FRAMEWORK FOR

CHILD INJURY PREVENTION PLANNING

Acknowledgements

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"If a disease were killing our children at the rate unintentional injuries are, the public would be outraged and demand that this killer be stopped." – C. Everett Koop, M.D., Sc.D., former surgeon General of the United States and former chairman of national safe kids Campaign, safekids voice, winter 2003

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GEORGIA CHILD INJURY PREVENTION PLAN

Executive Summary

Childhood injuries and associated deaths are a substantial emotional and economic burden on Georgia, but are preventable. Childhood injuries are the leading cause of death for Georgia's children ages 1–17 years. Each week, an average of 11 children die in Georgia because of either an intentional or unintentional injury, averaging an annual total of 549 deaths (1999–2006). Approximately 4,500 children are hospitalized, and >240,000 are examined in emergency departments yearly, at a charge of >$200,000,000 (Hospital Discharge Data, 2002–2006).

Although Georgia has multiple agencies serving children, no coordinated process has existed to prevent all childhood injuries. Collaboration and coordinated planning of injury prevention efforts should be improved to make better use of limited resources. This document provides a framework to be used for planning and collaboration.

The Georgia Office of Child Fatality Review (OCFR) and the Injury Prevention Section (IPS) of the Georgia Division of Public Health (GDPH) have led the process to develop the Framework for Georgia Child Injury Prevention Planning (FCIPP). Development of the framework has been under the direction of the OCFR's Prevention Committee. Its members represent key state agencies and community organizations that provide services to children. The prevention committee decided that the framework would focus on primary prevention — to prevent the injury-causing event, promote use of evidence-based interventions, and target injury-related health disparities, where possible.

The mission of this collaborative process is to prevent childhood injuries. The framework is a tool to achieve this mission. Four goals support the mission.

- Increase awareness of the social and financial impact of childhood injuries.
- Promote use of a systematic planning process that incorporates use of evidence-based interventions.
- Encourage collaboration among all child-serving organizations.
- Evaluate progress toward the mission and goals at all levels.

OCFR and IPS are committed to working together and leading the process to disseminate the framework, serve as a resource to communities in using the framework, and evaluate progress toward the goals.

HOW TO USE THIS FRAMEWORK

The intent of this document is to increase awareness of the extent of childhood injuries, provide a framework for prevention planning by promoting use of evidence-based interventions and evaluation, and encourage collaboration among child-serving agencies at both the state and local level.

Inform

The Childhood Injury Data section of the document provides detailed information regarding leading causes of childhood injuries in Georgia. Supplementary references provide additional sources of information for specific types of injuries. State and local organizations can use the data to educate community leaders and the public concerning childhood injuries.

Collaborate

The framework encourages collaboration among child-serving organizations. As agencies inventory their responsibilities and determine their goals and objectives, they should also identify partners that might be working on similar concerns or might have an interest in similar objectives to determine how they can work together and share resources.

Plan

The Goals, Strategies, and Action Steps section can serve as a template for organizations and communities to inventory responsibilities, activities, and resources related to childhood injury. Certain agencies' focus is children or injuries specifically, whereas for others, children and injuries are a subset of overall activities. After the inventory is complete, the action steps can assist agencies in determining next steps in their efforts to reduce childhood injuries. The action steps can be used to develop "SMART" (specific, measurable, achievable, relevant, and time-bound) objectives. Agencies can identify as many objectives under each strategy as is feasible for their organization and ideally will achieve this on a yearly as well as a longer term basis. Although the goals and strategies are presented as a progression, organizations and communities can move back and forth among them as they identify specific steps, take action, and evaluate their work. Appendix A provides tips for planning.

Supporting Documents and Tools

The Framework provides the following tools to support its use:

- child injury data for Georgia (1999–2006), including the leading causes and risk factors, and detailed information regarding injuries from the Child Fatality Review database (1999–2004);
- index of evidence-based and promising interventions that are both mechanism-specific and cross-cutting; and
- tools to identify intervention focus, strategies and resources for additional information

FRAMEWORK FOR CHILD INJURY PREVENTION PLANNNING
GOALS → STRATEGIES → ACTIONS

The Framework for Child Injury Prevention Planning is designed to prevent childhood death and disability by reducing childhood injuries. The Framework is supported by four goals and accompanying strategies and action steps needed to achieve reductions in childhood injuries.

Goal: The public and those in positions of leadership will be aware of the social and financial impact of childhood injuries.

Strategy: Increase awareness and knowledge among the public and those in leadership positions regarding injuries in children and the need for primary prevention.

Action Steps

- Provide information to key decision-makers regarding the magnitude, cost, context, and preventability of childhood injuries.
- Educate agency and organizational personnel at all levels concerning prevention and its benefits.
- Build relations with and use the media to advance accurate messages regarding childhood injury and prevention.
- Provide training for use of injury-related data for prevention planning.
- Make data regarding morbidity and mortality of childhood injury readily available through the World Wide Web.

Strategy: Improve surveillance for childhood injury prevention.

Action Steps

- Support improved death-scene investigation through education and training of law enforcement and other related personnel.
- Promote complete and accurate collection and analysis of data (e.g., vital records, child fatality review team reports, law enforcement reports, medical examiner and coroner reports, and hospital and emergency department records).
- Develop partnerships with child-serving agencies to share and link data related to childhood injury prevention, where feasible and useful.

Goal: Childhood injury prevention will be based on a systematic planning process that incorporates use of evidence-based and promising interventions.

Strategy: Promote use of a systematic planning process for injury prevention in local communities.

Action Steps

- Identify key stakeholders for effective prevention planning.
- Assess needs and resources and set priorities for prevention on the basis of this information.
- Partner with existing community-based networks (i.e., Georgia Family Connection Partnership and Georgia Family Connection at the local level, child fatality review teams, Safe Kids® coalitions, Georgia Alliance for Drug Endangered Children).

Strategy: Promote use of evidence-based and promising interventions for childhood injury prevention.

Action Steps

- Identify and compile resources of the best programs and practices.
- Link funding for programs to use of best practices.
- Incorporate evaluation as a component of injury-prevention programs.
- Provide technical and programmatic consultation to communities undertaking prevention efforts.
- Identify evidence-based programs that focus on reducing injury-related health disparities.

Strategy: Align injury initiatives with research and funding opportunities at state and national levels.

Action Steps

- Identify funding priorities of state and national organizations and link prevention efforts (e.g., Governor's Office of Highway Safety, Centers for Disease Control and Prevention (CDC), Governors Office of Family and Children Services, and Office of the Child Advocate).
- Use data to establish priorities for prevention programs.

Goal: Broad-based support throughout the state for efforts to reduce childhood death and disability caused by injuries will result.

Strategy: Secure statewide support for the framework from child-serving public and private stakeholders.

Action Steps

- Educate state and local leaders and service providers regarding the framework through presentations, meetings, and demonstrations.
- Secure commitment of state and local leaders for the goal of childhood injury prevention in all child-serving programs.
- Support increased funding for injury-prevention programs.
- Support enforcement of current laws which reduce risk for injuries.
- Support legislation to prevent injuries where evidence indicates this to be the best intervention (e.g., pool fencing and child passenger restraints).

Strategy: Promote policies at all state agencies that include injury-prevention messages and training for staff, where appropriate.

Action Steps

- Incorporate injury prevention into existing direct-service models.
- Develop policies and protocols that incorporate prevention into an organization's policies.
- Provide education and training to staff regarding childhood injuries and opportunities for prevention.

Strategy: Promote collaboration among local, state, and federal agencies and community partners.

Action Steps

- Develop collaborations that can advocate for injury-prevention programs among child-serving organizations.
- Create intervention and mechanism-specific working groups to coordinate prevention efforts.
- Increase participation of nontraditional partners advocating for and providing injury-prevention programs for children.
- Assign coordination responsibility among collaborators.
- Encourage collaboration between state agencies and private partners on projects funded with state dollars.
- Encourage resource knowledge-sharing among providers.
- Align state policies and prevention agendas with the goals of Healthy People 2010 that relate to childhood injury prevention.

Goal: Progress toward the mission of reducing childhood injuries will be evaluated.

Strategy: Develop a plan to evaluate progress toward the mission of reducing childhood injuries.

Action Steps

- Develop specific objectives and indicators for each goal and determine benchmarks.
- Develop monitoring systems to collect evidence of progress toward the goals.

Strategy: Plan for periodic review of progress in achieving goals.

Action Steps

- The Prevention Committee will report yearly to the Child Fatality Review Panel, Office of the Child Advocate, and the State Injury Advisory Board on progress toward the goals.

Child Injury Background

This section provides background information concerning injury, a discussion of data sources used, data regarding the major childhood injuries in Georgia, including who is at risk, risk factors where known, prevention opportunities, and information on cross-cutting concerns that are associated with childhood injuries. The narrative is followed by tables for the most common injuries by cause of death or injury.

Introduction

Injuries are the leading cause of death and disability for children ages 1–17 years in the United States. Georgia follows this national pattern, with injury being the leading cause of death for all children ages 1–17 and the second leading cause of death, after medical conditions, for infants.

Motor Vehicle Collision (MVC)
A 17-year old decedent was one of eight teenage boys in a van that collided with a car and then a fixed object. Only the driver and right front-seat passenger were wearing seat belts. Georgia requires that all passengers in a vehicle be in an appropriate seat belt. Georgia law also limits the number of unrelated passengers a teenage driver can transport. Additional education and enforcement of laws might have reduced the risk for death and injury that occurred in this collision.

Injuries are usually classified two ways — by intentionality or by the mechanism of injury. Intentionality can be unintentional — sometimes referred to as accidents — or intentional, usually associated with violence. The public health community is increasingly using the term unintentional injury rather than accident. Accident implies a lack of control over the injury event; however, the majority of injury events are controllable, and therefore preventable. Intentional injuries are either self-inflicted or inflicted on others and are associated with violence. The mechanism is what actually causes the injury. The most common mechanisms of childhood injury are motor vehicle crashes, suffocation, fire, drowning, firearm injuries, and falls.

The medical response and resulting death and disability attributable to childhood injuries result in substantial costs in Georgia. Families must cope with the psychological and financial losses resulting from death and disability. Communities suffer from the loss of future productive members of society, the psychological effects on its residents, and dollars spent on medical expenditures required to treat, care for, and rehabilitate injured children.

Surveillance

Surveillance in the public health context is "the ongoing systematic collection, analysis, and interpretation of outcome-specific data for use in the planning, implementation, and evaluation of public health practice" (Teutsch, 2000). Public health surveillance is designed to provide information related to diseases, injuries, and other health conditions occurring among the population; who is affected; and where they are occurring to set priorities and plan effective programs.

Injuries occur along a continuum from minor injuries that require little or no treatment to ones that lead to death. Data sources contribute to injury surveillance and to understanding the characteristics and circumstances of child deaths. Following is an explanation of the data sources that were analyzed or reviewed to provide information for the framework. Injuries treated in homes, in clinics, or in private physicians' offices are not addressed in this report. These injuries are less serious than those treated in hospitals. Value is placed on working to prevent the most severe and costly injuries.

The major sources of hospital-based injury data are emergency department (ED) records and hospital discharge reports for inpatient hospitalizations from the Georgia Hospital Association. Individual patient data from these two sources are provided electronically to the Georgia Division of Public Health. These sources also provide information related to the economic costs associated with injuries. Hospital record data are useful because the

distribution of types of injuries frequently treated in hospital settings is different from the distribution for injuries that result in death (e.g., young children are examined in EDs most often for falls but rarely die from falls).

