An overview of IOSH R&D and work-related road safety

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About IOSH

- Chartered body for health and safety professionals
- Around 46,000 members in 120 countries – the world's largest professional health and safety organisation
- Our role: Supporting safety and health professionals
- What we do: Support, research, advice, training
- Why we do it: Safer, healthier workplaces
- Mission: A world where work is safe and healthy for every working person, every day
- Work 2022: Our 5 year strategy
  - Influence
  - Collaborate
  - Enhance

Our research

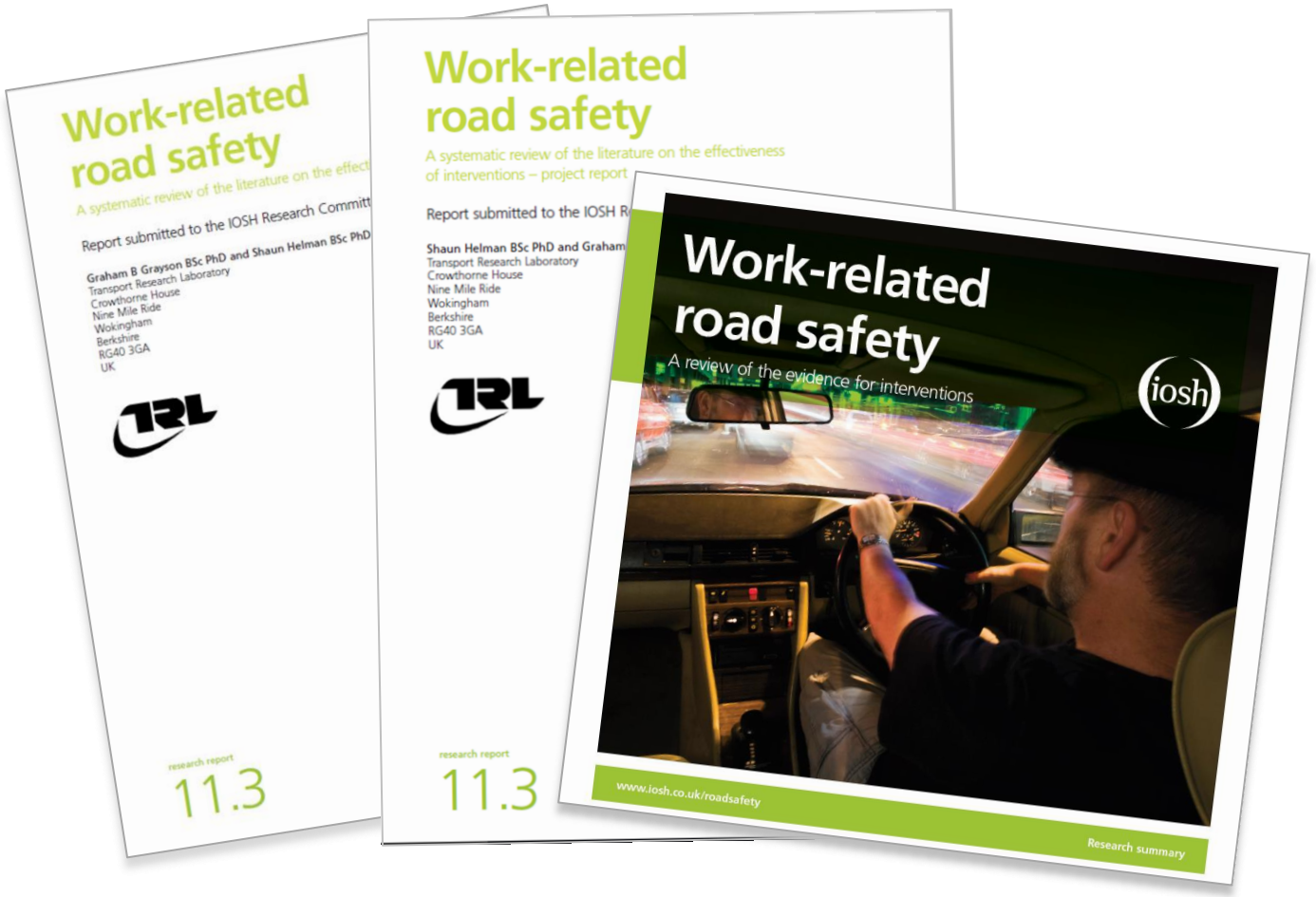
- Started commissioning research and development in 2005
- Call for proposals:
  - Using narrative data from coroners' files to determine underestimation of fatal work-related vehicle collisions
  - effectiveness of work-related road safety interventions
  - Reducing risky driving behaviour using telematics and behaviour change
  - DEMiSt
- Research into practice

