

## **Strengthen the Evidence for MCH Programs: Environmental Scan of Strategies**

National Performance Measure (NPM) #7: Injury

*Rate of hospitalization for non-fatal injury per 100,000 children ages 0-9 and adolescents ages 10-19*

### **Introduction**

This environmental scan identifies collections of strategies to advance performance for NPM #7, Injury. The information provided in this document focuses on strategies to achieve the NPM, not on the content of care or specified health outcomes. Please note that the quality of the evidence in this compilation has not been evaluated, and that data sources describing a single strategy, rather than a collection of strategies, have been excluded.

This compilation includes the following sections:

- **Reviews and Compilations:** Identifies existing compilations for strategies that intend to improve performance for each measure
- **Frameworks and Landmark Initiatives:** Frameworks includes conceptual models underlying strategy implementation; Landmark Initiatives include seminal programs/policies related to the NPM
- **Data Sources:** Indicates sources, search criteria, links to search strategy and selected organizational websites
- **Inclusion and Exclusion Criteria:** Denotes types of studies, setting, populations of interest and exclusion criteria

Technical assistance for State Title V MCH programs related to using evidence to inform State Action Plans, selection of strategies, and development of evidence-based or evidence-informed Strategy Measures may be requested at <http://www.semch.org/technical-assistance.html>

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## Reviews and Compilations

| Review/Compilation  | Summary   | Web Link   |
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| <p>Abernethy. (2007).<br/>Strategies to prevent injury in adolescent sport: a systematic Review<br/><i>British Journal of Sports Medicine</i><br/>[Target<sup>1</sup>: G]</p> | <ul style="list-style-type: none"> <li>• 12 studies (RCTS, intervention, and cohort studies) of adolescent (12-18) sports injury prevention strategies</li> <li>• Pre-season and during season conditioning and flexibility training, as well as education regarding injury prevention are recommended</li> </ul>   | <p><a href="http://dx.doi.org/10.1136/bjism.2007.035691">http://dx.doi.org/10.1136/bjism.2007.035691</a></p> |
| <p>Bass et al. (1993).<br/>Childhood injury prevention counseling in primary care settings: a critical review of the literature.<br/><i>Pediatrics</i>. [Target: B,C]</p>     | <ul style="list-style-type: none"> <li>• Objective: “Critical review of the scientific literature on the effectiveness of primary care-based counseling to prevent childhood unintentional injury”</li> <li>• 20 articles included</li> <li>• 18 showed reduction in injury after prevention counseling</li> <li>• 5 of these were RCTs and 10 not RCTs</li> <li>• Physicians provided the counseling in the studies with positive results</li> </ul>   | <p><a href="http://www.ncbi.nlm.nih.gov/pubmed/8414825">http://www.ncbi.nlm.nih.gov/pubmed/8414825</a></p>   |
| <p>Bruce et al. (2005).<br/>Group Interventions for the prevention of injuries in young children: a systematic review.<br/><i>Injury Prevention</i>.<br/>[Target: G]</p>      | <ul style="list-style-type: none"> <li>• Objective: To examine “group based injury prevention interventions that targeted young children to determine the effectiveness of such strategies in enhancing children’s safety behaviors.”</li> <li>• 9 studies included, interventions for road crossing, car restraints, spinal cord safety, poison safety</li> <li>• Interventions included videos, stories, games, etc.</li> <li>• Five studies had positive effect, but 3 had mixed effect</li> </ul> | <p><a href="http://dx.doi.org/10.1136/ip.2004.007971">http://dx.doi.org/10.1136/ip.2004.007971</a></p>       |
| <p>Damashek et al. (2002).<br/>Unintentional injury prevention efforts for</p>  | <ul style="list-style-type: none"> <li>• Interventions categorized by levels: national and state, community, caregiver and child</li> <li>• Also organized by type of method: legislation, education and behavioral training</li> </ul>   | <p><a href="http://www.ncbi.nlm.nih.gov/pubmed/12476076">http://www.ncbi.nlm.nih.gov/pubmed/12476076</a></p> |

