

Chapter 4

Child Safety Reference Frameworks – A policy tool for child injury prevention at the sub-national level

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Abstract

Objective

The aim of this paper is to present Child Safety Reference Frameworks (CSRF), a policy advice tool that places evidence-based child safety interventions, applicable at the sub-national level, into a framework resembling the Haddon Matrix.

Methods

The CSRF is based on work done in previous EU funded projects, which we have adapted to the field of child safety. The CSRF were populated following a literature review.

Results

Four CSRF were developed for four domains of child safety: road, water and home safety and intentional injury prevention.

Conclusion

The CSRF can be used as a reference, assessment and comparative tool by child safety practitioners and policy makers working at the sub-national level.

Keywords: child safety, injury prevention, health inequalities, sub-national, inter-sectoral action

Introduction

Europe has some of the highest and lowest injury rates in the world with large differences in injury mortality between high-income countries and low and middle-income countries. (1) In the European Union in 2010 intentional and unintentional injury deaths for 0-19 year olds ranged from 5/100,000 in the Netherlands to 24/100,000 in Lithuania. (2) Despite large reductions in overall mortality between 2000 and 2010, inequalities between countries are increasing. (3) Additionally there are large inequalities within countries, and the substantial improvements in injury mortality rates in recent years have not been spread equally across society. (4-6)

Child injury, is a complex 'wicked' problem, (7, 8) and its prevention requires the participation of multiple stakeholders. Actors working across the whole of society (public sector, private sector and civil society) and at all levels of government, from the local to international level have a role to play. (9)

In this paper we focus on the sub-national level of governance for child injury prevention for several reasons. First, much attention has been paid to the role of the European and national levels of governance in injury prevention, with encouraging results. (10) However, while policies are often developed at the national level, implementation and enforcement – much of the action – takes place at the sub-national or local level. An area of research somewhat understudied.

Second, the capacity of the sub-national level to focus upon the specific needs of its population is an important characteristic. Diverse risk factors for child injury such as: socio-economic position, employment status, (11) parental education, (12) area deprivation and types of settlement (13, 14) cluster in pockets of society and require tailored action. Thus, effective action at the sub-national level is required to address regional inequalities in child injury rates.

Third, the role of the sub-national level for public health is increasing in many countries, due to decentralization. (15, 16) But, efficient delivery of child injury interventions at the sub-national level may be hindered due to a lack of leadership, infrastructure and capacity. (15, 17)

In this paper we describe the development of a policy advice tool, applicable at the sub-national level, named Child Safety Reference Frameworks (CSRF). The study was part of the European Commission funded project, Tools to Address Childhood Trauma and Children's Safety (TACTICS). CSRF list evidence-based interventions, applicable at the sub-national level, covering four domains of child safety: road, home and water safety and intentional injury prevention. In this paper we describe the development of the tool and its application.

Material and Methods

Haddon categories and design of CSRF

The design and use of the CSRF is built upon the Haddon Matrix (18) and was first used in a regional health management project in Spain (19). It was further refined in the European commission funded project "Benchmarking Regional Health Management II" (BEN II). (20) Using the experiences of Peiro et al and Brand et al we refined the methodology and applied it to child safety at the sub-national level.

We developed a CSRF for each of four domains of child safety: water safety, road safety, home safety and prevention of intentional injury. To identify suitable interventions with which to populate the four CSRF, each domain was clearly defined for scope. The following definitions were used:

- Road safety: prevention of car/bus, pedestrian, bicycle, moped/ motor scooter, all terrain vehicle (ATV) and farm vehicle injuries
- Home safety: prevention of falls (within the home and related to public/school playground equipment), burns/scalds, poisoning, choking/strangulation, drowning in the home (e.g., in a bathtub)
- Water safety: prevention of drowning in pools (public and private) or open water and beach safety
- Intentional injury: prevention of abuse/neglect, violence, suicide and self-harm

We used the definition of good practice as outlined in the European Child Safety Alliance (ECSA) Child Safety Good Practice Guide (21) to guide the selection of appropriate evidence-based interventions.

- “1) An intervention that has been evaluated and found to be effective (either through a systematic review or at least one rigorous evaluation) OR
- 2) An intervention where rigorous evaluation is difficult but expert opinion supports the practice and data suggest it is an effective policy / intervention (e.g., use of personal floatation devices to prevent drowning) OR
- 3) An intervention where rigorous evaluation is difficult but expert opinion supports the practice and there is a clear link between the policy / intervention and reduced injuries (e.g. secure storage of poisoning) AND
- 4) The intervention has been implemented in a real world setting so that the practicality of the intervention has also been examined.”