Why IOSH commissions research

We commission a range of projects to establish evidence for safety and health policies and practice, and support research and inspire innovation as part of our work as a 'thought leader' in safety and health. This is largely done through our annual research competition, as two-stage process that may be linked to a particular theme that we set.

Our research enables us to support our *WORK 2022* strategy – Shaping the future of safety and health, to make a real difference in the lives of people around the world. For this reason our research will support the following broad aims that underpin the strategy: Enhance, Collaborate and Influence.

Work-related road safety. A review of the evidence for interventions (2011)



www.iosh.co.uk/roadsafety

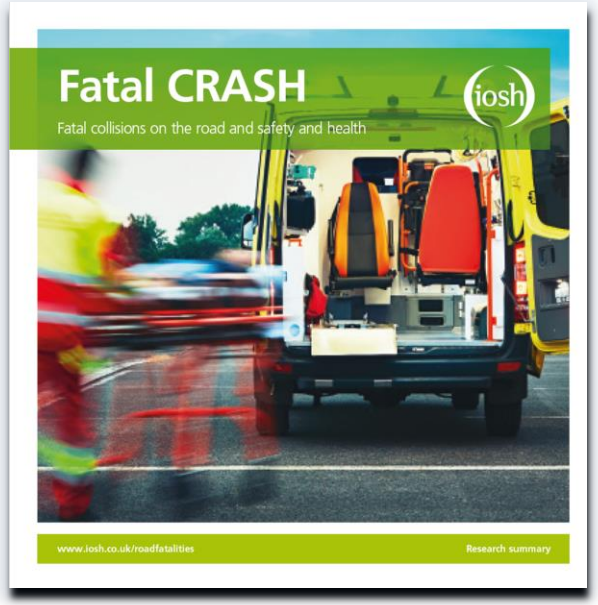
Fatal collisions on the road and safety and health (2016)

Why did we fund this research?

- Road Traffic Accidents are a leading cause of death globally
- Road traffic fatalities – risks affect all workers who drive (buses, taxis, trucks, sales, self-employed trades, those attending business meetings)

What did the research involve?

- Assess extent of underestimation of work-related road traffic fatalities (WR-RTFs) by examining coroner, RSA and HSA data
- Researchers approached coroners in Ireland –- 45 districts
- Reviewed 833 of 895 available coroner files (road traffic deaths occurring between 2008 and 2011)
- Undertaken by University College Dublin



www.iosh.co.uk/roadfatalities

Fatal collisions on the road and safety and health

What did we find out?

- 23% of 833 RTF inquest files involved a worker (n=193)
  - 15% workers (n=29)
  - 23% deceased not at work (n=45) but the other party to the collision was working; work a primary factor
  - 62% deceased not at work (n=119) but the other party to the collision was working; work a secondary factor
- Under-estimation a problem of WR-RTFs.
  - RSA recorded all fatalities but couldn't identify work-related cases
  - HSA was notified of only 15 WR-RTFs (not all 193)
- Majority had no passengers
- One third of deceased were professional drivers; remainder drove frequently, as part of their job

Fatal collisions on the road and safety and health

What did we find out?

