

PACTS Inquiry into Transport Safety: Who is responsible?

Written evidence in relation to, ‘Research: What provision is made for keeping abreast of effective global practice?’

Summary

Academics at the University of Plymouth teamed with road safety professionals in Devon and Cornwall County Councils to embed consideration of best research evidence into road safety decision-making. The legacy of the partnership included:

- Review and evaluation of current research evidence in relation to improving the safety of
 - older drivers
 - young drivers
 - motorcyclists
 - ‘at work’ drivers
- The introduction of a process to embed evidence based practice into road safety-related decision-making in local government, including establishing change management teams.
- The development and delivery of training courses for road safety professionals on
 - evaluation and appraisal of research evidence
 - questionnaire design for evaluating interventions
 - the use of behavior change techniques and persuasive communications

We present a framework for embedding research findings and evidence into road safety-related decision-making. Establishment of the Road Safety Observatory and the Road Safety Knowledge Centers offer a resource for storing and sharing relevant research evidence - the framework presented here intends to complement that resource by articulating a process by which interrogation of research evidence is embedded in everyday working practice. Our approach and outcomes have been recognised nationally and internationally through the Prince Michael International Road Safety Award (2012), invitations to speak at; the Parliamentary Advisory Council on Transport Safety, the Institute of Road Safety Officers national conference and the International Conference on Driver Behavior and Training. One of the partnership team was selected as the National Champion for the South West Region for the RoSPA and Department for Transport Evaluation Toolkit.

The Approach

The Department for Transport, Audit Commission and leading road safety academics have all called for a more robust and evidence-based approach to decision making for road safety. Evidence-based practice (EBP) has been used effectively in the healthcare sector and implies that decision makers interrogate and evaluate current research evidence to guide decision making with respect to road safety interventions and initiatives. In practice however, road safety professionals rarely have access to the research evidence nor the dedicated time or skills to interpret it - further they are subject to public and political pressures with regard to what are perceived to be appropriate courses of action and expenditures.

Academics at the University of Plymouth teamed with road safety professionals in Devon and Cornwall County councils to embed evidence-based practice into local government. Knowledge Transfer Partnerships (KTPs) were used as a framework to formalize collaboration between academics and road safety professionals, as a mechanism to transfer and embed evidence gathering and appraisal skills and as an enabler for cultural change. Specifically the academic team provided the expertise necessary to

- Train road safety practitioners in evidence appraisal
- Conduct reviews of the evidence base
- Conduct primary research to fill gaps in the evidence base
- Oversee the change management process required to achieve evidence-based work practice in road safety.

The partnership developed a comprehensive body of intelligence which summarized and evaluated the research evidence in relation to improving the safety of - older drivers, young drivers, motorcyclists and 'at work drivers'. Other reviews summarized the known links between social deprivation and road accidents and the use of persuasive communications and behavior change techniques. This intelligence is now used to guide decision making with respect to these road user groups.

A specific and planned output of the partnership was to develop and establish a framework for embedding EBP into local government road safety-related decision-making. This involves identifying a topic of interest, examining evidence, constructing an evidence base report with recommendations, forming change management teams and integrating recommendations into practice. This process was adopted for the key risk groups of older, younger, work-related drivers and motorcyclists. The lead of a change management team is responsible for ensuring that changes arising from the evidence base are implemented. An example of this process includes evidence from the USA suggesting that self-assessment workbooks designed specifically for older drivers increase knowledge and self-awareness. The recommendation was to design a self-awareness workbook to use alongside the existing workshop to increase older driver safety. A workbook was designed with Plymouth University and was used to

supplement the Driver Safer for Longer Workshops that are delivered to older drivers in Devon.

In order to ensure that the transformation to an evidence-based approach as sustainable for local government, several training courses were developed and continue to be delivered. These include training on Evidence Based Practice and Questionnaire Design for evaluating interventions (delivered to senior managers and road safety professionals), CPD courses for the Devon Road Safety Academy (Understanding the Younger Driver, Understanding the Older Driver) and a Behavior Change toolkit which outlines and evaluates the effectiveness of extant behavior change techniques.

The Partnership

University of Plymouth

Elizabeth Hellier (EH), University of Plymouth. EH is a Psychologist with research interests the determinants of safe behaviour, with a specific interest in the determinants of road safety behaviour and the effectiveness of road safety interventions. EH has built strong collaborations with Devon and Cornwall County Councils road safety teams. EH has a strong research reputation, evidenced by both publications and research funding exceeding £1.6m.