The CSRF is applicable to the sub-national level of governance. Within Europe there are diverse jurisdictional differences regarding the distribution of political power between national, sub-national and local levels. We therefore developed the following inclusion criteria in an attempt to accommodate these differences without being too broad.

We defined a sub-national level intervention for the purposes of the CSRF as:

“An intervention that is implementable, enforceable or possible to monitor on the sub-national (land, province, department) or local level (city, municipality, commune).

This includes interventions where the decision to implement is made at the national level but responsibility for method of implementation or enforcement lies at the sub-national or local levels.”

This definition excludes manufacturing standards such as car safety devices (e.g., airbags) as these are generally developed, implemented and enforced by national or European bodies. Legally banned items such as dangerous toys were excluded for the same reason. Legislative interventions such as laws mandating bicycle helmets were

included in the CSRF where either passing laws at a sub-national level was possible or enforcement is carried out at the sub-national level. Clinical recommendations for the treatment of injuries were excluded, except where implementation could lead to prevention (e.g., guidelines regarding diagnosis of physical abuse that can protect the child from further abuse).

To be included in the CSRF interventions needed to conform to both the definition of evidence based good practice and be applicable at the sub-national level.

Literature Review

A literature search for review articles was conducted in February 2012 using PubMed, and The Cochrane Database. Search terms used included 'injury', and 'prevention', as both mesh terms and free text. The search was limited to children (0-18 years) and to review articles published in the last 10 years in English, French and German.

The search yielded 733 results, after excluding irrelevant articles 227 remained, these were reviewed in greater detail for interventions meeting the criteria described above. Reference lists of included articles were also searched for additional publications not picked up in the initial search, but these did not yield any other interventions. Finally, interventions outlined in the following 'core' documents were also included: European Child Safety Alliance (ECSA) Child Safety Good Practice Guide (21) (including the 2010 Addendum) (22), ECSA Child Safety Report Card 2012: Europe Summary, (23) ECSA National Action to Address Child Intentional Injury – 2014, (24) WHO European and World reports on unintentional child injury, (25, 26) and the WHO world report on violence and health (27).

Populating the four CSRF tables

Interventions were assigned to the appropriate row in the CSRF tables using Haddon's definitions of time phase (pre-event, event and-post event):

- Pre-event: interventions designed to prevent the injury event from occurring (e.g., separation of pedestrian walkways from roads).
- Event: interventions designed to protect host (minimise energy exchange) in the event of an injury (e.g., bicycle helmets, surfacing materials under public playground equipment).

- Post-event: interventions designed to reduce the impact and maximise salvage (e.g., poison control centres, child helplines) (18).

When assigning the interventions to the appropriate column we modified the definitions of host, agent and environment slightly by assigning them based on *who or what the intervention targeted or whose behaviour it attempted to change*. The headings of the columns were defined as follows:

- Host: interventions targeting the person at risk of injury. In the case of home injury, parents/caregivers were included in this column to account for the importance of high quality care and supervision to prevent injuries.
- Agent: interventions targeting the agent/means of/vehicle transferring the energy (e.g., car, gun, assailant, water)
- Physical environment: interventions targeting the physical characteristics surrounding the event (e.g., road, building, playground).
- Social environment: interventions targeting the social environment surrounding the event including all laws/legislation (e.g., laws regarding vehicle speed) as well as the existence of committees, practice guidelines, surveillance, etc.

The CSRF were reviewed and validated by the Scientific Committee of TACTICS and selected experts. The four finalised CSRF addressing evidenced-based interventions at the subnational level are presented in tables 1, 2, 3 and 4.

Results

Overall, 127 interventions were identified: 27 in road safety, 26 in home safety, 23 in water safety and 51 in intentional injury prevention. 71% of interventions fell into the pre-event phase, 11% into the event phase and 18% into the post-event phase. There were no interventions identified in any domain for two cells: 'event/policies targeting the agent' and 'post-event/policies targeting the physical environment'. The distribution of interventions over the time-phases varies by injury domain. In road and water safety most of the interventions fell into the pre-event phase (17 and 18 respectively) followed by the event phase (9 and 1) and finally the post-event phase (1 each). In home safety and intentional injury prevention most of the interventions

were also in the pre-event phase (23 and 32 respectively). In the event phase there was one intervention in home safety and none in intentional injury prevention. In the post-event phase there were 2 in home injury and 19 in intentional injury prevention.

