teams that submitted a list of their activities via a survey. Therefore, the list of the local team activities do not represent activities among those teams that did not complete the survey, and some local team activities may be omitted in this report.

the district attorney's office, family advocates and DCF. This reporting recommendation was also accepted statewide.
- Worked with DPH and continues to work with DPH on creating pamphlets for families with appropriate referrals to be given out by law enforcement responding to child suicides.
- Recommended that memory boxes of deceased children in DCF custody be available for other family members including siblings and they be held for parents who have lost custody but may regain custody in the future.
- Recommended coordination of referrals for families after a child dies of suicide to ensure greater access to support services.
- Recommended expanding visiting nurse safety checks for children who have noted behavioral issue.
- Recommended that all persons working with children requiring ventilators to breathe have special training on ventilation machines.

Northwestern:
- Developed and disseminated a Public Service Announcement on drowning prevention

Suffolk:
- Conducted a SUID community information session.
- Submitted a recommendation regarding mandated reporting and unexplained deaths resulted in the development and adoption of the State Team 51A protocol described in the State Team activity section of this report.
- Met regularly throughout 2009-2012 with the support of a very part-time volunteer coordinator.

Worcester:
- Met regularly in 2009-2012, reviewed a high number of cases, and sent thorough recommendations to the State Team

State Child Fatality Review Team Activities (2009-2012)

During 2009-2012, the key activities and accomplishments of the State Child Fatality Review Team were:

1. In 2009, the State Team developed a SUID investigation form based on standards set by the Centers for Disease Control and Prevention. This work was initiated to improve trainings and protocols related to sudden unexplained deaths of children in Massachusetts, and a direct result of the Paige Victoria Perry Act of 2008. Beginning in 2010, the State Team worked with the Executive Office of Public Safety, the State Police, Boston, Springfield and Worcester Police Departments to begin use of the Massachusetts SUID form for all sudden unexpected deaths in children up to age 3. Data is being collected and entered into a database, and analyzed on an ongoing basis by the State Team. As a result of these efforts, our understanding of the circumstances of sudden unexpected deaths has significantly improved, and has been critical in informing prevention efforts.

2. From 2009 through 2010, the State Team convened working groups that developed guidance documents for standardizing both State and Local Team protocols and processes. These documents were developed to strengthen the work of the teams and improve the quality of the reviews and recommendations put forth.

3. Beginning in 2010, the State Team convened a working group under the direction of the Department of Public Health to examine ways to improve the quality of local reviews of infant deaths that are due to medical causes. This process, also known as "RIM" or Review of Infant Mortality, is still in development and expected to be piloted in 2014.

4. In 2012, the State Team voted to endorse an infant safe sleep policy developed by the MA Department of Public Health; this policy is in line with the 2011 policy put forth by the American Academy of Pediatrics.

5. In 2012, the State Team discussed 51A reporting process for when a child unexpectedly dies, including who should file and how 51A reports are processed. Following the discussion, the team drafted and voted on a recommendation for use by mandated reporters statewide on the filing of a 51A following the unexplained death of a child. The 51A recommendation will be distributed to emergency department staffs, emergency medical services, fire departments, police and others that are responsible for reporting any suspicious neglect or abuse in 2013 and 2014.

51A Recommendation by State Team: The State Child Fatality Review Team (CFRT) considers that all unexplained infant and child deaths establish reasonable suspicion that neglect or abuse may have contributed to the death and recommends that mandated reporters report all such events to the Department of Children and Families pursuant to M.G.L. c.119, s.51A.

6. In 2010, in an effort to prevent window falls, the State Team modified materials developed by the Boston Public Health Commission's Kids Can't Fly (KCF) campaign and partnered with Western MA Safe Kids to distribute the materials with local discounts on window guards.

7. In 2012, a half time child fatality review team coordinator was hired by the Department of Public Health to coordinate the activities of the State Team, increase communication and follow-up between the State and Local Teams, and to work with partners to advance the recommendations put forth by the Local Teams.

8. In 2010, the State Team developed an internal working group to review homicide deaths and supportive documentations to assist local teams. In 2010-2011, the State Team had a working group to discuss the process for reviewing and near fatalities.

9. The State Team identified the need to write effective recommendations for youth suicide reviews. Youth suicide resources were identified by the team; these included a prevention program at DPH that is available to schools and programs at other after school programs.

10. A Statewide Child Fatality Review conferences, held in 2011, provided educational and networking opportunities for State and Local Team members. The conference agenda included information on safe sleep, firearms safety, suicide prevention, implementation of the SUID data form, local team guidance documents, and recent trends in child death data.

11. In 2011, the State Team held a legislative briefing, providing updated statistics on child death and information about the work being done by the State and Local Teams. Several training events were also held from 2009-2012; topics included child abuse and neglect and how death investigations are done.

Challenges to the Massachusetts Child Fatality Review Process

While the multidisciplinary review process provides a model for preventing child deaths, challenges exist in the implementation of the law in Massachusetts. Foremost among these challenges is a lack of dedicated funding for State and Local Child Fatality Review teams to conduct quality reviews and advance recommendations. Other challenges experienced during the period 2009-2012 included:

Leadership and Staffing

Local team coordinators, based at the District Attorney's offices, have multiple work responsibilities and limited time available for coordinating local team meetings, gathering records for the review, and submitting data to the State Team. At both the state and local level, this is an unfunded mandate. Funding for local teams would allow staff coordinating the reviews to dedicate more time to gathering records, bringing the right people to the table to discuss the case, and generating more robust recommendations. A more thorough process based on detailed evidence will be more effective and will do justice to the child's death under review.

State Team action: The State Team will look at how Child Fatality Review Teams are funded in other states, explore resources available, and report findings to policymakers and other stakeholders involved in the Child Fatality Review process.

In 2012, there were changes in State Team leadership with the appointment of a new State Team co-chair from the Department of Public Health. Although, a part-time State Child Fatality Review coordinator has been hired through Department of Public Health, a dedicated full-time position for this work would substantially improve the efficiency and effectiveness of the program's activities.

General Challenges

Sixty-five percent of all Massachusetts child deaths in 2009-2010 were among infants. Many of these deaths are due to prematurity and/or are among infants with congenital malformations. Local team statutory membership may lack the expertise to provide insight on the preventability of these infant deaths.

State Team action: Continue to support the pilot of the "Review of Infant Mortality" working group at the Department of Public Health to develop methods for improving the review of these deaths.

In 2008, the Child Fatality Review legislation was broadened to enable multidisciplinary reviews of "near fatalities" of children. A "near fatality" was defined as "an act that, as certified by a physician, places a child in serious or critical condition." In reviews of fatalities, cases are identified through death certificates generated by the Medical Examiner's office. To identify near fatalities systematically would require participation of physicians and a central repository where near fatalities are reported. Currently, no such central repository exists.

State Team action: Recognizing the limited capacity of local teams, the State Team will explore working with the medical community to develop a process for identification and reporting near fatalities.

Broader Issues:

- Since local teams rely on the cause of death to structure and conduct their reviews, a cause of death listed on the death certificate as "pending" investigation by the Office of the Chief Medical Examiner may result in substantial delays between when deaths occur and when they are reviewed.

- Due to the current system of sending paper death certificates to the MA Registry of Vital Records to enter manually into a database, there is typically a lag of up to two years from when the death occurred to the time that the calendar year death files are released by the MDPH for analysis. This impacts the timeliness of identification of emerging problems and timely evaluation of interventions to prevent deaths.

Challenges of the Local Teams (2009-2012)

Local teams also reported on the following challenges, summarized below:

Cape & Islands:

- Reported that it can be a challenge to coordinate regular meetings due to the demanding schedules of the team members.

Essex:

- Frequently discussed issues related to deaths of infants in inappropriate sleep environments and the frustration of seeing these deaths repeatedly.
- Reported that putting recommendations into action can be challenging on a local level due to limited resources.

Middlesex:

- Reported that a lack of consistent funding for local Child Fatality Review teams is a significant challenge.

Norfolk:

- The Norfolk Team was not receiving final death certificates, and therefore not reviewing, cases where the child's death was initially pending. They have now improved their communication with the ME's Office and follow-up on all pending cases to ensure that they have an updated death certificate. As a result, the team is reviewing some past SUIDs, suicides and accident cases that had evaded review. The team also continues to struggle with limited administrative support and resources.

Suffolk:

- Lost grant funding they had previously secured for a local team coordinator. Without any dedicated staff, the Suffolk Team is currently operating with a very part time volunteer coordinator. Due to limited resources and staffing, the team is unable to meet as regularly they have in past years.

Worcester:

- Reported that finding realistic ways to bring attention and awareness to risks associated with child deaths in their county is a major challenge.

Introduction of Key Focus Areas

State and Local Child Fatality Review teams have identified five key focus areas based on the leading causes of preventable death among children from birth to seventeen years old. The five areas selected are:

- Unintentional Drowning
- Sudden Unexpected Infant Death
- Transportation Death
- Homicide
- Youth Suicide

The subsections provide a brief description of the preventable nature of these injuries, the latest Massachusetts data (including magnitude and the known circumstances or risk factors of these deaths), and summaries of the key State and Local Child Fatality Review Team recommendations to prevent child deaths in these areas in Massachusetts.

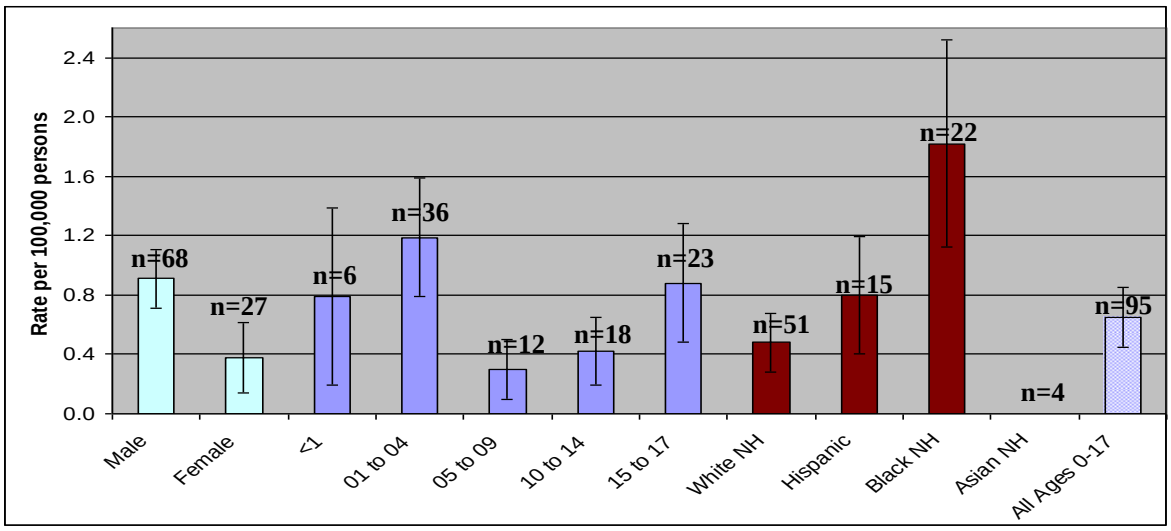
Unintentional Drowning

Unintentional drowning was the 4th leading cause of injury death among Massachusetts children in 2009-2010. The multidisciplinary approach to the prevention of drowning includes promotion of and ensuring access to swimming lessons; expanding access to CPR training; enforcing environmental regulations such as four-sided pool fencing and personal floatation device use; promoting use of locked gates and covers on swimming pools when not in use; educating adults on the need for close supervision of children near all water sources; and educating the public on the signs of drowning.