- Common months for collision: May (18%), January, February and July (10%)
- Common days for collision: Thursdays (22%), Mondays (19%) and Fridays (15%)
- 78% of deceased were men
- 79% collisions took place between 6am and 6pm
    - 18% between 10am and 12pm
    - 14% between 6.01am and 8am
    - 14% between 4.01pm and 6pm
- Type of road – road 92.9%, motorway 3.6% and roundabout 3.6%

Fatal collisions on the road and safety

Road risk assessment considerations

- Recognition of cars and vans (not just trucks) as mobile workplaces in risk assessment
- Driving alone – a high-risk activity
- Data – time of day, day of week, road and climatic conditions
- Appropriate training and information on risk provided
- Work vehicle and design factors, eg blind spot mirrors and cameras
- Developing safe driving policies
- Post-trauma support for those involved in road traffic collisions

Reducing risky driving behaviour using telematics and behaviour change

Using in-vehicle data recorders and behavioural science to improve driver safety

Funded by iosh

Background

In most developed countries, driving is the riskiest work-related activity. Improving the safety of those driving during work has historically been difficult, as the task is predominantly carried out alone and off site. However, in-vehicle data recorders (IVDRs) are a tool with considerable promise. The information collected by IVDRs can be used to generate driver feedback, and real-time feedback can be delivered via in-vehicle warning devices, eg icons, lights and sounds, which warn the driver when a risky behaviour occurs.

A number of studies have reported that IVDRs reduce both risky driving behaviour and collisions, but these studies all have substantial methodological shortcomings, such as no control group; very short baselines; extremely unstable baselines; relying solely on volunteers; short study periods; and non-random selection.

Objective

The purpose of this study was to investigate whether behaviour change techniques (BCTs), used in combination with IVDRs, could be used to reduce risky driving behaviour among sales representatives.

Method

A randomised controlled study design was used to test the efficacy of this approach among 50 sales representatives in Russia over a 12-month period.

Tables and figures

Table 1. Comparing the alerts per km for the baseline and treatment periods

		M	SD	Sig.
Group 1	Baseline	21.14	2.93	.000
	Treatment	9.36	2.93	
Group 2	Baseline	22.16	4.18	.000
	Treatment	13.53	5.06	
Group 3	Baseline	23.60	4.45	.027
	Treatment	19.75	5.82	

Table 2. Comparing mean seatbelt use for the baseline and treatment periods

		M	SD	Sig.
Group 1	Baseline	90.36	1.91	.000***
	Treatment	97.56	3.34	
Group 2	Baseline	76.87	2.57	.000***
	Treatment	89.78	8.95	
Group 3	Baseline	83.15	3.61	.153ns
	Treatment	81.10	4.93	

Figure 1 – Mean monthly risky events per 100 kilometres for the three groups

Figure 2 – Mean monthly seatbelt use for the three groups

Results and discussion

- Alerts – there was no clear difference between the groups for most of the baseline period.
- Following the start of the treatment period, there was a clear and obvious decline in the number of alerts per kilometre for group 1 (weekly feedback plus in-vehicle alerts) and a less pronounced decline for group 2 (weekly feedback). In contrast, there was no obvious change in the number of alerts per kilometre for group 3 (control group) in the first two months of the experimental period.
- At the 4–5 month period, groups 2 and 3 reached their lowest level and then an increase in the number of alerts per 100 km can be seen for both groups, although the increase for group 3 is considerably larger than for group 2.
- The large decline in the number of alerts per 100 km for all three groups was partly due to the fact that the temperatures in Russia during the winter period were very low.
- Seatbelt use significantly increased from baseline to the treatment period for both groups 1 and 2, but there was no significant difference for group 3.

