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The prevention paradox and population level strategies as applied to road safety: A public health approach

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## Approaches to Road Safety

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### Key to relative benefits:
- **some or indirect benefit only**
- **moderate benefit**
- **substantial benefit**
Insights into targeting young male drivers with anti-speeding advertising: An application of the Step approach to Message Design and Testing (SatMDT)

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\textbf{ARTICLE INFO}

\textbf{ABSTRACT}

In Australia, young drivers aged 17–25 years comprise 13% of the population yet account for 22% of all road deaths with young males over-represented in such trauma. Speeding represents a major contributing factor and advertising campaigns have long focused on promoting anti-speeding messages in the effort to reduce drivers’ speeds. Positioned within a larger program of research aimed at developing, piloting, and evaluating a range of theoretically-informed anti-speeding messages, the current study reports results relating to the final phase of the research, the evaluation. Six messages were devised in accordance with the guiding framework, the Step approach to Message Design and Testing (SatMDT: Lewis et al., 2016) and based on the findings emerging from earlier qualitative and quantitative studies within the program of research. N = 938 licensed drivers (n = 455 males, 48%) aged 17–62 years completed an online survey. To ensure a controlled test of the persuasiveness of the message content, the messages were presented in an audio-based format and thus were devoid of potential confounds, such as images. The messages sought to address a particular belief (i.e., behavioural, normative, control) and to focus either on emphasising the positive aspects which make speeding less likely or challenging the negative aspects which make speeding more likely. Thus, key to this evaluation was to test the
The evidence translation gap

“It has been acknowledged that a large gulf remains between what we know and what we practise. Hence a task, if not the main task, is to improve knowledge transfer.”

Some insights on recent practice

“I have never considered research as a method of looking at a particular road safety issue. Whilst aware that obviously research was being undertaken, and from time to time hearing about it, I have never given it much credence [or] seriously looked at it as any more than general information”

Hewson, P. 2007 Evidence-based practice in road casualty reduction, Injury Prevention, 3;291-292
Evidence in local government

“The successes of the evidence-based healthcare movement have been much trumpeted… Strikingly, local government work on the determinants of health appears to be one arena in which this paradigm was largely absent.”

Evidence hierarchy

- Expert opinions
  - “Experts are of the opinion that ...”
- Cross-sectional studies and case studies
  - “There are signs that ...”
- Uncontrolled longitudinal studies
  - “It is likely that ...”
- Controlled longitudinal studies
  - “It is shown that ...”
- Randomised controlled studies
- Establish causality (bias --)
  - Generate hypotheses (bias ++)
Policy makers’ hierarchy of evidence

(adapted from Davies 2005 with acknowledged from developments by Hunter, D. 2017, Health in All Policies: Making it Work in Practice - Winter School, Durham University)
The high risk approach

- Medical professionals identify people with a condition (e.g. high blood pressure) and prescribe medication to prevent it developing into heart disease, or other diseases high blood pressure might be a risk factor for.
- The advantages: people are likely to be motivated to take the medication and the intervention will be tailored to the individual.
- Disadvantages: any fixes may be temporary because the cause of high blood pressure is not identified. Also, predicting new cases of disease (known as incidence) is difficult to predict for individuals.
Population Strategy Approach

• This approach to prevention aims to shift the distribution of a condition, so that fewer numbers of a case may occur.

• If there are a lot of 30 year olds with low risk, but a few 50 year olds with high risk, then more cases will occur in the 30 year olds, simply because there are more of them.
Is speeding a practice of a minority?

• On 20mph roads, 81% of car drivers exceed the speed limit and 44% exceed 25mph.

• On 30 mph roads in built-up areas, 53% of car drivers exceed 30 mph and 19% exceed 35 mph.

RoSPA Road Safety Fact Sheet 2018
Speed: A view from a trainer

• “The vast majority of front-line officers and their immediate supervisors do not understand the importance of shifting the speed distribution to the left. They remain convinced that their principal task is to apprehend those speeding at very high levels.”

Johnston, I. 2010 Beyond “best practice” road safety thinking and systems management - a case for culture change, Safety Science, 48 1175-1181
Who Gets Hurt?

• And who gets hurt the most?

- In 2012, 50 pedestrians, 29 cyclists, 34 motorcyclists, 20 car occupants were killed or seriously injured on Bristol’s roads
- In the period 2008 to 2010, the 25 most deprived Super Output Areas in Bristol had 21% of KSI casualties
- The 25 least deprived Super Output Areas had 5% of KSI casualties
The prevention paradox and population strategies applied to transport

• A measure that brings large benefits to the community offers little to each participating individual.”

Theoretical distribution of the exposure to risk of road death and injury, showing a reduction in the average exposure for the entire continuum of risk (dotted line).
A Safe Systems Approach to Road Safety in Bristol
A Ten Year Plan
Reducing Road Danger in Bristol

• **Vision:** *Bristol should be a city safe for a 10 year old to walk independently to school*

• **A Safe System Approach:**
  • life & health should not be sacrificed for mobility
  • human error should not lead to death or serious injury
  • vulnerable road users should not be exposed to forces which are likely to result in serious injury
  • road users need to be encouraged to behave with care and avoid unsafe violations

• **We aim for**
  • Safer Roads
  • Safer Speeds
  • Safer Road Users
  • Safer Vehicles
Thank you

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