Magnitude of Drowning Deaths[18]

There were 15 unintentional drowning deaths and 55 hospital stays and 126 emergency department visits for nonfatal submersion events among Massachusetts children in 2009-2010. The average annual unintentional drowning death rate among Massachusetts children 0-17 years was 0.7 per 100,000 children, compared with 1.2 per 100,000 U.S. children.[19] During the 10-year period 2001-2010, the average annual drowning rate among male children (0.9 per 100,000 persons) was more than twice the rate of female children. By age group, 1-4 year olds had the highest drowning rate (1.2 per 100,000 persons), followed by youth 15-17 years old. Rates among Black non-Hispanic children (1.8 per 100,000 persons) were more than 3.6 times higher than among White non-Hispanic children. Figure 4 displays disparities in drowning death rates by select demographic factors.

Figure 4: 10-year Average Annual Drowning Rates Among MA Children Ages 0-17 Years by Sex, Age Group, and Select Race/Ethnicity, 2001-2010*



*Source: Registry of Vital Records and Statistics, MDPH, 2001-2010
**Rates based on counts of less than 20 are considered unstable and should be interpreted with caution. Rates are not calculated on counts of less than 5.

[18] All drowning data presented in this section are restricted to unintentional drowning.
[19] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on Jul 2, 2013 11:17:23 AM

Circumstances of Drowning Deaths

Drowning can occur in natural water, such as lakes or the ocean; swimming pools; bathtubs; or other sources such as buckets, toilets, wells, koi ponds, or other landscape water features. During 2009-10, more than half (53%) of all Massachusetts child drowning deaths occurred in natural water and 33% occurred in swimming pools. Bathtubs and swimming pools were more prevalent water sources for drowning among younger children in MA (83% of 1-4 year olds drowned in a swimming pool in 2009-2010), while natural water was the most common water source where drowning occurred among older children (80% of 15-17 year olds drown in a natural water source in 2009-2010). The statewide prevalence of other risk and protective factors (supervision, personal flotation use, pool fencing, etc.) in these deaths is not currently available.

Child Fatality Review Team Key Recommendations

Local Child Fatality Review teams made 20 drowning prevention recommendations to the State Child Fatality Review Team in 2009-2012. A summary of key Local and State Team recommendations are:

- Bring together YMCA's, community centers, recreation centers, state agencies and schools to offer and advertise swim lessons to children, especially in urban or coastal area. The swim lessons should be free or on a sliding fee scale for families who qualify.

- Conduct an education and prevention campaign to inform families, schools, and owners/managers of public and private pools about the dangers of children swimming unsupervised. Include information on what drowning looks like.

- The Department of Elementary and Secondary Education should require that all public schools teach "summer time safety," including information on swimming and drowning risks, to all students before the end of the school year, regardless of whether the school has a pool or is located in a coastal area.

- Standardize and improve lifeguard certification and training.

- Publicize information about 780 CMR 120m on water safety regulations via the media, public safety outlets, state and community agencies, and other stakeholders. Ensure that backyard safety is always addressed regarding proper gates, fences, and supervision by providing this information to people when purchasing pools, koi ponds and other water features.

Sudden Unexpected Infant Death (SUID)

Sudden Unexpected Infant Death (SUID) is the leading cause of death among infants over one month of age: the equivalent of two kindergarten classes of children is lost every year in Massachusetts due to SUID. Sudden Unexpected Infant Death is defined as the death of an infant less than one year of age due to Sudden Infant Death Syndrome (SIDS); suffocation in bed; or undetermined causes.[20] Risk factors for SUID include being placed to sleep on the stomach or side, sleeping in an adult bed or other surface such as a sofa with another person, and sleeping with excessive bedding such as pillows, blankets, and stuffed animals[21]. While dramatic reductions in SUID have been seen nationwide as a result of the American Academy of Pediatrics' "Back to Sleep" campaign, these gains have not been experienced equally across all racial and socio-economic groups.

The multidisciplinary approach to the prevention of sudden unexpected infant deaths involves educating parents and guardians on the key practices of infant safe sleep; working with day care providers to ensure their centers comply with safe sleep guidelines and policies; promoting safe sleep practices to babysitters and grandparents who may care for infants; and collecting data on the circumstances and trends of SUID cases to identify specific risk factors. Parental education is most effective when messaging is consistent and occurs in multiple venues, including prenatally; immediately following the birth; at pediatricians' offices; during meetings with WIC (Women, Infants, and Children) nutrition counselors; and through public messaging campaigns. Effective prevention messages provide healthy, practical alternatives to unsafe sleep practices.

Child fatality review teams in Massachusetts and across the country continue to see cases where infants are dying in unsafe sleeping conditions. Local and State Teams are in a key position to gather data on the circumstances of SUID in Massachusetts and to advance policies, practices and campaigns to ensure that all parents and caregivers receive education about the importance of sleeping infants' safety.

Example Review of an Infant Sleep Death*

The local CFR team met to review the death of three-month old baby boy. The cause of death was identified as sudden unexpected infant death (SUID). The team members reviewed the records that were collected by the local team coordinator to examine the circumstances leading up to the infant's death, the EMS response, the scene investigation conducted by law enforcement, and the medical examiner's findings. They identified specific risk factors present in the case including sleeping in an adult bed with a heavy blanket and pillows with parents who were not only exhausted, but also had been drinking alcohol the previous evening. The local team recommended that the MA Hospital Association work with hospitals to ensure the provision of education on the importance of safe sleep practices to all parents of newborns.

**While the case details described may resemble those of actual cases, the case described is fictitious.*

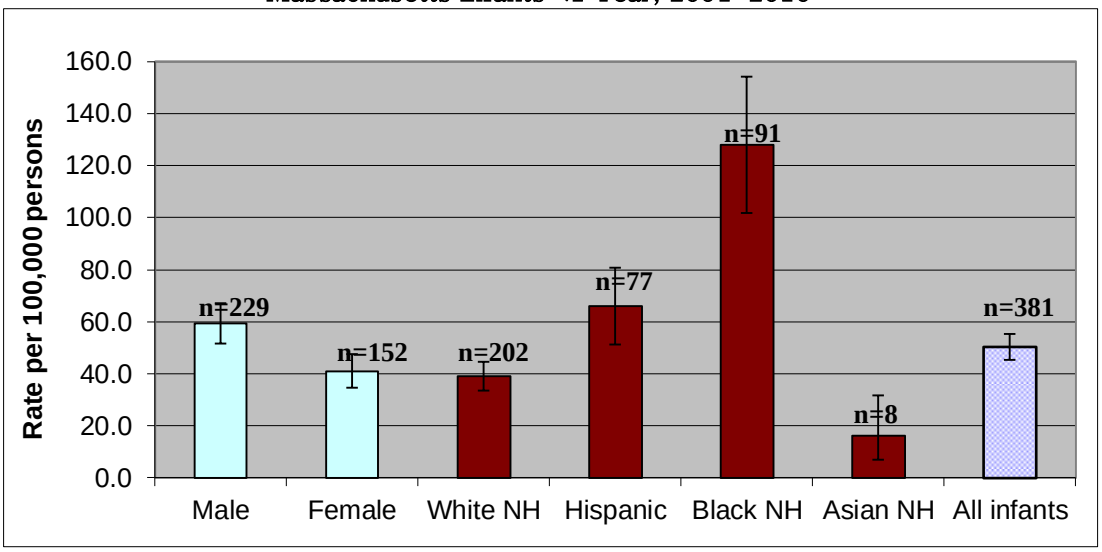
[20] These causes of death correspond to the following ICD-10 codes: R95, R99 (manner not pending), W75, W84

[21] Task Force on Sudden Infant Death Syndrome. (2011) *SIDS and Other Sleep-Related Infant Deaths: Expansions of Recommendations for a Safe Infant Sleeping Environment*. Pediatrics: DOI: 10.1542/peds.2011-2285. Downloaded from pediatrics.aappublications.org on August 12, 2013.

Magnitude of Sudden Unexpected Infant Death

In 2009-2010, there were 90 cases of SUID among Massachusetts infants under 1 year. During the 10-year period 2001-2010, SUID rates among Black non-Hispanic infants (128.0 per 100,000 persons) were 2 times higher than among Hispanic infants (66.0 per 100,000 persons) and 3 times higher than the rate among White non-Hispanic infants (39.1 per 100,000 persons). Figure 5 displays disparities in SUID rates by select demographics.

Figure 5: 10-year Average Annual SUID Rate by Sex and Select Race/Ethnicity, Massachusetts Infants <1 Year, 2001-2010**



*Source: Registry of Vital Records and Statistics, MDPH, 2001-2010
**Rates based on counts of less than 20 are considered unstable and should be interpreted with caution.

Circumstances of Sudden Unexpected Infant Death

Although statewide information on the circumstances of the 90 cases of SUID in MA in 2009 and 2010 is not known, these are expected to be available for the next report. As described in the State Child Fatality Review Team Activities section (item 1), the State Team created a standardized SUID data collection form, which is currently being completed by death scene investigators on Massachusetts SUID cases.

Population estimates of infant safe sleep practices are available through the Massachusetts Pregnancy and Risk Assessment Monitoring System (PRAMS). PRAMS surveys mothers who have recently given birth to collect information on pre and postnatal health practices, including infant sleep position and sleep location. According to 2009 PRAMS data, 21.5% of mothers reported placing their infants to sleep in a position known to increase the infants' risk of SUID (i.e. on their stomachs or sides, or using more than one sleep position). Placing infants in the recommended sleep position (back to sleep) varied by racial/ethnic group, with only 55.2% of Black, non-Hispanic mothers and 67% of Hispanic mothers reporting placing their infants to sleep on their backs compared to 83.9% of White non-Hispanic mothers. Nearly fifteen percent (14.7%) of mothers statewide reported that their infants usually slept in

an adult bed with another person; this number was higher among Asian non-Hispanic (29.5%) and Black non-Hispanic mothers (25.3%).

