

Appendix A3: Summary of evidence from surveillance

2019 surveillance of unintentional injuries on the road: interventions for under 15s (2010) NICE guideline PH31

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Evidence considered in surveillance

Search and selection strategy

We searched for new evidence related to the whole guideline.

We found 5 studies in a search for randomised controlled trials, systematic reviews and other comparative studies published between 1 January 2014 and 12 June 2019.

We also included 2 studies identified during the previous surveillance reviews in 2014 and 2015.

From all sources, we considered 7 studies to be relevant to the guideline.

See [summary of evidence from surveillance](#) below for details of all evidence considered, and references.

Selecting relevant studies

The inclusion and exclusion criteria from the original guideline were applied during study selection.

Ongoing research

We did not identify any ongoing research relevant to this guideline.

Intelligence gathered during surveillance

Views of topic experts

Topic expert views have been considered in this surveillance review. Two experts commented about wide-ranging staffing and organisational changes since the guidance was published. One expert expressed that this greatly impacted the ability of services to implement recommendations, a situation compounded by a challenging funding environment. A second felt that current recommendations should reflect these changes.

Comments were received about the appropriateness of the recommendations for several subgroups who are potentially at greater risk of injury, for example, asylum seekers and unaccompanied minors. No evidence was found during surveillance that suggested current recommendations are inappropriate for these groups. Comments were also received about specific interventions not currently included within the scope of the guideline, for example, parking bans around schools. No evidence was found during surveillance that assessed the impact of these interventions.

Concerns were also raised around implementation barriers and age groups considered across all three guidelines in the unintentional injury suite ([PH29](#), [PH30](#) and [PH31](#)). Further details can be found in the consultation document as well as the [summary of evidence from surveillance](#) below.

Summary of evidence from previous and 2019 surveillance

Studies identified in searches are summarised from the information presented in their abstracts.

Feedback from topic experts who advised us on the approach to this surveillance review, was considered alongside the evidence to reach a view on the need to update each section of the guideline.

Evidence from an Evidence Update for this topic was also considered. Evidence updates were produced by NICE to highlight new evidence relating to published NICE guidelines.

Surveillance evidence summary	Intelligence gathering	Impact statement
General guideline surveillance issues		
<p>2014 surveillance</p> <p>Implementation</p> <p>An expert group who were convened to assess the need to update recommendations in 2014 noted that when the guidance was published the new public health system was in its early stages and that some bodies mentioned in the guidance had been replaced. The group also noted that some of the delivery structures in public health had to be predicted at the time of writing of the guidance.</p> <p>2019 surveillance</p> <p>No relevant evidence was identified.</p>	<p>Searches for policy documents during intelligence gathering at the 2019 timepoint identified the following reports which were available after publication of NICE guideline PH31: Reducing unintentional injuries on the roads among children and young people under 25 years (March, 2018), Public Health England (PHE).</p> <p>School aged years 5 to 19 high impact area 2: reducing risky behaviours (Mar 2018), PHE. This report outlines 5 areas where children frequently engage in risk taking behaviour and the role of the school nurse in providing targeted interventions, including those to prevent unintentional injuries.</p> <p>Implementation</p>	<p>Implementation</p> <p>A topic expert raised concerns around the lack of resources available to implement all of the guideline recommendations. It is acknowledged that recommendations across the guideline will be interpreted in a context of budgetary constraints and that will have an impact on implementation.</p> <p>One expert noted that the wording of the recommendations may need to be updated to reflect the changes in organisation of public health services since the guideline was published. These have been accounted for in the editorial amendments described below.</p>

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	<p>One topic expert noted that whilst the recommendations remain relevant the practicality of implementing a number of them caused concern due to current local organisational, staffing and funding environments. One topic expert noted that the organisation of public health and preventative services has changed considerably, and it is important that the wording of recommendations takes these changes into account.</p> <p>Age groups</p> <p>One topic expert felt that the age range for this guidance was out of step with known developmental pathways and evidence globally and should be extended to under 20 years.</p> <p>Subgroups</p> <p>One topic expert identified asylum seekers, refugees and unaccompanied minors as being at greater risk of road traffic injury. Two topic experts highlighted that boys and girls have different rates of injury and one expert highlighted the issue of children who steal motor vehicles and cause injury as a potential grey area. Another expert highlighted that children and adolescents subject to neglect are at higher risk of injury.</p>	<p>New evidence is unlikely to change guideline recommendations.</p> <p>Age groups</p> <p>One topic expert felt that the age range of the guideline should be extended from under 15 to under 20 years. During fieldwork testing of recommendations there was extensive debate about the age range of the scope. Contributors suggested various age ranges including under 17 years, under 18 years and under 19 years.</p> <p>We identified several other sources of guidance and evidence on prevention of unintentional injury throughout this surveillance review and did not find the age range to be consistent.</p> <p>Due to this inconsistency and considering the original guideline referral form the Department of Health, we do not propose to make any changes to the guideline at this time.</p> <p>New evidence is unlikely to change guideline recommendations.</p> <p>Subgroups</p> <p>Topic experts identified that some subgroups are at greater risk of injury on the road. During this</p>