Paul Hewson (PH), University of Plymouth. PH is a statistician, he worked for Devon County Council from 2000 to 2004 as a Road Safety Data Analysis and Research Officer. His work applies Bayesian methodology to a number of public health related fields, including road safety, he assisted with a NICE review of childhood injury (including road injury). Dr Hewson has taught evidence based practice to several hundred healthcare professionals and assisted with GP preparation for MRGP exams.. He has delivered a course in Evidence Based Practice for Road Safety Practitioners in 2006 following a grant from Rees Jeffrey's Road Fund. He serves on the National Advisory Group for Department of Transport Research Dissemination and Action Learning Project.

Relevant Publications/Dissemination:

- Hellier, E., Naweed, A., Walker, G. Husband, P. & Edworthy, J. (2011). The influence of auditory feedback on speed choice, violations and comfort in a driving simulation game. *Transportation Research Part F: Traffic Psychology and Behavior*, 14, 591-599.
- Hewson, P. (2011). [ANALYSIS OF HEAD INJURIES USING A BAYESIAN VECTOR GENERALIZED ADDITIVE MODEL](#). *Australian & New Zealand Journal of Statistics*, 2011 53:233-246
- Hewson, P. (2008). Quantile regression provides a fuller analysis of speed data, *Accident Analysis & Prevention*, 40:502-510
- Hewson, P. (2008). [Evidence Based Practice](#) *URBAN DESIGN-NEW SERIES*, 105:29-32
- Hewson, P. (2007). Evidence-based practice in road casualty reduction, *Injury Prevention*, 13:291-292

- Hewson, P. (2004). [A demonstration of a modern statistical modelling approach to road casualty data using motorcycle casualty counts](#) TRAFFIC ENGINEERING AND CONTROL, 45:210-213
- Pearson, RT Mark, Hewson, P., Moxham, T. [A systematic review of risk factors for unintentional Injuries among children and young people aged under 15 years.](#) Peninsula Technology Assessment Group (PenTAG) NICE correlates review.
- Rolison, J., Moutari, S., Hewson, P. J., & Hellier, E. (2014). Overestimated crash risks of young and elderly drivers. American Journal of Preventive Medicine, 46, 58-64.
- Rolison, J., Hewson, P. J., Hellier, E., & Hurst, L. (2013). Risks of high-powered motorcycles among younger adults. American Journal of Public Health, 103, 568-571. doi:10.2105/AJPH.2012.300827
- Rollison, J., Hewson, P., Hellier, E. & Husband, P. (2012). Older drivers: impaired, frail, neither or both? Journal of American Geriatrics Society, 60(8), 1504-1508.

Devon County Council

Jeremy Phillips (JP). JP has worked in road safety for over 20 years, as a researcher, practitioner and operations, partnership and program Manager. He currently manages the Sustainable and Safer Travel Team at DCC. He has developed projects as diverse as client-pays at-work driver safety; the Road Safety Time Bank (now the RSGB Road Safety Knowledge Centre) and the national demonstration Devon Road Safety Academy and Evidence Based Practice (EBP) project, each of which followed his role as lead officer for Devon's Beacon Authority for Road Safety peer support program. JP is South West Regional Chair for Road Safety Great Britain, sits on the Board for the Peninsula Road Safety Partnership and jointly represents the South West on the ADEPT Road Safety Policy Group.

Poppy Husband (PoH). PoH initially started working in road safety through a two year Knowledge Transfer Partnership between Plymouth University and Devon County Council. The aim of this role was to embed an evidence based practice culture in the road safety and travel awareness team. This involved working with various partners and creating a course to encourage and provide skills in evidence based practice. Following the work in Devon, Poppy moved to the Transport Research Laboratory to work as a Psychologist. Since her time at TRL, Poppy has been involved in a variety of projects in the area of road safety for both private and public organisations. Poppy sits on the judging panel for the Prince Michael International Road Safety Awards and has been invited to present at a number of conferences including the International Conference on Driver Behaviour & Training, Parliamentary Advisory Committee for Transport, Royal Society for the Prevention of Accidents and The Institution of Highways and Transportation advising local, national and international policy.

Relevant Publications/Dissemination

Reports on the evidence relating to road casualties and older drivers, younger drivers, at work drivers and motorcyclists, and also reports on persuasive communications can be found at,

http://www.devon.gov.uk/index/transportroads/roads/road_safety/collision-stats.htm

Husband, P. (2011). Making knowledge exchange between academics and government a reality. The 5th International Conference on Driver Behaviour and Training. 29th-30th November 2011, Paris, France.