Child Fatality Review Team Key Recommendations

In 2009-2012, CFR local teams made 61 SUID recommendations to the State Team. A summary of key Local and State Team recommendations are:

- Work with the Department of Public Health, hospitals, home visitors, health centers, and other relevant child-caring agencies to tailor infant safe sleep messages to specific groups, including grandparents, fathers, non-English speakers, and immigrants. Information on napping should be included in all safe sleep messaging.

- The Department of Public Health should take a lead role in developing consistent infant safe sleep curriculum. The Department should then train and provide materials to DCF, mental health providers, home visitors, lactation consultants, nurses, and daycare providers.

- State and local police departments, in collaboration with the Medical Examiner's office and the Executive Office of Public Safety, should adopt a statewide standardized protocol for death scene investigation, where sudden unexpected infant death (SUID) forms are properly filled out in relevant cases.

- The Department of Public Health should launch a multimedia campaign to get out the message about infant safe sleep.

- The Department of Public Health should collaborate with hospitals to create standardized guidelines for infant safe sleep among newborns and other infants admitted to the hospital. The Department should also work with NICU's and hospital staff to model safe sleep practices for parents.

Transportation Deaths

Transportation deaths tied with homicide as the leading cause of injury death among Massachusetts children aged 0-17 in 2009-2010. Transportation deaths include injuries to occupants of cars, trucks, motorcycles, pedestrians, bicyclists, and riders of other forms of transport, such as all-terrain vehicles (ATVs), boats and horses. Preventing transportation deaths requires a comprehensive, multidisciplinary approach involving transportation safety laws and enforcement, highway engineering, educational approaches, emergency medical services, and health care providers. Massachusetts has comparatively good laws and policies in place that support transportation safety – a strong graduated driver's license law; a comprehensive child passenger safety law that includes booster seats; a recent no-texting law; bicycle and motorcycle helmet laws; ATV age restrictions; and a solid DUI law. Despite this, more than 40 children die each year from transportation injuries – so more can be done.

Magnitude of Transportation Injuries

There were 45 deaths, 1,333 hospital stays, and 24,317 emergency department visits due to transportation injuries among Massachusetts children aged 0-17 in 2009-2010. As shown in Figure 6, the majority (64%) of transportation deaths occurred among motor vehicle occupants (including motorcyclists), followed by pedestrian deaths (24%). Children experience different risks for transportation injury at different ages. In Massachusetts, the number of motor vehicle occupant deaths among infants and young children is low. As teenagers get older and obtain their licenses, the number of motor vehicle occupant and motorcyclist deaths sharply increases. Youth aged 15-17 years accounted for the highest proportion of transportation deaths (64%) and 76% of motor vehicle occupant deaths. The MA motor vehicle occupant death rate among children 0-17 years was 1.0 per 100,000 children in 2009-10 compared to 2.8 per 100,000[22] nationally.

Figure 6: Transportation Deaths by Age Group and Person Type Injured, Massachusetts Children 0-17 Years, 2009-2010*

	MV Occupant**	Pedestrian***	Pedal Cyclist***	Other Transport	Total All Types
Age <1	1	0	0	0	1
Ages 1-4	3	4	0	0	7
Ages 5-9	1	1	1	0	3
Ages 10-14	2	1	1	1	5
Ages 15-17	22	5	1	1	29
Total	**29**	**11**	**3**	**2**	**45**

*Source: Registry of Vital Records and Statistics, MDPH, 2009 & 2010
**Includes motorcyclist and unspecified person
***Includes MV-traffic and non-traffic injuries

[22] National Center for Injury Prevention and Control, CDC. NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates.

Circumstances of Transportation Deaths

Risk factors associated with transportation injury include inexperience operating a motor vehicle or motorcycle, not wearing a helmet while riding a bicycle, driving under the influence of alcohol or drugs, speeding, not using a child car seat, and not wearing a seatbelt. While detailed circumstance data is not available on all types of transportation deaths, the national Fatality Analysis Reporting System[23] had data available for 28 children/youth ages 0-17 who died in a motor vehicle (n = 23) or motorcycle (n = 3) crash in MA in 2009 and 2010. (Two motor vehicle crashes involved more than one death.) Sixteen of the children/youth were passengers (57%) and 12 were drivers/motorcyclists (43%). Eleven of the 12 drivers/motorcyclists killed were male (92%).

Of the 25 children/youth killed in motor vehicle crashes, 15 were killed in rollover accidents (60%) and 11 were ejected from the motor vehicle (44%). All three motorcyclists were drivers (operators") and all were wearing helmets. In motor vehicle crashes where restraint use was known, 61% of children/youth killed were unrestrained (11 out of 18). Of the 26 crashes involving child/youth fatalities, the majority (65%, n=17) involved single vehicle crashes. Eight drivers (33%) involved in these crashes reportedly did not have a valid license for the vehicle being driven. Speeding was listed as a factor in 9 of these crashes (35%) and driver alcohol impairment in 4 of these crashes (15%).

Statewide, seatbelt use is relatively poor compared with other states and territories. According to the 2011 National Occupant Protection Use Survey, a national observation survey, Massachusetts has the worst seat belt use in the nation – 73.2% of MA drivers wore seatbelts compared to the national average of 84%[24]. Massachusetts youth also consistently report lower seat belt use than youth nationwide: 13.5% of MA high school students report never or rarely wearing a seatbelt compared to 7.7% of high school students nationwide[25].

Child Fatality Review Team Key Recommendations

Local Child Fatality Review Teams made 21 transportation recommendations to the State Team in 2009-2012. A summary of key Local and State Team recommendations are:

- The Department of Transportation should make adjustments to the Drivers Education course to include more education on off road vehicles, seat belt use, driving in hazardous weather conditions, motorcycle awareness, vehicle maintenance, and general driver attentiveness.

- The State Child Fatality Review Team encourages the passage of the primary seat belt law, along with provision of education by the Department of Transpor-

[23] NHTSA Fatality Analysis Reporting System (FARS) Query System, accessed 9/5/2013.
[24] National Traffic Highway Safety Administration, 2012
[25] Youth Risk Behavior Surveillance System, National Center for Chronic Disease Prevention and Health Promotion. http://apps.nccd.cdc.gov/YouthOnline/App/Default.aspx?SID=HS. Accessed 3/18/2013

tation and the Department of Public Health on the importance of wearing seat-belts.

- The Department of Transportation should require more safety regulations for motorcycles, including a motorcycle safety course.

- State and municipal officials should support the MBTA to make safety changes at crossing railroad tracks. These changes should include using horns, even when prohibited by towns for noise violation, enforcing fines for walking on a track with the gates down, and the creation of warning systems for crossings where two trains are approaching and other safety measures.

- The Department of Public Health and the Department of Transportation should conduct surveillance and research on the circumstances and risk factors involved in motor vehicle crashes. Findings should then be used to inform media campaigns and safety efforts.

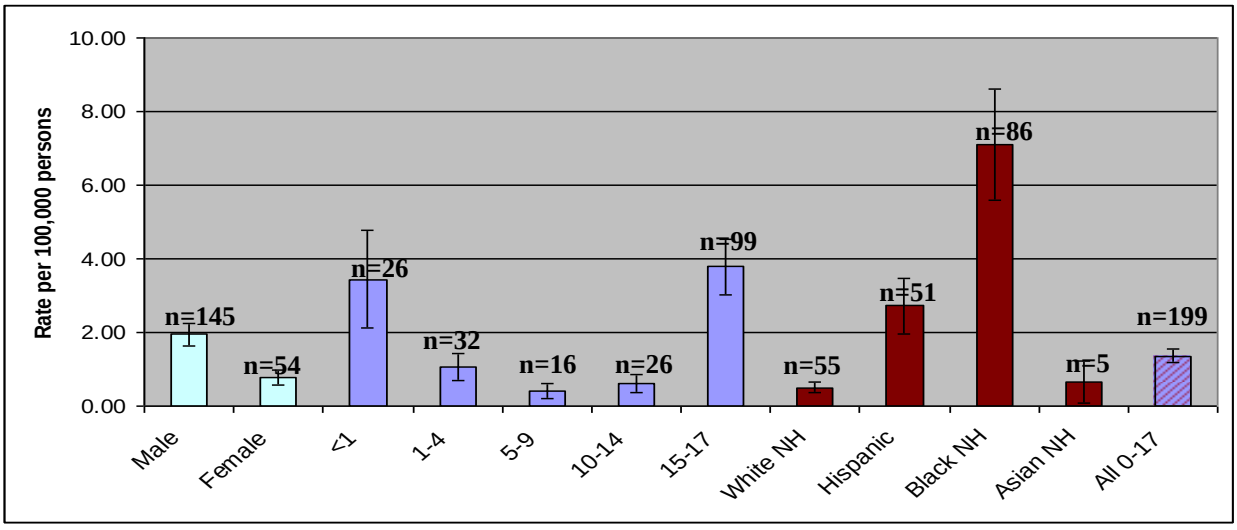
Homicide

Homicide tied with transportation injuries as the leading cause of injury death among Massachusetts children aged 0-17 years during 2009-2010. On average, one child died in Massachusetts due to homicide nearly every two weeks. Multidisciplinary prevention efforts involving community agencies, schools, businesses, local law enforcement, and health providers that strengthen the assets of families, schools, neighborhoods, and communities are important in decreasing youth and family violence.

Magnitude of Child and Youth Homicide

In 2009-2010, there were 45 homicides among Massachusetts children aged 0-17 years; there were also 428 hospital stays and 5,839 emergency department visits due to assault-related injuries. The average annual homicide rate was 1.6 per 100,000 children, compared with 2.3 per 100,000 U.S. children.[26] There are striking disparities in homicide by race/ethnicity, as well as significant differences in by sex and age. During the 10-year period 2001-2010, the average annual MA homicide rate among male children (1.9 per 100,000 persons) was 2.5 times higher than the rate among females. By age group, youth 15-17 years had a homicide rate (3.8 per 100,000 persons) 9 times higher than children aged 5-9 years (the age group with the lowest rate). The homicide rate among infants was almost as high as that among 15-17 year old youth (3.4 per 100,000 persons). The homicide rate among Black non-Hispanic children (7.1 per 100,000 persons) was 14 times higher than the rate among White non-Hispanic children and 2 times higher than the rate among Hispanic children.

