

A study into the effectiveness of traffic-calming measures in residential and school zones in Edinburgh

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Health Improvement

Abstract

BACKGROUND: Measures to reduce road traffic accidents (RTAs) are of considerable interest to Government, local authorities and the NHS. The majority of RTAs occur in built-up or residential areas so preventative measures in such areas may be particularly effective in reducing RTA associated morbidity and mortality. Two different types of 20 miles per hour (MPH) schemes have been introduced over recent years: local authority funded residential programmes, and Scottish Government funded interventions in areas around schools.

AIMS: This study aimed to assess the impact that 20MPH zones have had on the number of road traffic accidents and severity of injuries sustained in these areas.

METHODS: The number of accidents and severity of casualties sustained in a three year period preceding and following the implantation of 20MPH traffic-calming schemes was assessed across 112 areas of residential and school traffic-calming schemes in Edinburgh. The data were extracted from the 'STATS19' accident reporting system, with information on 662 accidents in residential areas and 128 accidents in school zones. Analysis was performed in Excel. Statistical testing was performed using the chi-squared test.

RESULTS: For areas with residential traffic-calming schemes the mean rate of accidents fell from 37.0 to 23.5 accidents per 100 days ($p < 0.0001$). Serious or fatal injuries also fell, from 6.3 to 3.7 per 100 days ($p = 0.006$) in these areas. School area traffic-calming schemes showed a reduction from 7.1 to 4.6 accidents per 100 days ($p = 0.013$), but no statistically significant impact on serious or fatal injuries.

CONCLUSIONS: Residential 20MPH schemes appear to be an effective means of reducing both rate of accidents and severity of injury; school area 20MPH zones are effective in reducing rate of road traffic accidents, but the impact on severity of injury would require a larger study. The effect on surrounding areas without traffic calming should also be considered.