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| <p>young children: levels, methods, types, and targets.</p> <p><i>Journal of Developmental and Behavioral Pediatrics</i><br/>[Target: D,G,H]</p>                    | <ul style="list-style-type: none"> <li>• Further described as active or passive</li> <li>• More individualized home education programs including home visits can be more effective</li> <li>• Children Can't Fly program: decreased falls through media, caregiver counseling, free safety equipment</li> <li>• Home Injury Prevention Project (HIPP) also combined education and safety device distribution</li> <li>• Hands on caregiver behavioral training is effective, child behavioral training is somewhat effective</li> </ul>  |  |
| <p>Dowswell et al. (1996). Preventing childhood unintentional injuries—what works? A literature review. <i>Injury Prevention</i>.<br/>[Target: G,H]</p>             | <ul style="list-style-type: none"> <li>• Objective: “report on a systematic review of the world literature to provide information about the most effective forms of health promotion interventions to reduce childhood (0-14 years) unintentional injuries.”</li> <li>• Effective interventions in reducing injury: legislation for child restraints, bike helmets, traffic, child resistant containers to prevent poisoning, and window bars to prevent falls.</li> </ul>   | <p><a href="http://dx.doi.org/10.1136/ip.2.2.140">http://dx.doi.org/10.1136/ip.2.2.140</a></p>                         |
| <p>Duperrex et al. (2009). The effect of educating children and adolescents on preventing dog bite injuries. <i>The Cochrane Collaboration</i>.<br/>[Target: F]</p> | <ul style="list-style-type: none"> <li>• Objective: “To determine the effectiveness of educational interventions that target children and adolescents in reducing dog bite injuries and consequences</li> <li>• Two studies included, randomized controlled trials in primary schools of but did not provide direct evidence of reduction in dog bites</li> </ul>  | <p><a href="http://dx.doi.org/10.1002/14651858.CD004726.pub2">http://dx.doi.org/10.1002/14651858.CD004726.pub2</a></p> |
| <p>Gielen. (1992). Health Education and Injury Control: Integrating Approaches. <i>Health Education and Behavior</i>.<br/>[Target: D,G,H]</p>                       | <ul style="list-style-type: none"> <li>• “Haddon countermeasures” (injury control strategies) <ul style="list-style-type: none"> <li>- Preventing the marshaling of potentially injurious agents</li> <li>- Reducing the amounts of potentially injurious agents</li> <li>- Preventing inappropriate release of the agent</li> <li>- Modifying the release of the agent</li> <li>- Temporal or spatial separation of people from potentially injurious agents</li> <li>- Separation with physical barriers</li> <li>- Modifying surfaces and basic structures</li> </ul> </li> </ul> | <p><a href="http://dx.doi.org/10.1177/109019819201900205">http://dx.doi.org/10.1177/109019819201900205</a></p>         |

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|  | <ul style="list-style-type: none"> <li>- Increasing resistance to injury</li> <li>- Beginning to counter damage already done</li> <li>- Stabilizing, repairing, and rehabilitating the injured</li> <li>• Health education strategies <ul style="list-style-type: none"> <li>- Project KISS (Kids on Safety Seats) – PRECEDE framework (see Frameworks and Initiatives) <ul style="list-style-type: none"> <li>▪ Predisposing factors (knowledge, attitudes, beliefs) were addressed through media campaigns, pamphlets, posters, and public presentations targeted directly to parents</li> <li>▪ Reinforcing factors (social support and social norms) were attacked through training programs for health professionals and community leaders to improve their skills in teaching and promoting the use of car safety seats</li> <li>▪ Enabling factors (availability and accessibility of resources) were addressed by community organizing efforts- reducing the financial barrier to using car seats through the development of local car seat loaner programs, advocacy efforts to generate community support for passage of Maryland’s Child Passenger Safety Law</li> </ul> </li> </ul> </li> <li>• A combined framework for planning injury control interventions (injury control countermeasures + health education strategies) <ul style="list-style-type: none"> <li>- Seat Belts Pay Off campaign (Chapel Hill, NC): media campaigns, incentives, printed materials, training programs, group presentations <ul style="list-style-type: none"> <li>▪ Seat belt use increased significantly from 24% to 41% during the program and remained at 36% six months later</li> </ul> </li> <li>- Children Can’t Fly program (NY): mass media, personal appeals, free window guards <ul style="list-style-type: none"> <li>▪ Reduced the incidence of window falls by 50%</li> </ul> </li> <li>- Massachusetts Home Injury Prevention Project: housing inspections for compliance with codes, counseling, and</li> </ul> </li> </ul> |  |
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|  | distribution/installation of selected safety devices   |   |
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| Gielen et al. (2015). Unintentional Home Injuries Across the Life Span: Problems and Solutions. <i>Annual Review of Public Health</i> . [Target: G,H]      | <ul style="list-style-type: none"> <li>• Compilation of strategies for safe sleep, burns, falls, and poisoning prevention</li> <li>• For preventing falls in children: <ul style="list-style-type: none"> <li>- Mandated resign of baby walkers</li> <li>- Reduction in baby walker use</li> <li>- Education and distribution of stair gates</li> <li>- Window guard mandates</li> </ul> </li> <li>• Preventing poisoning: <ul style="list-style-type: none"> <li>- Safe storage</li> <li>- Child resistant packaging</li> </ul> </li> <li>• Poison control centers</li> </ul> | <a href="http://dx.doi.org/10.1146/annurev-publhealth-031914-122722">http://dx.doi.org/10.1146/annurev-publhealth-031914-122722</a> |
| Kendrick et al. (2012). Home safety education and provision of safety equipment for injury prevention. <i>The Cochrane Collaboration</i> . [Target: D,F,G] | <ul style="list-style-type: none"> <li>• Objective: to evaluate “the effectiveness of home safety education [...] in reducing child injury rates or increasing home safety practices.”</li> <li>• 98 studies included</li> <li>• Largest reductions in injury were interventions delivered at home and that did not require safety equipment</li> <li>• School based study that did not provide equipment also was associated with reduced injury rate</li> </ul>  | <a href="http://dx.doi.org/10.1002/14651858.CD005014.pub3">http://dx.doi.org/10.1002/14651858.CD005014.pub3</a>                     |
| Kendrick et al. (2013). Parenting interventions for prevention of unintentional injuries in childhood <i>The Cochrane Collaboration</i> . [Target: G]      | <ul style="list-style-type: none"> <li>• Objective: “To assess the effects of parenting interventions for preventing unintentional injury in children 18 years of age and younger and for increasing possession and use of safety equipment and safety practices by parents”</li> <li>• 22 studies included, meta-analysis of 10 RCTs indicated significantly lower risk of injury in parental education intervention groups</li> <li>• Programs were implemented at home or other venues including clinic and community</li> </ul>  | <a href="http://dx.doi.org/10.1002/14651858.CD006020.pub3">http://dx.doi.org/10.1002/14651858.CD006020.pub3</a>                     |
| Mack et al. (2015). Preventing Unintentional Injuries in the Home Using the  | <ul style="list-style-type: none"> <li>• Fall injury prevention interventions <ul style="list-style-type: none"> <li>- Voluntary regulations to extend the width of walkers and modify the base to prevent tip-overs</li> <li>- Installing stair-gates, window guards, and window locks for</li> </ul> </li> </ul>   | <a href="http://dx.doi.org/10.1177/1090198114568306">http://dx.doi.org/10.1177/1090198114568306</a>                                 |