Figure 7: Average Annual Homicide Rates among MA Children Ages 0-17 years by Sex, Age Group, and Select Race/Ethnicity, 2001-2010



*Source: Registry of Vital Records and Statistics, MDPH, 2001-2010

**Rates based on counts of less than 20 are considered unstable and should be interpreted with caution.

[26] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on Aug 7, 2013 4:08:52 PM

Circumstances of Child and Youth Homicide[27]

A firearm was used in 45% of MA child and youth homicides in 2009-2010, while 20% involved the use of a sharp instrument, such as a knife. More than half of child homicides occurred among 15-17 year old youths; a firearm was used in 67% of cases in that age group. According to the Massachusetts Violent Death Reporting System, during the period 2006-2010, 22% of Massachusetts homicides among children and youth were gang-related; 16% were related to another argument such as abuse, insult, grudge or personal revenge; 13% were related to intimate partner violence; and 9% were precipitated by another crime. Thirty-eight percent (38%) of homicides occurred in Suffolk County; 14% in Hampden County; and 14% in Middlesex County.

Figure 8, also from the Massachusetts Violent Death Reporting System, displays the relationship between the victim and suspect in Massachusetts for child and youth homicides 2006-2010. Among homicides in children aged 0-14 years, a family member or parent's boyfriend/girlfriend was the suspect in nearly 69% of cases. Among homicides in youth aged 15-17 years, a family member was the suspect in 7% of cases while a friend, acquaintance or rival gang member was the suspect in 22% of the cases.

Figure 8: Suspect-Victim Relationship among Homicides of Children Ages 0-17 years occurring in Massachusetts, 2006-2010 (N=106)*

	Ages 0-14	Ages 15-17
Suspect's Relationship to Victim	%	%
Parent/stepparent	51.0	1.8
Other family/sibling/parent's boyfriend or girlfriend	17.6	5.5
Friend/acquaintance/other person known to victim/rival gang member	3.9	21.8
Stranger	7.8	1.8
Unknown/missing relationship	19.6	69.1
Total	100.0	100.0

*Data compiled and extracted by the Massachusetts Violent Death Reporting System of the Injury Surveillance Program in the Massachusetts Department of Public Health (July 2013)
**Sources: MA Violent Death Reporting System. Final2006FileOctober2008; Final2007FileJuly2009; Final2008FileAugust2010; Final2009FileJuly2011; Final2010July2012

Child Fatality Review Team Key Recommendations

Due to the nature of homicide cases, local Child Fatality Review teams conduct few reviews of homicides; this is because criminal investigations are often ongoing and teams do not conduct reviews of cases under investigation. The State Team is currently working with local team coordinators to encourage teams to conduct more

[27] Data on homicide circumstances and victim-suspect relationship is from the MA National Violent Death Reporting System (NVDRS). NVDRS provides information on violent deaths occurring in Massachusetts among both MA and non-MA residents; numbers will be slightly higher for data from the NVDRS system, as non-residents have been excluded from other data presented in this report.

homicide reviews, even if there is a delay from when the case occurred to when the review can be conducted due to legal proceedings. Local CFR teams made 4 homicide recommendations to the State Team in 2009-2012. A summary of key Local and State Team recommendations are:

- Community agencies and local police should reach out to communities to provide information and resources for preventing gang violence. The possibility of media campaigns should also be explored.

- The Department of Public Health, health centers, and social service agencies should raise awareness about the role of mental health, trauma, self-care, and depression in violence prevention. Mental illness per se is not correlated with violent behavior and it is more likely that those with mental illness will be victims of violence rather than perpetrators.

- Conduct education in schools, after-school and other youth serving programs about gun/weapon safety and violence prevention – encourage a risk reduction approach.

- Partner with the Department of Public Health and public health research institutions in the state to gather information on best practices to reduce access to illegal firearms.

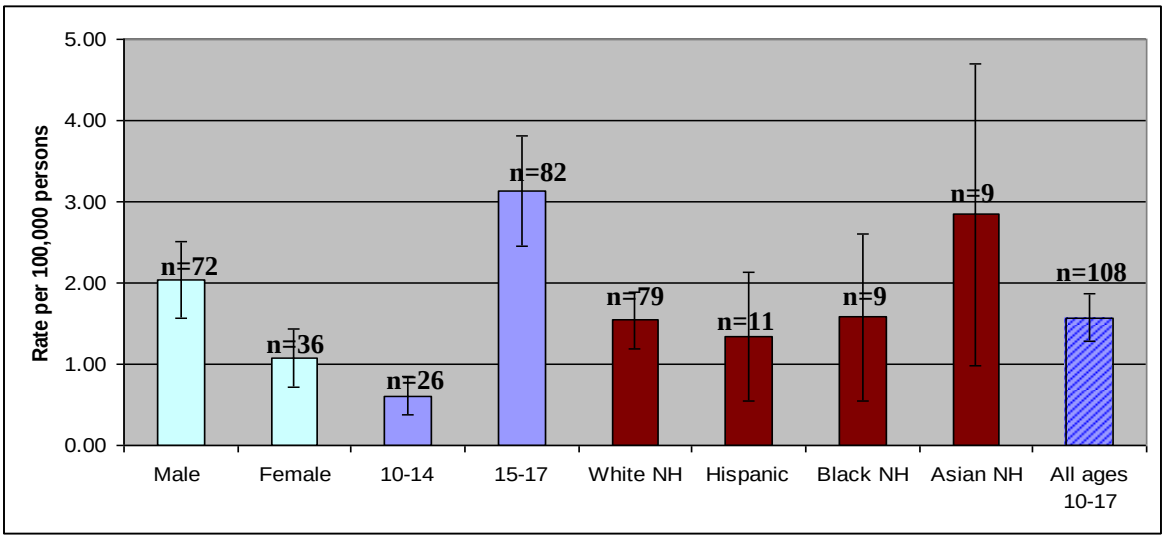
Youth Suicide

Suicide was the 3rd leading cause of injury death among Massachusetts children in 2009-2010. An average of one youth between the ages of 10 and 17 died per month due to suicide during that period. Youth suicide is painful, impacting peers, families and entire communities. Suicide can be prevented: there are known warning signs that a youth may be at risk for suicide and known protective factors that can decrease the risk of suicide. Multidisciplinary suicide prevention methods include mental health screening and services, policies mandating training of "gatekeepers," environmental modifications such as limiting access to guns in the home, educational tools to foster healthy relationships, and postvention crisis management.

Magnitude of Youth Suicide

There were 21 suicides among MA youth aged 10-17 in 2009-2010. There were also 598 hospital stays and 2,492 emergency department visits for nonfatal self-inflicted injuries among MA youth during that time period. The average annual suicide rate among Massachusetts youth 10-17 years in 2009-2010 was 1.6 per 100,000 children, compared with 3.1 per 100,000 U.S. youth in the same age range.[28] Disparities in youth suicide in MA for the period 2001-2010 are detailed in Figure 9. Male youth in had nearly two times the rate (2.0 per 100,00 persons) of suicide compared to females during the 10-year period of 2001-2010. The rate among 15-17 year olds (3.1 per 100,000 persons) was five times higher than the rate of the 10-14 year old age group.

Figure 9: 10-year Average Annual Suicide Rates Among MA Youth 10-17 years by Sex, Age Group, and Select Race/Ethnicity, 2001-2010



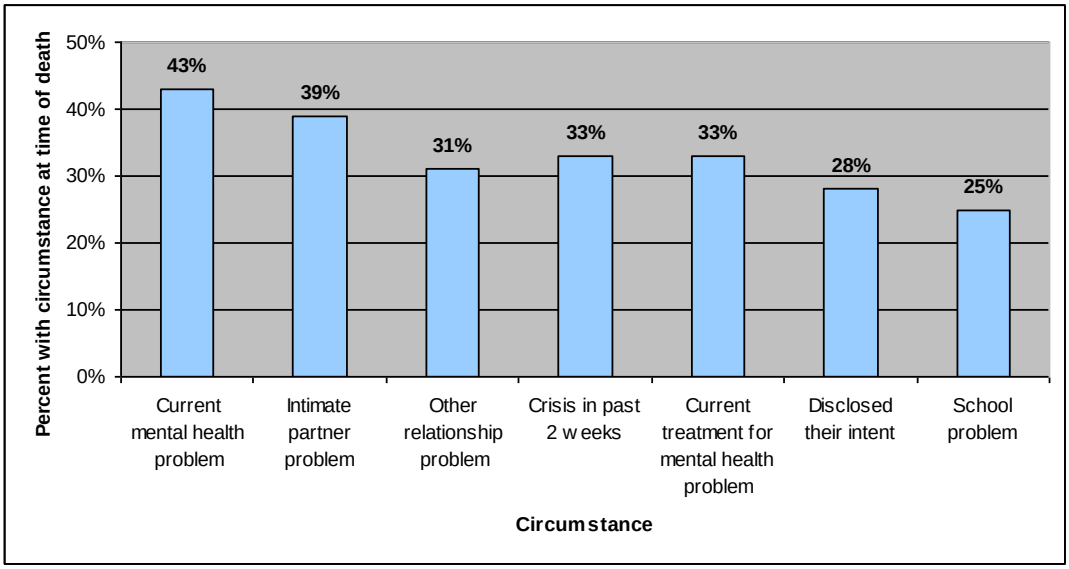
*Source: Registry of Vital Records and Statistics, MDPH, 2009 & 2010
**Rates based on counts of less than 20 are considered unstable and should be interpreted with caution.

[28] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2010 on CDC WONDER Online Database, released 2012. Data are from the Multiple Cause of Death Files, 1999-2010, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on Aug 7, 2013 4:08:52 PM

Circumstances of Youth Suicide

The majority of youth suicides (67%) were due to suffocation (includes hanging). Some of the common circumstances of youth suicides occurring in Massachusetts from 2006-2010 are detailed in Figure 10 (note: individuals may have more than one circumstance).

Figure 10: Prevalence of select circumstances of suicides occurring among MA youth ages 10-17, 2006-2010*



Current mental health problem	Identification of a current mental health problem including disorders and syndromes listed in the Diagnostic and Statistical Manual of Mental Disorders with the exception of alcohol and substance dependence. Inclusive of current treatment for a mental health disorder, even if the nature of the problem is unclear.
Intimate partner problem	Problems with a current or former intimate partner that appear to have contributed to the death. A problem may include a divorce, break-up, argument, jealousy, conflict, or discord.
Other relationship problem	Interpersonal problems with a family member, friend, or associate (other than an intimate partner) that appear to have contributed to the death.
Crisis in past 2 weeks	Victim experienced a crisis within 2 weeks of the incident, or a crisis was imminent within 2 weeks of the incident. Identifies those cases in which a very current crisis or acute precipitating event appears to have contributed to the death. Crisis is interpreted from the eyes of the victim.
Current treatment for mental health problem	Had a current prescription for psychiatric medication or saw a mental health professional within the past 2 months. Treatment includes seeing a psychiatrist, psychologist, MD, therapist, or other counselor for MH or substance abuse problem; receiving a prescription for psychiatric medicine; attending anger management classes; and residing in an inpatient, group home, or other residential facility for mental health problems.
Disclosed their intent	Disclosed to another person the intention to commit suicide. Previously expressed suicidal feelings to another person, either explicitly or indirectly.
School problem	Problems at or related to school that appear to have contributed to the death. A problem at school may be poor grades, difficulty with a teacher, bullying, social exclusion at school, or performance pressures, and this appears to have contributed to the death.