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		<p>surveillance review no evidence was identified that focused on prevention of injuries in the specific subgroups that were mentioned: asylum seekers, neglected children and children who steal cars.</p> <p>The original referral from the Department of Health included all children and young people aged under 15, including those from disadvantaged areas who are likely to be exposed to high traffic volumes. There is no new evidence identified that would alter the recommendations with respect to subgroups; it should also be noted that the recommendations and related interventions could protect all subgroups.</p> <p>A policy document from PHE (Reducing unintentional injuries on the roads among children and young people under 25 years) was identified that includes recent epidemiological data about the greater risk of injury to boys compared with girls, but no evidence relevant to unintentional injuries on the road, that identified prevention opportunities for subgroups of children was identified. This document also provides recent epidemiological data on the socioeconomic determinants of road injury.</p> <p>No evidence has been found that indicate current recommendations act to exclude specific groups. For these reasons the recommendations remain</p>

Surveillance evidence summary	Intelligence gathering	Impact statement
		<p>relevant and appropriate for the subgroups identified.</p> <p>New evidence is unlikely to change guideline recommendations.</p>
<p>Recommendation 1 Health advocacy and engagement</p>		
<p>2014 surveillance No evidence identified</p> <p>2019 surveillance No evidence identified</p>	<p>No intelligence was identified for this recommendation.</p>	<p>No new evidence identified to change the recommendation.</p>
<p>Recommendation 2 Needs assessment and planning</p>		
<p>2014 surveillance No evidence identified</p> <p>2019 surveillance No evidence identified</p>	<p>No intelligence was identified for this recommendation.</p>	<p>No new evidence identified to change the recommendation.</p>

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<p>Recommendation 3 Measures to reduce speed</p>		
<p>2014 surveillance</p> <p>Speed limits and speed reduction zones</p> <p>A study (1) carried out in Calgary, Canada investigated the impact of 30 kilometres per hour (kph) (18.6 mph) speed zones around a sample of 11 schools and 16 playgrounds. The mean speed of the 4580 vehicles measured was 32.0 kph (SD=6.6 kph, 85th percentile=38.8 kph) lower than the default speed of 50 kph in urban areas. The applicability of this finding to comparable UK areas may be reduced due to differing road layouts in Canada and the UK.</p> <p>An observational study (2) of the effect of the introduction of 20 mph zones on road traffic casualties in London between 1986 and 2006 found an all casualty reduction of 48.5% in children under 15 years. All casualty reduction was 46.2% for pedestrians and 27.7% for cyclists. The analysis was based on police STATS19 data. The number of people under 15 years killed or seriously injured was reduced by 50.2%. The authors were unable to examine the contribution of other speed</p>	<p>Speed limits and speed reduction zones</p> <p>Two topic experts highlighted the importance of assessing the effectiveness of 20 mph zones, particularly in cities. The surveillance review found the following report Reducing unintentional injuries on the roads among children and young people under 25 years (PHE 2018) which cross-refers to NICE guideline PH31. In line with the NICE guideline it recommends the introduction of 20 mph limits and zones as a priority action for reducing the number and severity of injuries. This report draws on a study of the effectiveness of the city-wide 20 mph speed limit scheme in Bristol, England. This study reports an average reduction in traffic speeds of 2.7 mph across the city and a reduction in child serious injury and child fatal injury of 1.28 per year and 0.6 per year post-scheme, respectively.</p> <p>Traffic calming measures</p> <p>No intelligence was identified for this area.</p>	<p>Speed limits and speed reduction zones</p> <p>Two studies from the 2014 surveillance review and one study from the 2019 surveillance review found that speed limits and speed reduction zones are effective in reducing child road casualties or are effective in reducing motorised traffic speeds.</p> <p>The PHE report Reducing unintentional injuries on the roads among children and young people under 25 years provides further evidence on the effectiveness of speed limits in reducing injuries to children.</p> <p>The body of recent research evidence in urban areas supports recommendation 3 where it recommends to implement changes to the speed limit where current average speeds are low enough, and to implement city or town-wide 20 mph zones.</p> <p>New evidence is unlikely to change guideline recommendations.</p> <p>Speed humps</p> <p>A single study was identified that concluded speed humps are associated with reduced risk of PMVCs</p>

