



University of the
West of England

Department for
Transport

Wheels, Skills and Thrills

Using social marketing to
improve driving skills for
young adult males from areas
of high social deprivation

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The Lawrence Weston Project

wstdrive

Contents

| | |
|--|----|
| Executive Summary..... | 1 |
| 1. Introduction..... | 3 |
| The project partners..... | 3 |
| 2. The problem..... | 4 |
| Pre-driver education..... | 4 |
| Drive for Life..... | 4 |
| Post-licence education and training..... | 5 |
| Conclusions..... | 6 |
| 3. The insights..... | 7 |
| The nature of driving behaviour..... | 7 |
| Cultural Capital..... | 7 |
| Social Marketing..... | 8 |
| 4. The solution: Wheels, Skills and Thrills..... | 10 |
| Target area..... | 10 |
| Target group size and description..... | 11 |
| Recruitment: A fusion of community engagement and incentivisation..... | 12 |
| Behaviour change components..... | 14 |
| 5. Outcomes..... | 16 |
| Summary of IVDR analysis..... | 20 |
| Post trial behaviour: more detailed analysis..... | 20 |
| Drivecheck outcomes..... | 21 |
| Self assessment surveys..... | 22 |
| Interviews..... | 24 |
| Other outcomes..... | 24 |
| 7. Conclusions and recommendations..... | 25 |
| References..... | 27 |
| Glossary..... | 29 |
| Appendix 1: IVDR Procedures..... | 30 |
| Appendix 2: Drive Check Sheets..... | 31 |
| Appendix 3: Survey Sheets..... | 32 |
| Appendix 4: Interview extracts..... | 34 |
| Appendix 5: Publicity materials..... | 37 |
| Appendix 6: Dissemination..... | 39 |

Executive Summary

Young men from areas of social deprivation have proven very resistant to current road safety initiatives, with Road Traffic Collision (RTC) levels remaining alarmingly high. This document summarises the findings of a two year trial of the use of social marketing techniques to reduce aggressive driving amongst these young men. The trial was funded by the Department for Transport (through the Road Safety Partnership Grant), the West of England Road Safety Partnership and the University of the West of England, Bristol to a total of £100,000. Trial planning began in 2009, with the intervention running from October 2010 through to June 2011.

A review and research phase informed the design of the intervention. This was trialled through a small scale pilot with 18-25 year old young men living in the area of Lawrence Weston, a housing estate on the outskirts of Bristol. The intervention departed from traditional approaches (fear appeals, educational approaches, or punitive measures), instead seeking to use a multi-disciplinary approach led by social marketing principles. Such approaches seek to create intervention designs that reflect the motives and lifestyles of the audience in question.

The intervention consisted of the following. First, improvements in driving were sought from a bespoke designed course of driver coaching provided by the Institute of Advanced Motorists (IAM). Second, In Vehicle Data Recorders (IVDRs) were used for data gathering and to provide in-car feedback of aggressive driving manoeuvres. Third, an incentive to recruit and retain the cohort, in the form of monthly karting sessions was used as a team bonding device. Finally, co-creation and relationship marketing approaches were used throughout the trial, (enabled through the close engagement of a locally based youth worker and other team members) such that the trial was tailored towards the motivations of the cohort.

Behaviour changes were measured pre- during and post-trial through a combination of data. Pre, during and post-trial driver performance data was collected from the IVDRs. These used accelerometers and GPS to measure aggressive driving manoeuvres by identifying excessive lateral and longitudinal forces in the car's movement. These driving 'events' were manoeuvres defined by the IAM as excessive braking or swerving, and these were used as a proxy for poor driving technique. Secondly, pre- and post-trial 'drive-checks' (assessments of driving) were undertaken by trained observers from the IAM. Lastly, self assessment surveys and interviews were conducted with trial participants. The survey instrument was developed by synthesising selected statements from the *Driver Behaviour Questionnaire* and *Driver Attitude Questionnaire* survey instruments. Qualitative data was gathered through a combination of one-to-one interviews, focus group, telephone interviews and informal in-car interviews.

Results across these different measures indicate, on average, a significant improvement in driving behaviour amongst participants who completed the trial. Of most significance were the drive-check results, which showed sharp improvements across the key measures of

concentration, observation, anticipation, and cornering. These observed results were backed up by IVDR data that, when accumulated, demonstrated a sharp fall in 'driver-events' per hour of drive-time through the life of the trial. Post-trial IVDR data (up to eight months post-trial data) remained at these lower levels, encouraging the belief that the improvements were permanent 'new habits' rather than temporary effects. Finally, pre- and post-survey responses showed improvement in some attitudinal and behavioural aspects of driving.

An unanticipated, but positive outcome was that several of the cohort signed up for the full IAM Skill for Life Advanced Driving Course after completing the project.

In conclusion, results from all measures cumulatively signify that the trial has been very successful in delivering marked improvements in driver skills, and safer driving habits. These early results give grounds for optimism that the approaches trialled here could offer a significant breakthrough in intervention design to address a hitherto intractable behavioural problem.

1. Introduction

Previous attempts to improve the driving of young men from deprived backgrounds have had little success. The West of England Road Safety Partnership (WoERSP) commissioned the Bristol Social Marketing Centre (within the University of the West of England, Bristol (UWE)) to undertake a review of what was known about this issue, with the aim of generating innovative ideas. The resulting proposals were accepted for funding by the Department for Transport (DfT).

The project partners

WoERSP encompasses Bristol City Council, Bath & North East Somerset Council, North Somerset Council and South Gloucestershire Council. It also includes Avon & Somerset Constabulary, Avon Fire & Rescue Service, Highways Agency and NHS Bristol. The Partnership works together to reduce road casualties and promote road safety across the West of England area. WoERSP initiated this project in partnership with the Bristol Social Marketing Centre (BSMC) at the University of the West of England (UWE). BSMC is a centre of excellence that researches ways in which social marketing can help solve difficult behavioural problems.

The project was funded by WoERSP, supported by a Department for Transport Road Safety Partnership Grant, with UWE also contributing staff time. The total budget was £99,800.

2. The problem

Despite a significant decline in overall road user casualties in recent years, a disproportionate number of young drivers continue to be involved in car crashes. In the UK only one in eight drivers is aged under 25, yet one in three drivers who die are in this age group. Hence, young drivers emerged as a key priority for WoERSP.

Literature analysis of road casualty data indicates that there is a close correlation between crash involvement, youth, males, and social deprivation (DfT, 2011b:16). Within Bristol, post code data, based on STATs19 reports, illustrated a clear link between collisions involving young male drivers aged 17-25 from areas of social deprivation.

This audience was therefore identified as the priority group for intervention.

A variety of interventions have been trialled, but with varying degrees of success:

Pre-driver education

These interventions are normally designed to improve the values and attitudes of young drivers before they acquire a full licence. They vary in style and mode of delivery and may involve a practical, off road element. Delivery can include theatre-in-education, talks from a driving instructor, police or fire officer and will vary in the degree of interactivity involved. Presentations may be based on emotional or fear appeals, or may focus on legal issues such as speeding or drink driving, insurance, vehicle maintenance and purchase. Taken as a whole, evidence for the influence of such interventions on subsequent crash involvement is weak (see for example McKenna 2010). One reason may be that fear appeals have little effect on those most likely to be involved in crashes. Males, particularly those suffering the greatest social disadvantage, are better able to deflect such appeals. Either it doesn't apply to them, as they consider themselves to be more skilful drivers, or these approaches merely emphasise the element of risk that motivates their behaviour in the first place.

Pre-driver training may also be counterproductive because it encourages earlier licence acquisition and therefore a higher likelihood of being involved in a collision (McKenna, 2010). In reality driving behaviour is likely to be influenced from a much earlier age, from observing parents' driving, or absorbing attitudes and values from the wider culture. It may be over optimistic to expect short term interventions to counteract these influences.

A rare example of a project that had some positive benefits was the recent Sheffield Drive for Life project.

Drive for Life

Although aimed at learner drivers, many of the young people involved would already have been driving illegally. The project was aimed at 17-19 year olds not in employment, education or training (NEETS) from an area of social deprivation and addressed attitudes

towards driving as well as skill deficiencies including numeracy, literacy and wider life skills. These skills were delivered through road safety and life skills sessions over a ten week period. 60 young people completed the course, which included tuition in preparation for the Theory Test.

The project produced positive 'lifeskills' results with 50 per cent of participants entering either employment or education/training following the programme. The Driver Behaviour Questionnaire (DBQ) showed a small but significant improvement in attitudes towards driving (Sheffield City Council, 2009).

Post-licence education and training

We briefly summarise four recent interventions.

1. Pass Plus

This national programme aimed to overcome the experience deficit among novice drivers by providing additional tuition in night driving, motorway driving, coping with different weather conditions and other risk factors for novice drivers.