The State of Georgia Vital Records Office maintains death records, which provide a consistent source of information regarding injuries that lead to death. Deaths are classified by using the International Classification of Diseases, 10th Revision (ICD-10 codes).

Suicide
A 16-year old male was playing army with friends. The adolescent had a disagreement, went inside the home, got a shotgun and put it in his mouth and killed himself. Storing guns in a locked cabinet and using gun locks has been demonstrated to reduce the risk for firearm injuries among children. Limiting access to firearms for persons at risk for harming themselves has been proven to reduce deaths attributable to firearms.

Georgia County Child Fatality Review (CFR) teams review deaths of children that are sudden or unexpected. Each county has a CFR team, and as of 2004, approximately 82% of all eligible cases were reviewed by the teams. The Georgia OCFR maintains a database of detailed information and case-specific circumstances for all CFR-reviewed deaths. Cause-of-death may differ between the death certificate and the child fatality review, because CFR teams might have access to additional information regarding the child's death that might not have been available when the death certificate was filed. This report includes CFR information related to reviewed child deaths during 1999–2004, referred to as "CFR-reviewed deaths."

The Georgia Violent Death Reporting System (GVDRS) provides extensive information regarding homicides, suicides and unintentional firearm injury deaths; injury deaths of undetermined manner; deaths resulting from legal intervention; and terrorism-related deaths. Information has been collected since 2004.

Injuries are reviewed by mechanism and data presented on deaths, hospitalizations, and ED visits for the leading causes of childhood injury. Age categories are <1 year, 1–4 years, 5–9 years, 10–14 years, and 15–17 years. Race is divided by white, black, and other, which includes Asian, American Indian, or Pacific Islander.

Sudden infant death syndrome (SIDS) cases and sudden unexpected infant deaths (SUID) are included in this report because circumstances of these deaths may be injury-related or unknown, and the risk and protective factors for SIDS/SUID are similar to those for infant suffocation (they are addressed separately in the discussion of infant deaths). SUID is a category that is increasingly being used for infant deaths that are unexpected and includes SIDS deaths as well as other infant deaths. Certain SUID deaths can be attributed to injuries. The Office of Child Fatality Review is increasingly using this category for child sleeping related deaths in which the cause of death cannot be determined and at least one risk factor for SIDS is present.

Scope of the Problem in Georgia

Childhood Injury-Related Deaths

During 1999–2006, a total of 14,174 children ages 0–17 years died in Georgia; 4,389 (31%) of these deaths were attributed to injuries or SIDS, and the remaining 9,785 were attributed to medical causes. For children ages 1–17 years, injury was the leading cause of death, accounting for 2,965 (65%) of all deaths for this age group. Among children aged <1 year, 9,144 deaths occurred, of which 1,424 (16%) were attributed to SIDS or other injuries, and 7,720 (84%) were attributed to medical causes. See Table 1 for a breakdown of the five leading causes of child injury-related deaths by mechanism and age group.

Table 1. 5 Leading Causes of Child Death for Injury and SIDS by Age Group, Georgia, 1999-2006

Rank	<1 yrs (n=1,424)	1-4 yrs (n=711)	5-9 yrs (n=416)	10-14 yrs (n=559)	15-17 yrs (n=1,279)	<18 yrs (n=4,389)
1	SIDS 983	Motor vehicle 188	Motor vehicle 201	Motor vehicle 250	Motor vehicle 686	Motor vehicle 1,394
2	Suffocation 160	Drowning 150	Drowning 44	Homicide 61	Homicide 184	SIDS 983
3	Homicide 86	Homicide 144	Homicide 44	Suicide 55	Suicide 156	Homicide 519
4	Motor vehicle 69	Fire 77	Fire 42	Drowning 52	Drowning 65	Drowning 325
5	All undetermined 45	Suffocation 43	Other transportation 18	Fire 28	Other transportation 56	Suffocation 249

Injury rates were highest for infants and adolescents ages 15–17 years. During 1999–2006, a total of 1,424 injury-related deaths occurred among infants, among whom the most frequent injury-related cause of death was SIDS or SUID, followed by suffocation. During the same period, the most common cause of death among children ages 1–9, 10–14, and 15–17 years was motor vehicle crashes (MVCs); drowning was the second leading cause of death among children ages 1–9, and the second leading cause among children ages 10–17 was homicide. The category other transportation includes deaths due to bicycle, pedestrian and other vehicle related deaths that did not occur on a roadway.

Table 2. Rates (per 100,000) for all injury-related deaths by age group and race/gender 1999-2006

	<1 yrs	**1-4 yrs**	**5-9 yrs**	**10-14 yrs**	**15-17 yrs**	**<18 yrs**
Race/Gender						
White male	121.3	20.0	8.5	14.2	66.8	29.0
Black male	216.1	25.1	12.4	15.9	57.7	34.8
Other male	41.9	*	*	*	20.1	10.2
White female	90.2	12.3	6.5	7.5	30.0	16.9
Black female	188.3	15.8	8.3	8.0	15.3	20.9
Other female	37.8	*	*	*	*	6.8
Total	133.5	17.3	8.3	11.0	43.4	24.1

*Rates not calculated less than 10 deaths

Injuries and injury-related deaths vary by age, race, and sex. Table 2 illustrates injury-related death rates by age group, race, and sex. Males are more likely to die of injuries than females for all mechanisms; of the 4,389 deaths, 64% were among males.

Death rates are higher for blacks than for whites. However, among adolescents, rankings vary by cause of death. For example, MVC rates are higher for whites, and homicide rates are higher for blacks. The cause-specific sections that follow address these differences, which are critical in identifying target populations for interventions.

Childhood Injury-Related Hospitalizations and ED Visits

During the period 1999–2006, a total of 36,507 hospitalizations for injuries in Georgia occurred among children aged 0–17 years, for a yearly average of 4,563 hospitalizations. Total hospital charges for the 8 years exceeded $646 million. Table 3 illustrates the top five causes for hospitalization.

ED data are available for years 2002–2006. During this period, 1,202,261 visits to EDs for injuries in Georgia occurred among children aged 0–17 years, for an average of 240,452 visits/year and an average charge of $149 million/year. Table 4 illustrates the top five causes of childhood injuries treated in EDs during 2002–2006.

The following two categories require explanation: struck by/against includes injuries related to being hit by an object or person and includes certain sports-related injuries; foreign body includes injuries in which a foreign object has entered a natural orifice (e.g., the eye).

Table 3. Leading Causes of Child Injury-Related Hospitalizations by Age Group, Georgia, 1999-2006

Rank	<1 yr (n=2,403)	1-4 yrs (n=7,463)	5-9 yrs (n=6,572)	10-14 yrs (n=9,086)	15-17 yrs (n=10,983)	<18 yrs (n=36,507)
1	Falls 658	Falls 1,489	Motor Vehicle 1,948	Motor Vehicle 2,863	Motor Vehicle 4,485	Motor Vehicle 10,676
2	Assaults 463	Burns 1,347	Falls 1,647	Falls 1,776	Suicide Attempt 1,497	Falls 6,471
3	Burns 288	Motor Vehicle 1,208	Other Transportation 497	Struck by/ against 824	Falls 901	Struck by/ against 2,404
4	Motor Vehicle 172	Poisoning 1,003	Struck by/ against 453	Other Transportation 627	Struck by/ against 716	Burns 2,328
5	Poisoning 116	Struck by/ against 359	Burns 326	Suicide Attempt 602	Assaults 678	Suicide Attempt 2,113

Child Fatality Review (CFR) Deaths

Data from child fatality reviews are used in the data summaries that follow. The reviews provide additional detail related to circumstances and risk factors associated with injury-related deaths. This document includes cumulative data on CFR-reviewed deaths during 1999–2004. Appendix B is a comparison of numbers of injury-related CFR-reviewed deaths, with total injury-related deaths from death certificates, and injury-related hospitalizations and ED visits for selected causes.

During 1999–2004, a total of 2,945 CFR-reviewed injury-related and SIDS/SUID deaths occurred among children ages 0–17 years; 1,550 (53%) occurred among children aged <6 years. Of the CFR-reviewed injury-related deaths, not including SIDS/SUID deaths, 1,617 (72%) were classified as unintentional and 533 (24%) were classified as intentional.

Table 4. Leading Causes of Child Injury-Related Emergency Department Visits by Age Group, Georgia, 2002-2006						
Rank	<1 yr (n=37,682)	1-4 yrs (n=311,364)	5-9 yrs (n=283,121)	10-14 yrs (n=341,741)	15-17 yrs (n=228,353)	<18 yrs (n=1,202,261)
1	Falls 16,802	Falls 114,678	Falls 92,494	Falls 86,716	Struck by/ against 46,319	Falls 345,071
2	Struck by/ against 4,161	Struck by/ against 49,311	Struck by/ against 54,708	Struck by/ against 77,644	Motor Vehicle 42,831	Struck by/ against 232,143
3	Foreign Body 2,183	Foreign Body 19,119	Cutting/ Piercing 24,742	Motor Vehicle 30,612	Falls 34,381	Motor Vehicle 105,818
4	Animal Bite 1,931	Animal Bite 18,703	Motor Vehicle 19,867	Cutting/ Piercing 27,729	Cutting/Piercing 17,748	Cutting/ Piercing 90,108
5	Burns 1,526	Cutting/ Piercing 18,688	Other Transportation 15,464	Other Transportation 14,762	Assaults 13,250	Animal Bite 48,732

Injuries and Developmental Stage

Childhood injuries are closely related to the child's age and stage of development, and the parent's knowledge of development and risks for injury. Childhood, particularly the early years, is a time of rapid physical, cognitive, and emotional growth, with each stage bringing new tasks for the child and different risks for injury. When planning for prevention of childhood injuries, the age and development of the child should be considered. Specific injuries are more common at certain ages. For example, suffocation is most common during infancy, because infants spend much of their time in sleeping environments and are not able to move themselves out of dangerous situations. Toddlers are exploring their environments but are not able to assess risky situations, and this puts them at risk for wandering into dangerous areas (e.g., unfenced pools or bodies of water, climbing unstable or dangerous objects, and pulling hot pans from the stove). Violence-related injuries are linked with stage of development; infancy, followed by youth ages 15–17 years, are the most vulnerable ages for homicide.

As the child progresses through the developmental stages, the child's family and living environment also play a role in risk for injury. Young children are most often injured in the home; however, as they become older and spend time at school, in sports, and with peers, the occurrence of injuries outside the home increases. Intentional injuries among young children are most often at the hands of a parent, whereas such injuries among adolescents are usually self-inflicted or inflicted by other adolescents.

Cross-Cutting Issues for Childhood Injuries

Certain concerns that relate to injuries cut across mechanisms or intentionality. Programs associated with these concerns might not have injury reduction as an explicit objective, but the program contributes to changes that result in injury reduction. For example, a substance abuse treatment program attempts to reduce chemical dependency so that a nonimpaired parent is less likely to make poor judgments related to his or her young children, resulting in fewer lack-of-supervision–related injuries. Four concerns are addressed here that are considered cross-cutting for mechanisms of injury and prevention — the social and physical environment, child maltreatment, substance abuse, and sports.

The Social and Physical Environment

Public health has traditionally focused on individual risk factors for disease as a basis for behavior change. Increasingly, public health is using the socioecologic model, which encourages considering a person within the larger social environment. This model is useful in considering risk factors and areas in which to intervene for injuries.