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| <p>Health Impact Pyramid.<br/><i>Health Education &amp; Behavior.</i><br/>[Target: G,H]</p> | <ul style="list-style-type: none"> <li>windows above ground level             <ul style="list-style-type: none"> <li>- Balcony railings less than 4 inches apart</li> <li>- Building codes that require safe stair and balcony design</li> </ul> </li> <li>• Fire and burn injury prevention interventions             <ul style="list-style-type: none"> <li>- Enforce and update strict building codes that address fire-safe material and construction, electrical specifications, and residential sprinklers</li> <li>- Programs to make safe homes available to low-income families</li> <li>- Codes or regulations that require smoke alarms</li> <li>- Pair improved access to fire safety products such as smoke alarms with fire safety education</li> </ul> </li> <li>• Scald injury prevention interventions             <ul style="list-style-type: none"> <li>- Law requiring new water heaters to be preset at a safe temperature at the factory</li> <li>- Home safety education for safe hot tap water temperature</li> <li>- Setting the temperature in water heaters to 120°F or lower, installing hot water temperature limiters at the faucet</li> <li>- Using roll up cords for electric coffee pots</li> <li>- Using pots, pans, and kettles designed to be less likely to tip and spill hot liquids</li> </ul> </li> <li>• Poisoning prevention interventions             <ul style="list-style-type: none"> <li>- Passage of Poison Prevention Packaging Act in 1970: required a number of household substances to be packages in child-resistant packaging</li> <li>- Safe packaging of medication- safety caps, unit-dose packaging</li> <li>- Safe storage of medications and other poisonous substances</li> </ul> </li> <li>• Educating children and parents about poisoning and poison prevention through community programs and interventions</li> </ul> |  |
| <p>McClure et al. (2005).<br/>Community-based</p>   | <ul style="list-style-type: none"> <li>• 6 community based interventions for children up to 16 years old</li> <li>• Bars on windows, removal of baby walkers and safe playgrounds</li> </ul>  | <p><a href="http://dx.doi.org/10.1111/j.1440-1754.2005.00685.x">http://dx.doi.org/10.1111/j.1440-1754.2005.00685.x</a></p> |