However, the impact of the scheme has been limited. Evaluation by WoERSP, as well by the Association of British Insurers (ABI, 2006) has shown that not all drivers received the full range of additional lessons, and that some of these were delivered through discussion rather than practical experience. Take up may have been skewed towards more middle class children, pressurised by parents, who were less likely to be involved in crashes anyway. Another factor limiting take up may have been the relatively small insurance premium reductions offered by the insurance companies.

2. Max Driver

This was an attempt to encourage advanced driver training among "boy racers".

Despite the language and imagery used, which was designed to appeal to that demographic, this collaboration between Max Power magazine and the Institute of Advanced Motorists (IAM) failed to persuade many of the target group to take up the offer.

3. Great Yorkshire Cruise

The Great Yorkshire (street legal) Cruise was an attempt to reach out to and communicate with high-risk younger drivers and 'boy racers' by means of the kind of event – a "show & shine" – that is attractive to the target audience.

Aspects of the event were designed to attract the target group's friends, parents and wider family with a view to having the road safety issues discussed after the event and spreading the message by word of mouth.

The key message of this event was that road safety awareness will lead to better enjoyment of driving in a safe and controlled manner. The event gave an opportunity for young drivers to display their cars at the same time as improving their understanding of road safety. The event was organised in partnership with cruiser groups.

According to the organisers, pre- and post-casualty data showed an 18 per cent reduction in killed and seriously injured casualties, with a control group showing a much lower reduction (Department for Transport, 2009). While not scientifically valid, this result was encouraging and demonstrates the possible success of schemes that seek to make themselves attractive to the audience.

4. Green Road/Staffordshire

This project was also important here as it involved young drivers having “black box” in-vehicle data recorders (IVDR) installed in their vehicles to monitor driver performance. A dashboard display gave drivers instant feedback (red, amber, green events) on their driving style. Parents and young drivers could access an online record of their driving performance, together with advice on how any identified problems could be addressed. The project relied on the leverage of parents as the majority of participants did not own their own vehicle. The project claimed a “66 per cent improvement” in driver performance (it was not clear from the available data exactly what this meant). This outcome provides encouragement for the use of IVDR equipment as both a feedback and measurement device. However, given the important role of parental influence in achieving this outcome, it was felt that a different approach would be needed with young drivers in an area of social deprivation.

Conclusions

The projects summarised above provided some useful ideas for an intervention aimed at a very specific group of young, socially deprived males. In particular, Staffordshire/Green Road demonstrated the value of IVDR as a means of monitoring changes in driver behaviour while Sheffield’s Drive for Life suggested that a face to face, group based intervention was a promising approach. The Great Yorkshire Cruise also highlighted the benefits of co-creation.

3. The insights

Academic input into this project was provided by the Bristol Social Marketing Centre. As part of this, a doctoral student, Ashley Pressley (based at Cardiff University), was given access to the project, and supported by Alan Tapp of BSMC. This PhD work yielded a number of useful theoretical insights. These are briefly summarised here.

The nature of driving behaviour

Psychologists have identified reflective and automatic modes of behaviour. Planned, logical thinking provides a cognitive platform for rational modes of behaviour. But it is also recognised that much of our behaviour is automatic, habitual, sub-conscious and reflexive. Previous experience is used as a heuristic – a ‘by-pass’ to avoid the effort of making fresh decisions each time a behaviour is carried out. Emotions can also act as by-passers to cognitive behaviour: anger or fear often lead quickly to behavioural responses that are faster than thought.

All of these mechanisms are important to understand driving. Our cohort of young men are strongly engaged with driving in the sense that they take an active interest in driving and cars. They therefore have cognitive engagement with driving. However, in common with most people, their driving is inevitably strongly influenced by habits, developed early in their driving lives, and quickly settled upon as ‘automatic’ unthinking ways of behaving. Finally, they are also likely to be affected by moods, or emotions, that may from time to time become dominant forces. Given the specific background of this cohort, anger and aggression may be particular priorities for this programme.

Cultural Capital

The concept of “Cultural Capital”, as described by the French social scientist Pierre Bourdieu, offers a useful framework for understanding the driving behaviour of the young men who were the target of this project. Cultural capital refers to the forms of knowledge, values and language which confer power and status within society. Driving skills and how these are displayed within a group are an example of cultural capital. Cultural capital theory would propose that the core skills for driving are accompanied by cultural ‘rules’ and ‘tastes’ that are socially created and shared. Thus, how one may hold the steering wheel could be construed as ‘cool’ or perhaps worthy of ridicule, according to these rules and tastes.

Hence, cultural capital is just as important for a group of young men from a deprived area as it is for any other group in society. Cultural capital has to be learned – to be acquired - from somewhere or someone. Driving skills, and the surrounding ‘rules’ may be acquired from the individual’s family and community, but may bring that individual into conflict with the ‘dominant culture’. Organisations such as RoSPA or the Institute of Advanced Motorists (IAM) could be viewed as embodying the dominant cultural definition of good

driving. However, such institutions would be viewed as culturally very distant – outside of the worldview of the kind of young men we are concerned with here. Indeed, the forms and practices of these in some ways quite ‘traditional’ institutions (age, language, dress code, etc.) would ordinarily be a deterrent to direct contact. These cultural differences provided a significant, and some ways central, challenge to this project.

One way of conceptualising cultural capital is to present the dichotomy of high and low forms of capital. Advanced driving organisations represent high-brow forms of consumption in the ‘driving field’ where advanced qualifications are used as a tool for conveying status and power amongst likeminded individuals. In contrast, low-brow forms of capital are considered illegitimate according to the dominant culture of a given consumption field. The driving activities of young male drivers – such as ‘meets’ in car parks, car modifications and street racing – sit firmly in the low-brow category.

Importantly each form of the above capitals has value when deployed within its own culture. For example, anecdotes relating to reckless behaviour produce positive results for a young man when deployed amongst likeminded young drivers. Relaying such stories at a meeting of advanced drivers would not yield the same results, in fact this could lead to an individual being ostracised from potentially positive reference groups.

In order for our intervention to work well, a bridge between the two very different cultures was essential. This meant using ‘bridging capital’, which enabled the joining together of disparate groups. Narratives of what is considered good driving within the young men’s culture constituted bonding capital, but created a barrier between them and more elite driving cultures. The challenge, therefore, was to create a bridge between these divergent cultures, such that the young men were able to access the skills and knowledge of the expert drivers. However, this needed to be done in recognition of the fact that it carried ‘social risk’ for the cohort, possibly opening them up to the ridicule of their peers.

The use of social marketing as a way of thinking, and as a process, was seen as key to addressing this challenge. A prominent example of this was to understand why previous interventions’ emphases on ‘safety’ were badly misplaced. For these young men, safe driving was of no interest to them whatsoever – indeed, taking an interest in ‘safe driving’ would have been ‘social suicide’ for them. Early recognition of this was important to our trial: we ‘banned’ the word safety from our work, even between the management group – replacing it with the word ‘skills’ as the core focus of the project.

Social Marketing

Our first strategy was to avoid previous mistakes. Traditional presentations by authority figures, or dissemination of road safety advice through leaflets, posters or media advertising, were unlikely to work with this target group.

In contrast to these simple approaches, social marketing can call upon a variety of sophisticated technologies. In simple terms, social marketing involves the use of commercial marketing technology transferred to public arenas for social good. Social

marketing uses research driven insights to help create an intervention that is designed so that the activity that leads to behaviour change is one that is also very attractive to the 'customer'.

This project deployed a number of key social marketing principles and process elements. These included:

- a. *'Consumer research' and segmentation* – understanding the complexities of the target group and how different elements of that group – according to age, subculture, etc. - would be likely to respond to the project.
- b. *Co-creation and community engagement* – based on the understanding that imposing a project from 'outside' was unlikely to work but needed to be developed in partnership with key members of the target community to have credibility. Co-creation activities built up a strong bond between the project workers and the local community.
- c. *Exchange* – recognition that there were social and personal rewards for those indulging in the kinds of behaviour that we wanted to change. There therefore needed to be compensatory elements to balance the sacrifices we would be asking them to make.
- d. *The importance of the concept of "cool"* (see the work of Bird and Tapp, 2008) – it was recognised from the outset that, for this group, road safety is not perceived as being 'cool', that is, of symbolic social value. This would be a serious potential barrier to engaging with young men, for whom there would be social risk in engaging with a project which ran counter to social and cultural norms. These ideas created a mentality for the project design that was to prove important in attracting and keeping the cohort. The project therefore took account of social meanings around driving and car ownership by infusing these into the project design.
- e. *Overcoming misperceptions* - It was recognised that young male drivers have a tendency to overestimate their own driving ability, and were initially reluctant to engage in driver training. Social marketing's emphasis on making activities fun and attractive was key in the early stages of the project.

These components were all used to inform the intervention design. The cohort themselves chose the name for the project: Wheels, Skills and Thrills.