The social environment includes one's relationships, culture, community, and society. Although less research exists in this area, the social environment is increasingly becoming a critical factor in assessing injury prevention. Family structure, cultural practices, community expectations, and social structure all have an impact on risk for injuries. The socioeconomic status of persons within their environment is associated with the risk for intentional and unintentional injuries and is particularly relevant for understanding and planning interventions. The Annie E. Casey Foundation's KIDS COUNT 2008 reported that, for years 2005 - 2007, 20% of Georgia's children were living in poverty; Georgia ranked 37th among states for this indicator in 2007. Examples of population-based interventions that focus on changing the social environment include making certain behaviors unacceptable (e.g., drinking and driving, child abuse, and partner abuse) and promoting family-friendly work places. Targeted interventions include home-visitor programs for new parents at risk for maltreating their children.

Physical environments contribute to injuries that affect children. Examples are playground injuries and child pedestrian injuries related to motor vehicles. Modifications to the physical environment can minimize or eliminate contact with the injury-causing event by producing safer surroundings and by designing products that prevent injuries. Examples of interventions in this area include four-sided fencing with locked gates around pools, use of smoke detectors, safety-approved infant cribs, and child-proof caps on medicine bottles. Environmental modifications might not be the first interventions considered because they require multidisciplinary collaboration, may require legislation and enforcement, and can initially be expensive. Yet after they are in place, they can produce long-term reductions in injuries. Additional examples of physical environmental modifications include improvements to roads that make them less dangerous and improved playground surfaces and structures that reduce the impact of falls.

Suffocation
A 3-month-old infant was sleeping in bed with his mother and her boyfriend (both had been drinking earlier in the evening). When the mother awoke, she found the infant laying face-down and unresponsive. The American Academy of Pediatrics (AAP) recommends that a child be put to sleep on his back. AAP recommends that if parents decide to share a bed with their infants, the parents should not be under the influence of drugs or alcohol or overly tired.

Child Maltreatment
The four common types of maltreatment are physical abuse, sexual abuse, emotional abuse, and neglect (CDC, 2008). The severity of each type varies from mild to severe, and individual children often experience more than one type of maltreatment.

Different authors have provided evidence that the boundaries between child maltreatment and what are referred to as unintentional injuries are blurred and that efforts are better focused on the injury rather than on the intentionality (Cohen, 2003). Child neglect is a factor in the majority of unintentional injuries in which a child has been inadequately supervised or unprotected from dangerous situations. Lack of supervision, particularly of children aged <5 years, is associated with increased risk for all types of injury. The Morbidity and Mortality Weekly Report of April 4, 2008, indicated that for fiscal year 2006 (October 1, 2005–September 30, 2006), the National Child Abuse and Neglect Data Systems (NCANDS) reported that, among children aged <1 year, 23.2/1,000 population experienced substantiated nonfatal maltreatment; neglect was the most frequently cited category, at 69% of the reports.

Although multiple factors contribute to child maltreatment, data indicate that children aged <3 years are particularly at risk and that male caregivers are more likely to be associated with child abuse, whereas mothers are more likely to be associated with neglect. Families with a previous history of involvement with child protective services are at higher risk for injury, death, and hospitalizations (Doll et al., 2007). Poverty, parenthood at a young age, parental isolation, overly controlling parental styles, inappropriate developmental expectations, and domestic violence have all been indicated as factors that place a child at risk for maltreatment. Substance abuse is also a factor in a majority

of child abuse cases (Pediatrics, 1999). The Georgia Alliance for Drug Endangered Children: Needs Assessment (2006) surveyed caseworkers to quantify the volume of child deprivation cases that involve parental substance abuse and discovered that approximately two-thirds of cases involve parents either using or manufacturing drugs.

In addition to the potential for immediate serious injury or death, child maltreatment is associated with potential adverse, long-term consequences for children, including an increased risk for suicide, assault, homicide, and substance abuse concerns, as well as other health and developmental problems.

Related findings include the following:

- Of 39,117 substantiated incidents (i.e., incidents in which the Division of Family and Children Services discovered evidence of maltreatment) of child maltreatment in Georgia for 2006, a total of 32,537 (83%) were attributable to neglect (Division of Family and Children Services, Georgia, 2007)
  - 34 % were among children aged <4 years.
  - 19,843 (61%) of the neglect incidents were a result of inadequate supervision.
- Of 1,477 CFR- reviewed injury-related and SIDS/SUID deaths among children ages 0–4 years, 35% were substantiated for abuse or neglect, and 48% were determined by CFR teams to have been inadequately supervised. For the 551 unintentional injury deaths among this age group, CFR teams determined that 240 (44%) were attributable to inadequate supervision, and 511 (93%) were definitely or possibly preventable.

Prevention opportunities include the following:

- Deliver programs that offer safety counseling across a range of risks and provide safety materials or other incentives.
- Educate parents and caregivers regarding risks for injury to young children as a component of home visitation programs.
- Promote programs that identify and provide support to parents at risk for maltreating their children (e.g., intensive home-visiting programs for parents with substance abuse and other mental illness diagnoses).
- Support safe, stable, nurturing families and communities through policies and practices in community organizations and businesses.
- Support appropriate and ongoing training for caseworkers, foster parents, and residential facilities.
- Support assignment of recommended caseload levels for Division of Family and Children Services.
- Incorporate injury prevention education and knowledge of prevention into staff training for Temporary Assistance to Needy Families/Ready for Work (TANF/RFW), the Women, Infants, and Children program, residential substance abuse treatment programs, and other organizations that serve parents and children.
- Promote evaluation and revision of the state child maltreatment prevention plan, Promises to Keep (1998), to provide a comprehensive statewide child maltreatment plan; and development of an accompanying implementation plan.

Substance Abuse

Alcohol is the most common drug used in the United States and the leading risk factor for all serious injury (CDC, 2007). The Children of Alcoholics Foundation estimates that 11 million–17.5 million children aged <18 years are living with an alcoholic parent. Studies examining the link between parental substance abuse and child maltreatment indicate that substance abuse is present in at least half of the cases referred for maltreatment (Pediatrics, 1999). The National Center on Addiction and Substance Abuse (CASA) estimates that 25% of children residing in the United States live in a household with a binge or heavy drinker, and 13% live in a household in which a parent uses illicit drugs. The Georgia Alliance for Drug Endangered Children: Needs Assessment (2006) estimates that in Georgia, approximately 600,000 children are endangered by alcohol, and 300,000 by drug use. During the last 5 years, 61,294 dependent children had a parent imprisoned in Georgia for a drug offense, and another 4,346 for an alcohol offense.

Substance abuse is associated with injuries among children both directly and indirectly. Caregivers or children (in the case of adolescents) might be using substances that increase the risk for injury, as can occur in MVCs. Caregivers under the influence of substances might place children at risk because of impaired judgment or lack of supervision. Children are endangered by the manufacture, transport, and sale of such illegal substances as methamphetamine.

Not only are children of substance-abusing parents at risk for injury in the short term because of lack of supervision, inappropriate expectations concerning behavior, and risky situations, but they also appear to be at risk of developing maladaptive behaviors later in life. These behaviors contribute to higher rates of school problems, suicide, homicide, and sexual assault (Pediatrics, 1999).

Interventions to screen for substance abuse and subsequent referral for treatment are cross-cutting and can potentially reduce injuries across a number of mechanisms. Routine education and screening for substance abuse in the family and with children across their life span can identify a problem early and result in treatment. Given the prevalence of substance abuse among parents referred to protective services, a need exists for universal screening for substance abuse of parents and caregivers reported for maltreatment and subsequent referral for indicated treatment. Improved data collection and linking of data are needed to further study the impact that parents who abuse alcohol or drugs have on injuries among children.

The Georgia Strategic Prevention Framework State Incentive Grant, funded by Congress, has determined alcohol related traffic crashes to be one of the priority areas of focus for sub recipient communities. Selected Georgia communities will conduct an assessment of the nature and extent of the problem within their respective communities.

Prevention opportunities include the following:

- Enforce community laws that relate to driving under the influence of alcohol or drugs.
- Enforce laws to limit availability of alcohol to minors.
- Enforce zero-tolerance laws for alcohol use among adolescent drivers.
- Promote delivery of anticipatory guidance and preventative screening for substance abuse for children and parents in health care settings.
- Promote interventions to screen and offer treatment for substance abuse to adolescents and adults at the time of injury (if alcohol or other substances were involved).
- Promote alcohol and drug screening among parents or caretakers who have been referred to the Department of Family and Children's Services for suspected neglect or abuse.
- Support drug-free workplace programs as education and support for working adolescents and adults.
- Educate child care providers regarding substance abuse, its symptoms, and how to refer parents to community resources.

*Firearm*s

During 1999–2004, among CFR-reviewed child deaths, 268 children ages 0–17 years died as a result of a firearm injury; 232 (86%) of these deaths were related to either a homicide or suicide. An additional 31 deaths were determined to be unintentional, and five were of unknown intent. Of the 36 unintentional or unknown-intent shootings, 19 (61%) were among youths aged 1–14 years.

Access to unsecured firearms is a factor in both intentional and unintentional firearm-related deaths. Of intentional firearm-related CFR-reviewed deaths among children, 159 (42%) were homicides, accounting for 42% of all CFR-reviewed child homicides. Older adolescents are more likely to be killed as a result of firearm injuries. Numerous studies have documented a clear association between the presence of firearms in the home and suicides, particularly by adolescents and young adults. Firearms were used in 73 (47%) suicides; older adolescents were more likely to commit suicide by using a firearm. Unintentional deaths by a firearm among children are most often the result of a child having access to an unsecured gun in the home. In 15 of the 31 CFR-reviewed unintentional firearm-related deaths, children were playing at the time the gun discharged.

Prevention opportunities include the following:

- Educate the public on firearm-related deaths and injuries among children.
- Educate parents and caregivers on the need to restrict access to firearms for all children.
- Promote safe gun storage.
- Educate and counsel parents of youths at risk for suicide on the need for restriction of access to firearms.
- Promote violence-prevention programs for youth.
- Encourage addition of safety features on guns, to make firing a gun more difficult for children.
- Promote improved data collection of firearm-related deaths among children.

Sports

Participation in sports and other recreational activities is critical to children's physical development, self-esteem, and social skills. Although fatal injuries resulting from sports and recreational activities are rare, nonfatal injuries are common. During July 2000–June 2001, an estimated 4.3 million nonfatal injuries were treated in hospital EDs in the United States; the percentage of all unintentional injury-related ED visits that were sports and recreation-related was highest for persons aged 10–14 years and particularly for boys in this age group (CDC, 2002). These estimates do not take into account the substantial number of children examined only in private physician offices and clinics for sports-related injuries. Boys are examined more often than girls for all types of sports injuries. White children are treated for injuries more often than black children. Interventions exist to reduce injuries for certain sports and recreational activities, including use of bicycle helmets and protective gear for athletes, separating bicyclists from motor vehicles, four-sided pool fencing, and school guidelines regarding preventive measures for sports. Much is still unknown about risks, protective factors, and interventions to prevent sports and recreation-related injuries, making this an area in which research is still needed.

Prevention opportunities include the following:

- Improve surveillance to better understand sport-related injuries among children.
- Promote use of protective equipment.
- Encourage activity-specific sports education for coaches, parents, and children to foster appropriate preventive behaviors.
- Promote development of environmental modifications that reduce incidence of injuries.