Application of the Frameworks

In order to apply the CSRF to a sub-national region a questionnaire was developed and validated in collaboration with partners of the TACTICS project from 6 countries. To get a more nuanced overview of activity in the area of child injury prevention at the sub-national level the questionnaire asks two things; one, whether the intervention is in place in the territory in question and; two, the estimated percentage of the target population covered by the intervention. For assessment purposes the intervention had to be implemented in the territory in question and covering at least 75% of the target population in order to be considered 'implemented'.

Rapid Appraisal

After inputting the quantitative data from the questionnaire the user can conduct a rapid appraisal of child injury prevention activities in the territory in question. For each cell of the CSRF the number of interventions implemented (and reaching more than 75% of the target population) is counted and then calculated as a percentage of the total number of interventions for that cell. Using the software Microsoft Excel, conditional formatting is applied to the percentages assigning a shade of grey, with white (no colour) representing 0% of interventions implemented and dark grey representing 100% of interventions implemented (see table 5).

Road	Interventions targeting the host (child)	Interventions targeting the "agent" (vehicle/driver)	Interventions targeting the physical environment	Interventions targeting the social environment
Pre-event	67% 2/3	75% 3/4	100% 3/3	43% 3/7
Event	33% 1/3			50% 3/6
Post-event				100% 1/1

zero interventions identified	0%	20%	40%	60%	80%	100%
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Table 5 - Fictitious example of a rapid appraisal for road safety

Discussion

The CSRF were developed for practitioners and policy makers working in child injury prevention at the sub-national level as a reference, assessment and comparative tool. As a reference tool the CSRF can help bridge the gap between research and practice by providing accessible information on sub-national level evidence-based interventions. In a second step the CSRF and questionnaire can be used to assess which interventions are already in place in the territory and to what extent they cover the target population. The results can then be used to perform a rapid appraisal, (table 5) providing a visual representation of the state of affairs – showing where interventions are in place and where there are gaps. Finally the CSRF can be used to compare the situation within a territory in terms of: intervention coverage, over time and from territory to territory (nationally and internationally).

The applicability of the CSRF to the sub-national level is important due to the influence of this level of governance on injury prevention, such as in environment modification. (25, 26) In a situation where political power may not be matched by a deep understanding of child safety issues the CSRF, as a reference tool, could complement the policy maker or practitioner's knowledge of local geography and populations with information on evidence based solutions. However, the interventions included in the CSRF are not weighted by effectiveness, making it difficult, based on the CSRF alone, to choose among them. Similarly some interventions were only found to be effective when implemented in parallel with others - e.g., a multi-faceted approach such as media campaign and speed limit enforcement. Though, as a rule, a combination of approaches is usually found to be most effective and is therefore recommended (21).

The component of the questionnaire regarding the level of implementation (percentage of target population coverage) of the intervention is an improvement on the previous Reference Framework methodology. (28) It draws attention to the importance of equitable intervention coverage (proportionate universalism)(29) to address health inequalities and highlights interventions with low population coverage. The time required to complete the questionnaire, especially finding population coverage data, is a challenging aspect of the application of the CSRF. Though one could argue that if it is difficult or impossible to verify an intervention's existence and the

extent to which it is implemented there is a clear gap in monitoring and evaluation – a valuable finding in itself.

The questionnaire requires input from stakeholders in diverse sectors, which could also slow down the data collection process. Nevertheless, inter-sectoral action is a vital component of child injury prevention, thus, completing the questionnaire could be a good opportunity for practitioners and policy makers to build or improve their professional network. Equally, notwithstanding the length of time required to complete the questionnaire, once the data are placed into the CSRF the visual accessibility of the rapid appraisal reduces the time required to transmit the results to other stakeholders, leaving more time to discuss how to move forward. Additionally, users are not required to complete CSRF for all four domains of child safety at one time, they can be done as separate assessments.

Inequalities in child injury rates, within and between countries, demonstrate the opportunity and necessity for good practice to cross borders to successfully reduce child injury rates. The CSRF provides a platform and context to compare and learn from other regions.

Conclusion

This policy tool, designed for child injury prevention practitioners and policy makers at the sub-national level, can be used as a reference, measurement and comparative tool. Additionally the CSRF may provide opportunities for inter-sectoral networking, knowledge exchange and capacity building. We hope that this will encourage greater uptake of evidence based child safety interventions at the sub-national level, thereby improving child safety and reducing inequalities both within and between countries.