4. The solution: Wheels, Skills and Thrills

The project was managed by a team drawn from the major partners: Bristol City Council, Bristol Social Marketing Centre, Bristol Advanced Motorists (IAM), and IVDR partners Alpha Micro Components (AMC). This management team researched and designed the intervention and managed its implementation.

The intervention was developed organically, based both on academic research and a close examination of the existing models outlined above. A coaching element and IVDR technology were identified as essential elements at an early stage and so the IAM and AMC were incorporated into the management team for their specialist expertise.

It was decided that the intervention would incorporate the following elements:

- ✓ A discreet geographical area
- ✓ Research based insights and a possible segmentation of the target group
- ✓ A manageable cohort
- ✓ Specific behaviour change elements to address cognitive, emotive and automatic behavioural mechanisms
- ✓ An incentive to attract and retain the cohort
- ✓ Multiple, objective measures of any behaviour change including evaluation through qualitative and quantitative measures.

The rationale for each of these is briefly discussed:

Target area

A review of the Stats 19 and social monitoring data led to the choice of Lawrence Weston, a deprived ward within Bristol, as an appropriate area for this project. Lawrence Weston fitted the requirements of the project in that it is a discrete community, a low income area with a high number of RTCs involving young men.

Lawrence Weston is a tightly knit, post-war housing estate on the northwest fringe of Bristol. It is an area with a strong local sense of identity, but many social problems such as unemployment and family breakdown. It has a predominantly white population with relatively low educational attainment. It is one of a number of areas where road casualty data shows a strong preponderance of young male drivers. The design of the estate does little to discourage speeding, with wide straight roads dissecting the area. There is a history of antisocial use of vehicles, including unlicensed and uninsured driving, speeding, nuisance from mopeds, etc.

Target group size and description

In the early stages of the intervention an ethnographic study of the target population was carried out. This study included observation and qualitative research. The aim was to gain a greater understanding of young men in the area, their attitudes and habits in relation to driving, to identify influential individuals within the community, and to gain a better understanding of how information flows within and between groups.

This study showed the importance of age as a factor. Younger males (17-18) tended to engage in “joy riding” and illegal driving, whilst 19-25 year olds developed a different attitude towards driving, often involving boy racer type modifications to their vehicles. While the driving style may still be reckless, they were more likely to keep their vehicles legal and have a degree of pride in them. It was this group that seemed most likely to respond to the project objectives.

A tentative quasi-segmentation of the target group generated five segments:

Segment 1: “Acers”

The *Acer* is an acronym for Alcohol, Cannabis and Ecstasy. “*Acers*” are drivers who are involved in anti-social and illegal driving activities. These individuals are adrenaline seekers using both cars and motorcycles as a way to demonstrate recklessness and bravado. They lack the necessary income (due to low educational attainment and low employment prospects) required to undertake legitimate driver training but have the technical know-how needed to drive a vehicle. This knowledge is normally derived from illegal driving or informal coaching from older drivers of the community who are negative role models.

They belong to small groups of likeminded individuals who experience similar life disadvantages who provide legitimacy and safety despite the obvious negative influence of such peer groups. Illegal driving is symptomatic of a reckless attitude towards life in general, minimal parental support and scepticism towards those in positions of authority. Such individuals are normally known to local Youth Inclusion Project (YIP) and other statutory agencies.

Segment 2: “Pay as you Goer’s”

The term ‘*Pay As You Go*’ was applied to this segment due to their frequent vehicle changes. These individuals are often employed but have limited disposable income. They have full driving licences but drive low-cost vehicles that often cost between £50 - £100. This segment warrant further driver training but frequent car changes render long term observation through the use of IVDR challenging. They treat cars as disposable items. Due to the frequency of vehicle changes this segment are likely to have incomplete documentation (i.e. tax, mot and/or insurance).

Segment 3: “Maxers”

Named after their favourite magazine Max Power, the *Maxer* segment is typically made up of younger drivers (17 – 19) who are new to driving. They own vehicles that are used as mechanisms of self-expression and identity creation. Their vehicles are often cosmetically modified including bodywork modifications and expensive installations of in-car entertainment (ICE) such as stereo systems and loud speaker installations. This segment is likely to keep and maintain a vehicle over a longer period of time. *Maxers* are accepting of high insurance premiums which often consume the majority of their disposable income.

Segment 4: “Petrol Hedonists”

In contrast to the ‘*Maxer*’ segment, ‘*Petrol Hedonists*’ tended to modify the *mechanical* components of their vehicles. For this segment, car modifications are about vehicle performance rather than aesthetics. This segment is typically older and employed in more skilled vocations leading to a higher level of disposable income.

Segment 5: “Settle Downers”

‘*Settle Downers*’ may have belonged to some or all of the previous segments. However, life circumstances or improvements in maturity have led to different choices in vehicle types and driving style. As the title suggests, the members of this segment have settled down with a partner and may have a family. They could be susceptible to occasional reckless tendencies but are generally more responsible drivers, however with a set of driving ‘bad habits’ that remain potentially dangerous.

The intervention targeted segments 3, 4 and 5. Segments 1 and 2 were considered beyond the scope of this project.

Recruitment: A fusion of community engagement and incentivisation

The initial aim was to recruit around 50 young drivers over the course of the programme, in two waves of 25, to allow for the limited supply of IAM coaching volunteers. In spite of the incentives on offer, recruitment proved to be difficult and time consuming, reinforcing the ‘hard to reach’ nature of much of the target audience. A total of 42 drivers were recruited to the programme, many of whom had very difficult backgrounds, and for whom any ongoing relationship was difficult. Of these, 32 engaged with the coaching at various levels of commitment, and in total 23 completed the entire course.

The young men recruited for the project had typically disengaged from education at a relatively early age, had experience of family breakdown and a history of involvement with the criminal justice system. Their driving history reflected this, with large numbers of crashes and convictions.

Of the final 42 drivers recruited to the programme:

- 9 drivers did not complete statutory mainstream education
- 11 drivers had experienced police involvement with their lives
- 4 drivers were subject to YOT orders
- 2 drivers were subject to probation orders
- 2 drivers had previously received a custodial sentence
- 31 drivers had licence points

Significantly for this project, our cohort (with an average age in their early twenties) exhibited an alarming RTC profile:

| Previous RTCs | No of cohort |
|----------------------|---------------------|
| 0 | 5 drivers |
| 1 | 14 drivers |
| 2 | 9 drivers |
| 3 | 2 drivers |
| 4 | 2 drivers |
| 5 | 2 drivers |

A project manager was appointed with close knowledge of the target community. As a Youth and Community Worker and a local resident, he had a status within the area that gave credibility to the project as well as access to the target group. The reputation of this individual played a significant role in overcoming initial scepticism that can prevent interventions in such tight knit areas gaining traction. His own relationships with many within the cohort proved to be very important in generating a spirit of co-creation of the project, with cohort involvement in decision making throughout. From the early stages the project manager instigated informal feedback mechanisms that led to ongoing subtle modifications to the design and delivery of the intervention.

Initially, four “Team Leaders” were recruited to the project. They were given a role in designing the intervention and used to test some initial ideas, including coaching elements, promotion and recruitment. While some marketing materials were produced (see Appendix 7), and door-drops were trialled as recruitment media, in the event word of mouth proved to be the most effective method of recruitment. The Team Leaders were crucial for developing the intervention in ways that would be attractive to their peers. This included the title of the project – *Wheels, Skills and Thrills*. Team Leaders also pre-tested some of the elements – for example, demonstration drives by the IAM observers, and they were, therefore, able to recommend them to their friends. Monthly karting sessions were also provided. These acted as an incentive for participation, but also as a focal point to give some structure, and a social element, to the project.

Karting events provided an opportunity for participants to socialise as a group and facilitated communication between the cohort and the management team. These events afforded the opportunity to provide information to the cohort on future coaching dates,

IVDR scores, karting times (from previous events) and other general information. These events also allowed participants the opportunity to provide feedback on the intervention to allow small changes to be made where possible.

Behaviour change components

In Vehicle Data Recorders

In Vehicle Data Recorders (IVDRs) are accelerometers combined with GPS capability and a mobile signal, lodged in 'black boxes' that are securely fastened to the vehicle. These IVDRs identified 'driving events'. These were occasions where braking or cornering forces were outside what would be considered normal levels, as calibrated by the IAM team members. These breaches were divided into mild 'Amber' and more serious 'Red' events, the latter being similar to an emergency stop or extremely hard cornering. As an experienced and competent driver would usually avoid this kind of situation, occurrence of these events was used as a proxy for poor driving technique.

The IVDR device sent real time data to a server, which stored and supplied the data. The IVDR black box included a tracker which enabled vehicles to be traced in the event of theft, which provided an additional incentive for participation.