The following are data relating to childhood injuries presented by mechanisms. The first six mechanisms are presented in order of leading cause of reviewed deaths; suffocation follows SIDS/SUID because similar risk factors affect these mechanisms. The last two mechanisms represent substantial numbers of visits by children to hospitals and EDs. Key findings are provided for each mechanism, along with risk factors and prevention opportunities. Additional data regarding specific injuries can be obtained from the Georgia Child Fatality Review Panel, Summary Report 1999–2004 and the Georgia Division of Public Health Planning and Assessment Unit.

Motor Vehicle Crashes (MVCs)

Motor vehicle-related injuries result in more deaths and injuries to children aged 0–17 years than any other type of injury. The injured person might be the driver or occupant of a motor vehicle, a pedestrian, or a cyclist hit by a vehicle.

Key Finding	Related Fact
MVCs are the leading cause of injury-related deaths among children aged 0–17 years. MVCs are the leading cause of hospitalizations for children aged 0–17 years.	MVC-related deaths accounted for 41% of all injury-related deaths of children aged 0–17 years during 1999–2006. MVC-related injuries were the most common reason for injury-related hospitalizations of children aged 0–17 years during 1999–2006. From 1999 to 2006, hospital charges for MVC-related injuries for children aged 0–17 years totaled $305,102,897.
Adolescent drivers aged 15–17 years account for the majority of MVC fatalities during childhood. Adolescent drivers represented 12% of all MVC-related deaths in Georgia, although they comprise only 7% of the population.	66 CFR-reviewed deaths occurred among children aged 15–17 years, for a rate of 21.5/100,000 population. This rate is approximately 4 times that for infants, who represent the next highest rate. 58% of all CFR-reviewed deaths among children aged 15–17 years resulted from MVCs. For CFR-reviewed deaths, the highest MVC-related death rates were among white males; the rates were approximately 1.5 times the rates for black males, and >2 times that for black females.
Driver or passenger not wearing a restraint correctly is associated with MVC injury.	In 257 (27%) of the reviewed cases in which information was known, the decedent was not wearing a restraint; an additional 41 (4%) were using the restraint incorrectly. Of the 466 deaths among children aged 15–17 years, in which information was known, 183 (49%) of the adolescents were not wearing a restraint.
Young children are at increased risk for MVC-related pedestrian deaths and hospitalizations. Black children are at higher risk for MVC-related pedestrian injuries.	Of 138 CFR-reviewed MVC-related pedestrian deaths among children, 47 (34%) were among children aged 0–4 years, and 23 (40%) occurred in a driveway or parking lot; MVC-related pedestrian deaths accounted for 36% of all MVC-related deaths among children aged 0–4 years. Among MVC-related pedestrian injury hospitalizations during 1999–2006, approximately 29% were among children aged 1–4 years; the rate among blacks was 13.0, more than twice the rate for whites, and almost twice the rate for Hispanics.
Risk factor	**Prevention Opportunity**
Failure to correctly use an appropriate safety restraint Riding with a driver who does not use a restraint (Cody et al., 2002) Riding with a driver who has been drinking (Shults, 2004) Being an adolescent driver aged 15–17 years Lack of adult supervision of children aged 1–4 years when around motor vehicles	Educate parents, caregivers, and adolescents on the correct use and lifesaving capability of passenger restraints. Enforce the Primary Seatbelt Law and support review and updating to comply with advances in technology. Enforce the Driving Under the Influence Law for all drivers. Educate parents of teenage drivers on the risks related to driving, the need to monitor adolescent driving, and the provisions of the Graduated Driver Licensing (GDL) Law, that restrict number of unrelated passengers and driving curfews, Enforce the GDL Law, including the 2007 changes that further restrict number of unrelated passengers. Support environmental changes that improve the safety of roads. Educate parents regarding the need for supervision of young children near motor vehicles. Support product modifications to better detect young children who might be standing behind moving motor vehicles

Sudden Infant Death Syndrome (SIDS) and Sudden Unexpected Infant Death (SUID)

SIDS is an unexplained, sleeping-related sudden death in a child aged <1 year. SIDS is only determined after an autopsy, an examination of the death scene, and review of the infant's and family's clinical histories (National SIDS/Infant Resource Center). SUID is a category that is increasingly being used for infant deaths that are unexpected; it includes SIDS deaths as well as other infant deaths. The Office of Child Fatality Review is increasingly using this category for child sleeping-related deaths in which the cause of death cannot be determined and where at least one risk factor for SIDS is present. Risk factors for SIDS, SUID, and suffocation are similar.

Key Finding	Related Fact
Infant's age, bed sharing, and race are associated with SIDS/SUID death	Of 430 CFR-reviewed SIDS/SUID deaths in which sleeping circumstances were known, 264 (61%) were bed- sharing. 66% of all SIDS/SUIDS deaths were among children aged <4 months. The rate of SIDS/SUID for black infants is twice the rate for white infants
Risk factor	**Prevention Opportunity**
Infants aged 2–6 months Infants sleeping prone (sleeping on the stomach) or side Infants sleeping with soft bedding or loose items in the bed (i.e., pillows, stuffed animals, or blankets) Infants born prematurely or at low birth weight Infants bed-sharing, especially with any one who is under the influence of drugs or alcohol Infants born to mothers who smoke or who are exposed to smoke at home Infants overheated because of excess clothing or bundling	Educate parents and caregivers in a culturally sensitive manner at different points throughout pregnancy and infancy on • American Academy of Pediatrics and National Institute of Health's recommendations for safe sleep for infants Encourage physicians and organizations providing services to families with infants to routinely include safe-sleep messages in communications with parents and caregivers. Educate the public through back–to-sleep and safe-sleep messages.

Suffocation Suffocation includes asphyxia caused by someone overlaying on a child, obstruction by an item, or by wedging or entanglement in an item; it also includes strangulation. The majority of infants who suffocate do so because their airway is obstructed by bedclothes or soft sleeping surfaces (Liller, 2006).	
Key Finding	**Related Fact**
Infant's age, bed-sharing, and race are associated with suffocation.	Of 166 CFR-reviewed suffocation deaths during 1999–2004, a total of 126 (68%) occurred among infants. 93% of CFR-reviewed infant suffocation deaths were sleep-related. 66% of all CFR-reviewed suffocation deaths were among children aged <5 months. Of CFR-reviewed deaths in which the sleeping environment was known, 73% of infants were sleeping in an adult bed, couch, chair, or on the floor.
Small objects, ropes, and cords pose risk for suffocation.	77% of CFR-reviewed suffocation deaths among children aged 5–9 years in which circumstances were known were a result of swallowing small foods or objects or unintentional hanging.
Risk factor	**Prevention Opportunity**
Infants sleeping prone (i.e., face down) or side-sleeping Infants sleeping with soft bedding or loose items in the bed (i.e., pillows, stuffed animals, or blankets) Infants bed-sharing, especially with anyone who is under the influence of drugs or alcohol Small objects or food items that can be lodged in the airway Cords, ropes, wires, and other items that can cause unintentional hanging	Educate parents and caregivers in a culturally sensitive manner at different points throughout infancy on • American Academy of Pediatrics and National Institute of Health's recommendations for safe sleep for infants Encourage physicians and organizations providing services to families with infants to routinely include safe-sleep messages in communications with parents and caregivers. Educate the public through back-to-sleep and safe-sleep messages. Educate parents about risks for suffocation that can result from swallowing small objects, food items, or other objects that can obstruct breathing (e.g., plastic bags) and items that pose a hanging risk. Support product modification and notices to reduce risk for injury from items that can cause suffocation among young children.

Homicide and Assault Homicide deaths in early childhood (0–4 years) are most often related to family violence and child maltreatment. The perpetrator is most often a parent or other caretaker, and deaths most often occur in the home environment and with a weapon of opportunity (i.e., whatever is available). Among youth homicides, the perpetrator is most often another adolescent or young adult, and the weapon is most often a handgun.	
Key Finding	**Related Fact**
Homicide was either the second or third leading cause of death among every age group category among CFR-reviewed child deaths for the years 1999–2004	Georgia's child death rate from homicide was 2.99/100,000 persons for the period 1999–2005. The nationwide rate was 2.52.
Infants are at greatest risk. Infants were most often killed by a parent. Young children are also at high risk	The rate of homicides among CFR-reviewed infant deaths for 1999–2004 was 9.3/100,000 persons, the highest for all age groups. Among 72 CFR-reviewed infant deaths, 59 (82%) were killed by their father, mother, or both parents. Among CFR-reviewed child deaths, 45% of all homicides were among children aged 0–4 years.
Youths aged 15–17 years are at risk for homicide.	The rate for CFR-reviewed deaths among children aged 15–17 years was 5.6/100,000 persons. Homicide was the second leading cause of death for this group. In 97 (80%) of the deaths in this age group, the decedent was killed by a firearm.
Firearms were the most common mechanism for injury of all CFR-reviewed homicides.	Of the 378 homicides reviewed by CFR committees, 159 (42%) were caused by a firearm; the second most common cause was being struck by an object or person, with 57 (15%).
Black males are most at risk for being the victim of homicide	During 1999–2004, among CFR-reviewed deaths, the homicide rate for black males was 6.3/100,000 persons, approximately 3.5 times the rate for white males
Risk factor	**Prevention Opportunity**
Infancy (GVDRS, 2006) Black infants and children at greater risk than whites Having access to lethal means	Promote programs to support parents during their children's infancy and young childhood, particularly where an identified risk exists for child maltreatment. Educate the public about parenting, child abuse, and community resources. Promote prevention of bullying and violence among youth. Support legislation to reduce children's access to lethal means.

Drowning	
Annually, drowning deaths are the second leading cause of unintentional death among children aged 0–14 years. "Inadequate supervision has been cited as a primary contributing factor in the majority of drowning studies" (Liller, 2006). The pattern of drowning deaths varies by age of the child, body of water, and activity at the time of drowning. Drowning among infants most often occurs in the bathtub, whereas children aged 1–4 years most often drown in residential pools.	
Key Finding	**Related Fact**
Children aged 1–4 years had the highest risk for drowning among CFR-reviewed deaths. Rates for blacks decreased from 1999 to 2004, but are still higher than rates for whites.	Among CFR-reviewed drowning deaths that occurred during 1999–2004, a total of 87 (42%) were among children aged 1–4 years. The rate for this group was 2.9/100,000 persons; the next highest rate was among children aged 15–17 years, at 1.8/100,000 persons. The most common location of death for CFR-reviewed deaths was open bodies of water and private and public pools; bathtubs were the next most common. In 73 (84%) of CFR-reviewed drowning deaths, the local CFR team determined that the decedent had not been adequately supervised.
Risk factor	**Prevention Opportunity**
Lack of appropriate supervision of young children Absence of an appropriate personal flotation device Use of alcohol by the person responsible for the child, or in the case of older children, by the victim Nonwhites have higher drowning rates than whites Seizure disorder (drowning is the most common cause of injury death for persons with epilepsy)	Educate parents and caregivers about the risks for drowning and the need for appropriate supervision. Educate the public to increase use of life jackets by all children aged <18 years. Provide personal flotation device (PFD) loaner programs at popular boat landings. Encourage legislation and enforcement requiring four-sided fencing with locked gates for pools, pool drain and pump covers and shutoff systems to prevent entrapment in drains and pumps. Educate the public about the increased risk for drowning associated with alcohol consumption during water-related activities. Promote risk reduction programs targeted to blacks and other minorities. Educate parents and caregivers of children with seizure disorder about the risk for drowning when left unattended.