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- Parts of this paper have been published previously in the technical report of the TACTICS project, available at: <http://www.childsafetyeurope.org/tactics/child-safety-reference-frameworks.html>
- Complete versions of the 4 CSRF, including citations and references, are available at <http://www.childsafetyeurope.org/tactics/info/child-safety-reference-frameworks.pdf>

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Conflict of Interests

None declared

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References

1. Sethi D, Raccoppi F, Baumgarten I, Vida P. Injuries and violence in Europe: why they matter and what can be done. Copenhagen: World Health Organisation Regional office for Europe; 2006
2. WHO European Detailed Mortality Database (EDMD) <http://data.euro.who.int/dmdb/> [accessed June 2015]
3. Gopfert A, Sethi D, Rakovac I, Mitis F. Growing inequalities in child injury deaths in Europe. *Eur J Public Health*. 2015;25:660-662.
4. Green J, Edwards P. The limitations of targeting to address inequalities in health: a case study of road traffic injury prevention from the UK. *Critical Public Health*. 2008;18:175-187.
5. Mackay M, Vincenten J. Children's Right to Safety: inequity in child injury in Europe. Birmingham: European Child Safety Alliance; 2014
6. Sengoelge M, Elling B, Laflamme L, Hasselberg M. Country-level economic disparity and child mortality related to housing and injuries: a study in 26 European countries. *Inj Prev*. 2013;19:311-315.
7. Simpson J, Fougere G, McGee R. A wicked problem: early childhood safety in the dynamic, interactive environment of home. *Int J Environ Res Public Health*. 2013;10:1647-1664.
8. Towner E, Mytton J. Prevention of unintentional injuries in children. *Paediatr Child Health*. 2009;19:517-521.
9. Kickbusch I, Gleicher D. Governance for health in the 21st century. Copenhagen: World Health Organisation Regional Office for Europe; 2012
10. Racioppi F, Sethi D. Shaping comprehensive policies for injury prevention in Europe. *Int J Inj Contr Saf Promot*. 2009;16:65-71.
11. MacKay M, Vincenten J. Child Safety Report Card 2012: Europe Summary for 31 Countries. Birmingham: European Child Safety Alliance, Eurosafe; 2012

12. Sethi D, Towner E, Vincenten J, Segui Gomez M, Racioppi F. European Report on Child Injury Prevention. Copenhagen: World Health Organization Regional Office for Europe; 2008.
13. Edwards P, Roberts I, Green J, Lutchmun S. Deaths from injury in children and employment status in family: analysis of trends in class specific death rates. *BMJ*. 2006;333:119.
14. Gissler M, Rahkonen O, Mortensen L et al. Sex differences in child and adolescent mortality by parental education in the Nordic countries. *J Epidemiol Community Health*. 2012;66:57-63.
15. Edwards P, Green J, Lachowycz K, Grundy C, Roberts I. Serious injuries in children: variation by area deprivation and settlement type. *Arch Dis Child*. 2008;93:485-489.
16. Haynes R, Reading R, Gale S. Household and neighbourhood risks for injury to 5–14 year old children. *Social science & medicine*. 2003;57:625-636.
17. Organization for Economic Co-operation and Development (OECD). Investing Together: working effectively across levels of government. OECD Publishing; 2013
18. Wilkinson J, Berghmans L, Imbert F, Ledesert B, Ochoa A. Health indicators in the European regions-ISARE II. *Eur J Public Health*. 2008;18:178-183.
19. Mackay JM, Vincenten JA. Leadership, infrastructure and capacity to support child injury prevention: can these concepts help explain differences in injury mortality rankings between 18 countries in Europe? *Eur J Public Health*. 2010;22:66-71.
20. Haddon WJ. The changing approach to the epidemiology, prevention, and amelioration of trauma: the transition to approaches etiologically rather than descriptively based. 1968. *Inj Prev*. 1999;5:231-235.