Driver feedback was delivered through an LED light fitted within driver eyesight. The fitting was carried out by the participants themselves, enabling them to choose the most appropriate location for them within the vehicle.

Thus, the use of IVDR boxes had a number of roles. Firstly it was hoped that the dashboard in-car feedback of aggressive events – if appropriately incentivised – would modify the cohort's driving. Secondly, the IVDR data would be used as the primary *objective* measure of the success or otherwise of the project. Finally, these 'black boxes' also gave a technological credibility to the project which would enhance its appeal to the target group.

As the project unfolded it became clear that to incentivise based on in-car feedback was operationally problematic. One idea had been to create a 'competition' amongst the cohort consisting of monthly 'winners' awarded to those with the least number of events. However, such competitions would thrive on stable environments, and on the ability of the young men to adopt a mature attitude to competing with others on a friendly basis. This proved too challenging, and a decision was made therefore to move to a behaviour change model based more solidly on a (modified) coaching design. This design was agreed upon for the full trial, and the details are discussed next.

Coaching

IVDR feedback on its own had significant limitations. It contained no inherent coaching or cognitive component that enabled reflective learning to take place. It also focused rather narrowly on vehicle handling, providing no opportunity to up skill in key areas of skilful driving, in particular, concentration, observation and anticipation of other traffic and road conditions.

For these reasons the project emphasis moved to ways in which it would be possible to engage the cohort with driver skills coaching provided by the Institute of Advanced Motorists. Here, principles of social marketing were used to help IAM partners modify the design of the standard IAM “Skill for Life” package, focusing on aspects of driving that were most likely to be of interest to the cohort whilst also addressing deficiencies that contributed to their risky behaviour. As discussed earlier, it was also recognised from the outset that any coaching would need to be promoted on the basis of *driver skills* rather than safety in order to be attractive. The coaching syllabus was designed to ensure emphasis was placed on observation, anticipation and hazard perception skills prior to more dynamic aspects such as vehicle positioning and cornering.

An initial *demonstration drive* was undertaken with the cohort. The demonstration drive was one of the most potent elements of the intervention. Participants were invited to accompany a qualified observer (IAM trained instructor) along a pre-defined test route. Often the observer would be accompanied by one or two of the cohort offering the opportunity for peer-to-peer discussion about specific driving techniques.

The demonstration drive allowed the participant to observe the style and technical aspects of advanced driving. This drive – during which a running commentary was normally provided - was instrumental in showing the cohort that the observers could drive *progressively* without sacrificing safety. It demonstrated to the cohort the standard of driving that could be achieved if they continued to engage in the training aspect of the intervention.

Coaching consisted of an initial driver assessment (“drivecheck”), demonstration drive, six coaching sessions and a final driver assessment. Coaching was provided by observers drawn from local IAM and RoSPA groups. Observers were selected for an enthusiasm and capacity to empathise with the cohort - a group of young men very different from ‘typical’ IAM associates. This required careful selection from a larger pool of observers, two of whom resigned after initial coaching as they decided it “wasn’t for them”. IAM project partners undertook extensive briefings with the coach volunteers to emphasise the bespoke design of the coaching scheme.

5. Outcomes

Outcomes were measured through a number of methodologies. The primary objective measure was the IVDR data that measured pre-during-post trial reductions in aggressive driving manoeuvres. The next level of measure was provided by the pre-post drive checks, carried out prior and after the intervention by trained IAM observer-assessors. This provided an observed measure of the effects of the intervention on driver behaviour. Finally, pre-post trial self assessments of driver attitudes and behaviours were provided by the cohort themselves.

These multiple measures were assessed for consistency by asking whether each specific measure provided similar trends. This technique is known as triangulation, and provided a robust assessment of the validity of each data set.

IVDR data analysis

The analysis of this data was undertaken by Dr Paul White of the Mathematics and Statistics dept at UWE. His complete report to the steering group is published separately.

The data is based on $n = 23$ participants described elsewhere as the “main” group. Structurally similar data is available on $n = 13$ described elsewhere as the “control” group. The following analyses are based on the data from the $n = 23$ [although missing values reduce the effective sample size in specific analyses].

The data is recorded over nine consecutive time intervals, referred hereafter as Event 1, Event 2, though to Event 9. Within each event window there is a record of the total number of amber events and number of red events along with drive duration. The amber event rate is the number of amber events divided by drive duration. The red event rate is the number of red events divided by the drive duration.

Amber/red rates for two event intervals indicate whether a participant has improved or worsened when viewed longitudinally (essentially producing binary data) but cannot be used to directly compare two different drivers driving different cars. For this reason the relative amber drive rate is defined as:

$$\frac{\text{Amber rate}[\text{Event } j]}{\text{Amber rate}[\text{Event 1}]}$$

with a similar definition for the relative red rate. This index is essentially a performance measure relative to baseline and is similar to a percentage change. In the absence of an intervention effect the expected value of the relative event rate would be unity.

The data analysed in this report contains missing values. These arise if the time of an event is not known, e.g. if time of Event 2 is not known but time of Event 1 and Event 3 is known then either a backfill or a carry forward imputed value for Event 2 could be made. Doing so

might mitigate against the discovery of significant effects; not doing this may reduce effective sample size and result in the non-discovery of effects.

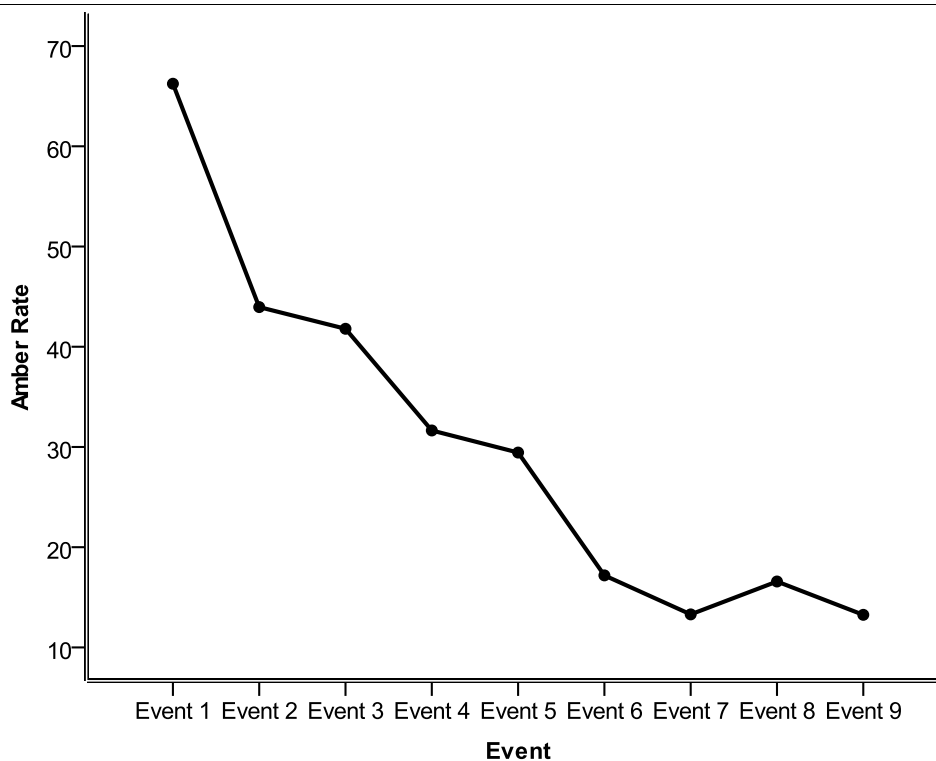
Amber rate and relative amber rate

A count of the number of positive changes and the number of negative changes in amber rates between any two events [Event j, and Event k] may be performed. These counts may be examined for evidence of a systematic change using the Sign test. This approach using the amber rate is defensible as it does not compare rates between drivers and their cars but compares changes within a driver.

The Table below presents the changes in amber rate relative to Event 1 [baseline data]. The p-value reported is the p-value from the Sign test and $p < 0.05$ indicates a statistically significant effect.