Suicide and Suicide Attempts Suicide is a major public health issue claiming the lives of many children and adults every year. Suicide is a leading cause of death in the U.S. and Georgia for young people ages 15-25. Suicide attempts were the third leading cause for hospitalization for Georgia's children ages15-17 from 1999-2006.	
Key Finding	**Related Fact**
Young adolescents are at risk for suicide.	Among 155 CFR-reviewed child suicide deaths during 1999–2006, 131 (85%) occurred among children aged 14–17 years. The Youth Risk Behavior Survey (YRBS) estimates that 15.5% of 9th grade students in Georgia have had thoughts of killing themselves (2007).
White males are at greatest risk for suicide.	Among CFR-reviewed suicide deaths, white males had the highest number and rate of suicide deaths (2.1/100,000 persons versus black females at 0.3/100,000 persons).
Firearms were the most frequent method used for suicide by adolescents.	Of CFR-reviewed deaths, firearms were used in 73 (47%) cases; suffocation (hanging) was the mechanism in 70 (45%) deaths. Children aged 15–17 years most often used firearms.
Females are examined more often than males for suicide attempts.	During 1999–2006, females comprised 68% of hospitalizations and 69% of ED visits for suicide attempts. Poisoning by fever reducers and tranquilizers was the most common method of suicide attempts among females.
Risk factor	**Prevention Opportunity**
History of mental illness, particularly depression History of alcohol and other substance abuse Previous suicide attempt Family history of suicide Family history of child maltreatment Feelings of hopelessness Easy access to lethal methods Prior experience with the juvenile justice system Unwillingness to seek help	Promote and advocate for gatekeeper training (training to screen for depression and suicide) for persons who work with children, including school and community personnel. Promote suicide screening and intervention programs in schools. Promote culturally competent prevention programs. Promote increased support and access to services for children experiencing stress, depression, substance abuse, and other mental health and substance abuse problems. Support restriction of access to lethal means for youth at risk of suicide. Support legislation that restricts access to firearms for children. Encourage safety modifications to guns that make firing guns more difficult for children.

Fires and Burns

Fires are the fifth leading cause of unintentional injury deaths nationally and the third leading cause of fatal home injury (CDC, 2005). Fires are also the leading cause of burn injuries among children. Although fire-related injuries accounted for only 1% of all injury hospitalizations in Georgia, they had the highest average hospital charges and the longest average hospital stay (Georgia Department of Human Resources, 2007).

Key Finding	Related Fact
Children aged 1–4 years are at greatest risk.	Of 137 CFR-reviewed fire-related deaths during 1999–2004, a total of 64 (47%) were among children aged 1–4 years. In 31 of the deaths among children aged 1–4 years, the CFR team discovered that the child had not been adequately supervised.
Black children are at greatest risk for fire-related deaths.	The number and rate of fire-related deaths for all children increased from 1999 to 2004; deaths among black children increased, whereas rates among whites remained stable. The rate of fires was higher among blacks —1.8 for black males and 1.5 for black females, compared with 0.9 for white males and 0.5 for females.
During 1998–2003, a total of 215 deaths occurred as a result of residential fires in Georgia; 58% of these fires occurred in homes with no smoke alarm (Georgia Residential Fire Risk Assessment, 2006).	In only 16 of the 137 CFR-reviewed fire-related child deaths was a working smoke alarm known to be in the home.
Risk factor	**Prevention Opportunity**
Children aged <5 years Lack of use of a working smoke detector Persons living in poverty Persons living in rural areas Persons living in manufactured and substandard housing Alcohol use	Educate parents and children about fire safety and distribute and install either free or low-cost smoke alarms. Promote programs that educate children and parents about what to do in the event of a fire. Educate parents on safety precautions, including safe cooking practices, removing matches and lighters from children's access, lowering the thermostat on the water heater, and maintaining smoke alarms. Support continued research on fire-safe cigarettes.

Falls	
Although children rarely die from falls, falls are the leading cause of unintentional injury among children aged 0–17 years. Infants are at greatest risk for falling off furniture, down stairs, and while using baby walkers; toddlers are at risk for falling out of windows; falls among older children are associated with playground equipment; and falls among adolescents are related to participation in sports and recreational activities.	
Key Finding	**Related Fact**
Falls were the leading cause of ED visits among children aged 0–17 years during 2002–2004.	A total of 345,071 visits to the ED resulted from falls, accounting for 29% of all ED visits. Total charges for ED visits related to falls were $225,237,645. Playground- and sports-related falls are the most common type among children aged 5–17 years, where the cause is known.
Infants and young children are at greatest risk.	Falls accounted for more ED visits than the next four leading causes combined, for both infants and young children aged 1–4 years; falls most often were associated with furniture. The head, face, or neck was the affected area in 84% of the visits for infants and 68% of the visits for ages 1-4 years.
Risk factor	**Prevention Opportunity**
Children aged <5 years Male children Children with disabilities, particularly those using wheelchairs Children of low-income families (possibly a result of lack of supervision and inadequate housing) Environmental hazards, including baby walkers, stairways, and above-ground windows with no bars Engaging in contact sports Playgrounds with multiple fall hazards, including inadequate surfacing Black and Hispanic children because of increased likelihood of living in urban, multiple-story, low-income dwellings	Educate parents about risks for falls, particularly among children aged <5 years. Educate parents about falls from windows and distribute free window guards. Support legislation to eliminate unsafe products (e.g., baby walkers) and to require window guards in multiple-story buildings. Promote regulation and inspection of playgrounds to ensure adequate surfacing. Educate coaches and pediatricians on the availability of CDC recreational head-trauma kits.

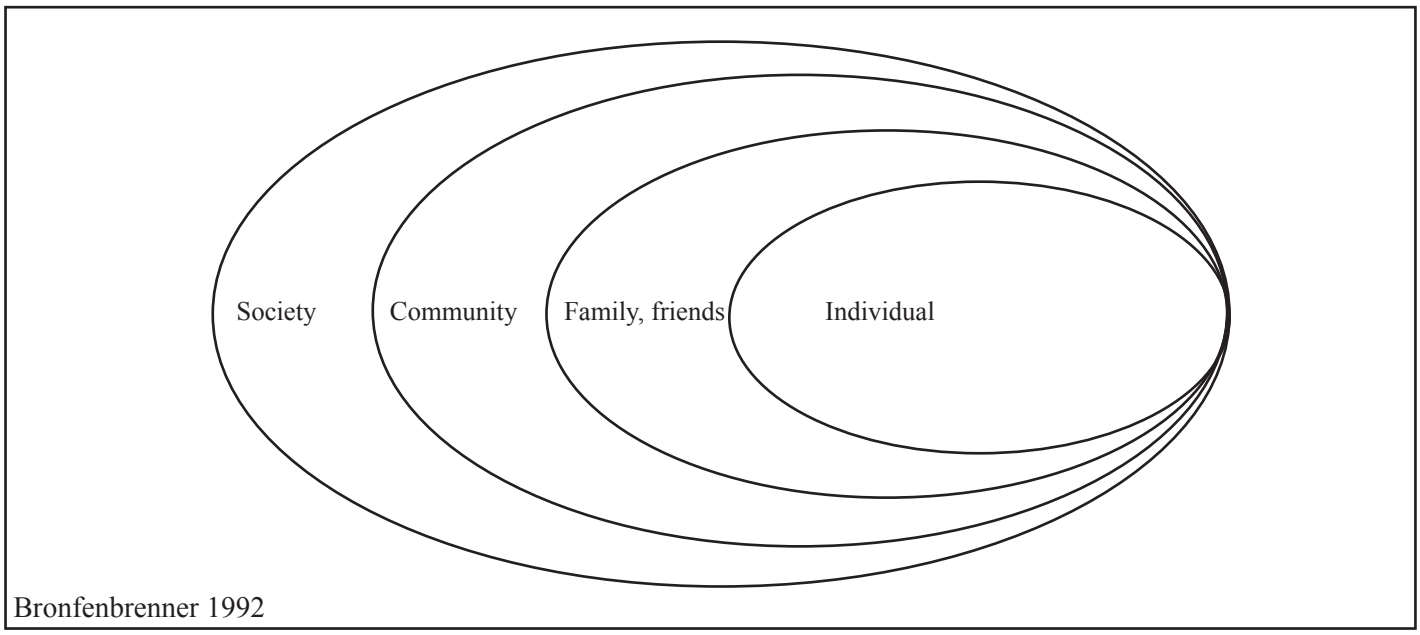
Struck by	
Injuries in the struck by category are a loosely defined mix of injuries that are caused by such occurrences as being hit during a tackle, being hit by falling or thrown objects, having fingers caught in doors, tripping, and bumping into objects. A substantial percentage of injuries in this category are sports-related. Despite the fact that this category is a major cause of ED visits for children, circumstances that cause injury are not well-understood. Improvements in data collection are needed to better understand the characteristics of struck-by injuries.	
Key Finding	**Related Fact**
Struck by was the second leading cause of ED visits for all children ages 0–17 years during 2002–2006.	232,143 ED visits accounted for $72,597,302 in charges and 19% of all ED visits.
Children ages 10–17 years are at greatest risk for injury.	Children aged 10–14 years had the highest number of ED visits at 33%. Rates were highest among children aged 15–17 years, followed closely by children aged 10–14 years. The most common types of injury were fractures.
Injuries are often related to participation in sports.	29% of ED visits and 53% of hospital admissions were sports-related. Children aged 15–17 years were the most frequently examined group for both ED visits and hospitalizations.
Males are affected more than females.	Males comprised 68% of injuries for combined hospital and ED visits; rates were highest among non-Hispanic white males.
Risk factor	**Prevention Opportunity**
Information is lacking Varies for the individual child, age, physical development, and the specific sport.	Improve data collection for causes of and factors related to these injuries. Educate children and parents regarding protective measures and skill development for specific sports. Promote use of protective equipment and compliance with appropriate protocols for all sports in school and community settings. Support environmental modifications where indicated (i.e., separate bicycle lanes, break-away bases for baseball, well-maintained sports fields).

Prevention

The three levels of prevention are primary, secondary, and tertiary prevention. Primary prevention is directed at preventing an act with risk for injury from occurring (e.g., preventing poisoning among young children by making such substances inaccessible). Secondary prevention is directed at reducing the effect of the injury after it has occurred. This would include promoting use of appropriate safety restraints in motor vehicles so that if a crash occurs, risk for injury is decreased. Tertiary prevention is directed at reducing the severity of an injury after it has occurred and includes advocating for funding for adequate emergency care.

The focus of this framework is to prevent childhood injuries through primary prevention. Certain primary prevention efforts will also provide secondary prevention, reducing the risk for injury if an event occurs. The plan uses the socioecologic model as a backdrop for injury prevention (See Figure 1.). This model is sometimes called the ecological model. A socioecologic framework is useful in injury prevention because it views the person and his or her behavior in the environment. The model helps us realize that, to plan successful interventions, we should look beyond a person's behavior to consider the complex interaction between the person, the family, the community, and society.

Figure 1. Socio-Ecological Model



With the socioecologic model as a backdrop, two tools are presented that can be used together as a way to analyze and plan prevention activities. The tools are the Haddon Matrix (Appendix C) and the Spectrum of Prevention (Appendix D). The Haddon Matrix was developed by William Haddon, Jr., MD, considered by many to be the father of injury epidemiology. The matrix provides a framework to view injuries similar to the way an infectious disease doctor considers an infection. The impact of the injury event, including the characteristics of the patient, the agent (e.g., poison or water), the physical environment, and the social environment, are viewed at three different time phases of an injury event — pre-event, event, and postevent. Prevention efforts can be better focused by viewing factors that affect an injury at different points in time.