*Source: Massachusetts Violent Death Reporting System, 2006-2010

Data from the Massachusetts Youth Risk Behavioral Survey has also identified factors associated with higher reports of attempted suicide among middle and high school students. These factors include: history of sexual assault and dating violence; feeling unsafe at school or having been threatened with a weapon at school; and being bullied or cyber-bullied in the last 12 months.

Child Fatality Review Team Key Recommendations

Local Child Fatality Review Team made 21 recommendations to the State Team in 2009-2012. A summary of key Local and State Team recommendations are:

- Bring together health care, social service, and educational institutions serving youth to improve coordination of services across providers and share information where appropriate. Include information on proper storage of firearms.

- The Department of Elementary and Secondary Education should develop a policy for sharing the counseling records of students between school levels and changing schools so that high-risk students can get the attention they need especially when adjusting in new schools.

- The Department of Public Health and local suicide prevention coalitions should provide education on topics associated with suicide, such as dating violence and bullying, to relevant stakeholders, including schools, social service agencies, and health centers.

- The Department of Public Health and local suicide prevention coalitions should provide outreach and education to families, teachers, community leaders, and DCF about the warning signs for suicide and suicide prevention.

- Work with the media to promote suicide awareness in a way that serves to discourage future youth suicide.

Appendix 1:
Child Fatality Review Legislation – Reflecting Amendment in 2008

Chapter 38: Section 2A. State and local multidisciplinary child fatality review teams

Section 2A. (a) As used in this section, the following words shall have the following meanings: –

"Child", a person under the age of 18.

"Fatality", any death of a child.

"Local team", a local child fatality review team established pursuant to subsection (c).

"Near fatality", an act that, as certified by a physician, places a child in serious or critical condition.

"State team", the state fatality review team established by subsection (b).

"Team", the state or a local team.

(b) There shall be a state child fatality review team within the office of the chief medical examiner. Notwithstanding section 172 of chapter 6, members of the state team shall be subject to criminal offender record checks to be conducted by the colonel of the state police, on behalf of the chief medical examiner. All members shall serve without compensation for their duties associated with membership on the state team.

The state team shall consist of at least the following members: – the chief medical examiner, who shall chair the state team; the attorney general or a designee; the commissioner of children and families or a designee; the commissioner of public health or a designee; the commissioner of elementary and secondary education or a designee; a representative selected by the Massachusetts District Attorneys Association; the colonel of the state police or a designee; the commissioner of mental health or a designee; the commissioner of developmental services or a designee; the director of the Massachusetts center for sudden infant death syndrome, located at the Boston Medical Center, or a designee; the commissioner of youth services or a designee; a representative selected by the Massachusetts chapter of the American Academy of Pediatrics who has experience in diagnosing or treating child abuse and neglect; a representative selected by the Massachusetts Hospital Association; the chief justice of the juvenile division of the trial court or a designee; the president of the Massachusetts Chiefs of Police Association Incorporated or a designee; the child advocate appointed under section 3 of chapter 18C or a designee; and any other person, selected by the chair or by majority vote of the members of the state team, with expertise or information relevant to an individual case.

The purpose of the state team shall be to decrease the incidence of preventable child fatalities and near fatalities by: (i) developing an understanding of the causes and incidence of child fatalities and near fatalities; and (ii) advising the governor, the general court and the public by recommending changes in law, policy and practice that will prevent child fatalities and near fatalities.

To achieve its purpose, the state team shall:

(i) develop model investigative and data collection protocols for local teams;

(ii) provide information to local teams and law enforcement agencies for the purpose of the protection of children;

(iii) provide training and written materials to local teams to assist them in carrying out their duties;

(iv) review reports from local teams;

(v) study the incidence and causes of child fatalities and near fatalities in the commonwealth;

(vi) analyze community, public and private agency involvement with the children and their families prior to and subsequent to fatalities or near fatalities;

(vii) develop a protocol for the collection of data regarding fatalities and near fatalities and provide training to local teams on the protocol;

(viii) develop and implement rules and procedures necessary for its own operation; and

(ix) provide the governor, the general court and the public with annual written reports, subject to confidentiality restrictions, which shall include, but not be limited to, the state team's findings and recommendations.

(c) There shall be a local child fatality review team in each of the 11 districts headed by a district attorney. Notwithstanding section 172 of chapter 6, members of a local team shall be subject to criminal offender record checks to be conducted by the district attorney. All members shall serve without compensation for their duties associated with membership on a local team.

Each local team shall be comprised of at least the following members: the district attorney of the county, who shall chair the local team; the chief medical examiner or a designee; the commissioner of children and families or a designee; a pediatrician with experience in diagnosing or treating child abuse and neglect, appointed by the state team; a local police officer from the municipality where the child fatality or near fatality occurred, appointed by the chief of police of that municipality; a state law enforcement officer, appointed by the colonel of state police; the chief justice of the juvenile division of the trial court or a designee; the director of the Massachusetts center for sudden infant death syndrome, located at the Boston Medical Center, or a designee; the commissioner of public health or a designee; and any other person with expertise or information relevant to an individual case who may attend meetings, on an ad hoc basis, by agreement of the permanent members of each local team. Those other persons may include, but shall not be limited to, local or state law enforcement officers, hospital representatives, medical specialists or subspecialists, or designees of the commissioners of developmental services, mental health, youth services and education.

The purpose of each local team shall be to decrease the incidence of preventable child fatalities and near fatalities by: (i) coordinating the collection of information on fatalities and near fatalities; (ii) promoting cooperation and coordination between agencies responding to fatalities and near fatalities and in providing services to family members; (iii) developing an understanding of the causes and incidence of child fatalities and near fatalities in the county; and (iv) advising the state team on changes in law, policy or practice which may affect child fatalities and near fatalities.

To achieve its purpose, each local team shall:

(i) review, establish and implement model protocols from the state team;

(ii) review, subject to the approval of the local district attorney, all individual fatalities and near fatalities in accordance with the established protocol;

(iii) meet periodically, but at least 4 times per calendar year, to review the status of fatality and near fatality cases and recommend methods of improving coordination of services between member agencies;

(iv) collect, maintain and provide confidential data as required by the state team; and

(v) provide law enforcement or other agencies with information for the purposes of the protection of children.

At the request of the local district attorney, the local team shall be immediately provided with:

(i) information and records relevant to the cause of the fatality or near fatality maintained by providers of medical or other care, treatment or services, including dental and mental health care;

(ii) information and records relevant to the cause of the fatality or near fatality maintained by any state, county or local government agency including, but not limited to, birth certificates, medical examiner investigative data, parole and probation information records, and law enforcement data post-disposition, except that certain law enforcement records may be exempted by the local district attorney;

(iii) information and records of any provider of social services, including the state department of children and families, relevant to the child or the child's family, that the local team deems relevant to the review; and

(iv) demographic information relevant to the child and the child's immediate family, including but not limited to, address, age, race, gender, and economic status. The district attorney may enforce this paragraph by seeking an order of the superior court.

(d) Any privilege or restriction on disclosure established pursuant to chapter 66A, section 70 of chapter 111, section 11 of chapter 111B, section 18 of 111E, chapters 112, 123, or sections 20B, 20J or 20K of chapter 233 or any other law relating to confidential communications shall not prohibit the disclosure of this information to the chair of the state team or a local team. Any information considered to be confidential pursuant to the aforementioned statutes may be submitted for a team's review upon the determination of that team's chair that the review of this information is necessary. The chair shall ensure that no information submitted for a team's review is disseminated to parties outside the team. Under no circumstances shall any member of a team violate the confidentiality provisions set forth in the aforementioned statutes.

Except as necessary to carry out a team's purpose and duties, members of a team and persons attending a team meeting may not disclose any information relating to the team's business.

Team meetings shall be closed to the public. Information and records acquired by the state team or by a local team pursuant to this chapter shall be confidential, exempt from disclosure under chapter 66, and may only be disclosed as necessary to carry out a team's duties and purposes.

Statistical compilations of data which do not contain any information that would permit the identification of any person may be disclosed to the public.

(e) Members of a team, persons attending a team meeting and persons who present information to a team may not be questioned in any civil or criminal proceeding regarding information presented in or opinions formed as a result of a team meeting.

(f) Information, documents and records of the state team or of a local team shall not be subject to subpoena, discovery or introduction into evidence in any civil or criminal proceeding; provided, however, that information, documents and records otherwise available from any other source shall not be immune from subpoena, discovery or introduction into evidence through these sources solely because they were presented during proceedings of a team or are maintained by a team.

(g) Nothing in this section shall limit the powers and duties of the chief medical examiner or district attorneys.