Author: Dr Mark Sullman, Driving Research Group, Cranfield University, UK

Presented by IOSH (Institution of Occupational Safety and Health)

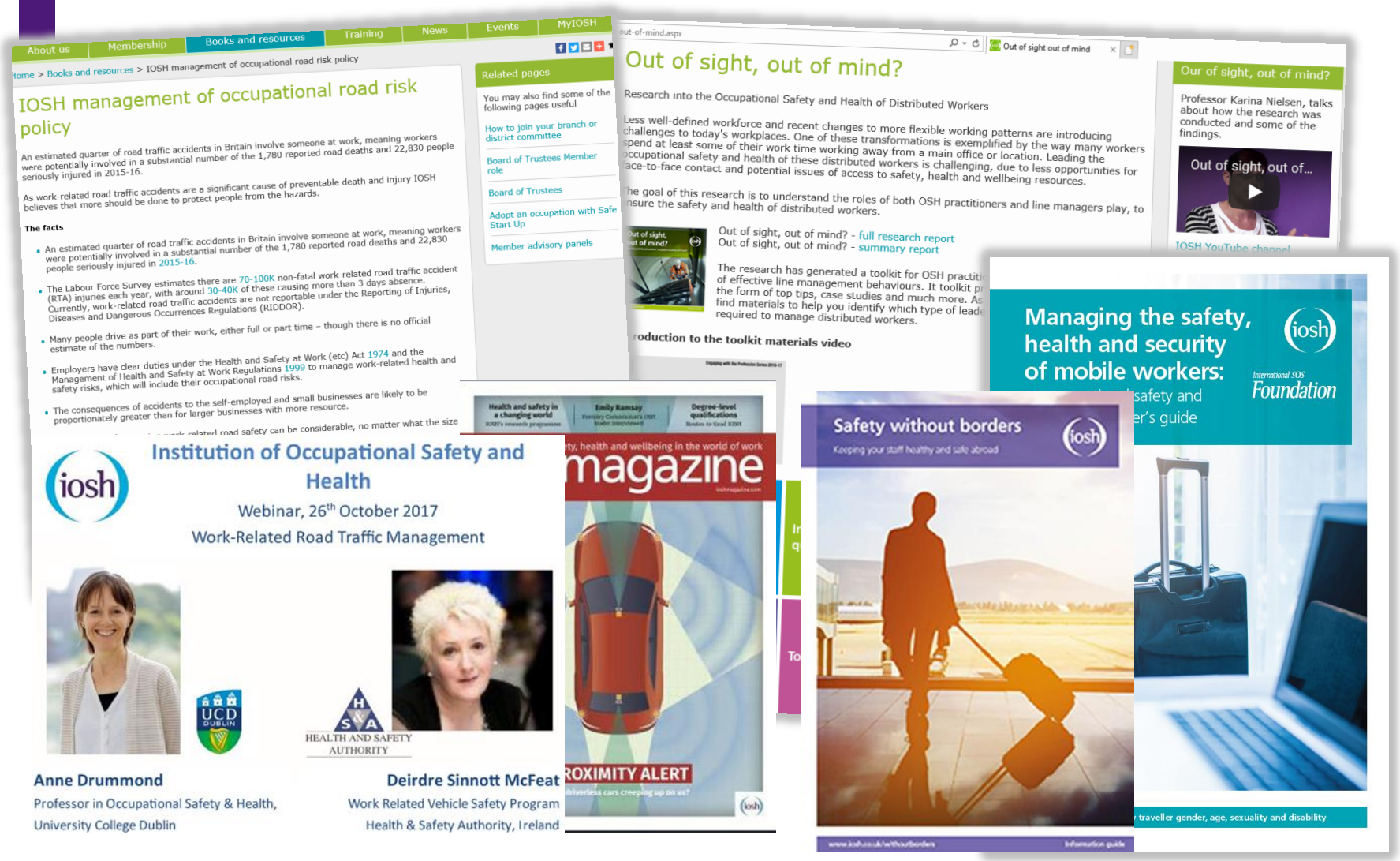
Researched by Cranfield University

To test whether pairing a behaviour change technique with telematics data will result in a reduction in risky driving behaviour

DEMiSt: The Driver Diesel Exposure Mitigation Study

KING'S College LONDON

Resources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Professor in Occupational Safety & Health,
University College Dublin
Deirdre Sinnott McFeat
Work Related Vehicle Safety Program
Health & Safety Authority, Ireland

An overview: IOSH R&D and work-related road safety

Thank you

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