work-related road safety

a review of the evidence for interventions

research summary

iosh

Our research and development programme

IOSH, the Chartered body for health and safety professionals, is committed to evidence-based practice in workplace health and safety. We maintain a Research and Development Fund to support research, lead debate and inspire innovation as part of our work as a thought leader in health and safety.

In this document, you'll find a summary of the independent study we commissioned from the Transport Research Laboratory: 'Work-related road safety: a systematic review of the literature on the effectiveness of interventions'.

Work-related road safety

What's the problem?

Road traffic collisions are a serious problem. In Britain the latest figures (2009) show that there were over 56,000 casualties killed or injured in an accident which involved a driver/rider driving for work at the time.* Figures from the EU† (excluding the UK) show that over one-third of fatal accidents at work occur on the roads, and a similar proportion has been reported in the United States. The World Health Organization predicts that by 2030, road collisions will be the fifth leading cause of death, compared with being the ninth leading cause in 2004.‡

Even when their higher mileage is taken into account, people who are driving for work still have a higher risk of crashing than the average driver.

It is important that we find ways to reduce work-related road crashes, but the best ways to achieve this are not obvious. Although we know that many businesses run schemes and interventions to try to improve their road safety records, it is not clear whether the different approaches taken by various organisations (such as training, using in-vehicle data recorders and making organisational changes) have been properly evaluated and shown to make a difference.

So we commissioned Dr Graham Grayson and Dr Shaun Helman of the Transport Research Laboratory (TRL) to research these issues. The research aimed to review and assess the evidence for the effectiveness of different approaches (interventions), in order to inform businesses about the most effective ways to reduce work-related road risk.

The research team wanted to answer three key questions:

- Is there enough evidence from high quality evaluations to support a definitive statement about the overall effectiveness of work-related road safety interventions?
- If not, what levels of effectiveness are suggested by studies using weaker evaluations?
- In either case, what can be said about the effectiveness of different types of intervention?

* Department for transport. *STATS 19: Reported casualties in accidents involving a driver/rider reported to be driving as part of work 2005–2009*.

† European Transport Safety Council. *Reducing road safety risk driving for work and to work in the EU.* ETSC Position Paper, February 2010. ETSC, 2010.

‡ World Health Organization. *Global status report on road safety. Time for action*. WHO, 2009.

What did our researchers do?

The project consisted of two key stages:

- a systematic review of existing literature about approaches to managing and reducing work-related road risk
- a consultation with a range of stakeholders at the beginning and end of the project.

Systematic literature review

The team at TRL examined the evidence from evaluations of interventions designed to reduce crashes, or to change behaviours and attitudes that are known to be related to collision risk in work-related driving.

The team mainly searched a database system containing some 260,000 items on transport-related research. The researchers selected 63 studies to review, including six earlier literature reviews, which had been conducted between 1999 and 2011.

The researchers next assessed the quality of the studies to ensure that only scientifically sound studies were included. This was to make sure that their conclusions were based only on reliable evidence.

Early in the project, the researchers found that most of the evidence in the literature could not be relied on to be robust. So they decided to expand the scope of the review to cover how the work-related road safety field has developed over time, including what is known about risk factors. In addition, they discussed the limitations of the current literature and how these might be overcome in the future.

Consultation with stakeholders

For the consultation, the researchers identified a list of 30 stakeholders and academics from a number of professions, including:

- academia
- consultants working in the field of work-related road safety
- company fleet representatives
- insurance industry representatives
- government and policy representatives
- fleet organisation representatives.

Half of the stakeholders were directly involved with work-related road safety and feedback was received from 17 of the stakeholders who were approached.

At the start of the project, the team invited a small group of the selected stakeholders to give their views on the proposed definition of work-related road safety, promising interventions and the level of evidence needed to demonstrate whether or not an intervention was effective.

At the end of the project, stakeholders responded to a summary of the literature review. Academics and consultants were asked for general feedback, while other stakeholder groups were also asked to comment on any issues they thought had been missed in the review, and how the messages could be communicated to a wider audience.

What did our researchers find out?

All respondents in the initial consultation gave multiple examples of the types of intervention they felt had potential, with several of them specifying 'systems-based' or 'multifaceted' approaches as the most effective. Most of the respondents said that a decrease in accidents or accident severity was a key outcome measure, and many also suggested that evidence of behavioural change would be useful. There was general agreement among stakeholders that the evidence base was weak.

Risk factors

The literature review showed a generally good understanding of the broad risk factors for work-related road crashes. A number of studies have come to similar conclusions that the key underlying risk factors for work-related crashes are:

- fatigue
- time pressure
- in-car distractions, eg mobile phones.

Evidence for interventions

The study set out to review evaluated intervention studies on work-related road safety, and provide advice. However, these types of studies were limited in both number and quality – the review found only five studies that were methodologically sound:*

- **Driver training** – training designed to raise awareness of risks in traffic, with a specific focus on providing drivers with an insight into their own limitations, has been shown in one properly controlled study to be effective in reducing crashes.†
- **Group discussions** – held among small groups of drivers, who considered problems at the workplace and how to resolve them, and committed to future actions. This led to a 56 per cent reduction in accident rates in the two years after the measure was introduced. However, the researchers who ran the study later pointed out that it wasn't easy to disentangle the different component parts of the discussions.
- **Incentives** – rewards for accident-free driving led to a 23 per cent reduction, but further work may be required to establish issues such as the how the level of reward affects outcomes.

* All five of these types of interventions were found in studies conducted more than a decade ago, and four of them were found in the same investigation, known as 'The Swedish telephone study' – Gregersen N P, Brehmer B and Morén B. 'Road safety improvement in large companies: an experimental comparison of different measures'. *Accident Analysis and Prevention* 1996; 28: 297–306.