Appendix 2: List of Recommendations

Category	Local Team Recommendations
Bristol	
Suicide	Improve suicide risk assessment training for DCYF staff as well as mental/behavioral health providers
	Provide support for school-based suicide prevention and intervention strategies
	Encourage parents, educators, and others who work with youth to take all warning signs seriously and to seek help if they see warning signs
	Work with the media to ensure that coverage of deaths by suicide serves to discourage future youth suicide
	Encourage suicide prevention training and educational programs to students, parents, teachers, and community professionals serving children, youth, and families.
Transportation	Review the helmet (type) information on injurious crashes (including fatalities).
	Require that licensed motorcyclists take motorcycle safety course as part of licensing.
	Have some educational content on motorcycle awareness in the licensing requirement for all motorists.
	Passage of a primary seat belt law
	Include an evasive driving component to the licensing requirement.
Cape and Islands	
Drowning	Swim lessons available to children, especially in urban areas.
Natural	Teach mothers about risks of alcohol use during pregnancy
Poisoning	Teach about prescription medication abuse and diversion of medications, securing medications.
	Find better ways for destruction of medications (old). Centralized location in each town to drop off unused pills for destruction.
Suicide	More suicide prevention education
Cape and Islands	Provide education of safe sleep position and environment
	Provide education about safe sleep environment and co-sleeping. Get co-sleeping message out in similar fashion to back to sleep.
Essex	
Natural	When a child dies from some kind of illness, the siblings should be screened for the same illness. ME will make recommendations to family.
SUID	Bumpers should be ruled as risky beddings. (Soft mattresses, blankets)
	Prioritize safe sleep campaign
	Educate hospital staff about HIPAA laws that DCF and Police must be allowed to investigate death of infant and that ER staff are mandated reporters
	Can SBS curriculum include safe sleep messages as well.
	Review of hospital protocols for collection of forensic evidence in child deaths and procedures for families to properly mourn death/say goodbye.
	Launch an aggressive campaign to get the word out about safe sleep. Medical examiner or commissioner of DPH should speak out on this with a formal statement of this being a major public health issue. Also a campaign in fall to coincide with national public release- should use TV as a medium for this and other media (multi-media campaign)

	Given the frequent and consistent review of cases of child fatalities as a result of co-sleeping or unsafe sleep environments, the team recommends that educational info relating to unsafe sleep settings be included in the SBS statewide curriculum.
	Assure that various state agencies also communicate safe-sleep messages to the public and to their staff who work with the public in a manner consistent with state and federal statements.
	We recommend that mental health providers should be included in the circle of providers to receive safe sleep messaging to discuss with their clients
	Foster parent agencies need to have capacity to educate parents via standardized curriculum about safe sleep environments, particularly for especially high risk children. Ensure that there is a protocol for inter-agency communication about high risk foster placements
	Integrate into safe sleep messaging acknowledgement of traditional practices with regard to how infants are put down to sleep so that they can be contrasted with safe sleep methods and what is known about risk.
	Send out messaging tailored to grandparents
	Do an "omnibus" statistical study to show risks numerically (for lay audience). MA stats would be useful to include
	Get NICUs in line with safe sleep regulations so they can model safe sleep practices for parents
	Given the numbers of unsafe sleep deaths that the team reviews, the team would like to strongly encourage the State Team to develop an aggressive statewide multimedia public service campaign.
	The Essex team recommends that the State Team discuss the status of a protocol for interagency communication about high risk children as it relates to safe sleep strategies. The strategy would include education of foster parents as well as other disciplines such as mental health providers.
	Recommend that the State Team look at across the state incidents of child deaths in daycare and begin to address risk factors and enforcement issue for past four years.
Hampden	
Drowning	For the State Team to research pools sold in Massachusetts to determine whether at sale they include notice about local ordinances or state regulations requiring a locking ladder mechanism and/or other safety precautions. If there is no mandate requiring such notice, the State Team should look into requiring that pools sold in the state of MA include a notice.
Homicide	Reach out and educate the community on issues of gang violence and safety for children, including via a local radio program which should be planned for late spring.
Natural	We recommend that AED's be mandated in recreation centers of all kinds, preferably placed within the gymnasium itself.
	Substance abuse has been repeatedly identified directly and indirectly in the death of children. The participation on state and local teams of a substance abuse expert is necessary in order to help formulate and evaluate recommendations as well as formulate appropriate policy regarding substance abuse issues, such as substance abuse testing of moms: mandatory treatment and training of obstetricians to do substance abuse screening, brief intervention and referral into treatment

	The local Team supports the review of certain cases by the RIM process when certain records are missing. As the new review process develops, there needs to be clean guidelines to distinguish the responsibilities of the two committees, so that no cases are missed and duplicative efforts are minimized. (Committee reviewing Extreme prematurity cases) (RIM Team)
	Recommend that the medical examiner inquire about DCF involvement before determining whether to defer an autopsy.
	Review standardized curriculums used to train day care providers to see if adequate and appropriate
	That the practices of the Department of Early Education and Care be reviewed to see if there is an appropriate way to regularly monitor the quality of care in day care centers.
	That the State Team reviews the process used to train new day care and early education providers to see that it is up to date and timely.
	More of an effort should be made by the State Team in identifying substance abuse issues to inform policy making.
Suicide	For the State Team to continue suicide awareness for teens.
	To schedule a radio show broadcast on the topic of suicide awareness with a child psychologist
SUID	All models of early intervention to support families need to be assessed to determine efficacy and to determine best model and/or best practices.
	Continue developing an effective education campaign regarding infant sleep position.
	Do a radio show broadcast on the topic of SIDS. Include Back to Sleep campaign, co-sleeping and substances, and the use of car seats to sleep.
	The State Team needs to concentrate efforts on getting across culture message out to the public to try to change perceptions about the dangers of co-sleeping, using available data and maybe using the voices of moms who have lost children. There has to be a full-fledged campaign using different media methods to get the word out.
	The State Team should review curriculum regarding breastfeeding lactation consultants and recommend that they include information regarding co-sleeping dangers and co-sleeping when moms are taking medications.
	The State Team should reach out to the Joint Commission to discuss the issue with them and see if they will partner or take a lead on educating the medical community on the risk of co-sleeping.
	To aid in the investigations of SIDS cases, EMTs should be encouraged to describe the scene on their arrival in their reports.
	A statewide campaign regarding proper sleep environments and more emphasis on dangers of co-sleeping. One idea was a poster ad "find the baby in this picture (messy bed)."
Transportation	For the Department of Public Health to focus its annual campaign by informing itself regarding the previous years' identified risks.
	The State Team should consider how or whether the law could be changed to empower police to get blood/urine tests from junior operators on serious bodily injuries or fatality cases.
Middlesex	
Drowning	User friendly fact sheet on 780 CMR 120 m swimming pools, spas, hot tubs with clarification on state vs. town regulation clarify city ordinance of home violations
	PSA/written facts sheet - signs of drowning, proper supervision of child even if they can swim, possible using shocking visuals.

	Must have an adult present at poolside 100% of time. Recommend swimming lessons for all children. Include "teach all children to swim" as part of a PSA/brochure campaign.
	Middlesex coordinator will investigate whether CPSC has any regulations about koi ponds, will report this case if not already reported. Also check local products for existing warnings.
	Public education around backyard water safety, including water features other than pools. Can manufacturers of air filtration for koi ponds be required to add safety info about risk to young children and advice to incorporate access measures in design.
	MA is one of few states that does not require adults to take a boating safety course. There has been pending leg. For 10 years. So we recommend this legislature be passed. Examining NH, CT, NY state incremental implementation would be most practical approach.
	Given statistics on prevalence in 15+ age group we recommend water safety be incorporated in high school curricula and/or other settings (e.g.: after school/out-of-school organizations) during spring. Boys and girls clubs, YMCA's are other potential venues.
Falls	Review how safety bar regulations for windows work (or don't) with fire regulations in communities across commonwealth.
	Create and distribute a window safety PSA (re: opening top window instead of lower windows with screens on them; placement of furniture relative to window access, etc.)
Natural	Assess insurance coverage and high deductibles that may influence moms to use midwives. Eliminate high deductibles for prenatal to postpartum. Look at data regarding home births and births with midwives. Establish reviews and review boards for all midwives.
Near Fatality	Local team will look into CPSC regulations about red flyer wagons and braking feature for wheel.
	Include window guard information in hospital discharge and pediatrician parent info packets.
	Highlight window guards and furniture placement in State Team document to be released in the spring.
Other	Limit length and weight to shower hose and safety notices on package pass case along to Consumer Product Safety Commission for review
Suicide	When children, parents report home schooling and when DCF, police are involved, DCF/police should verify that children are officially working with school system as required
	Recommend to DESE that all schools have link to website and/or newsletter/info regarding information and resources on depression/behavior changes (possible suicidality) for parents and an appropriate link to age appropriate resource/info for students.
	Mandatory topic in health class (or appropriate class) to include resources.
	More proactive dating violence, IPV interventions in all schools as part of normal curriculum, not one time offerings and on-going relationship between schools and local intervention agencies and training of alcohol staff on how to respond appropriately to disclosures
	Recommend to DESE to develop a policy for sharing of counseling records for students between levels of schooling and when they change schools so that high risk students are more likely to get attention/monitoring of their situations/ functioning/adjustment, The policy needs to include protections/privileging of the info so that that these records cannot be subpoenaed and so that only staff with need-to-know have access.

	More coordination around suicide prevention might be needed at EOHHS level or across secretariats; Consider State Team seeking amendment to anti-bullying legislation for training of school faculty, staff, students for recognizing stressors and triggers.
	Have schools incorporate anon. dropbox for students to report concerns about peers so they can be approached by school psychologist; Have ME automatically notify DPH suicide prevention program following suicide to reach out to family Team is going to consult with in-house non-profit. See what works in preventing suicide/is in place in schools, may invite DESE to a meeting to discuss
SUID	Tweak safe sleep materials that are available for distribution to be appropriate for grandparents. NICHD has a grandparent brochure. Send to senior centers, include in hospital packets. Tweak language and wording for cultural appropriateness.
	Promotion of Safe Sleep, Back to Sleep and Smoke Free Families Messages
	Make assessment for need for community health nursing follow-up visits when red flags exist, even for mothers with other older children might reduce likelihood unsafe sleep conditions
	Create radio spots about safe sleep to reach a broader audience (e.g. fathers, other family members). Middlesex team is creating its own brochure which it will send to the State Team.
	Promote public awareness campaign of existence and available services of EEC and resources specific to child care provider regulations (i.e. through birth hospitals)
	Promote awareness of weight limits to pack and plays with EEC staff and child care providers.
	Further promote safe sleep message and ensure training for all child care providers on safe sleep environments.
	Provide safe sleep information in multiple languages when deemed of probable need.
Transportation	Promote and support MBTA in ability to utilize horns/whistles while trains travel through high risk areas even when town/city ordinances prohibit train horn/whistle use due to noise pollution
	DA's office working with local police departments to recommend town/city police notifying MBTA Police of any incidents where people trespassed onto MBTA property /train tracks.
	We recommend looking into legislation around testing older drivers (more than vision, also driving skills generally).
	Doing speed survey on rural roads. Ensuring they're done more frequently, educating towns on how to get this done.
Norfolk	
Drowning	The Norfolk team would suggest continued education about drowning and the need for consistent, dedicated supervision of children in the water.
	Re-evaluate the certification and regulations regarding life guards. More uniform training.
Natural	The Norfolk County team recommends that the statewide team convene to address the issue of transitional care for 24 hour ventilator-dependent children. The Norfolk County team would be willing to present on the issue and our concerns.
	The Norfolk team recommends that memory boxes of deceased children in DCF custody be available for other family members including siblings. The team also suggests memory boxes be held for parents who have lost custody but may regain custody in the future.