Table 1: Count of changes in amber rate relative to Event 1

| Event | Improvement | Worsening | Sample Size | p-value |
|---------|-------------|-----------|-------------|---------|
| Event 2 | 7 | 6 | 13 | 1.000 |
| Event 3 | 8 | 4 | 12 | .388 |
| Event 4 | 11 | 1 | 12 | .006 |
| Event 5 | 10 | 0 | 10 | .002 |
| Event 6 | 13 | 0 | 13 | <.001 |
| Event 7 | 9 | 0 | 9 | .004 |
| Event 8 | 9 | 0 | 9 | .004 |
| Event 9 | 10 | 0 | 10 | .002 |

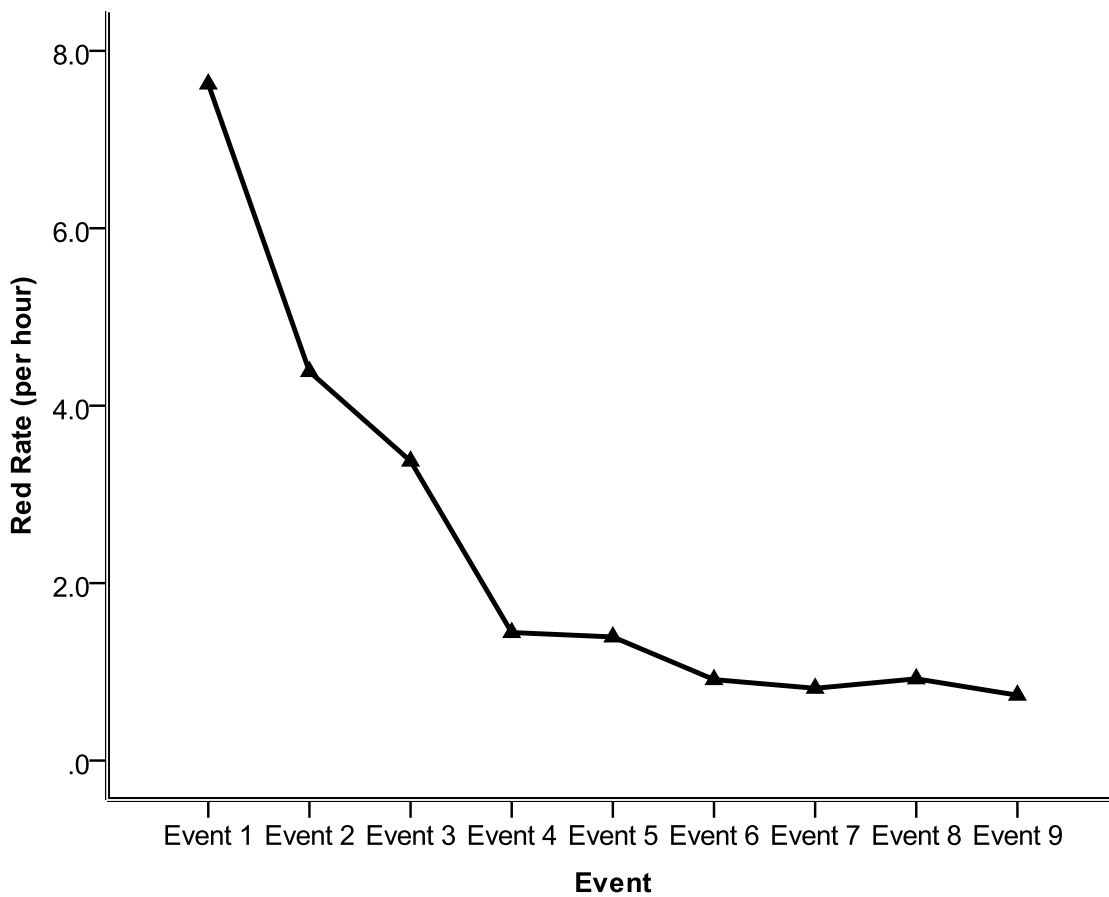


Red rate and relative red rate

The preceding analyses for the amber rate and the relative amber rate have been reproduced using the red rate and the relative red rate.

Table 2: Count of changes in red rate relative to Event 1

| Event | Improvement | Worsening | Sample Size | p-value |
|---------|-------------|-----------|-------------|---------|
| Event 2 | 7 | 6 | 13 | 1.000 |
| Event 3 | 5 | 7 | 12 | .774 |
| Event 4 | 9 | 3 | 12 | .146 |
| Event 5 | 7 | 3 | 10 | .344 |
| Event 6 | 11 | 2 | 13 | .022 |
| Event 7 | 9 | 0 | 9 | .004 |
| Event 8 | 8 | 1 | 9 | .039 |
| Event 9 | 8 | 2 | 10 | .109 |

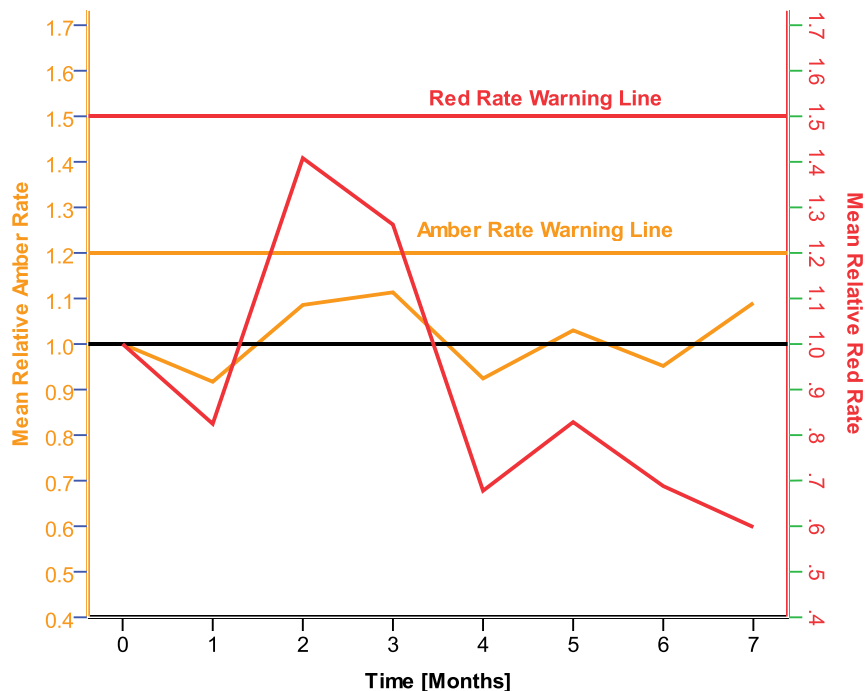


Summary of IVDR analysis

Both graphs demonstrate a sharp and sustained decline in both red and amber events based on the parameters set at the outset to define desirable driving performance. The initial sharp drop in red events precedes the start of coaching and suggests that engagement in the trial in itself had an immediate effect. As hoped, the initial coaching sessions, including the demonstration drive, appear to have had a significant impact, while subsequent coaching seems to have maintained newly established driving patterns.

Post trial behaviour: more detailed analysis

The graph below illustrates the findings with respect to post trial retention of the improved driving behaviour. Time zero represents the end of the first data collection period. The mean monthly relative amber rate and the mean monthly relative red rate for the remaining participants is calculated for each of the seven months. The black line ($Y = 1$) represents no change in either the relative amber rate or relative red rate and a position of no change would occur if there is random deviation around this line. An amber rate warning line and a red rate warning line is superimposed on the graphic. A breach of the amber rate warning line for amber or a breach of the red rate warning line would indicate that previously obtained benefits had not been maintained and that there was evidence of a worsening mean behaviour. No such breaches are observed. [In fact the number of participants changes over time and both the red rate warning line and amber rate warning lines should be changing step functions; this would make the graphic a lot more complex, harder to explain, but would not change conclusions; for simplicity of exposition two simple warning lines are put on the graphic.]



Dr White concluded that the mean relative amber rate and relative red rate had not reverted to past historic values and is entirely consistent with the claim made here that the driving improvements created by the intervention have been maintained in the post trial analysis period.

Drivecheck outcomes

'Drivechecks' are visual assessments of driver performance based on observed drives by IAM Observers. A test route was designed which incorporated different road types, speeds and hazards. The test route was used during both before and after drivechecks to monitor behaviour change along a consistent route.

Pre- and post-intervention drivechecks were undertaken, with scores for each driver compared for signs of improvement. These are based on the standard criteria used by the IAM to conduct driver assessments and therefore provide a useful benchmark for this cohort. In total 22 drivers completed both entrance and exit drivechecks. All but two drivers achieved an improvement in their scores, with the average score changing from 34 per driver before coaching to 21 per driver after (lower scores reflect improved driving). The potential for observer bias was recognised and hence, where possible, the same observers conducted both drivechecks.

Table 3: Pre-post drivecheck scores for 22 drivers

| Drivecheck Results | | |
|---------------------------|-------------|-------------|
| | Pre | Post |
| Driver 1 | 33 | 15 |
| Driver 2 | 25 | 17 |
| Driver 3 | 33 | 36 |
| Driver 4 | 40 | 18 |
| Driver 5 | 36 | 17 |
| Driver 6 | 30 | 31 |
| Driver 7 | 33 | 14 |
| Driver 8 | 41 | 17 |
| Driver 9 | 35 | 17 |
| Driver 10 | 32 | 25 |
| Driver 11 | 33 | 27 |
| Driver 12 | 39 | 14 |
| Driver 13 | 37 | 23 |
| Driver 14 | 42 | 28 |
| Driver 15 | 31 | 14 |
| Driver 16 | 28 | 25 |
| Driver 17 | 36 | 17 |
| Driver 18 | 30 | 19 |
| Driver 19 | 32 | 26 |
| Driver 20 | 25 | 21 |
| Driver 21 | 35 | 16 |
| Driver 22 | 40 | 18 |
| Average Score | 33.9 | 21 |

The assessments indicate a clear improvement across the board for the group as a whole and lend confidence to the interpretation of IVDR data.