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| <p>programs to prevent falls in children: a systematic review. <i>Injury Prevention</i>. [Target: D]</p>  | <p>were associated with reduction in falls</p> <ul style="list-style-type: none"> <li>Falls-specific interventions were more effective than those for multiple types of injuries, though these studies were the least rigorous</li> </ul>   |  |
| <p>Joske Nauta et al. (2014). A systematic review on the effectiveness of school and community-based injury prevention programmes on risk behaviour and injury risk in 8–12 year old children. <i>Journal of Science and Medicine in Sport</i>. [Target: D,F]</p> | <ul style="list-style-type: none"> <li>Educational information for parents and children as well as extra exercises during physical education associated with reduction in physical activity related injury</li> <li>Children 10-12 years old, in Netherlands</li> <li>Other studies in review did not assess for reduction in injury</li> </ul>                                 | <p><a href="http://www.ncbi.nlm.nih.gov/pubmed/23962868">http://www.ncbi.nlm.nih.gov/pubmed/23962868</a></p> |
| <p>Roberts et al. (1996). Does home visiting prevent childhood injury? A systematic review of randomized controlled trials. <i>British Medical Journal</i>. [Target: D]</p>   | <ul style="list-style-type: none"> <li>Objective: “To quantify the effectiveness of home visiting programs in the prevention of child injury and child abuse”</li> <li>11 RCTs of home visiting programs</li> <li>4 studies focused on home visiting and injury reduction during child’s first year, which did not show a significant reduction in injury</li> </ul>            | <p><a href="http://www.jstor.org/stable/29730221">http://www.jstor.org/stable/29730221</a></p>               |
| <p>Rossler et al. (2014). Exercise-Based Injury prevention in Child and Adolescent Sport. <i>Sports Medicine</i>.</p>   | <ul style="list-style-type: none"> <li>Objective: “quantify the effectiveness of exercise-based injury prevention programs in child and adolescent sport in general, and with respect to different characteristics of the target group, injury prevention program, and outcome variables.</li> <li>21 RCTs of exercise-based injury prevention in athletes less than</li> </ul> | <p><a href="http://dx.doi.org/10.1007/s40279-014-0234-2">http://dx.doi.org/10.1007/s40279-014-0234-2</a></p> |

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| [Target: G]   | <p>19 years old</p> <ul style="list-style-type: none"> <li>• Prevention programs focusing on all injuries and specific are both effective</li> <li>• Pre and during season interventions were similarly effective</li> </ul>  |  |
| <p>Spinks et al. (2004).<br/>Community based prevention programs targeting all injuries for children.<br/><i>Injury Prevention</i>.<br/>[Target: A,D,F,G,H]</p>   | <ul style="list-style-type: none"> <li>• Objective: to examine the evidence for effectiveness of community based models for injury in children age 0-14</li> <li>• 9 programs that reported injury outcomes were included</li> <li>• 3 of 7 controlled studies and 2 studies without controls found a significant reduction in injury</li> <li>• Highlighted need for more research</li> </ul>  | <p><a href="http://dx.doi.org/10.1136/ip.2003.004903">http://dx.doi.org/10.1136/ip.2003.004903</a></p>       |
| <p>Theurer WM et al. (2013).<br/>Prevention of unintentional childhood injury.<br/><i>American Family Physician</i>.<br/>[Target: A,B,C,G]</p>  | <ul style="list-style-type: none"> <li>• Overview of child injury prevention</li> <li>• Motor vehicle: proper restraints, driver education for teenagers, community and school based interventions have not shown consistent improvement in reducing pedestrian injuries</li> <li>• Falls: no walkers for infants and toddlers, no bunk beds under 6 years</li> </ul>   | <p><a href="http://www.ncbi.nlm.nih.gov/pubmed/23547592">http://www.ncbi.nlm.nih.gov/pubmed/23547592</a></p> |
| <p>Towner et al. (2001).<br/>Updating the evidence. A systematic review of what works in preventing childhood unintentional injuries: Part 1 and Part 2<br/><i>Injury Prevention</i>.<br/>[Target: D,G,H]</p> | <ul style="list-style-type: none"> <li>• Objective: to answer: “(1) Have there been any changes in the evidence relating to the effectiveness of childhood injury prevention? (2) “What additions have been made to the literature, relating to the target groups and implementation strategies of interventions? (3) What additions have been made to the literature, relating to the ways interventions have been evaluated?”</li> <li>• Included 42 studies not included in previous reviews, which targeted children age 0-14, described primary or secondary prevention, and had evaluation of the intervention</li> <li>• Road environment interventions: free helmet distribution, media campaign, seat belt legislation and enforcement all partially effective</li> <li>• Home environment and leisure environments: smoke detectors,</li> </ul> | <p><a href="http://dx.doi.org/10.1136/ip.7.2.161">http://dx.doi.org/10.1136/ip.7.2.161</a></p>               |