The second tool, called the Spectrum of Prevention, is a comprehensive framework for developing multilevel strategies for prevention interventions. The Spectrum of Prevention was developed in 1983 by Larry Cohen,

MSW and is based on the clinical work of Marshall Swift, PhD from Hahnemann College. The spectrum is derived from practice and developed out of the conviction that complex problems require comprehensive solutions. The spectrum has been applied in injury prevention efforts for children and adolescents and has been useful in determining action steps at different levels of intervention from education to policy change. Samples of the two tools are provided in Appendices E and F.

The two tools complement each other, providing the practitioner with a comprehensive plan for prevention of a specific injury. The spectrum supplements the Haddon Matrix because it helps practitioners to specify the array of activities necessary for an effective prevention campaign. By using the two tools together, practitioners can devise a multifaceted intervention that simultaneously addresses the temporal concerns highlighted by the Haddon matrix. The spectrum emphasizes the importance of influencing policy and legislation, an area that Haddon's approach does not specifically address.

When planning a program, effectiveness is most likely achieved through addressing the problem at multiple levels — from the person to the larger community, including policymakers. A mass-media campaign, combined with educational opportunities that are interactive, incentives from insurance carriers, and vendors providing low- or no-cost safety products, has a better chance of being effective than any one intervention alone.

Evaluation of interventions is vital to prevention planning. Evaluation can be used for program improvement, to demonstrate effectiveness or progress toward program goals, and to garner support for future programming. By planning the evaluation along with the program, critical information is more likely to be collected to provide evidence that the program is reaching its goals, and if not, why. Selected evaluation-planning Internet sites are listed in the back of this document.

Prevention programs and activities are listed in the Reference and Internet Site section at the end of this document.

Selected Interventions

Following is a list of prevention interventions that have been compiled on the basis of reviews of evaluations completed by The Cochrane Review; Harborview Injury Prevention Center; the Guide to Community Preventive Services, CDC; and the Handbook of Injury and Violence Prevention (Doll et al., 2007). Although this is a fairly comprehensive list, it does not include all possible injury-prevention programs for children. Readers are encouraged to consult the Resource and Internet Sites at the end of this document for additional information. Interventions focus on primary prevention, but they might also provide secondary prevention measures; each is divided by cross cutting concerns and mechanisms. Interventions for injury prevention can include providing education, enforcing laws, advocating for legislation, and modifying products and environments.

In some cases specific programs are cited, while for others types and characteristics of programs are listed. Interventions listed have been shown to be either effective or promising. Interventions that have not been evaluated or have not demonstrated effectiveness are not listed. For certain injuries (e.g., drowning), limited evidence exists regarding effective interventions, but interventions are presented that might prove to be effective in a multilevel strategy.

Where data are available on the cost of a program, it is included. All costs listed are approximate. Cost –effectiveness data are lacking on injury prevention and always need to be considered in the current economics of the time the program is actually implemented. Readers should consult specific programs to estimate costs.

Cross-Cutting Interventions

Screening for Alcohol and Drug Abuse	
What does the law say?	There are no Georgia laws requiring screening of alcohol and drug abuse.
Learn more	Screening, Brief Intervention, and Referral for Treatment (http://sbirt.samhsa.gov/about.htm)
Effective Methods of Implementation	
1. Alcohol screening, brief intervention, and referral for trauma patients	
What is it?	Screening, brief intervention and, referral for treatment (SBIRT) is a recommended program of the Substance Abuse and Mental Health Services Administration (SAMHSA). The intervention screens persons for alcohol abuse who present to Level I and II trauma centers, followed by feedback about the results of the screening and referral for treatment, if needed.
How well does it work?	Preliminary data suggest the program is successful in modifying the consumption/use patterns of those who consume five or more alcoholic beverages in one sitting and those who use illegal substances.
Cost?	Brief medical alcohol intervention is $87 per lecture.
Other interventions are identified under the Transportation section	

Broad Injury Prevention Programs	
What does the law say?	There are no laws requiring such programs.
Learn more	The Injury Prevention Program (http://www.aap.org/family/tippmain.htm) Risk Watch (http://riskwatch.org/about.html)
Effective Methods of Implementation	
The Injury Prevention Program (TIPP)	
What is it?	An injury education program for parents of children aged 0–12 years aimed at preventing common childhood injuries. The program provides a systematic method for pediatricians to counsel parents about common injuries, including drowning, fires, and falls. It includes policy statements from the American Academy of Pediatrics (AAP) on safety concerns, counseling schedules, fact sheets, and other educational materials for parents and children.
How well does it work?	Has not been evaluated but is based on studies reporting that educational counseling by primary-care providers decreases specific injuries.
Cost?	On average, injury prevention counseling by a pediatrician for children ages 0-4 costs $10 per child.
Risk Watch	
What is it?	A comprehensive, school-based injury prevention curriculum developed by the National Fire Protection Association (NFPA) and the Home Safety Council. The curriculum is divided into five age-appropriate modules that cover causes of injuries resulting from motor vehicles, fires, suffocation, poisoning, falls, firearms, bicycles, and water.
How well does it work?	Has been evaluated by an independent evaluator, and children completing the modules show statistically significant gains in safety-related knowledge.
Cost?	Data not available

Interventions To Reduce Child Maltreatment	
What does the law say?	There are several Georgia laws addressing child maltreatment, including child endangerment and harm in environments with domestic violence and drug manufacture. Georgia does not have a law defining a general custodial duty to protect children from environments or situations that are likely to cause unintentional injury.
Learn More	Georgia Code The Developing Child (http://www.developingchild.harvard.edu)
Effective and Promising Interventions	
Intensive home-visiting programs for families with children aged 0–3 years	
What is it?	Home visitation programs for parents of young children aged 0–3 years who are at risk for or have been reported for maltreating children. Programs usually include information concerning child health and individualized coaching in child development and parenting skills. They can also include interventions to assist parents with mental health, substance abuse, and domestic violence concerns.
How well does it work?	Home visitation programs that include in-home, family-based, multifaceted services for families at risk have been effective in reducing injury rates; programs have varying effectiveness depending on whether they were provided by professional versus nonprofessional visitors and are short-or long-term (families at high risk might need long-term visitation). Targeting families at high risk and defining specific goals has demonstrated increases in positive outcomes.
Cost?	The cost of programs varies with the type of provider and the intensity of the program.
Parent education and support groups	
What is it?	Center based education and support groups that include parent-child interactions, group sessions on educational topics, and a classroom component for teachers.
How well does it work?	Evaluation of a variety of programs has shown positive outcomes in cognitive and social development for children.
Cost?	Data not available
Child assault prevention programs in schools	
What is it?	Universal education programs conducted in school settings about physical and sexual abuse. Programs include information regarding abuse, how to avoid risky situations, and if abused, how to respond and get help.
How well does it work?	Have been effective in conveying safety messages about reducing risks to children and have offered victims of abuse the language and knowledge for accessing help and reducing future abuse.
Cost?	Data not available.

Public awareness campaigns	
What is it?	Public awareness through the media, including radio and television public service announcements, pamphlets, and billboards.
How well does it work?	Have been effective in raising awareness about the existence and types of child maltreatment. Evidence concerning whether they change parental attitudes about abusive treatment is unclear.
Cost?	Data not available.

Violence Prevention	
What does the law say?	There are no Georgia laws that are applicable to this intervention.
Learn more	National Youth Violence Prevention Resource Center (http://www.safeyouth.org/scripts/index.asp) Centers for Disease Control and Prevention (http://www.cdc.gov/ncipc/dvp/YVP/school_violence.htm)
Effective Methods of Implementation	
Universal school-based violence prevention programs	
What is it?	Universal programs are those delivered to all children at all grade levels in a given school. The curricula include education related to violence, emotional self-awareness, self-esteem, positive social skills, social problem-solving, and conflict resolution. One such program being used in Georgia is Second Step.
How well does it work?	The *Guide to Community Preventive Services* recently completed a review of studies of this type of program and discovered that strong evidence exists for the effectiveness of the programs and they are associated with decreases in violence-related outcomes. Beneficial results were evidenced at all school levels, from prekindergarten to high school.
Cost?	Costs for programs reviewed by the Community Guide ranged from approximately $15 - $245 per child.
Targeted school-based violence prevention programs	
What is it?	School-based violence prevention programs targeted to selected or indicated children identified because of conduct problems or risk factors. These programs used a variety of methods including cognitive approaches, behavioral strategies, social skills training, and counseling approaches. Examples of such programs include bullying prevention, life skills, and intensive therapy programs.
How well does it work?	These types of program have been effective in reducing aggressive, disruptive, and bullying behaviors and in improved conflict resolution.
Cost?	Data not available

Drowning

Although studies have been completed on the incidence and epidemiology of drowning, only a limited number of them have evaluated interventions to prevent drowning. Effective prevention for drowning might require employing a combination of multiple prevention strategies, including mass-media campaigns regarding water-related risks for children, promotion of regular use of personal flotation devices (PFDs), education about supervision of children in water-related activities, advocating for pool fencing and lifeguards, and decreasing consumption of alcohol in water activities. Although the majority of interventions have not been evaluated, a prevention program can be developed on the basis of sound behavioral theories and interventions that have the potential for effectiveness.

Drowning	
What does the law say?	Recent Georgia legislation sets standards for pools in one and two family dwellings based on the 2006 International Residential Code.
Learn more	Harborview Injury Prevention and Research Center (http://depts.washington.edu/hiprc/practices/topic/drowning/index.html)
Effective Methods of Implementation	
Swimming pool fencing legislation	
What is it?	Isolation fencing, preferably four-sided with a secure self-latching gate for all pools (i.e., public, semipublic, and private).
How well does it work?	Has demonstrated strong evidence of reducing the risk of drowning by preventing children from accessing pools. Evaluations of pediatric drowning deaths have determined that isolation or four-sided fencing is effective in reducing fatal and nonfatal drowning injuries. Perimeter fencing, in which a building, such as a house serves as one of the sides, is less effective.
Cost?	Data not available.
Lifeguards	
What is it?	Provide lifeguards in public areas where people swim and encourage swimming only in protected areas.
How well does it work?	Although this intervention has not been evaluated, observational data demonstrate the success of life-saving resuscitations and likely deterrence of risky water-related behaviors.
Cost-effectiveness?	Data not available

Drowning	
Effective Methods of Implementation	
Use of personal flotation devices (PFDs)	
What is it?	Programs that promote use of PFDs in multiple settings, including pools and other open water areas.
How well does it work?	Evaluations of this intervention are observational, but indicate that 85% of persons who drowned in boating-related incidents had not worn a PFD. The U.S. Coast Guard and AAP recommend wearing life jackets when on water in a boat. Campaigns to increase use should focus on adult use as well as children's use because adult role-modeling affects use by children.
Cost?	Data not available