In summary, the improvement in driving behaviour indicated by the IVDR data is corroborated by the drive checks.

Self assessment surveys

Surveys were administered at the entrance and exit phases of the project. The surveys were stripped down versions of the standard *Driver Behaviour* and *Driver Attitude Questionnaires*. The survey sheet is shown in Appendix 4.

In total 23 drivers completed the entrance and exit surveys. The results across the cohort showed significant positive changes for questions relating to tailgating, braking and unofficial “races” with other drivers. There was no significant change in relation to any of the other items.

Wheelskills and Thrills – Entrance Survey
June 2010

Thank you for taking the time to complete this survey. Please complete both sections using your first response to each of the 19 statements.

Section A:

To what extent do you agree with each of the following statements?

| | I strongly disagree | I disagree | I neither agree nor disagree | I agree | I strongly agree |
|--|---------------------|------------|------------------------------|---------|------------------|
| 1. Some people can drive safely even though they only leave a small gap behind the vehicle in front | 1 | 2 | 3 | 4 | 5 |
| 2. I get wound up if someone over takes me | 1 | 2 | 3 | 4 | 5 |
| 3. Even overtaking in a slightly risky situation makes you less safe as a driver | 1 | 2 | 3 | 4 | 5 |
| 4. Sometimes I drive aggressively for the fun of it | 1 | 2 | 3 | 4 | 5 |
| 5. Sometimes you have to drive in excess of the speed limit in order to keep up with the flow of traffic | 1 | 2 | 3 | 4 | 5 |
| 6. I think I am an above average driver | 1 | 2 | 3 | 4 | 5 |
| 7. I think it is okay to overtake in risky circumstances as long as you drive within your own capabilities | 1 | 2 | 3 | 4 | 5 |
| 8. My style of driving changes depending on who is in my car | 1 | 2 | 3 | 4 | 5 |
| 9. It annoys me when other drivers make mistakes | 1 | 2 | 3 | 4 | 5 |
| 10. On the whole people aren't aware of the dangers involved in close following | 1 | 2 | 3 | 4 | 5 |

Pre – Post Test Statistics^b

| | Small Gap | Wound Up | Overtake Risky | Excess Speed | Above Average | Own Capabilities | Style/Who Annoy/Mistakes | Dangers/Close | | |
|---|-----------|----------|----------------|--------------|---------------|-------------------|--------------------------|---------------|------|------|
| P | .022 | 1.000 | .210 | .302 | .302 | .581 ^a | 1.000 | .146 | .774 | .012 |

b. Sign Test

In a similar way, Section B of the survey relates to aspects of behaviour. Significances are observed on Item 7 (Races) and Item 9 (Braking) but not on other items.

Wheelskills and Thrills – Entrance Survey
June 2010

Section B:

For each driving behaviour described in the table below, please indicate how often the behaviour happened to you in the last three months. Please indicate this by circling a number in each line.

| | Never | Hardly ever | Occasionally | Quite often | Frequently | Nearly all the time |
|---|-------|-------------|--------------|-------------|------------|---------------------|
| 11. Drive especially close to the car in front as a signal to the driver to go faster or get out of the way | 0 | 1 | 2 | 3 | 4 | 5 |
| 12. Realise that you have no clear recollection of the road along which you have just been travelling | 0 | 1 | 2 | 3 | 4 | 5 |
| 13. Cross a junction knowing that the traffic lights have already turned against you? | 0 | 1 | 2 | 3 | 4 | 5 |
| 14. On turning left, nearly hit a cyclist who has come up on your inside | 0 | 1 | 2 | 3 | 4 | 5 |
| 15. Underestimate the speed of an oncoming vehicle when overtaking | 0 | 1 | 2 | 3 | 4 | 5 |
| 16. Fail to check your rear view mirror before pulling out, changing lanes, etc. | 0 | 1 | 2 | 3 | 4 | 5 |
| 17. Get involved in unofficial "races" with other drivers | 0 | 1 | 2 | 3 | 4 | 5 |
| 18. Get into the wrong lane when approaching a roundabout or junction | 0 | 1 | 2 | 3 | 4 | 5 |
| 19. Brake too quickly on a slippery road, or steer the wrong way into a skid | 0 | 1 | 2 | 3 | 4 | 5 |

2

Test Statistics^c

| | Signal/Faster | Recollection | Junction/Cross | Left/Cyclist | Speed/ Oncoming | Rear View | Races Post - | Wrong Lane | Braking |
|---|---------------|--------------|----------------|--------------|-----------------|-----------|--------------|------------|---------|
| Z | -1.76 | -.480 | -1.03 | -1.41 | -.583 | -.641 | -2.99 | -.905 | -2.81 |
| p | .088 | .631 | .303 | .157 | .560 | .521 | .003 | .366 | .005 |

c. Wilcoxon Signed Ranks Test

Test Statistics^b

| | Signal/Faster | Recollection | Junction/Cross | Left/Cyclist | Speed/Oncoming | Rear View | Races | Wrong Lane | Braking |
|---|---------------|--------------|----------------|--------------|----------------|-----------|-------|------------|---------|
| p | .227 | 1.000 | .388 | .375 | .754 | 1.000 | .003 | .549 | .004 |

a. Binomial distribution used.

b. Sign Test

Interviews

Interviews were conducted both with participants of the intervention and observers tasked with coaching the cohort. These interviews explored the views and motivations of participants, their reasons for taking part and the benefits they felt they had gained from the project.

Extracts from some of these interviews are included in Appendix 4.

Other outcomes

In addition to these measured outcomes, there were several unexpected, but very positive, outcomes of the project.

In various informal ways, the young men engaged with the project have benefited from incidental information, advice and contacts resulting from their engagement. These included outcomes relating to housing, debt management, benefits advice, employment support, and employment gained through support. The project team noted that the act of engagement – with the project itself, and with stable society in the shape of the IAM volunteers – helped to engineer a pathway to social engagement for some of the cohort who had hitherto found this difficult.

A more directly road safety related outcome is that, to date, 15 of the young drivers have signed up for the full Skill for Life IAM driving course, with 5 of them having already successfully completed the course. This represents a very significant change in the aspirations of the cohort and one which they were extremely unlikely to have even considered at the outset.

7. Conclusions and recommendations

The results from Section 6 indicate that this intervention has achieved significant improvements in driving behaviour among this group. Given that young males from deprived backgrounds are notoriously resistant to traditional road safety interventions, this is, to say the least, encouraging.

The intervention design fused together community engagement and bespoke coaching, underpinned by social marketing principles. The centrepiece of the project was the relationship between the IAM Observers and the cohort of young men. It is difficult to overstate the challenges that this project overcame in bringing these two very different communities together. The success of this relationship was attributed to a number of 'catalysts', described in the report. The project's emphasis on skills rather than safety helped to bridge the potential cultural barrier between the cohort and the Observers through a shared interest in cars and skilful driving. The careful briefing of the Observers, and their own work in redesigning the Skills for Life course meant that they were able to act as role models despite the cultural and age gap and were perceived as possessors of valued forms of knowledge. The demonstration drives were also catalytic in selling the project and bridging a gap between the values attached to driving by the group and those of the advanced drivers. The initial engagement of the four "Team Leaders" in co-creation of the project and their role in dissemination and recruitment probably helped to lend authenticity to the 'project brand'.

Behind the IAM-cohort link lay another crucial relationship: that of the Youth Worker who was also project manager for the project. His credibility in the local area as part of the management team was key. His extensive knowledge and experience of working with young people gave valuable insight into the social dynamics of the area and the ways in which information was shared. It enabled continuous feedback about the project and allowed adaptations to be made as things developed. In terms of the Bourdieu model described earlier, the group possessed strong bonding capital and weak bridging capital, so credibility depended on a trusted source within the community being identified strongly with the project. Initial attempts at promoting the project through leaflets and a You Tube video were unsuccessful, even though the four team leaders had helped in their production. The local contact proved invaluable in recruiting for the project by word of mouth (snowballing), which proved to be the most effective method.

Retention was as challenging as recruitment. It was understood from the outset that securing ongoing commitment was going to be challenging. Other groups seeking to repeat this model need to resource retention accordingly: significant energy was spent in securing basic commitments and ensuring promises were kept. These difficulties also required patience from observers who understood that some of the cohort had relatively chaotic lifestyles and could not always be relied upon. We note that despite these safeguards, nearly half of the original cohort failed to complete all the coaching elements. Those seeking to repeat this model need to clearly understand the nature of the group they will be working with and be able to plan accordingly.