† However, it should be noted that this training is rather different from what is traditionally offered by driver training providers in the UK, and also that the author of the controlled study from which this finding comes concluded in later publications that it was not known precisely which components of the training resulted in the effects.

- **In-vehicle data recorders** – these were installed in a number of fleets in Belgium and the Netherlands, and drivers were made aware that the data recorded could be used when accident responsibility was being assessed. The installations led to a 20 per cent reduction in accident involvement.
- **Campaigns** – staff meetings took place during the course of a year, where seasonal problems for driving were discussed, videos shown and publicity material was distributed. Unlike the others, this intervention did not show a decrease in accident rate.

There have been no follow-up studies on any of these investigations. So although most of the above interventions show great promise, it is impossible to say for sure how effective they are.

Case studies

The rest of the literature consists largely of case studies, which mostly involve multiple changes to organisational culture and practices, and multiple packages of interventions. There are published case studies that show accident reductions using these broad packages. However, 'unsuccessful' case studies tend to go unpublished, and this raises the possibility that success stories could be largely down to luck. Even if the published case studies reflect real demonstrations of accident reductions, the 'multi-factor' approach used makes it impossible to know which parts of the packages are most effective.

The researchers concluded that in order for efforts to improve work-related road safety to be properly focused and efficient, there is a need for more robust and scientific evaluation studies in this field.

Stakeholder responses

Several themes emerged from the stakeholders' responses to the literature review. There was general agreement that the evidence base was weak and that better, more controlled evaluation was needed. But while half of the stakeholders made specific reference to the methodological weakness of existing evidence, some also suggested that despite these weaknesses, such studies still contained valuable elements.

Several stakeholders were keen to point out that there are considerable practical difficulties in persuading companies to take part in controlled evaluations:

- companies may not wish to invest time and money in evaluation studies if they think that holistic approaches (even if only supported by case study data) are sufficient
- a 'can-do' attitude in many businesses can result in a preference for 'being seen to do something' in the short term, rather than taking part in a longer-term evaluation study
- companies may be reluctant to have their accident data made public
- there is a need for leadership and management buy-in to implement successful interventions.

Business leaders' enthusiasm for work-related road safety has been built up over the past decade with the help of schemes such as 'Driving for Better Business'. This is a positive sign, but, because of the limitations in the evidence base, it's difficult to be certain about how to harness this enthusiasm and leadership in order to implement the most effective interventions.

What does the research mean?

Risk factors for work-related road crashes

This research suggests that work-related road safety interventions should focus on issues such as making sure people don't drive when tired, when under pressure to reach their destination quickly, or when using devices such as mobile phones.

Involving businesses in evaluation

In order to achieve better evaluation of interventions, more must be done to involve businesses in evaluation studies. As many of the interventions currently used are unproven, evaluation can satisfy business needs by creating greater efficiencies and ensuring funds are only spent on what is known to work.

Guidance for businesses

In the absence of a robust evidence base, initial guidance to businesses should highlight the self-evident safety case for simply reducing the amount that people drive, by teleconferencing or using alternative transport modes when travelling for work.

Good practice, such as checking driving licences and checking eyesight, should be seen as a baseline from which to measure future improvement through using properly focused interventions.

In-vehicle data recorders should be used more to manage and evaluate interventions, as they enable more objective behavioural data to be collected.

Don't forget…

Like most studies, this one had some limitations. The research literature that the project sought to examine was limited. While every effort was made to gather up 'grey' literature (studies that have not been formally published), it is possible that some properly controlled studies were missed – although the researchers feel that this is unlikely. Any future work should seek to encourage businesses to publish the findings of any evaluation studies.

Another limitation is that, although the work sought to engage with stakeholders over the issue of evaluation data, it did not necessarily have firm answers on how to engage businesses in future evaluation work. However, the researchers' recommendations seek to address this important issue.

Our current position

IOSH believes that all work-related accidents, even those on public roads, should be included as a reporting requirement under regulations – this is currently not the case. We have repeatedly called for work-related road traffic accidents to be included as a reporting requirement under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). We have also called for an improvement to STATS19, the form used by the police to record information on road accidents, and we welcome the revision to this introduced in January 2011.

As work-related road traffic accidents are a significant cause of preventable death and injury, we think that people should be protected from the hazards involved.

- Employers should ensure that they produce a policy for managing work-related road safety and that they communicate it effectively to their staff.
- Road safety policies should cover:
  - suitable and properly maintained vehicles
  - driver suitability, fitness and training
  - realistic timescales for journeys, to prevent stress or pressure to take risks.

- Journeys should be properly planned to avoid fatigue, and journey plans should be reassessed if weather conditions deteriorate.
- Employers need to control the risks from driver distraction and include this in their policy – for example, by prohibiting activities like using phones and eating while driving.
- Managers should consider alternatives to driving, such as travelling by train or using video and teleconferencing.
- Employees should also be encouraged to tell their employer about any serious near misses on the road, as well as actual accidents, so that lessons can be shared.

To find out more about this issue and our position, see our policy on managing occupational road risk at **www.iosh.co.uk/information_and_resources/policy_and_consultation/policies/occupational_road_risk.aspx**.

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Our summary gives you all the major findings of the independent literature review and project report by the Transport Research Laboratory. If you want to read about the study in more depth, you can download the free full literature review and stakeholder consultation reports from **www.iosh.co.uk/researchreports** or buy a paper copy by emailing **andrea.alexander@iosh.co.uk**.

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We set standards, and support, develop and connect our members with resources, guidance, events and training. We're the voice of the profession, and campaign on issues that affect millions of working people.

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