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|   | child resistant packaging, parent education, and environment improvement all effective in behavior change or injury reduction   |   |
| Williams et al. (2007). Primary Care Interventions to Prevent Motor Vehicle Occupant Injuries. <i>U.S. Preventive Services Task Force Evidence Syntheses</i> . [Target: B,C]                      | <ul style="list-style-type: none"> <li>Primary care behavioral counseling reduced motor vehicle related occupant injuries in non-randomized, group-level, controlled trial in 14 communities in Massachusetts with Statewide Childhood Injury Prevention Program</li> </ul>   | <a href="http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0005757/">http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0005757/</a>                                       |
| Young et al. (2013). Preventing childhood falls within the home: Overview of systematic reviews and a systematic review of primary studies. <i>Accident Analysis and Prevention</i> . [Target: G] | <ul style="list-style-type: none"> <li>Review of 13 different reviews about home safety interventions</li> <li>Sparse evidence of effect of interventions on falls/fall injuries, only three studies assessed, one study found reduction in falls</li> <li>Study that found significant reduction in falls associated with intervention of educational home safety information given to mothers</li> <li>Most interventions not evaluated in terms of fall reduction</li> </ul> | <a href="http://www.ncbi.nlm.nih.gov/pubmed/24080473">http://www.ncbi.nlm.nih.gov/pubmed/24080473</a>   |
| NIHCM Foundation and Educational Development Center (EDC): Health Plan Approaches to Child Injury Prevention Issue Brief [Target: A,B,C,D,G,H]  | <ul style="list-style-type: none"> <li>Describes CDC's National Action Plan for Child Injury Prevention (NAP)</li> <li>Notes cost and prevalence of injuries</li> <li>Details examples of how health plans/health plan foundations are encouraging child injury prevention <ul style="list-style-type: none"> <li>Programs for members (ex. Through home visitation programs)</li> </ul> </li> <li>Programs for communities (ex. Through corporate giving programs)</li> </ul>  | <a href="http://www.nihcm.org/images/pdf/Child_Injury_Prevention_Issue_Brief.pdf">http://www.nihcm.org/images/pdf/Child_Injury_Prevention_Issue_Brief.pdf</a> |

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| <p>Trust for America's Health &amp; Robert Wood Johnson Foundation (2012) The Facts Hurt: A State-by-State Injury Prevention Policy Report [Target: H]</p> | <ul style="list-style-type: none"> <li>• Provides details for a range of proven, evidence-based policies and strategies for reducing injury rates across the country</li> <li>• Interventions for vehicle-related injuries <ul style="list-style-type: none"> <li>- Primary seat belt laws</li> <li>- Mandatory ignition interlocks</li> <li>- Universal helmet law requiring motorcycle helmets for all riders</li> <li>- Require children to ride in a car seat or booster seat to at least the age of eight</li> <li>- Requiring bicycle helmets for all children</li> <li>- Cell and texting bans</li> <li>- Distracted driving countermeasures</li> <li>- Graduated driver licenses</li> <li>- Speed limits</li> <li>- Safe street designs</li> </ul> </li> <li>• Interventions for violence-related injuries <ul style="list-style-type: none"> <li>- Permission to get protection orders in dating relationships</li> <li>- Teen dating violence laws</li> <li>- Homicide and assault prevention</li> <li>- Firearm safety and children</li> <li>- Suicide prevention</li> <li>- School-based violence prevention programs</li> <li>- Gang-related violence prevention</li> <li>- Anti-bullying laws</li> <li>- Child abuse and neglect prevention</li> </ul> </li> <li>• Interventions for falls, drowning, and sports- and recreation-related injuries <ul style="list-style-type: none"> <li>- Youth sport concussion safety laws</li> <li>- Window guards, stair gates, and appropriate equipment and energy absorbing surfacing on playgrounds to prevent fall-related injuries</li> </ul> </li> <li>• Interventions for injuries from poisoning <ul style="list-style-type: none"> <li>- Prescription drug monitoring program</li> <li>- Poison control centers</li> </ul> </li> </ul> | <p><a href="http://healthyamericans.org/assets/files/TFAH2012FactsHurt20.pdf">http://healthyamericans.org/assets/files/TFAH2012FactsHurt20.pdf</a></p> |
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|  | <ul style="list-style-type: none"> <li>• Research tools for reducing injuries <ul style="list-style-type: none"> <li>- E-coding system and practices</li> </ul> </li> <li>• Interventions for fire-related injuries <ul style="list-style-type: none"> <li>- Alarms and sprinklers</li> </ul> </li> <li>• Carbon monoxide detectors</li> </ul> |  |
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<sup>1</sup> Target specifies Target Audience for the strategies mentioned in each Review/Compilation: A = Hospital Inpatient (includes physical, mental, and oral health); B = Hospital Outpatient (includes physical, mental, and oral health); C = Non-Hospital Outpatient Providers (e.g. community health centers, private medical groups, health maintenance organizations); D = Community Organizations (e.g. WIC, advocacy organizations, child care providers, home visiting services); E = Social Service Organizations (e.g. Head Start, child welfare); F = Schools and School Systems; G = Consumers/Families; H = Other