Husband, P. (2012). Evidence based practice: aiding decision ,aiding decision making on a reduced budget. RoSPA

<http://www.rospace.com/events/pastevents/roadsafetyseminar2011/info/poppy-husband.pdf>

Husband, P. (2013). Drivers- seminar. TMS Road User Behaviour (Seminar)

Kinnear, N., Lloyd, L., Helman, S., Husband, P., Scoons, J., Jones, S., Stradling, S., McKenna, F. and Broughton, J. (2013). Novice drivers: evidence review and evaluation - pre-driver education and training, graduated driver licensing, and the New Drivers Act. Published Project Report (PPR673). Crowthorne: Transport Research Laboratory.

Phillips, J., & Husband, P. (2012). Evidence based practice in road safety. Road Safety GB Conference, UK.

<http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&ved=0CD8QFjAC&url=http%3A%2F%2Fwww.roadsafetygb.org.uk%2Fconference%2F2011-presentations%2FJeremy-Philips-Poppy-Husband.ppt&ei=0ldFU8jxLKWb0QXX1YGgDg&usq=AFQjCNFw4cPCTojQCLI14jJ1QUnrUuoGOQ&sig2=zTjTg9R9XWdEZ9-FDJ0vKg>

Cornwall County Council

Paula Wellings (PW). PW has worked in road safety for over 25 years, as manager of the research, development, delivery and evaluation for education, training and awareness programs in Cornwall, five years as SW regional rep for CRSOA (now RSGB); National Secretary for CRSOA and was awarded a Prince Michael Award, Road Safety Officer 1997. Her teams have been recognized with Highly Commended awards for various education and training schemes. On behalf of the South West region a two year government funded, pan-regional (progressing to National) project on post-test motorcycle training was won on its EBP merits. PW was instrumental in establishing EBP in Cornwall's casualty reduction program (education, engineering, enforcement and health partners involved) through the introduction of a Knowledge Transfer Partnership. The research and application of BCTs culminated in a Prince Michael Award for the Behavior Change Techniques methodology. The success of this work has resulted in invitations to speak at several national and international conferences on applying BCTs, improved evaluative process using EBP and partnership working (Road Safety Great Britain, Capita, Inside Government, MAST, Safer Roads International Conference).

Laura Hurst, has had wide experience of evidence based and evaluation within Road Safety and other areas in the public sector. This has including

building evidence bases in key risk areas and managing change management groups to implement findings from the evidence. She implemented an evaluation group within Cornwall's Road safety team and now drives a service wide initiative and evaluation process in the Council. Laura has developed and delivered training in Evidence Based Practise, Evaluation, Questionnaire Design and Behaviour Change Techniques. Her work in implementing behaviour change techniques won a Prince Michel award in 2012. She is now working on similar projects within the wider Community Safety directorate, with a particular focus in drug and alcohol treatment. Her evidence papers in key road safety risk areas have been published on Road Safety knowledge centre and she has been invited to present findings, particularly in behaviour change techniques and evidence based practise and national and international conferences.

Relevant Publications/Dissemination

- Hurst, L. (2011). A review and exploratory analysis of fatalities and serious injury collisions in relation to motorcyclists: implications for practise. Cornwall Council and Plymouth University
<http://www.roadsafetyknowledgecentre.org.uk/sections/research-reports/knowledge/760.html>
- Hurst, L. (2011). Defining behaviour change techniques. Implications for road safety. Cornwall Council and Plymouth University
<http://www.roadsafetyknowledgecentre.org.uk/sections/research-reports/knowledge/571.html>
- Hurst, L. (2011). A review and exploratory analysis of fatalities and serious injury collisions in relation to deprivation: implications for practise. Cornwall Council and Plymouth University
<http://www.roadsafetyknowledgecentre.org.uk/sections/research-reports/knowledge/572.html>
- Hurst, L. (2012). A review and exploratory analysis of fatalities and serious injury collisions in relation to older drivers and passengers: implications for practise. Cornwall Council and Plymouth University
<http://www.roadsafetyknowledgecentre.org.uk/sections/research-reports/knowledge/939.html>
- Hurst, L. (2012). A review and exploratory analysis of fatalities and serious injury collisions in relation to young drivers: implications for practise. Cornwall Council and Plymouth University
<http://www.roadsafetyknowledgecentre.org.uk/issues/young-drivers/knowledge/889.html>
- Hurst, L., Husband, P., Hellier, E. Hewson, P. (2014). Making knowledge exchange between theory and practice a reality: a practical model to enhance road casualty reduction on a decreasing budget. The 4th International Safer Roads Conference, 18-21st May 2014, Cheltenham, UK.
- Hurst, L. (2012) A practical application of behaviour change techniques into road safety education initiatives. Safer Roads international conference, 14/15th November 2012, London
- Hurst, L. & Wellings, P. Applying behavioral change techniques in practice. 3rd MAST user conference, 5th February 2013, Dunchurch Park Hotel near Rugby