FALLS

Falls	
What does the law say?	There are no state laws applicable to fall related injuries
Learn more	Harborview Injury Prevention and Research Center (http://depts.washington.edu/hiprc/practices/topic/falls/index.html)
Effective Methods of Implementation	
Legislation to require window bars on rental housing and interventions to encourage parents to use window guards.	
What is it?	This legislation requires rental units to have bars on windows, making falling out of windows less likely for young children. In the absence of legislation, programs that include education about falls from windows and distribution of window guards to families have been effective in reducing falls from windows.
How well does it work?	Has shown sufficient evidence of success, although only a limited number of studies evaluating it exist.
Cost?	Data not available
Playground injury interventions	
What is it?	Environmental modifications to playgrounds include use of impact-absorbing surface materials and maintenance of the surfaces and equipment, as well as following standards for playgrounds (Public Playground Safety Handbook, US Consumer Product Safety Commission, 2008).
How well does it work?	Modifications to playgrounds have led to a decreased number of playground-related serious injuries resulting from falls.
Cost?	Data not available
Advocate banning manufacture of mobile baby walkers.	
What is it?	Baby walkers have been implicated in fall injuries for years. The AAP has recommended they be banned. This type of intervention would require education, as well as mobilization of supporters for such a ban.
How well does it work?	Evaluation evidence is not available. Canada became the first country to ban baby walkers in 2004.
Cost?	Data not available

Fires and Burns

Fires and Burns	
What does the law say?	As of July 1, 1994, Georgia state law requires a working smoke detector be present in new dwellings and dwelling units constructed after July 1, 1987. Additional local ordinances related to fire safety might also exist.
Learn more	Georgia Code (http://www.lexis-nexis.com/hottopics/gacode/default.asp)
Effective Methods of Implementation	
Education about and distribution of smoke detectors	
What is it?	Community programs, often targeting specific areas, that distribute smoke alarms. Actual installation of the alarm increases likelihood of use.
How well does it work?	Is a reliable, effective, and inexpensive method for reducing injuries resulting from home fires. Programs that include fire education along with distribution are promising, and with actual installation, are effective. Communitywide education-only programs have demonstrated limited effectiveness.
Cost?	Average cost of the fire department installing smoke alarms in a home is $56 per home based on the Georgia smoke alarm installation program 2008. This cost includes the fire department's personnel and equipment costs as well as the cost of the smoke alarms.
Legislation to require smoke detectors in all homes, apartments, and manufactured housing, together with a multilevel education campaign and distribution of free or low-cost smoke detectors	
What is it?	A multi-strategy campaign, with legislation to enforce placement and use of smoke detectors.
How well does it work?	Evidence indicates that this is the most effective strategy for increasing use of smoke detectors.
Cost?	Data not available
Multifaceted fire/burn injury prevention	
What is it?	Program typically offers broad information regarding fire/burn prevention.
How well does it work?	Is somewhat effective. To be fully successful, the program should be based on sound theory and promising interventions, with a narrow message and a target audience.
Cost?	Data not available

Fire/Burns

Effective Methods of Implementation	
Product modification	
What is it?	Modification of products can be a passive intervention to reduce injuries. Changes to cigarette lighters and manufacture of flame-resistant infant clothes are examples of modifications.
How well does it work?	Has been successful with cigarette lighters, flame-retardant clothing for children, and water heaters, and has injury prevention potential for cigarettes, mattresses, stove guards, and other devices that decrease risk for fires and burns.
Cost?	Data not available
Knowing what to do in the event of a fire	
What is it?	Education of household members, particularly children, about what to do in the event of a fire.
How well does it work?	Research has indicated success in teaching young children fire-escape skills, but additional research is needed to demonstrate evidence of effectiveness in the event of a fire.
Cost?	Data not available

SPORTS-RELATED INJURIES

Sports-Related Injuries	
What does the law say?	No Georgia laws are applicable.
Learn more	Sports-Related Injuries Among High School Athletes — United States, 2005–06 School Year, *MMWR* 2006;55:1037–40. (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5538a1.htm)
Effective Methods of Implementation	
Use of appropriate sport-specific safety gear	
What is it?	Safety gear is recommended for specific sports (i.e., helmets for baseball, football, and bicycling; or padding for soccer and football).
How well does it work?	Use of appropriate recommended protective gear is successful in preventing injuries.
Cost?	Data not available
Environmental modifications	
What is it?	Redesign of equipment or sports environments (e.g., installing softer playground and sports field surfaces, placing bars on bicycles, and using breakaway bases for baseball).
How well does it work?	Interventions may be effective in reducing risk for injuries for specific sports.
Cost?	Data not available
Adequate coaching and supervision	
What is it?	Coaching and supervision to teach correct training and sport techniques, and sportsmanship.
How well does it work?	Intervention has not been evaluated well, but evidence indicates that it contributes to reducing injuries that result from improper techniques and assaultive behavior.
Cost?	Data not available
Recognizing and preventing head injuries in sports	
What is it?	Programs that educate coaches of children's sports and athletes to recognize, prevent, and seek treatment for head injuries. CDC's *Heads Up: Concussion in Youth Sports* is an example of this type of intervention.
How well does it work?	Program is based on best practices for recognizing and preventing concussions and seeking early treatment. Evaluation of the program has demonstrated an increase in high school coaches' knowledge, attitudes, behavior and skills related to concussion prevention and management.
Cost?	Data not available

SUFFOCATION and SIDS/SUID

Suffocation and SIDS/SUID	
What does the law say?	The US Consumer Product Safety Commission regulates specifications for new full-size and non-full-size infant cribs.
Learn more	American Academy of Pediatrics (http://www.aap.org/healthtopics/Sleep.cfm) Centers for Disease Control and prevention (http://www.cdc.gov/SIDS/sleepenvirnoment.htm) National Sudden Death Infant Resource Center (http://www.sidscenter.org/)
Effective Methods of Implementation	
Interventions to promote a safe sleep space for infants	
What is it?	The AAP and the Centers for Disease Control and Prevention recommend that infants sleep on their backs in cribs. Additionally, infants should not sleep with stuffed animals, pillows, fluffy bed clothing, or bumpers. If parents choose to bed-share with an infant, they should not smoke or sleep with an infant while impaired (e.g., under the influence of alcohol or drugs).
How well does it work?	Evidence has demonstrated that putting an infant to sleep on his or her back reduces the risk for sleep-related infant death. Studies have demonstrated other risk factors in the sleeping environment and recommended infants sleep in safety approved cribs without loose objects.
Cost?	Data not available
Other suffocation-related prevention strategies	
What is it?	Childhood suffocation or choking prevention is complex because the injury can occur in different ways, including choking on small objects and pieces of food and suffocation by hanging. Warnings on products, product modification, and supervision of young children while eating and playing are strategies that might be effective.
How well does it work?	Not evaluated
Cost?	Data not available

SUICIDE

Suicide	
What does the law say?	No Georgia laws are applicable.
Learn more	Centers for Disease Control and Prevention Injury Center (http://www.cdc.gov/ncipc/dvp/Suicide/default.htm) Suicide Prevention Resource Center (http://www.sprc.org/featured_resources/bpr/index.asp)
Effective Methods of Implementation	
Gatekeeper Training: Training to recognize signs of depression and suicide and training to teach how to talk with a person and get help for them. These programs can be applied in multiple settings, including schools, churches, and community organizations. The following are examples of two such programs:	
What is it?	Population-based programs aimed at reducing suicide by providing training about the signs of depression and suicide, how to get someone help, strengthening social support, promoting development of social skills, and changing policies and norms to encourage effective help-seeking behaviors. Examples of this model are Question Persuade Refer and SOS (Signs of Suicide).
How well does it work?	Programs of this type have been effective in reducing attempts, increasing education about depression and suicide, and in reducing stigma associated with suicide. Specific models are recommended by Substance Abuse and Mental Health Services Administration (SAMHSA)
Cost?	SOS kits are $300 and include a procedure manual, best-practice guidelines, and a training video for staff.
Means restriction	
What is it?	Education for parents about the need to reduce access to lethal means for adolescents at risk for attempting suicide.
How well does it work?	Has promising results in reducing access to lethal means by parents of adolescents at risk for suicide.
Cost?	Data not available
Cognitive behavioral therapy for adolescent depression	
What is it?	Cognitive behavioral therapy (CBT) for adolescent depression is a developmental adaptation of the classic cognitive therapy model developed by Aaron Beck and colleagues(http://www.nrepp.samhsa.gov/programfulldetails.asp?PROGRAM_ID=92).
How well does it work?	Reduces major depression and symptoms of depression that lead to remission.
Cost?	The cost of CBT for adolescent depression is approximately $640 and is based on 16 hours of therapy with a social worker at $40 per hour.

Transportation–Related Injuries

Child Passenger Restraints	
What does the law say?	All children aged 6–17 years are required to be restrained in a safety belt in all seating positions. Children aged <6 years are required to be in an age- and weight-appropriate child safety or booster seat, which must be used according to manufacturer's instructions. The law also requires that children aged <6 years ride in rear seats.
Learn more	Georgia Code Georgia Office of Highway Safety (http://www.gohs.state.ga.us/)
Effective Methods of Implementation	
Enforcement of the Child Passenger Restraint Law	
What is it?	Failure to properly restrain children aged <6 years can result in a fine of ≤$50 and one point on the driving record; for a second conviction, the fine and points can be doubled. One citation can be written per unrestrained child. Law enforcement officers can stop a vehicle solely on the basis of observing a seatbelt violation.
How well does it work?	Evidence indicates that such laws decreased fatal injuries by 35%, decreased combined fatal and nonfatal injuries by 17%, and increased child safety-seat use by a median of 13%.
Cost?	Data not available
Distribution of child passenger seats and education about use	
What is it?	Programs that provide safety seats, coupled with education about how to correctly use restraints.
How well does it work?	Evidence indicates that this type of program increases possession and correct use by a median of 23%; programs were effective when used in hospitals and clinics and when provided by an auto insurance program; effective with urban, suburban, and rural communities and with affluent and lower socioeconomic populations.
Cost?	Average cost of a child safety seat is $55, combined with education the cost of the seat is approximately $100/seat; this estimate is based on the costs of the Georgia Child Passenger Safety Program 2008.

Child Passenger Restraints	
Effective Methods of Implementation	
Communitywide information, plus enforcement campaigns	
What is it?	Mass-media mailings and safety-seat displays and programs that use special enforcement strategies, including checkpoints, dedicated law-enforcement officials, or alternative penalties to enforce existing child safety-seat laws.
How well does it work?	Evidence indicates such programs increased child safety-seat use by a median of 12% in all settings and among all socioeconomic levels.
Cost?	Data not available
Incentive, plus education programs	
What is it?	Provides rewards to children and parents for purchasing and correctly using child safety seats and includes an educational component.
How well does it work?	Evidence demonstrates a median increase of 10% in use of safety seats; the programs were implemented in child care centers and among targeted populations in communities in all types of settings and among all income levels.
Cost?	Data not available

Safety Belt Use	
What does the law say?	All children aged 6–17 years are required to be restrained in a safety belt in all seating positions. Failure to do so will result in a $25 fine, to be paid by the driver. Georgia has a primary law, which means that law enforcement can issue citations that are based on observing an unbelted driver or passenger.
Learn more	National Highway Traffic Safety Administration (http://www.nhtsa.gov/) Governors Office of Highway Safety (http://www.gohs.state.ga.us/)
Effective Methods of Implementation	
Primary enforcement of safety belt laws	
What is it?	Primary enforcement provisions permit law enforcement officers to stop a vehicle solely on the basis of observing a seatbelt violation.
How well does it work?	Evidence indicates that safety belt laws reduce fatalities overall by a median of 9% and nonfatal injuries by a median of 2% and increase observed seatbelt use by a median of 33%. In states with primary laws, the median decrease in fatalities was 8% greater than in states without a primary law; for safety belt use, the median increase in primary-law states relative to states without primary laws was 14 percentage points for observed use; studies have demonstrated the primary seatbelt enforcement increased use among blacks and Hispanics more than among whites.
Cost?	Data not available
Click It or Ticket (CIOT) National Campaign	
What is it?	CIOT is a national campaign sponsored by the National Highway Traffic Safety Administration to enhance enforcement of safety belt use by motor vehicle drivers as a means of saving lives and preventing injuries.
How well does it work?	CIOT is the most successful seatbelt enforcement campaign ever, helping create the highest national seatbelt use rate of 82%.
Cost?	Costs are available based on specific state programs.