Surveillance evidence summary	Intelligence gathering	Impact statement
<p>reduction measures to the observed reductions in injuries.</p> <p>2019 Surveillance</p> <p>Speed limits and speed reduction zones</p> <p>A systematic review of reviews (3) investigated the impact of speed reduction measures (including 20 mph limits, 20 mph zones and speed humps) and socioeconomic status and risk of road accidents in children and adults. Five systematic reviews were included and provided evidence that these measures were effective in reducing collisions, injuries and improving the perception of risk of accidents (2 studies); no data was presented to support these findings in the abstract. No evidence was found for effectiveness of these interventions in addressing socioeconomic status related injury inequalities.</p> <p>Speed humps</p> <p>A quasi-experimental study (4) in Toronto, Canada, looked at rates of pedestrian motor vehicle collisions (PMVC) before and after speed hump installation; the analysis adjusted for season and road characteristics. PMVC incidence rates per meters of road per month decreased after installation of speed humps (Incidence rate ratio IRR=0.78, 95% CI 0.66 to 0.91). The association between speed humps and PMVC rates decreased</p>		<p>among children. It supports recommendation 3 where it recommends to introduce speed reduction features, for example traffic calming measures on single streets.</p> <p>New evidence is unlikely to change guideline recommendations.</p>

Surveillance evidence summary	Intelligence gathering	Impact statement
<p>more for children (IRR 0.57, 95 % CI 0.4 to 0.79) than for adults (IRR 0.80, 95 % CI 0.68 to 0.95). The study also reported that winter, collector roads (roads designed to carry traffic from local roads to arterial roads), pre-amalgamated city centre and mixed land use were all associated with more collisions.</p>		
<p>Recommendation 4 Popular routes</p>		
<p>2014 surveillance No evidence identified</p> <p>2019 surveillance Safe routes to school schemes A study in the US (5) investigated the impact of safe routes to school (SRTS) programmes on child cyclist and pedestrian injury rates; the programme consisted of built environment and active travel initiatives. Crash records from 18 states for the period 1995-2010 were used to examine the association between SRTS and risk of injury in children aged 5 to 19 compared with adults aged 30 to 64. For child cyclists and pedestrians SRTS was associated with a 23% reduction in injury risk (IRR=0.77, 95% CI 0.65 to 0.92) and a 20%</p>	<p>Safe routes to schools No intelligence was identified for this area.</p> <p>Parking free zones around schools One expert highlighted the use of parking bans outside schools as an initiative for injury prevention and a potential area for guideline recommendations.</p>	<p>Safe routes to school schemes The guideline committee noted that studies of the effectiveness of SRTS programmes on injury prevention in the UK are lacking. Research on the effectiveness of SRTS in a UK setting would strengthen the evidence base by increasing applicability (see Appendix D: gaps in the evidence), New evidence is limited to 1 US study and 1 Danish study. The US study concludes SRTS programmes are effective in reducing injury risk and fatality risk in child cyclists and pedestrians. A Danish study of a cycling promotion intervention which includes infrastructural changes around schools noted that there was no increase in incidence of injury as a result of promoting cycling as a commuter option for school children.</p>

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<p>reduction in fatality risk (IRR=0.80, 95% CI 0.68 to 0.94) compared with adults.</p> <p>A controlled quasi-experimental study (6) in Denmark looked at the impact on commuter cycling and injury rates of a multi-component cycling promotion intervention comprising infrastructural changes near schools (including changes to the road surface and traffic regulation) and promotional activities. Participants (n=2,415) from control schools (n=12) and intervention schools (n=13) were assessed at baseline and at 1-year follow-up. No significant differences between groups in school commuter cycling were detected in the short term or in the long term. No differences between groups were observed in the incidence or characteristics of traffic injuries. Approximately 50% of all traffic injuries occurred during school transport with most reported as solo injuries.</p>		<p>This evidence supports recommendation 4 which states: consider opportunities to develop engineering measures to provide safer routes commonly used by children and young people including to school and other destinations.</p> <p>New evidence is unlikely to change guideline recommendations.</p> <p>Parking free zones around schools</p> <p>Experts highlighted the use of parking free zones around schools as a potentially effective intervention to reduce injury risk. No studies describing this type of intervention were identified during this surveillance review but multi-component traffic calming schemes, containing similar interventions (such as parking rationalisation, reduced on-street parking and measures to deter parking) were reviewed during the development of the guideline.</p> <p>Recommendation 4 states that engineering measures to provide safer routes should be considered as part of a broad package of measures which could include the use of parking bans as part of multi-component interventions. New evidence on the effectiveness of parking bans around schools could potentially strengthen recommendation 4, however, in the absence of</p>

