Delivering Accident Prevention at local level in the new public health system

Part 2: Accident prevention in practice

Case Study 20mph zones and speed limits

Reduced Risk of Injury
CASE STUDY: 20mph zones and speed limits

Indicator 1.10 in the public health outcomes framework is “Killed and seriously injured casualties on England’s roads.”

The extent of injury

There are still a high number of reported casualties on urban roads in Great Britain. In 2011, there were 816 fatalities and 15,438 serious injuries in total on built-up roads in Great Britain. A large proportion of these accidents occurred on residential roads:

- 116 fatalities and 2,123 serious injuries reported on 8 roads, and
- 280 fatalities and 6,747 serious injuries on other minor C and unclassified roads.

The majority of pedestrian casualties occur in built-up areas. In 2011 there were 25 child pedestrians killed and 1,535 serious injuries on built-up roads, as well as 311 adult pedestrians who were fatally injured and 3,566 who were seriously injured. In total, there were 25,346 injured casualties on England’s roads.1

20mph zones and speed limits

A distinction is often made between 20mph zones and 20mph limits:

- 20mph zones use traffic calming measures to reduce the adverse impact of motor vehicles on built up areas. The principle is that the traffic calming slows vehicles down to speeds below the limit, and in this way the zone becomes “self-enforcing”. Speed humps, chicanes, road narrowing, planting and other measures can be introduced to both physically and visually reinforce the nature of the road.

- A major review of 20mph limits in London between 1986 and 2006 demonstrated that they reduced the number of casualties by more than 40% (40.9%).2 The 20mph zones were slightly more effective in preventing fatal or serious injuries to children, which were reduced by half (50.2%).3 There was a smaller reduction in casualties among cyclists than any of the other major groups of road users studied, with a reduction of 16.9%.

The analysis showed that the reduction in road injuries in 20mph zones occurred at a greater rate than the overall trend of reduction in casualties in London, and that this was not attributable to the areas where 20mph zones were introduced having higher numbers of casualties initially, and that there was no displacement of injury risk to roads close to the 20mph zones.

A Cochrane review found that area-wide traffic calming in towns and cities are a promising intervention for reducing the number of road traffic injuries and deaths.4 An analysis conducted of all the previous studies to work out the best estimate of effect, found that traffic calming schemes reduced the number of injury accidents by about 15% on average. Schemes in residential areas showed a greater reduction in injuries.

20mph limits

20mph limits are areas where the speed limit has been reduced to 20mph but there are no physical measures to reduce vehicle speeds within the areas. Drivers are alerted to the speed limit by 20mph speed limit repeater signs.

There has been an expansion of 20mph limits in the UK recently. The reasons for this are not solely for road safety reasons, with many being introduced to contribute towards healthier environments.

TRL carried out research on 20mph limits in 1998 to examine the effectiveness of 20mph limits without traffic calming measures.5 It found that there were small reductions in speed following its introduction. There was some evidence that public awareness campaigns and enforcement further reduced traffic speeds.

The largest area in the UK with a 20mph limit is Portsmouth, where the lower limit has been introduced on about 94% of roads which previously had a 30mph limit.6 There was a staggered introduction and the limit was introduced at different times in six areas of the city.

There was an overall average speed reduction of 1.3mph following the introduction of the limits, as the average speed dropped from 39.8mph to 18.5mph. The change across the six areas varied from a reduction of 0.6mph to 1.7mph. A statistical analysis showed that this reduction was unlikely to be due to chance.

Bristol has also piloted 20mph limits in two areas using only signage as one element of a strategy to increase physical activity in Bristol along with events that encouraged children to play outside and increase the uptake of cycling.7 Two years after the introduction of the limits, speed surveys were recorded on 10% of the roads covered by the scheme. There was a reduction in mean daytime speeds on 65% of the roads. On residential roads there was, on average, a 0.4mph reduction in traffic speeds. There was a greater reduction on main roads; 1.7mph was the average reduction in the Inner East area and 1.3mph in the Inner South area.

It was not possible to draw conclusions about the effect of 20mph limits on injuries from the data available.
Introduction of 20mph zones and limits

The evidence suggests that local authorities should take advantage of opportunities to introduce lower limits.

20mph zones significantly decrease the risk of being injured in a collision by reducing vehicle speeds. Their greater use, especially in residential areas, would help to reduce the number of traffic injuries in the UK.

Evidence on 20mph limits is generally positive and typically there are small reductions in speed following the introduction of 20mph limits. As they are a more recent intervention there are fewer evaluations and most schemes have so far only had a short follow-up period.

Local evaluations of 20mph limits, along with monitoring of traffic speeds, will help to understand the effects of 20mph limits in different circumstances and whether there needs to be more work to reduce traffic speeds.

20mph limits are cheaper to introduce over a wider area than 20mph zones, which require traffic calming measures to be installed.

Supporting interventions

Other measures can be introduced alongside 20mph zones or limits.

Road safety education or publicity campaigns play an essential role alongside engineering measures. Research has identified the messages that campaigns on 20mph can use and the messages that are important for different audiences.10

Some European experiences have shown the value of introducing lower limits as part of a more comprehensive traffic plan rather than on their own. 30km/h zones were introduced in Graz, Austria, as part of a comprehensive traffic plan.19 The two strands of this plan were:

- To promote walking, cycling and public transport by improving the infrastructure and education activities, and
- To limit the volume and speed of traffic by introducing restrictions in the city centre and prioritising public transport.

The limit itself was marked by signage and accompanied by police enforcement and a road safety education campaign.

Local communities and residents should also be able to contribute to the development of local 20mph schemes.

References