## Frameworks and Landmark Initiatives

| Framework/Initiative  | Summary  | Web Link  |
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| Gielen. (1992). Health Education and Injury Control: Integrating Approaches. <i>Health Education and Behavior</i> .                         | <ul style="list-style-type: none"> <li>• PRECEDE Framework as applied to childhood motor vehicle accidents (MVAs)               <ul style="list-style-type: none"> <li>- Health education program</li> <li>- Educational methods: direct communication, community organization, indirect communication</li> <li>- Predisposing factors: knowledge/attitudes regarding car seats</li> <li>- Enabling factors: ability to use car seat properly</li> <li>- Reinforcing factors: encouragement for proper use of car seats</li> <li>- Behavioral factors: poor usage of child auto restraints</li> <li>- Health problems: child death/injury from MVAs</li> </ul> </li> <li>• Integrative planning framework for injury prevention programs               <ul style="list-style-type: none"> <li>- Step 1 (epidemiological diagnosis) → Step 2 (environmental and behavioral diagnosis) → Step 3 (influencing factors diagnosis) → Step 4 (intervention planning)</li> <li>- Components of injury control – Engineering/Technological, Legislative/Enforcement, Educational/Behavioral – Predisposing factors, Enabling Factors, Reinforcing Factors – Non-behavioral determinants &amp; behavioral determinants – Injury problem (mortality, morbidity)</li> </ul> </li> </ul> | <a href="http://dx.doi.org/10.1177/109019819201900205">http://dx.doi.org/10.1177/109019819201900205</a> |
| Mack et al. (2015). Preventing Unintentional Injuries in the Home Using the Health Impact Pyramid. <i>Health Education &amp; Behavior</i> . | <ul style="list-style-type: none"> <li>• Health Impact Pyramid (increasing individual effort needed from Tier 1 to Tier 5)               <ul style="list-style-type: none"> <li>- Tier 1: socioeconomic factors</li> <li>- Tier 2: changing the context to make individuals' default decisions healthy/safe</li> <li>- Tier 3: long-lasting, protective interventions</li> <li>- Tier 4: clinical interventions</li> <li>- Tier 5: consoling &amp; education</li> </ul> </li> <li>• Framework can be applied to fall injury prevention, fire and burn injury prevention, scald injury prevention, poisoning prevention</li> </ul>  | <a href="http://dx.doi.org/10.1177/1090198114568306">http://dx.doi.org/10.1177/1090198114568306</a>     |

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| <p>Runyan. (2003).<br/>Introduction: Back to the Future—Revisiting Haddon’s Conceptualization of Injury Epidemiology and Prevention. <i>Epidemiologic Reviews</i>.</p> | <ul style="list-style-type: none"> <li>• Haddon Matrix consists of host, agent, physical and social environmental components to describe cause of injury and prevention</li> <li>• Before, during and after the injury occurs</li> </ul>   | <p><a href="http://dx.doi.org/10.1093/epirev/mxg005">http://dx.doi.org/10.1093/epirev/mxg005</a></p>   |
| <p>Bright Futures<br/>Promoting Safety and Injury Prevention</p>   | <ul style="list-style-type: none"> <li>• Guidance on interventions and strategies targets 3 domains: <ul style="list-style-type: none"> <li>- Development/age of the child,</li> <li>- Environment in which injury takes place</li> </ul> </li> <li>• Circumstances surrounding the event</li> </ul>                                 | <p><a href="https://brightfutures.aap.org/Bright%20Futures%20Documents/10-Promoting_Safety_and_Injury_Prevention.pdf">https://brightfutures.aap.org/Bright%20Futures%20Documents/10-Promoting_Safety_and_Injury_Prevention.pdf</a></p> |
| <p>CDC National Action Plan for Child Injury Prevention</p>  | <ul style="list-style-type: none"> <li>• Strategic framework consists of a multi-sector approach to child injury prevention including surveillance, research, education, policy and health systems aimed to raise awareness and make recommendations for prevention</li> </ul>   | <p><a href="http://www.cdc.gov/safechild/NAP/summary.html">http://www.cdc.gov/safechild/NAP/summary.html</a></p>   |
| <p>Safecar.gov</p>   | <ul style="list-style-type: none"> <li>• Information for parents from NHTSA on car safety for kids and teens</li> <li>• Car seats: finding the right seat, knowing how to install, safety inspections<br/>Teen driving: suggested rules, information about graduated driving license</li> </ul>                                      | <p><a href="http://www.safercar.gov/parents/index.htm">http://www.safercar.gov/parents/index.htm</a></p>   |
| <p>Sequence of prevention model for physical activity related injuries</p>   | <ul style="list-style-type: none"> <li>• Mentioned in Collard et al. (2008). <ul style="list-style-type: none"> <li>-Identification of problem: incidence and severity</li> <li>-Risk factors and mechanisms</li> <li>-Introduction of preventive measures</li> </ul> </li> <li>• Evaluation of effectiveness through RCT</li> </ul> | <p><a href="http://www.ncbi.nlm.nih.gov/pubmed/18347696">http://www.ncbi.nlm.nih.gov/pubmed/18347696</a></p>   |