Suicide	The Norfolk team recommends some coordination post suicide for families to access support services.
SUID	The Norfolk CFR team would recommend safe sleep initiatives that include the safety risks associated with sleeping with babies on couch, napping while holding the baby and inappropriate sleep environments (boppy, pillows, adult beds).
	Norfolk County CFRT recommends safe sleep awareness targeted toward fathers. The team is requesting feedback from the ME's office regarding significance of findings regarding cause of death i.e. undetermined sudden death
Northwest	
Drowning	Swimming lessons, awareness, adult supervision, getting the message out to children and caregivers about the dangers of water. PSA on water safety
Natural	Notification to hospitals/hospice etc. that deaths must be reported to the ME.
SUID	A recommendation around better system of home visits for moms/families in need of support.
	Bereavement services offered to parents
	Get word out on co-sleeping/safe sleep environments
Plymouth	
Pending	Consider AEDs at all organized sporting events and training in use
SUID	Continue education about "back to sleep" and co-sleeping. Reinforce message at every pediatric encounter. Continuum of education from prenatal through first year of life.
	Including no bumper pad education in messaging to parents/caregivers re: safe sleep.
Suffolk	
Drowning	What "summer time" safety is taught to children in school? What is the most effective way to reach families in all communities to educate and promote summer safety? This is important because many children are under less supervision during the summer months. Is it possible to teach water safety to children and adolescents without physical education/lessons i.e. swimming lessons?
	At what age is it appropriate to allow a child to supervise another child(ren)? Is there a minimum age requirement to ride public transportation without an adult?
	Due to the fact that Boston is a coastal city, the team was unsure if additional signage would prevent future accidents and/or fatalities.
	What are national Best Practices for Water Safety education and prevention? What is the best practice for summer safety education? Does public outreach or education need to be available due to our geographic location?
Falls	The Suffolk team recommends that medical providers have information available for families with young children regarding window safety.
Homicide	Do public schools address gun/weapon safety; if so, do public schools take a risk reduction approach to gun safety; what is the best practice in terms of violence education would a risk reduction approach be best practice or counter -productive.
	There is an easy access to firearms, what is best practice to reduce firearm access; how do you limit access to uncontrolled/illegal firearms?
	The Suffolk County Review Team recommends that EAP (Employee Assistance Programs) raise awareness regarding mental health and self-care in relation to termination of employment or unemployment. Educate employers as well as employees on how to recognize depression and where to find help.

	The Suffolk County CFRT recommends additional training and education is provided to clinicians working with patients who have children and display any risk factors associated with homicide-suicide cases to raise awareness. It is recommended that clinicians directly question depressed and suicidal patients regarding the fate of their child in the event of a suicide. Appropriate treatment and safety planning should be initiated when client presents with suicidal ideations.
Natural	Public health campaigns regarding that asthma can be lethal - also with family - community awareness. Peer PSA mentor /medical "Big Brother" program.
	Re-examine excess absenteeism policy in schools (especially if child has chronic illness e.g. asthma). BPHC would like to expand Case Mgmt program to work with students who have excessive absenteeism. Devise care plan with CM group and school staff nurse.
	If MassHealth/SSI is in charge of care, need to contact PCP to make sure no lapse in care.
SUID	Team would like to make sure police are aware that they fill out the SUID form, not the parent. Request that all jurisdictions be required to complete the SUID form on relevant cases.
	Remind providers to provide safe sleep info/materials and include the word "napping" when describing safe sleep so caregivers realize that napping is the same as sleeping.
	Providers of infant and maternal health discuss safe sleep at each visit. Informational take home materials should be given to parents so that they may share this info with other potential caretakers.
	Suffolk CFRT supports the classification of SUID and co-sleeping death and that these deaths be appropriately coded.
	Suffolk team discussed the inconsistencies of hospital filing reports with DCF. They are looking for assistance from the State Team on the following issue: What is the statewide protocol for hospitals filing a 51a due to child death?
	Adoption of a statewide standardized protocol for death scene investigation in SUID which is provided by the Medical Examiner's office.
	The Suffolk County CFRT recommends a Statewide Safe Sleep campaign to reduce the number of infants who die each year in an inappropriate sleep environment.
	Standardized pediatric education as part of re-certification. Classes such as PALS and PEARS would be appropriated
	Newborn home visiting for those at high risk or those demonstrating the need for additional assistance at home.
	Education for EMS personnel regarding proper documentation for all potential crime scenes, especially child fatalities as well as education to increase the knowledge of the existence of CFRT. (See attached for formal recommendations).
	Regular education of grandparents and other caregivers involved in the infants care
	All Emergency Departments and pediatric facilities file 51A on all unexplained infant deaths of infants and children under 17 years. Current practice, 51A determined by ME.
	Review policies of hospitals with low pediatric traffic.
Transportation	Use of a "warning system" to be used at crossings to signal the approach of 2 trains. This should be used at high pedestrian traffic crossings to alert pedestrians of a second train. Without this, outreach and education crucial.
	Community education in the form of school presentations or a media/awareness campaign.
	Enforcement and fines for walking on track or crossing a track when gates are down.

	Examine research, public health guidelines on the use of seat belt and airbag resulting in placental abruption. Bring in specialist on pregnancy and car crash and consider invite Sally Fogerty.
Worcester	
Drowning	Letter to city manager regarding summer safety in water
	We recommend that pool access safety precautions be addressed. Could pools be inspected and could there be PSA's about pool fences?
Natural	Education regarding CPR training
	Practical support for parents - encourage faith-based providers community support outside of state sources
	Recognize when parents stop meeting DCF needs to "ramp it up" involvement
	DPH Injury Prevention - "Safe Home Checklists"
	Ongoing education (survey, sleeping environment)
	Six-week site visit by a nurse for post-partum care to identify things that may not come up in hospital
	Co-sleeping issue: establish a denominator co-sleeping survey; develop a survey to determine sleep; provides scientific response. Include questions such as where besides crib; is co-sleeping and with whom; and what else is in the sleeping environment
Other	Require helmets for skiing, snowboarding
Suicide	Importance of gatekeeper training
	Proper storage of firearms
	Disruptions in a teen's therapy such as discontinuation and being waitlisted at new practices. Recommended continuity in adolescent therapy.
	We recommend regional crisis teams, such as suicide prevention consulting to schools and workshops to high school students on recognizing danger signs.
SUID	Provide information regarding unsafe sleeping co-sleeping
	Reinforce the general recommendation that infants not sleep in the adult bed, even occasionally or after breastfeeding.
Transportation	More Winter Driving Skills education (skid school)
	Continued awareness on seatbelt usage
	Provide SUV information especially on rollover risk
	Continued awareness about building new driver skills.

Appendix 3: Tables of local team meetings and cases reviewed

The yearly logs in Appendix 3 are based on summary forms submitted to the MA Department of Public Health (DPH) following local team meetings. Information from these forms is used to compile basic statistics on the number of meetings Local CFR Teams held; the number and manner of death of cases reviewed; and the number of recommendations submitted to the State CFR Team. The information presented in this report is based only on forms submitted to DPH, and therefore will not reflect meetings held and cases reviewed where a summary form was not completed and/or submitted.

Massachusetts Local Child Fatality Review -- 2009 Yearly Log*

Team	Number of Meetings where cases completed	Total Number of Case Review Forms Submitted*	Natural	Accident	Suicide	Homicide	Undetermined	Other or Missing Manner	Total Number Cases** with Recommendations
Berkshire									
Bristol									
Cape and Islands	2	21	14	2	1	0	3	1	7
Essex	2	6	0	0	1	0	0	5	3
Hampden	9	27	17	4	0	3	0	3	4
Middlesex	5	11	3	4	1	0	3	0	10
Norfolk	4	30	28	2	0	0	0	0	0
Northwest									
Plymouth	1	2	0	0	0	0	2	0	1
Suffolk	7	14	3	6	0	2	3	0	13
Worcester	4	28	17	9	0	0	1	1	11
Total		139	82	27	3	5	12	10	49

*Based on forms with a meeting date of 1/1/2009 through 12/31/2009. Forms received with pending recommendations or pending re-review are not included.

**Recommendation information missing on 2 cases.

Massachusetts Local Child Fatality Review -- 2010 Yearly Log*

Team	Number of Meetings where cases completed	Total Number of Case Review Forms Submitted*	Natural	Accident	Suicide	Homicide	Undetermined	Other or Missing Manner	Near Fatality	Number of cases where recommendations made**
Berkshire										
Bristol										
Cape and Islands	1	9	8	1	0	0	0	0	0	1
Essex	3	11	2	3	1	0	1	4	0	4
Hampden	2	5	3	0	1	0	0	1	0	0
Middlesex	2	6	0	2	0	0	0	0	4	6
Norfolk	4	23	20	0	1	0	1	1	0	2
Northwest										
Plymouth	1	3	0	0	0	0	2	1	0	3
Suffolk	2	5	1	1	0	2	1	0	0	4
Worcester	2	11	6	4	1	0	0	0	0	2
Total	17	73	40	11	4	2	5	7	4	22

*Based on forms with a meeting date of 1/1/2010 through 12/31/2010
Forms received with pending recommendations or pending re-review are not included.

Additional Data Submitted in Other Formats:
Hampden: 8 meetings held, Submission of 11 State and 3 Local Recommendations in 2010

Massachusetts Local Child Fatality Review -- 2011 Yearly Log*

Team	Number of Meetings where cases completed	Total Number of Case Review Forms Submitted*	Natural	Accident	Suicide	Homicide	Undetermined	Other or Missing Manner	Near Fatality	Number of cases where recommendations made**
Berkshire		0	0	0	0	0	0	0	0	0
Bristol	1	5		5						5
Cape and Islands	1	9	6	3	0	0	0	0	0	3
Essex	2	6	3	0	1	0	2	0	0	1
Hampden	4	14	14	0	0	0	0	0	0	4
Middlesex	4	9	1	3	2	0	3	0	0	9
Norfolk	3	20	18	1	1	0	0	0	0	2
Northwest	1	3	1	0	0	0	2	0	0	3
Plymouth		0	0	0	0	0	0	0	0	0
Suffolk	2	3	1	1	0	0	1	0	0	3
Worcester	3	22	12	4	2	0	0	4	0	2
Total		91	56	17	6	0	8	4	0	32

*Based on forms with a meeting date of 1/1/2011 through 12/31/2011
Forms received with pending recommendations or pending re-review are not included.