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		<p>new evidence this intelligence does not impact recommendation 4.</p> <p>Note that Physical activity: walking and cycling (NICE guideline PH41) makes the following recommendation to help promote physically active travel: Develop programmes to ensure the local environment around schools and the nearby catchment area provide opportunities for all children to cycle or walk. This should include addressing motor vehicle speed, parking and dangerous driving practices.</p> <p>New evidence is unlikely to change guideline recommendations.</p>
<p>Areas not currently covered in the guideline</p>		
<p>2019 surveillance</p> <p>A study from Toronto, Canada (7) examined the impact of a tramway right-of-way (ROW) on PMVC on a single avenue using police-reported PMVC data from 1 January 2000 to 31 December 2011. The study used a quasi-experimental study to examine changes in the rate and spatial patterning of PMVC pre to post installation in one location. Poisson regression analysis was used to estimate</p>	<p>No intelligence identified</p>	<p>A single Canadian study was found that describes an engineering intervention that comprised a dedicated tramway that physically separated tram traffic from motorised traffic and provided clearly designated pedestrian crossing points. The intervention also provided improved separation of pedestrians from motorised traffic which was particularly beneficial for people boarding and alighting trams. The study reports a significant decrease in PMVCs for children.</p>

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<p>changes pre to post ROW installation. There was a 48% decrease in the rate of all PMVCs post ROW installation (Incident rate ratio (IRR)=0.52, 95% CI 0.37 to 0.74) and a significant decrease was noted for children (IRR=0.13, 95% CI 0.04 to 0.44)</p>		<p>Although a decrease in PMVCs was observed, the intervention described was implemented on a single avenue, in a specific local context in Canada therefore its applicability to a UK setting and the generalisability of its findings are limited.</p> <p>The study uses an uncontrolled before and after design and is considered low level evidence. Further good quality evidence for the effectiveness of this type of intervention is needed before any impact on NICE guidance PH31 recommendations can be assessed.</p> <p>New evidence is unlikely to change guideline recommendations</p>
<p>Research recommendation 1*</p> <p>To what extent do interventions to reduce speed and prevent unintentional injuries on the road among under-15s influence people's attitude, knowledge and behaviour towards road safety (both drivers and the general public)? How can interventions be designed to maximise this effect?</p>		
<p>No relevant evidence was identified.</p>	<p>No intelligence was identified for this recommendation.</p>	<p>No new evidence identified to change the recommendation.</p>

Surveillance evidence summary	Intelligence gathering	Impact statement
<p>Research recommendation 2*</p> <p>How can systematic methods, combining health and engineering research, be developed to:</p> <p>assess the effectiveness and cost effectiveness of injury prevention interventions outside the health sector (for example, within education and employment)</p> <p>identify wider public health outcomes as a standard part of research into engineering measures to reduce speed and unintentional injuries (including co-benefits and unintended consequences, such as the impact on physical activity and air quality)?</p>		
No relevant evidence was identified.	No intelligence was identified for this recommendation.	No new evidence identified to change the recommendation.
<p>*The original guideline committee developed some provisional research recommendations, based on the evidence and expert advice from cooptees. These were passed to the NICE committee that developed related guidance on 'Strategies to prevent unintentional injuries among under-15s', for them to develop a comprehensive set of research recommendations covering all types of unintentional injuries. This section contains the research recommendations from NICE guideline PH29 that relate specifically to prevention of unintentional injury on the road.</p>		

Editorial amendments

Recommendation 1: The cross referral to NICE guideline PH9 needs updating. This guideline has been updated and replaced by the NICE guideline on [Community engagement: improving health and wellbeing and reducing health inequalities](#) (NG44).

Recommendation 2: The cross reference to 'Manual for streets' should be replaced with the updated '[Manual for streets 2](#)'

Recommendation 3: Add the following text to recommendation 3: 'When introducing engineering measures to reduce speed, consider promoting smooth driving and speed reduction to minimise pollution (see NICE's guideline on [Air pollution: outdoor air quality and health](#))'

Section 3.11 The link to 'Social value judgements: principles for the development of NICE guidance' should be changed to [Social value judgements: principles for the development of NICE guidance](#)

Footnote 4 within the considerations section includes a cross referral that needs to be updated to [Transport analysis guidance](#).

References

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