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| WHO Safe Communities Model | <ul style="list-style-type: none"> <li>• National Safety Council: US lead for WHO Safe Communities Model             <ul style="list-style-type: none"> <li>- Local solutions through community coalition</li> <li>- Prioritize safety in each sector of community, partnerships with businesses, schools, healthcare, parks, residents etc.</li> </ul> </li> </ul> | <a href="http://www.nsc.org/learn/N-SC-Initiatives/Pages/safe-communities.aspx?var=mn">http://www.nsc.org/learn/N-SC-Initiatives/Pages/safe-communities.aspx?var=mn</a> |
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### Data Sources

| Data Source*     | Search Criteria  | Web Link |
|------------------|--|----------|
| Cochrane Library | Search Term: child injury prevention<br>Search Limits: all Cochrane databases, all document statuses, for all years<br>Sorted by relevance                   | N/A      |
|                  | Search Term: assault injury prevention children<br>Search Limits: all Cochrane databases, all document statuses, for all years<br>Sorted by relevance        |          |
|                  | Search Term: self inflicted injury prevention children<br>Search Limits: all Cochrane databases, all document statuses, for all years<br>Sorted by relevance |          |
|                  | Search Term: intentional injury prevention children<br>Search Limits: all Cochrane databases, all document statuses, for all years<br>Sorted by relevance    |          |

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| Campbell Systematic Reviews | Search Term: child injury prevention   | <a href="http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=Child+injury+prevention&amp;search_criteria=all_text">http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=Child+injury+prevention&amp;search_criteria=all_text</a>                                       |
|                             | Search Term: assault injury prevention children  | <a href="http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=Assault+injury+prevention+children&amp;search_criteria=all_text">http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=Assault+injury+prevention+children&amp;search_criteria=all_text</a>                 |
|                             | Search Term: self inflicted injury prevention children   | <a href="http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=self+inflicted+injury+prevention+children+&amp;search_criteria=all_text">http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=self+inflicted+injury+prevention+children+&amp;search_criteria=all_text</a> |
|                             | Search Term: intentional injury prevention children  | <a href="http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=intentional+injury+prevention+children&amp;search_criteria=all_text">http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=intentional+injury+prevention+children&amp;search_criteria=all_text</a>         |
| PubMed                      | Search Term: prevent hospitalization child injury<br>Search Limits: review<br>Sorted by: Relevance | <a href="http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+hospitalization+child+injury">http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+hospitalization+child+injury</a>   |
|                             | Search Term: prevent injury children<br>Search Limits: review<br>Sorted by: Relevance              | <a href="http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+injury+children">http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+injury+children</a>   |
|                             | Search Term: prevent falls children<br>Search Limits: review<br>Sorted by: Relevance               | <a href="http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+falls+children">http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+falls+children</a>   |

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|                | Search Term: prevent intentional injuries children<br>Search Limits: review<br>Sorted by: Relevance     | <a href="http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+intentional+injuries+children">http://www.ncbi.nlm.nih.gov/pubmed/?term=prevent+intentional+injuries+children</a>   |
|                | Search Term: Self inflicted injury prevention children<br>Search Limits: review<br>Sorted by: Relevance | <a href="http://www.ncbi.nlm.nih.gov/pubmed/?term=self+inflicted+injury+prevention+children">http://www.ncbi.nlm.nih.gov/pubmed/?term=self+inflicted+injury+prevention+children</a>   |
|                | Search Term: Assault injury prevention children<br>Search Limits: review<br>Sorted by: Relevance        | <a href="http://www.ncbi.nlm.nih.gov/pubmed/?term=assault+injury+prevention+children">http://www.ncbi.nlm.nih.gov/pubmed/?term=assault+injury+prevention+children</a>   |
| CINAHL Plus    | Search Term: Child Injury Prevention<br>Search Limits: review<br>Sorted by: Relevance                   | N/A   |
| Google Scholar | Search Term: reduce rate of hospitalization child injury<br>Sorted by: Relevance                        | <a href="https://scholar.google.com/scholar?hl=en&amp;q=reduce+rate+of+hospitalization+child+injury&amp;btnG=&amp;as_sdt=1%2C21&amp;as_sdtp=">https://scholar.google.com/scholar?hl=en&amp;q=reduce+rate+of+hospitalization+child+injury&amp;btnG=&amp;as_sdt=1%2C21&amp;as_sdtp=</a> |
|                | Search Term: prevent falls children<br>Sorted by: Relevance   | <a href="https://scholar.google.com/scholar?hl=en&amp;q=prevent+falls+children&amp;btnG=&amp;as_sdt=1%2C21&amp;as_sdtp=">https://scholar.google.com/scholar?hl=en&amp;q=prevent+falls+children&amp;btnG=&amp;as_sdt=1%2C21&amp;as_sdtp=</a>   |
|                | Search Term: prevent injury children<br>Sorted by: Relevance  | <a href="https://scholar.google.com/scholar?q=prevent+injury+children&amp;btnG=&amp;hl=en&amp;as_sdt=0%2C21">https://scholar.google.com/scholar?q=prevent+injury+children&amp;btnG=&amp;hl=en&amp;as_sdt=0%2C21</a>   |