21. Peiro R, Alvarez-Dardet C, Plasencia A, Borrell C, Colomer C, Moya C et al. Rapid appraisal methodology for 'health for all' policy formulation analysis. *Health Policy*. 2002;62:309-328.
22. Brand H, Bureick G, Schröder-Bäck P. Benchmarking Regional Health Management II (Ben RHM II) Final Report;2007 http://www.lzg.gc.nrw.de/_media/pdf/gesundheitplanen/projekte/ben2_abschluss.pdf (Accessed November 2016)
23. Mackay M, Vincenten J, Brussoni M, Towner E. Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety promotion. Amsterdam: European Child Safety Alliance, Eurosafe; 2006
24. Mackay M, Vincenten J, Brussoni M, Towner L. Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety promotion: Addendum 2010. Amsterdam: European Child Safety Alliance, Eurosafe; 2010
25. Mackay M, Vincenten J. Action to Address Child Intentional Injury - 2014: Europe Summary. Birmingham: European Child Safety Alliance; 2014 <http://www.childsafetyeurope.org/archives/news/2014/info/ciir-report.pdf> (accessed November 2016)
26. Peden M, Oyebite K, Ozanne-Smith J, Hyder A, Branche C, Fazlur Rahman AKM, et al. World Report on child injury prevention. Geneva: World Health Organization; 2008.
27. Krug E, Dahlberg L, Mercy J, Zwi A, Lozano R. World Report on Violence and Health. Geneva: World Health Organisation; 2002.
28. Brand H, Schroder P, Davies JK, Escamilla I, Hall C, Hickey K et al. Reference frameworks for the health management of measles, breast cancer and diabetes (type II). *Cent Eur J Public Health*. 2006;14:39-45.
29. Marmot M. Fair Society, Healthy Lives. The Marmot Review Final Report. London (UK): University College London; 2010.

References for tables 1 – 4

1. Mackay M, Vincenten J, Brussoni M, Towner E. Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety promotion. Amsterdam: European Child Safety Alliance, Eurosafe; 2006.
2. MacKay M and Vincenten J. Child Safety Report Card 2012: Europe Summary for 31 Countries. Birmingham: European Child Safety Alliance, Eurosafe; 2012.
3. Berger LR, Wallace LJ, Bill NM. Injuries and injury prevention among indigenous children and young people. *Pediatr Clin North Am*. 2009;56 (6):1519-1537.
4. Sethi D, Towner E, Vincenten J, Segui Gomez M, Raccoppi F. European Report on Child Injury Prevention. Geneva: World Health Organization; 2008.
5. Small K. Interventions to prevent adolescent motor vehicle crashes: a literature review. *Orthop Nurs*. 2008;27 (5):283-290.
6. Fletcher A, McCulloch K, Baulk SD, Dawson D. Countermeasures to driver fatigue: a review of public awareness campaigns and legal approaches. *Aust N Z J Public Health*. 2005;29 (5):471-476.
7. Ameratunga S, Hajar M, Norton R. Road-traffic injuries: confronting disparities to address a global-health problem. *Lancet*. 2006;367 (9521):1533-1540.
8. Chakravarthy B, Vaca FE, Lotfipour S, Bradley D. Pediatric pedestrian injuries: emergency care considerations. *Pediatr Emerg Care*. 2007;23 (10):738-744.
9. Yuma PJ, Maxson RT, Brown D. All-terrain vehicles and children: history, injury burden, and prevention strategies. *J Pediatr Health Care*. 2006;20 (1):67-70.
10. Royal ST, Kendrick D, Coleman T. Non-legislative interventions for the promotion of cycle helmet wearing by children. *Cochrane Database Syst Rev*. 2005(2):CD003985.
11. Saveika JA, Thorogood C. Airbag-mediated pediatric atlanto-occipital dislocation. *Am J Phys Med Rehabil*. 2006;85 (12):1007-1010.

12. Kendrick D, Coupland C, Mulvaney C et al. Home safety education and provision of safety equipment for injury prevention. *Cochrane Database Syst Rev*. 2007(1):CD005014.
13. Kendrick D, Smith S, Sutton AJ et al. The effect of education and home safety equipment on childhood thermal injury prevention: meta-analysis and meta-regression. *Inj Prev*. 2009;15 (3):197-204.
14. Pearson M, Garside R, Moxham T, Anderson R. Preventing unintentional injuries to children in the home: a systematic review of the effectiveness of programmes supplying and/or installing home safety equipment. *Health Promot Int*. 2011;26 (3):376-392.
15. Kendrick D, Barlow J, Hampshire A, Stewart-Brown S, Polnay L. Parenting interventions and the prevention of unintentional injuries in childhood: systematic review and meta-analysis. *Child Care Health Dev*. 2008;34 (5):682-695.
16. Mackay M, Vincenten J, Brussoni M, Towner L. Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety promotion: Addendum 2010. Amsterdam: European Child Safety Alliance, Eurosafe; 2010.
17. Mackay M, Vincenten J, Brussoni M, Towner E, Fusseli P. Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety promotion - Canadian Edition. Toronto: The Hospital for Sick Children; 2011.
18. Damashek A, Peterson L. Unintentional injury prevention efforts for young children: levels, methods, types, and targets. *J Dev Behav Pediatr*. 2002;23 (6):443-455.
19. Garzon DL. Contributing factors to preschool unintentional injury. *J Pediatr Nurs*. 2005;20 (6):441-447.
20. Gittelman MA, Durbin DR. Injury prevention: is the pediatric emergency department the appropriate place? *Pediatr Emerg Care*. 2005;21 (7):460-467.