Backing up these relationships were the technological and incentive components of the project: the IVDRs, and monthly karting sessions. These enabled 'exchanges' to take place – offering tangible rewards in return for participation. We noted that the karting component proved to be an effective recruitment tool, however its importance appeared to diminish as the project developed. The coaching and the casual socialising associated with karting then became more important in maintaining commitment to the project.

We expect that future road safety interventions aimed at young people will lean towards a dependence on private funding, probably from the insurance industry sector. However, such models are likely to be based on simplistic models of self-taught driving improvement driven by IVDR technology. This may have good returns for mainstream society, but we doubt if they would provide adequate returns for hard to reach young males. Given their high risk, we believe there is a clear case for a bespoke model of the type described in this report.

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Glossary

| | |
|---------------|--|
| ABI..... | Association of British Insurers |
| AMC | Alpha Micro Components |
| BSMC | Bristol Social Marketing Centre |
| DBQ | Driver Behaviour Questionnaire |
| DfT | Department for Transport |
| G-G Kite..... | A model of longitudinal and latitudinal g-force. |
| IAM..... | Institute of Advanced Motorists |
| ICE | In Car Entertainment |
| IVDR..... | In-Vehicle Data Recorder |
| NEETS | Not in employment, education or training scheme |
| NHS..... | National Health Service |
| RoSPA..... | Royal Society for the Prevention of Accidents |
| RTC..... | Road Traffic Collision |
| STATs19 | Collision report forms |
| UWE | University of the West of England, Bristol |
| WoERSP | West of England Road Safety Partnership |
| YIP | Youth Inclusion Project |
| YOT | Youth Offending Team |

Appendix 1: IVDR Procedures

a) Blind data. In order to understand the effects of the pilot, the management team required a benchmark of driving behaviour. IVDR units were installed in participants' vehicles up to one month prior to the start of coaching. During this time participants were not given any feedback on their driving via verbal coaching or LED outputs. The first drivecheck marked the end of the blind period.

b) LEDs. On completion of the blind period, participants were given the LED loom which could be self-installed by attaching the loom to the IVDR unit. Participants were then able to see the dynamic parameters on which they would be judged via a LED output.

Participants could choose where they wished the LED unit to be displayed offering the opportunity for customisation. Some of the cohort chose to hard-wire the loom into their vehicle, others chose less intrusive means of displaying the lights.

A short period of experimentation where the cohort would test the parameters of the IVDR unit and the corresponding green, yellow or red outputs, was anticipated.

The IVDR data shows a dramatic initial decline in average red and amber events across the cohort. This improvement in performance occurs very early in the intervention, suggesting a strong influence from the demonstration drive. The impact of coaching is also evident from the maintenance of the initial improvement and a continuing decline in the average red and amber events recorded. This improvement appears to have been maintained in the six months or so from the final stage of the intervention until the IVDR data collection ended.

Appendix 2: Drive Check Sheets

| Wheels, Skills and Thrills - Check drive 1/2 | |
|---|--|
| Date | <input type="text"/> |
| Driver Name | <input type="text"/> |
| Car - make/model | <input type="text"/> |
| Observer | <input type="text"/> |
| | 1 - 5 1=SFL test ready 3=average 5=needs development |
| 1 Vehicle Knowledge <small>engine, fwd/rwd, abs, esp, driving position, POWDER, belt/head restraints</small> | <input type="text"/> |
| 2 Observation <small>ahead, behind, mirrors(3), cross-views, scanning</small> | <input type="text"/> |
| 3 Anticipation <small>can see, can't see, expect to happen, blind spots, dead-ground, worst that can happen?</small> | <input type="text"/> |
| 4 Planning <small>plan for worst, arrive at hazards as they clear, early posn, hold back</small> | <input type="text"/> |
| 5 Vehicle Sympathy <small>smooth progressive inputs, braking fff, rev-matching, rev-range</small> | <input type="text"/> |
| 6 Positioning <small>safety bubble, safety, vision, stability, t-on-t, following posn 2 secs+, LH/RH bends</small> | <input type="text"/> |
| 7 Cornering <small>stop in distance you can see to be clear, limit point, speed,posn, gear b4 corner, slow in fast out, add power in bend, lift-off oversteer</small> | <input type="text"/> |
| 8 Overtaking <small>when and when not to, hazards, view around vehicle ahead,position, don't surprise, place to 'land', half the distance, don't commit,</small> | <input type="text"/> |
| 9 Mind-Set <small>restraint/progress balance, keep cool, courteous/empathy, learn from mistakes, progress in built-up areas</small> | <input type="text"/> |
| 10 Motorways <small>joining/leaving, extended vision, space, others blind spots, concentration</small> | <input type="text"/> |
| 11 Driving Rules <small>HWC, dual-carriageway limit, hatched areas, signs</small> | <input type="text"/> |

Appendix 3: Survey Sheets

Wheelskills and Thrills – Entrance Survey
June 2010

Thank you for taking the time to complete this survey. Please complete both sections using your first response to each of the 19 statements.

Section A:

To what extent do you agree with each of the following statements?

| | I strongly disagree | I disagree | I neither agree nor disagree | I agree | I strongly agree |
|--|---------------------|------------|------------------------------|---------|------------------|
| 1. Some people can drive safely even though they only leave a small gap behind the vehicle in front | 1 | 2 | 3 | 4 | 5 |
| 2. I get wound up if someone over takes me | 1 | 2 | 3 | 4 | 5 |
| 3. Even overtaking in a slightly risky situation makes you less safe as a driver | 1 | 2 | 3 | 4 | 5 |
| 4. Sometimes I drive aggressively for the fun of it | 1 | 2 | 3 | 4 | 5 |
| 5. Sometimes you have to drive in excess of the speed limit in order to keep up with the flow of traffic | 1 | 2 | 3 | 4 | 5 |
| 6. I think I am an above average driver | 1 | 2 | 3 | 4 | 5 |
| 7. I think it is okay to overtake in risky circumstances as long as you drive within your own capabilities | 1 | 2 | 3 | 4 | 5 |
| 8. My style of driving changes depending on who is in my car | 1 | 2 | 3 | 4 | 5 |
| 9. It annoys me when other drivers make mistakes | 1 | 2 | 3 | 4 | 5 |
| 10. On the whole people aren't aware of the dangers involved in close following | 1 | 2 | 3 | 4 | 5 |

Section B:

For each driving behaviour described in the table below, please indicate how often the behaviour happened to you in the last three months. Please indicate this by circling a number in each line.

| | Never | Hardly ever | Occasionally | Quite often | Frequently | Nearly all the time |
|---|-------|-------------|--------------|-------------|------------|---------------------|
| 11. Drive especially close to the car in front as a signal to the driver to go faster or get out of the way | 0 | 1 | 2 | 3 | 4 | 5 |
| 12. Realise that you have no clear recollection of the road along which you have just been travelling | 0 | 1 | 2 | 3 | 4 | 5 |
| 13. Cross a junction knowing that the traffic lights have already turned against you? | 0 | 1 | 2 | 3 | 4 | 5 |
| 14. On turning left, nearly hit a cyclist who has come up on your inside | 0 | 1 | 2 | 3 | 4 | 5 |
| 15. Underestimate the speed of an oncoming vehicle when overtaking | 0 | 1 | 2 | 3 | 4 | 5 |
| 16. Fail to check your rear view mirror before pulling out, changing lanes, etc | 0 | 1 | 2 | 3 | 4 | 5 |
| 17. Get involved in unofficial "races" with other drivers | 0 | 1 | 2 | 3 | 4 | 5 |
| 18. Get into the wrong lane when approaching a roundabout or junction | 0 | 1 | 2 | 3 | 4 | 5 |
| 19. Brake too quickly on a slippery road, or steer the wrong way into a skid | 0 | 1 | 2 | 3 | 4 | 5 |

Appendix 4: Interview extracts

Recruitment:

We have already mentioned the difficulties of recruitment. The leafleting was of limited effectiveness. Importantly the cohort grew in number through word of mouth after the implementation phase had begun. Once we had overcome the initial scepticism shown by the small group, friends and colleagues of early innovators began to sign up and engage with the intervention.

"I heard about it through a friend that was already doing it, I think he had done one session before and he mentioned it and it just went from there".

"Through X, he said about it and Y as well, do you know Y? He was saying about it and I came up when he was doing his drive, his first...what's it called?"

"One of my good friends is on his way down but an apprentice at his work is coming down as well so that's three of us."

"That's my mate there...he wants to get on the scheme as well"

"The worst driver that I know...I won't say who he is but I will give you a little hint, he is here tonight, he came here with me".

"I have always liked watching the advanced driving like the skid-pans and things like that, that has been something I have wanted to do."

"To learn anything really, coz obviously wear and tear on my car, if I am doing something wrong or whatever I can be told that is a bit wrong, and I can save money by wear and tear and stuff and the fact that it will help the insurance as well, that was a big thing for me".