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|   | Search Term: assault injury prevention<br>strategies children review<br>Sorted by: Relevance  | <a +assault+injury+prevention+strategies+children+review&amp;btng='&amp;hl=en&amp;as_sdt=0%2C21"' href="https://scholar.google.com/scholar?q=">https://scholar.google.com/scholar?q="+Assault+injury+prevention+strategies+children+review&amp;btnG=&amp;hl=en&amp;as_sdt=0%2C21</a> |
| AMCHP Innovation Station                          | State: all<br>Region: all<br>Practice Category: all<br>Primary topic: Any<br>National Performance Measures: all<br>Year: N/A<br>Keywords: injury prevention | <a href="http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/Pages/default.aspx">http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/Pages/default.aspx</a>  |
| Johns Hopkins Center for Injury Research & Policy | Search Term: hospitalization<br>Topic: Children and Adolescents   | <a href="http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/publications_resources/">http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/publications_resources/</a>      |
|   | Search Term: prevention<br>Topic: Children and Adolescents  | <a href="http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/publications_resources/">http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/publications_resources/</a>      |
|   | Search Term: intervention<br>Topic: Children and Adolescents  | <a href="http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/publications_resources/">http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/publications_resources/</a>      |

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| Johns Hopkins Bloomberg School of Public Health<br>Center for Gun Policy and Research | N/A   | <a href="http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-gun-policy-and-research/publications/">http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-gun-policy-and-research/publications/</a>   |
| Georgetown Knowledge Base   | MCH Knowledge Base and Library Collection<br>→ Evidence Briefs → Child Safety/Injury<br>NPM 7 | <a href="http://ncemch.org/evidence/NPM-7-injury-related-hosp.php">http://ncemch.org/evidence/NPM-7-injury-related-hosp.php</a>   |
| Children's Safety Network   | N/A   | <a href="http://www.childrenssafetynetwork.org/injurytopic">http://www.childrenssafetynetwork.org/injurytopic</a>   |
| CDC National Action Plan  | N/A   | <a href="http://www.cdc.gov/safecild/NAP/background.html">http://www.cdc.gov/safecild/NAP/background.html</a>   |
| National Institute for Health Care Management (NIHCM) – Maternal and Child Health     | N/A   | <a href="http://www.nihcm.org/research/improving-child-maternal-and-adolescent-health">http://www.nihcm.org/research/improving-child-maternal-and-adolescent-health</a>   |
| Consumer Product Safety Commission  | Search Term: child injury prevention strategies   | <a href="http://search.cpsc.gov/search?site=en_us.public_site&amp;output=xml_no_dtd&amp;getfields=*&amp;tlen=120&amp;client=CPSC_frontend&amp;proxystylesheet=CPSC_frontend&amp;q=child%20injury%20prevention%20strategies&amp;filter=0">http://search.cpsc.gov/search?site=en_us.public_site&amp;output=xml_no_dtd&amp;getfields=*&amp;tlen=120&amp;client=CPSC_frontend&amp;proxystylesheet=CPSC_frontend&amp;q=child%20injury%20prevention%20strategies&amp;filter=0</a> |

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|  | N/A                                  | <a href="http://www.cpsc.gov/en/Research--Statistics/-Technical-Reports/">http://www.cpsc.gov/en/Research--Statistics/-Technical-Reports/</a>   |
| National Highway Traffic Safety Administration | Search Term: child injury prevention | <a href="http://search.usa.gov/search?utf8=%E2%9C%93&amp;affiliate=dot-nhtsa&amp;query=child+injury+prevention&amp;searchCommit=Search">http://search.usa.gov/search?utf8=%E2%9C%93&amp;affiliate=dot-nhtsa&amp;query=child+injury+prevention&amp;searchCommit=Search</a> |
| American Academy of Pediatrics                 | Search Term: injury prevention       | <a href="https://www.aap.org/sites/Search/Pages/results.aspx?k=child%20injury%20prevention#k=injury%20prevention#s=11">https://www.aap.org/sites/Search/Pages/results.aspx?k=child%20injury%20prevention#k=injury%20prevention#s=11</a>                                   |

*\*The Strengthen the Evidence Team of Experts and selected HRSA discretionary grantees contributed to the identification of data sources*

### Inclusion and Exclusion Criteria

| Inclusion Criteria   | Exclusion Criteria   |
|--|--|
| <ul style="list-style-type: none"> <li>Types of studies: reviews of studies, organization websites also count as 'compilations'</li> <li>Language: English</li> <li>Population of interest: Children and teens up to 19 years old</li> <li>Includes at least one of top five ED visit/nonfatal injuries according to CDC falls, being struck by person or object, overexertion, motor vehicle (occupant), and cuts/piercing</li> </ul> | <ul style="list-style-type: none"> <li>Articles describing single strategies that are not part of a larger review</li> </ul> |