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Speed Limit Reduction Report - CASR Commentary

On 27 May 2015, a CASR report was released titled "Reduction of speed limit from 110 km/h to 100 km/h on certain roads in South Australia: a follow up evaluation". The report found a 27% reduction in injury crashes on roads where the speed limit was reduced. There was considerable media and public interest in the report. There were also a number of criticisms made which seemed to be based more on the reporting of the study rather than the original report.

The report can be found at: <http://casr.adelaide.edu.au/publications/list/?id=1497>

This commentary addresses the main criticisms of the report directly.

Isn't the decrease in injury crashes due to safer vehicles?

The study compared roads where the speed limit remained the same with roads where it was reduced. Injury crashes went down on roads that remained at 110 km/h but they went down 27% more on roads where the speed limit was reduced from 110 to 100 km/h. So the measured effect is that above and beyond any general effect of safer vehicles.

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The use of roads that remained at 110 km/h as a control eliminates the effect of general road improvements from the reported effect. In fact, as major roads are more likely to have had more safety treatments than the roads that had their speed limit lowered, the effects on the lower speed limit roads are probably an underestimate.

Aren't crashes caused by things other than speed?

Crashes rarely have a single cause and the factors that lead to crashes happening are probabilistic in nature. Being drunk does not guarantee a crash but makes it much more likely to happen. In a similar way, travelling at a higher speed means that a crash is more likely to happen and, if it does, injuries will be more likely and they are likely to be more severe. The speed relationship is also not linear - a little bit faster greatly increases the risk of an injury crash. So speed always plays a role in every crash even when there are other factors present.

Doesn't travelling slower increase time on the road which leads to more fatigue crashes?

It is not clear that this is the case as there has been no research conducted in this area. It may be that the extra concentration required at faster speeds leads to an increase in fatigue that offsets the shorter time spent driving.

In any case, this study and many others show net safety benefits of lower speeds, so any fatigue effect would be small in comparison to the safety benefits of lower speeds.

Can't statistics be used to show anything?

Selective use of different measures can give different impressions of subtle effects. However, in this study, the effect is large and clearly visible in the raw data which is provided in the report. Any reasonable analysis will show a strong effect.

Isn't this study flawed?

The study is not based on a true experiment so there are other possible explanations for the observed changes in injury crashes. These are explored in the report and it is concluded that the size of the effect and the consistency of the various elements provides rather convincing evidence that the lowered speed limits were effective in reducing casualty crashes and injuries by a large amount.

The study also needs to be placed in the context of other research. Research from around the world using different methodologies shows that small reductions in speed lead to large reductions in injury crashes. So the observed changes in this study are not surprising. Really the only question was whether drivers would slow down on this set of roads in response to a speed limit reduction and this was found to be the case both by direct measurement of speeds and by the associated reduction in injury crashes.

Doesn't CASR just produce what the government wants?

CASR does receive some government funding. However, CASR is dedicated to providing useful independent advice. Maintaining its high quality reputation will always outweigh appeasing its sponsors. All of the raw data, a full explanation of the method and an exploration of the limitations are presented in the report which is publicly available for anyone to examine. Any informed comments on the report itself will always be appreciated.

Isn't it the case that speed is just not a problem?

The speeds that vehicles travel at is directly related to the number of deaths and injuries on our roads. Slowing vehicles down by a small amount can lead to large reductions in deaths and injuries (as shown in this and many other studies).

If 100 deaths and 7,000 injuries each year in South Australia is an acceptable price for the speed of travel that we currently have, then speed limits do not need to be changed.

However, major gains can be made with relatively small changes in speed limits. The current 110 km/h speed limits on two lane undivided roads in South Australia are high by international standards (such roads in the USA and Europe would typically have a speed limit between 70 and 90 km/h). By lowering the speed limit on these roads to 100 km/h, injuries and deaths on these roads could be reduced by 20-30% with less than a 10% increase in travel time. There would also be a 10% saving in fuel costs and reduced gas emissions. This seems to me to be a fair trade off.

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