Massachusetts Local Child Fatality Review -- 2012 Yearly Log*

Team	Number of Meetings where cases completed	Total Number of Case Review Forms Submitted*	Natural	Accident	Suicide	Homicide	Undetermined	Other or Missing Manner	Near Fatality	Number of cases where recommendations made**
Berkshire		0								
Bristol	1	3	0	0	3	0	0	0	0	3
Cape and Islands	1	6	5	1	0	0	0	0	0	1
Essex	3	9	1	2	1	0	5	0	0	4
Hampden	2	8	8	0	0	0	0	0	0	3
Middlesex	1	1	0	0	1	0	0	0	0	1
Norfolk	4	23	14	1	1	0	7	0	0	3
Northwest	1	1	0	1	0	0	0	0	0	1
Plymouth		0	0	0	0	0	0	0	0	0
Suffolk	2	3	0	1	0	0	2	0	0	3
Worcester	1	1	0	0	0	0	1	0	0	0
Total		55	28	6	6	0	15	0	0	19

*Based on forms with a meeting date of 1/1/2012 through 12/31/2012
Forms received with pending recommendations or pending re-review are not included.

Appendix 4: Child Deaths by District of Residence

Table 4.1: Massachusetts Child Deaths by District of Residence, 2009 and 2010**

District	Total Child Deaths (0-17 years)	Average Annual Child Death Rate per 100,000 population (95% CI)	Child Deaths <1 year	Child Deaths 1-17 years
Berkshire	19	37.0 (20.4, 53.6)	12	7
Bristol	80	32.6 (25.5, 39.7)	45	35
Cape & Islands (includes Barnstable, Dukes, and Nantucket counties)	30	35.0 (22.5, 47.6)	18	12
Essex	108	31.4 (25.4, 37.3)	70	38
Hampden	103	46.8 (37.8, 55.8)	64	39
Middlesex	233	36.4 (31.7, 41.1)	159	74
Norfolk	83	27.3 (21.4, 33.2)	50	33
Northwest (includes Franklin and Hampshire counties)	27	33.0 (20.6, 45.5)	18	9
Plymouth	85	35.5 (28.0, 43.0)	55	30
Suffolk	128	50.6 (41.8, 59.4)	89	39
Worcester	147	39.2 (32.8, 45.5)	103	44
Total MA	**1044**	**36.8 (34.5, 39.0)**	**685**	**359**

*National Center for Health Statistics. Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, county, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of October 26, 2012, following release by the U.S. Census Bureau of the revised unbridged intercensal estimates by 5-year age group on October 9, 2012.

**The county of residence for one death is unknown.

Table 4.2: Select Leading Causes/Intents of Injury Deaths by District of Residence,
MA Children Ages 0-17 years, 2009 & 2010

District	Unintentional Transport Deaths (occupant, pedestrian, off road, bike, and MV unspecified)	Homicide	Suicide	Unintentional Drowning	Injuries of undetermined intent	Other Injury Deaths	Total Injury Deaths
Berkshire	0	1	1	0	1	0	3
Bristol	4	5	2	2	3	3	19
Cape & Islands	4	0	0	0	0	3	7
Essex	3	5	5	5	1	2	21
Hampden	10	6	3	0	3	4	26
Middlesex	5	9	3	2	2	4	25
Norfolk	4	3	2	1	1	4	15
Northwest	1	0	1	1	1	0	4
Plymouth	6	2	2	3	1	1	15
Suffolk	1	12	0	0	1	1	15
Worcester	7	2	2	1	1	5	18
Total MA	45	45	21	15	15	27	168

Appendix 5: Trends and Comparisons in Massachusetts Child Deaths

Table 5.1: Deaths and Average Annual Death Rates
Among MA and US Children 0-17 Years: 2009 & 2010

Location and Year	2-year Total Number	2- year Average Annual Death Rate (per 100,000 children aged 0-17)	Lower 95% confidence interval	Upper 95% confidence interval
MA 2009-10	1044	36.8	34.5	39.0
US 2009-10	80548	54.3	53.9	54.7

Table 5.2: Infant Mortality Rates Among MA and US Infants: 2009 & 2010

Location and Year	2-year Total Number	2- year Average Annual Death Rate (per 1,000 infants aged <1)	Lower 95% confidence interval	Upper 95% confidence interval
MA 2009-10	684	4.7	4.4	5.1
US 2009-10	50,998	6.3	6.2	6.3

Table 5.3: Injury Deaths and Average Annual Injury Death Rates
Among MA and US Children 0-17 Years: 2009 & 2010

Location and Year	2-year Total Number	2- year Average Annual Death Rate (per 100,000 children aged 0-17)	Lower 95% confidence interval	Upper 95% confidence interval
MA 2009-10	168	5.1	4.3	6.0
US 2009-10	18,637	12.6	12.4	12.7

Appendix 6: Disparities in Massachusetts Infant Mortality, 2009 & 2010

Table 6.1: Infant Deaths and Infant Mortality Rates
by Select Race/Ethnicity, 2009 & 2010

Race/Ethnicity	2-year Total Number	2-year Average Annual Death Rate (per 1,000 live births)	Lower 95% confidence interval	Upper 95% confidence interval
White NH	366	3.8	3.4	4.1
Black NH	109	7.9	6.5	9.4
Hispanic	143	6.6	5.6	7.7
Asian NH	44	3.8	2.6	4.9
American Indian NH	0	n/a	n/a	n/a
Other and unclassified race	20	n/a	n/a	n/a
All Massachusetts Infants	682	4.7	4.3	5.1

Table 6.2: Infant Deaths and 5-year average annual Infant Mortality Rates
by Select City/Town, 2006-2010

City/Town	5-year Total Number	5-year Average Annual Death Rate (per 1,000 live births)	Lower 95% confidence interval	Upper 95% confidence interval
Springfield	106	8.7	7.0	10.3
Brockton	59	7.8	5.8	9.8
Worcester	96	7.4	6.0	8.9
Holyoke	24	7.4	4.4	10.3
Lowell	61	7.0	5.2	8.6
Fall River	42	6.9	4.9	9.1
Taunton	25	6.8	4.1	9.4
New Bedford	46	6.7	4.8	8.6
Lawrence	43	6.1	4.3	7.9
Revere	22	6.0	3.5	8.4
Boston	235	5.8	5.2	6.7
All Massachusetts Infants	1,812	4.8	4.5	5.0

Appendix 7: Disparities in Massachusetts Child Deaths, 2009 & 2010

Table 7.1: Deaths and Average Annual Death Rates
Among MA Children 0-17 Years by Age Group, 2009 & 2010

Age Group	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
<1	685	474.8	439.2	510.3
1-4	93	15.8	12.6	19.0
5-9	59	7.7	5.7	9.6
10-14	79	9.7	7.6	11.9
15-17	128	24.5	20.3	28.8
All Ages 0-17	1044	36.8	34.5	39.0

Table 7.2: Deaths and Average Annual Death Rates
Among MA Children 0-17 Years by Sex, 2009 & 2010

Sex	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
Male	633	43.6	40.2	47.0
Female	410	29.5	26.7	32.4
All Children	1044	36.8	34.5	39.0

Table 7.3: Deaths and Average Annual Death Rates
Among MA Children 0-17 Years by Select Race/Ethnicity, 2009 & 2010

Race/Ethnicity	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
White NH	572	28.7	26.3	31.0
Black NH	189	76.5	65.6	87.4
Hispanic	210	50.3	43.5	57.0
Asian NH	64	37.2	28.1	46.3
American Indian NH	4	n/a	n/a	n/a
Other and unclassified race	5	n/a	n/a	n/a
All Children	1044	36.8	34.5	39.0

Table 7.4: Injury Deaths and Average Annual Injury Death Rates
Among MA Children 0-17 Years by Age Group, 2009 & 2010

Age Group	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
<1	21	14.6	8.3	20.8
1-4	30	5.1	3.3	6.9
5-9	9	1.2	0.4	1.9
10-14	24	3.0	1.8	4.1
15-17	84	16.1	12.7	19.5
All Ages 0-17	168	5.9	5.0	6.8

Table 7.5: Injury Deaths and Average Annual Injury Death Rates
Among MA Children 0-17 Years by Sex, 2009 & 2010

Sex	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
Male	112	7.7	6.3	9.1
Female	56	4.0	3.0	5.1
All Children	168	5.9	5.0	6.8

Table 7.6: Injury Deaths and Average Annual Injury Death Rates
among MA Children 0-17 Years by Select Race/Ethnicity, 2009 & 2010

Race/Ethnicity	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
White NH	89	4.5	3.5	5.4
Black NH	40	16.2	11.2	21.2
Hispanic	27	6.5	4.0	8.9
Asian NH	12	7.0	3.0	10.9
All Children	168	5.9	5.0	6.8

Table 7.7: Homicides and Average Annual Homicide Rates among MA Children 0-17 Years by Sex, 2009 & 2010

Sex	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
Male	33	2.3	1.5	3.1
Female	12	0.9	0.4	1.4
All Children 0-17	45	1.6	1.1	2.1

Table 7.8: Homicides and Average Annual Homicide Rates among MA Children 0-17 Years by Select Race/Ethnicity, 2009 & 2010

Race/Ethnicity	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
White NH	11	0.6	0.2	0.9
Black NH	19	7.7	4.2	11.2
Hispanic	14	3.4	1.6	5.1
Asian NH	1	n/a	n/a	n/a
All Children 0-17	45	1.6	1.1	2.1

Table 7.9: Youth Suicides and Average Annual Suicide Rates among MA Youth 10-17 Years by Sex, 2009 & 2010

Sex	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
Male	11	0.8	0.3	1.2
Female	10	0.7	0.3	1.2
All Children 0-17	21	0.7	0.4	1.1

Table 7.10: Youth Suicides and Average Annual Suicide Rates
among MA Children 0-17 Years by Select Race/Ethnicity, 2009 & 2010

Race/Ethnicity	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
White NH	79	1.5	1.2	1.9
Black NH	9	1.6	0.6	2.6
Hispanic	11	1.3	0.6	2.1
Asian NH	9	2.8	1.0	4.7
All Children 0-17	108	0.7	0.4	1.1

Table 7.11: Unintentional Injury Deaths and Average Annual Unintentional Injury Death Rates
among MA Children 0-17 Years by Sex, 2009 & 2010

Sex	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
Male	57	3.9	2.9	4.9
Female	27	2.0	1.2	2.7
All Children 0-17	84	3.0	2.3	3.6

Table 7.12: Unintentional Injury Deaths and Average Annual Unintentional Injury Death Rates
among MA Children 0-17 Years by Select Race/Ethnicity, 2009 & 2010

Race/Ethnicity	2-year Total Number	2- year Average Annual Death Rate (per 100,000 persons)	Lower 95% confidence interval	Upper 95% confidence interval
White NH	54	2.7	2.0	3.4
Black NH	17	6.9	3.6	10.2
Hispanic	7	1.7	0.4	3.0
Asian NH	6	3.5	0.7	6.3
All Children 0-17	84	3.0	2.3	3.6