21. Kendrick D. Role of the primary health care team in preventing accidents to children. *Br J Gen Pract.* 1994;44 (385):372-375.
22. Olsen HM, Hudson SD, Thompson D. Developing a playground injury prevention plan. *J Sch Nurs.* 2008;24 (3):131-137.
23. Peck MD. Epidemiology of burns throughout the world. Part I: Distribution and risk factors. *Burns.* 2011;37 (7):1087-1100.
24. Weiss J. Prevention of drowning. *Pediatrics.* 2010;126 (1):e253-62.
25. Sleet DA, Ballesteros MF, Borse NN. A review of unintentional injuries in adolescents. *Annu Rev Public Health.* 2010;31 (195-212).
26. Yuma P, Carroll J, Morgan M. A guide to personal flotation devices and basic open water safety for pediatric health care practitioners. *J Pediatr Health Care.* 2006;20 (3):214-218.
27. Kendrick D, Barlow J, Hampshire A, Polnay L, Stewart-Brown S. Parenting interventions for the prevention of unintentional injuries in childhood. *Cochrane Database Syst Rev.* 2007(4):CD006020.
28. Mikton C, Butchart A. Child maltreatment prevention: a systematic review of reviews. *Bull World Health Organ.* 2009;87 (5):353-361.
29. Krug E, Dahlberg L, Mercy J, Zwi A, Lozano R, eds. *World Report on Violence and Health.* Geneva: World Health Organisation; 2002.
30. Massetti GM, Vivolo AM, Brookmeyer K et al. Preventing youth violence perpetration among girls. *J Womens Health (Larchmt).* 2011;20 (10):1415-1428.
31. Cusimano MD, Sameem M. The effectiveness of middle and high school-based suicide prevention programmes for adolescents: a systematic review. *Inj Prev.* 2011;17 (1):43-49.
32. MacKay M and Vincenten J. *National Action to Address Child Intentional Injury - 2014: Europe Summary.* Birmingham: European Child Safety Alliance; 2014.

33. Shapiro S. Addressing self-injury in the school setting. *J Sch Nurs.* 2008;24 (3):124-130.
34. Kellogg ND. Evaluation of suspected child physical abuse. *Pediatrics.* 2007;119 (6):1232-1241.
35. Cozens PM, Saville G, Hillier D. Crime prevention through environmental design (CPTED): a review and modern bibliography. *Property Management.* 2005;23 (5):328-356.
36. Adamsbaum C, Mejean N, Merzoug V, Rey-Salmon C. How to explore and report children with suspected non-accidental trauma. *Pediatr Radiol.* 2010;40 (6):932-938.
37. Hobbs CJ, Bilo RA. Nonaccidental trauma: clinical aspects and epidemiology of child abuse. *Pediatr Radiol.* 2009;39 (5):457-460.
38. Jacobi G, Dettmeyer R, Banaschak S, Brosig B, Herrmann B. Child abuse and neglect: diagnosis and management. *Dtsch Arztebl Int.* 2010;107 (13):231-39; quiz 240.
39. Keane C, Chapman R. Evaluating nurses' knowledge and skills in the detection of child abuse in the Emergency Department. *Int Emerg Nurs.* 2008;16 (1):5-13.
40. Sanders T, Copley C. Identifying non-accidental injury in children presenting to A&E departments: an overview of the literature. *Accid Emerg Nurs.* 2005;13 (2):130-136.
41. Moskos MA, Achilles J, Gray D. Adolescent suicide myths in the United States. *Crisis.* 2004;25 (4):176-182.

Legend for figures

Table 1 CSRF, Road Safety

Table 2 CSRF, Home Safety

Table 3 CSRF, Water Safety

Table 4 CSRF, Intentional Injury Prevention

Table 5 Fictitious example of a rapid appraisal for road safety