

To: Transport & Health Policy Makers, & Practitioners
From: Prof Adrian Davis, TRI, Edinburgh Napier University
Date: 23rd March 2023
Subject: Essential Evidence 4 Scotland No.66 Levels of
policing and road casualties

Top line: Increasing levels of traffic policing reduces road crashes and traffic violations.

Theory suggests that the relationship between levels of policing and crash/casualty rates is non-linear. A UK study sought to establish the relationships.¹ At zero enforcement level, crashes and casualties are expected to be at their highest levels. Increases in enforcement will have no noticeable effect at first but at a certain level, when drivers become aware of increased police presence, crashes and casualties can be expected to drop until a saturation point is reached, after which further increases in enforcement levels can be expected to have little or no effect.

On the basis of the literature, it is possible to discriminate between stationary and mobile methods of traffic policing. Each method can involve visible policing in marked police vehicles or can involve the use of unmarked vehicles. Stationary and highly visible policing appears to be the most effective method of reducing violations and crashes. Although stationary enforcement in unmarked vehicles has also been found to be effective, Mobile policing methods are less effective, especially when unmarked police vehicles are used. The effect of increased stationary enforcement of speed limits seem to last for a limited amount of time after the police presence has been removed. The largest time halo effect appears to be 8 weeks. However, sustained police presence is required to produce such large effects. The distance halo effects of stationary policing appear to be in the range of 1.5 miles to 5 mile of the enforcement site.

There is evidence in favour of deploying traffic police largely at random over the whole road network. Theoretically it is likely to increase deterrence. In practice, the random allocation of stationary policing methods to different locations on the road network has been found to be effective, producing substantial impacts on crash rates and reductions in mean speeds and large distance halo effects. The main advantage of this method of traffic policing is that it requires relatively low levels of police enforcement.

Speed camera have been found to be particularly effective enforcement tools. They appear to be more effective than physical policing methods in reducing mean speeds and crashes. However, the effects of speed cameras appears to be mainly limited to speed camera sites and physical policing methods have still been found to be effective. The minimum distance halo effects associated with physical policing are about 5 times greater than the minimum distance halo effects associated with speed cameras. Studies of the enforcement of drink-driving violations have also shown that increased policing using random breath testing tends to reduce violations and crashes.

Another study found that lack of police enforcement was a significant predictor of both aggressive and risky driving. The researchers concluded that it appears that introducing or increasing traffic enforcement may be one method of reducing aggressive and risky driving behaviour.²

¹ Elliot, M., Broughton, J. 2005. How methods and levels of policing affect road casualty rates. TRL Report TRL637. Crowthorne: TRL. [Unpublished project report template: \(tfl.gov.uk\)](#)

² Stanojevic, P. et al 2018 The impact of police presence on angry and aggressive driving, *Accident Analysis and Prevention*, 110: 93-100. [The impact of police presence on angry and aggressive driving - ScienceDirect \(uwe.ac.uk\)](#)