Reducing Drinking and Driving	
What does the law say?	All 50 states and the District of Columbia have per se (unlawful alcohol level) laws defining drunk driving; a crime is committed when a person drives with a blood alcohol concentration (BAC) at or above a prohibited level; in Georgia the BAC is 0.08 %. Violation is punishable by fines, loss of license, community service, attendance at education programs, and imprisonment. In Georgia, the maximum BAC for youth aged <21 is 0.02%.
Learn more	National Highway Traffic Safety Administration (http://www.nhtsa.gov/) Governors Office of Highway Safety (http://www.gohs.state.ga.us/)
Effective Methods of Implementation	
Minimum legal drinking age (MLDA) and zero-tolerance laws	
What is it?	Law specifies a minimum age below which the purchase or consumption of alcoholic beverages is prohibited. In Georgia, the age is <21 years.
How well does it work?	Studies in states with MLDA indicated a median 16% decrease in crash-related outcomes.
Cost?	The zero-tolerance law for drivers aged <21 years costs approximately $34 per driver to enforce.
Blood alcohol concentration (BAC) at 0.08% for all drivers	
What is it?	The BAC at which driving a motor vehicle is illegal
How well does it work?	After implementation of these laws, the median decrease in fatal alcohol-related motor vehicle crashes was 7%.
Cost?	Data not available.
Lower blood alcohol concentration for drivers <21 years	
What is it?	An alcohol content reading of 0.02 BAC is the level for per se (unlawful alcohol level) intoxication for persons aged <21 years.
How well does it work?	Evidence indicates decreases in fatal and nonfatal crash outcomes.
Cost?	Data not available.

Reducing Drinking and Driving	
Effective Methods of Implementation	
Sobriety checkpoints	
What is it?	Selective breath-testing at checkpoints by law-enforcement officials who have reason to suspect a driver has been drinking; media campaigns publicizing this event are a helpful component.
How well does it work?	Evidence indicates a drop in crashes in which alcohol was involved after implementation of such programs; fatal crashes thought to have involved alcohol decreased a median of 22% after implementation of checkpoints.
Cost?	Estimated cost of $9,600 per checkpoint.
Mass-media campaigns	
What is it?	Mass-media campaigns designed to persuade drivers either to avoid drinking and driving or to prevent others from doing so. Media includes public service announcements, written literature, and billboards.
How well does it work?	Evidence indicates a median decrease of 13% in alcohol-related crashes.
Cost?	Data not available.
Instructional school-based interventions	
What is it?	School-based instructional programs to reduce riding with alcohol-impaired drivers, alcohol-impaired driving, or alcohol-related crashes.
How well does it work?	Evidence indicates reductions of adolescents riding with alcohol-impaired drivers but insufficient evidence of effect on reducing drunk driving.
Cost?	Data not available.

Interventions to Reduce Young Driver Crashes	
What does the law say?	The Teenage and Adult Driver Responsibility Act (TADRA), Georgia's graduated driver licensing (GDL) law, requires that all drivers aged 16 years who are applying for a Class D driver's license must complete an approved driver-education course and a total of 40 hours of supervised driving, including 6 hours of night driving that must be sworn to by a parent or guardian; additional restrictions are placed on adolescent drivers.
Learn more	Georgia's Teenage and Adult Driver Responsibility Act (http://www.gahighwaysafety.org/tadra.html) Joshua's Law (http://www.gateendrivereducation.dds.ga.gov/)
Effective Methods of Implementation	
Graduated driver licensing (GDL) systems	
What is it?	GDL laws are licensing systems designed to ensure that novice drivers meet certain minimum requirements. In Georgia new drivers are restricted to driving only immediate family members during the first 6 months of having a license; one unrelated passenger under the age of 21 years during the second 6 months; and no more than three unrelated passengers under the age of 21 years during the third 6-month period. A Class D license holder cannot drive during the hours of 12–6 a.m.
How well does it work?	Evidence indicates a median decrease in per-population overall crash rates during the first year of 31%.
Cost?	Cost is $74 per driver.

Bicycle Injuries	
What does the law say?	Children aged ≤16 years are required to wear an appropriate fitting bicycle helmet.
Learn more	Governors Office of Highway Safety (http://www.gohs.state.ga.us/gabikelaws.html)
Effective Methods of Implementation	
Education about helmet use and distribution of free or discounted helmets	
What is it?	Education about the law and bicycle safety combined with distribution of free or low-cost helmets.
How well does it work?	Evidence indicates that use of bicycle helmets reduces incidence and severity of head, brain, and facial injury. Evidence indicates increased use of helmets after implementation of programs that combine education and distribution of low-cost or free helmets. Long-term, effectiveness of legislation and sustainability of use varies by income areas, with decreasing use among middle- and low-income areas. Alternate strategies to sustain helmet use are needed.
Cost?	Cost of program with helmet distribution is approximately $11 per user.
Separate bicycle paths and lanes for bikers	
What is it?	Paths that separate bikers from other motor vehicle traffic.
How well does it work?	There is limited evidence that this type of intervention may reduce risk for accidents.
Cost-effectiveness?	Data not available.

APPENDICES

A. Tips for Prevention

B. Table: Comparison of Child Deaths

C. Haddon Matrix

D. Spectrum of Prevention

E. Sample of Haddon Matrix

F. Sample of the Spectrum of Prevention

Appendix A

Tips for Planning Prevention Activities

Obtain and review county and regional data on childhood injuries from various sources including:

- Child Fatality Team
- Hospital and emergency department
- Vital records
- Division of Family and Children Services

Identify and define the problem you want to address

- Look at risk and protective factors
- Use the Haddon Matrix to look at factors affecting the injury

Identify stakeholders

- Will vary depending on what the problem is
- Consider creating injury specific work groups
- Identify recommended and promising interventions

Inventory resources

- Public and private agencies
- Business community
- Faith community

Choose interventions

- Use the Spectrum of Prevention to identify activities at multiple levels
- Determine action steps
- Assign responsibilities
- Follow up on assigned tasks

Write a simple evaluation plan

- See resource list for links to developing an evaluation plan

Appendix B

Comparison of Child (<18 years) Death Certificates, Hospitalizations, Emergency Department Visits, and Reviewed Deaths for Child Injuries, including SIDS				
Mechanisms	**Death Certificates 1999-2006 N= 4,389**	**Hospitalizations 1999-2006 N= 36,507**	**Emergency Department 2002-2006 N= 1,202,261**	**Child Fatality Review 1999-2004 N= 2,945**
Average number of events/year	549	4,563	240,452	491
Animal Bite	10	394	48,732	0
Burns	1	2,328	17,398	0
Cutting/Piercing	3	614	90,108	0
Drowning/Near Drowning	325	298	587	205
Falls	26	6,471	345,071	15
Fire	165	964	3,071	137
Firearm (unintentional)	31	423	3,033	31
Foreign Body	0	492	37,836	0
Homicide/Assaults	519	1,658	25,733	378
Motor Vehicle	1,394	10,676	105,818	961
Other Transportation	139	1,413	37,916	0
Poisoning	72	1,809	16,949	43
Shaken Baby	*	*	*	1
SIDS	983	0	0	692
Struck by/Against	34	2,404	232,143	0
Suffocation	249	209	1,799	166
Suicide/Attempts	214	2,113	5,474	155
Other/Unspecified	141	3,586	226,226	161
Undetermined	83	655	4,367	

Sources: Georgia Division of Public Health Vital Records Death Data, Hospital & Emergency Room Data; Office of Child Fatality Review, Child Fatality Review Data

*Included under other categories

Appendix C

HADDON MATRIX

Worksheet

PHASES	EPIDEMIOLOGIC DIMENSION			
Factor/Phases	**Human Factor**	**Agent or Variable**	**Physical Environment**	**Socio-cultural Environment**
Pre-event				
Event				
Post-event				

Source: Haddon 1968

Appendix D

SPECTRUM OF PREVENTION

Worksheet

LEVEL OF SPECTRUM	DEFINITION OF LEVEL	ACTIVITY
1. Strengthening Individual Knowledge and Skills	Enhancing an individual's capability of preventing injury or illness and promoting safety	
2. Promoting Community Education	Reaching groups of people with information and resources to promote health and safety	
3. Educating Providers	Informing providers who will transmit skills and knowledge to others	
4. Fostering Coalitions and Networks	Bringing together groups and individuals for broader goals and greater impact	
5. Changing Organizational Practices	Adopting regulations and shaping norms to improve health and safety	
6. Influencing Policy and Legislation	Developing strategies to change laws and policies to influence outcomes	

Source: Prevention Institute www.preventioninstitute.org

Appendix E

HADDON MATRIX

Sample: Infant Suffocation

PHASES	EPIDEMIOLOGIC DIMENSION			
Factor/ Phases	**Human Factor**	**Agent or Variable**	**Physical Environment**	**Socio-cultural Environment**
Pre-event	*Increase knowledge about safe sleep among parents/ care givers, community members, health care, child care and other social service providers.* *Promote safe sleep protocols for child serving organizations.*	*Reduce items associated with risk - position of baby, location for sleep, items in sleep space, smoking .* *Work with retailers to provide safe sleep messages with products and to display products modeling safe sleep practices.*	*Increase use of crib, reduce items in the sleep space, reduce smoking, reduce unsafe bed-sharing.*	*Increase awareness of the risks of unsafe sleep practices.* *Collect information on barriers to safe sleep.* *Develop culturally sensitive safe sleep messages.* *Promote thorough death scene investigation to improve understanding of infant sleep-related deaths.*
Event				
Post-event				

Appendix F

SPECTRUM OF PREVENTION

Sample: Infant Suffocation

LEVEL OF SPECTRUM	DEFINITION OF LEVEL	ACTIVITY
1. Strengthening Individual Knowledge and Skills	**Enhancing an individual's capability of preventing injury or illness and promoting safety**	*Educate parents and care takers about safe sleep and collaborate with them to problem solve barriers to following recommendations.*
2. Promoting Community Education	**Reaching groups of people with information and resources to promote health and safety**	*Provide information resources about safe sleep that can be made available to providers and community groups; Distribute information through community agencies, organizations, churches, and events,*
3. Educating Providers	**Informing providers who will transmit skills and knowledge to others**	*Train health care providers, home visitors, community workers, and others who serve parents of infants.*
4. Fostering Coalitions and Networks	**Bringing together groups and individuals for broader goals and greater impact**	*Facilitate an infant safe sleep work group to identify needs, focus efforts, plan action steps.*
5. Changing Organizational Practices	**Adopting regulations and shaping norms to improve health and safety**	*Work with and educate law enforcement re: deaths scene investigation* *Promote adoption of safe sleep protocols for all child serving agencies* *Work with vendors to educate about safe sleep and encourage modeling of safe practices.*
6. Influencing Policy Legislation	**Developing strategies to change laws and policies to influence outcomes**	*Develop recommendations about model death scene investigation and advocate for application statewide*

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