"X said you have a drive check and you get to go go-karting and there is loads of stuff they give you for free".

IVDR:

"I was round my friend's house, just chilling, playing the computer. It was about 1130, I had just gone to leave to get home and I noticed my car wasn't parked where I thought I had left it to. Obviously I then realised it had been stolen. They looked at the tracker and they found where it was, I think Inns Court, Knowle West or Hartcliffe area. I told the Police the position of where the tracker was and the Police went looking and it was where he said it was."

A respondent later made reference to the swift recovery of the vehicle in an exit focus group. We would suggest this would help to overcome scepticism should the intervention be adopted by other similar areas.

"Who was it with the escort that got pinched? They got it back didn't they? You can't get much better than that!" – Focus group – LW.

Demonstration Drives:

"Right at the beginning of the project he showed us what they [the observer] drive like. I thought he was good"

Coaching:

A number of quotes taken from exit interviews and focus groups with participants provide an illustration of views about the trial

"I thought the cornering session was quite good. The positioning on the corners, like if you were on the corner just going left, you would stick further out to the right so you could see further round the corner. Things like that, like I didn't really think about things like that before I did that coaching lesson".

"When I went out for a drive, we pulled up at a set of traffic lights and another car, young kiddie in I think it was a Saxo pulled up next to me and X [Observer] said, 'watch this bloke, he will go speeding off at the traffic lights' and I have gone off normally, drove on normally, he said, 'I guarantee you he will be stuck at the next set of traffic lights, pull up behind him'. Pulled up behind him stuck at the traffic lights so what is the point of speeding all the time? You don't get anywhere fast, you just end up stuck at the next traffic lights!" – exit one-to-one.

"One handed steering - don't do it anymore. Don't know why! Just, like, always two hands on the steering wheel. Even my uncle went, 'why have you got two hands on the wheel?'"

"You can read people better now I find. You see someone is going to do something a long way, before I would just follow the car in front of me, I didn't even see the brakes lights or anything. But with this keep your eyes at high beam and all that, you can see stuff so far away".

"It just makes you more alert to everyone around you rather than you just drive along in your own little world". Focus group – LW

"I tend to plan more. They taught us, when you see a cyclist, instead of just hurtling past, try and plan it so that as you get to the cyclist, he is in-between, I do plan, instead of ploughing up behind him and slamming the brakes on and then waiting to somehow overtake" - Focus group – LW

"I used to go 40 in the 30 all the time but that has come down"

"Rather than taking sharp corners and thinking well "F" it, you know, be more cautious" - Focus group – LW

"What's that view thing called, limit point, when you get to a corner and you can only see 10 meters, you slow right down and as it opens up you put your foot down to suit it". Focus group – LW

"You do enjoy it [driving] more, you don't mind slowing down a bit in the 30 because you have already had a bit of fun [on faster roads] and you don't mind slowing down" - Focus group – LW

*"I used to use one [hand] on the motorway, put the chair back as far as you can. I use two hands now".
- LA focus group.*

"And not going down through the gears, I always used to go down through the gears, that kind of thing". - LA focus group.

"The maintenance as well and things like that, what was it, putting the clutch down when you start the engine that takes away so much of the battery when you start the car, things like that." - LA focus group.

"I think the cornering is the big one really, a lot of people crash on corners" - LA focus group.

Observer Interviews:

"The first lad I took out was exceptional, brilliant, there was only a couple of points I picked him up on but I had a really nice run with him, really good".

"I wouldn't say they were a danger to me but they were very fast, they disregarded the speed limit, they certainly didn't have control of their cars because they were driving with one hand"

"Of the lads that I have been out with, none have been what I would classify as dangerous, we haven't got into any dangerous situations, I certainly haven't wanted to stop the car and say 'drop me here and I will arrange a lift home' sort of thing. The one trait that I have come across with everyone I have been out with so far is that they tend to steer single handed"

"...when I was their age and I had just passed my test, I thought I could drive anything, any speed, anywhere. As you get older and you get more sensible then you realise there is an awful lot to learn when it comes to driving cars"

"The young lad I took out last time - he looked at me and I looked at him - I thought 'you might be giving me a bit of trouble', but once he got to know the way I was speaking to him he was a very nice lad"

"It does seem to me, they tend to rely on their quick reactions to get them out of trouble which, with foresight, they wouldn't have got into it in the first place".

"I am still learning after 46 years on the road. There is always something that you can learn, you never stop".

"I had more than a little trepidation getting into cars with these young lads - all with a history of illegality and RTCs...as it turned out neither I, nor any of the Observer team had any problems - they were as good as gold and listened and practiced what we suggested."

Appendix 5: Publicity materials

a. Recruitment Leaflet

Check THIS OUT!

IF YOU (AND YOUR MATES) ARE INTERESTED IN -

- FREE** GO-KARTING SESSIONS IN AVONMOUTH
- A **FREE** LED G-FORCE FEEDBACK SYSTEM
- FREE** ADVANCED DRIVING SKILLS

then we need you and your driving skills to help develop a new electronic in-car gadget to improve the driving skills of other young men.

IS THIS YOU?

A male driver aged between 17-25 living in **B**RISTOL?!

CALL OR TEXT ^{Drive} TO 07876 403840 FOR MORE INFO

The leaflet features a dark background with a car at the bottom. The text is primarily in white and yellow, with some blue accents. A large blue splatter graphic is on the right side, containing the contact information. An orange arrow points down from the 'IS THIS YOU?' section.

b. Videos



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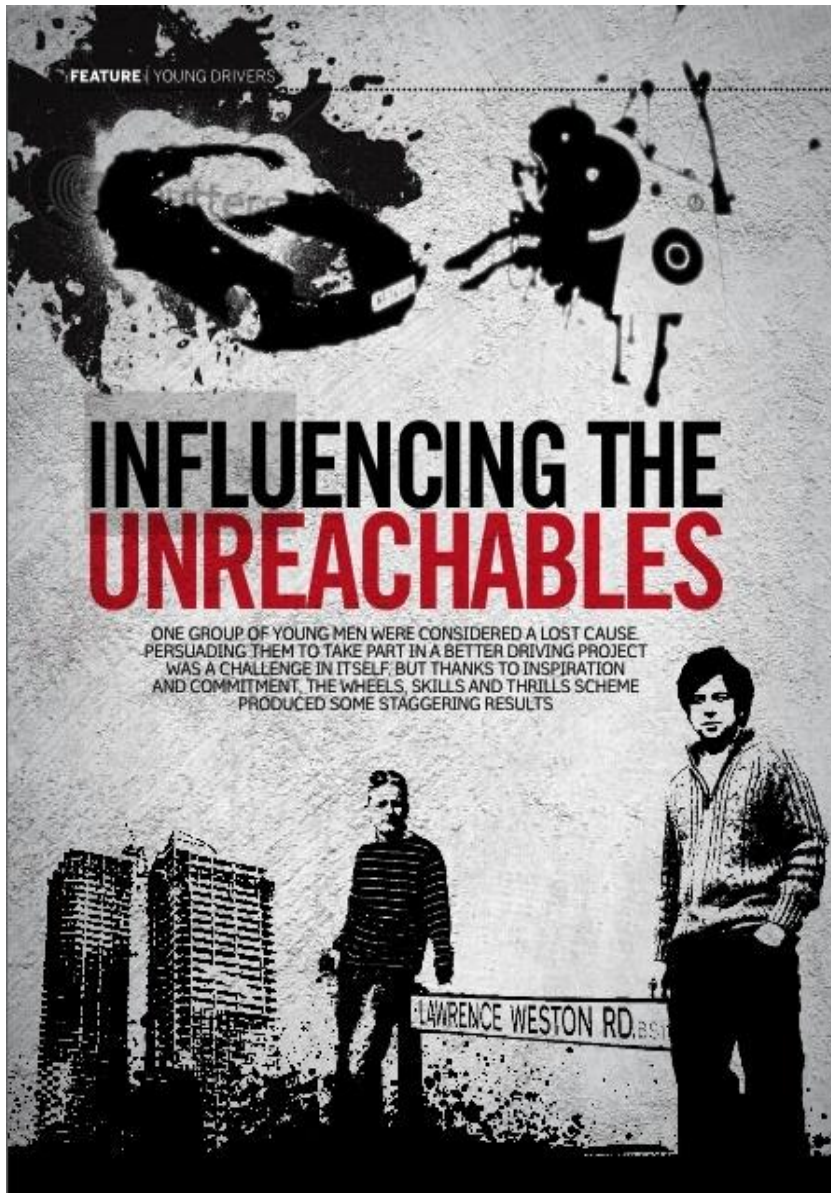
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Appendix 6: Dissemination



IAM Magazine Feature, November 2011

This report will be made available on the Road Safety GB website