

Submission to the Road Safety Authority's
Road Safety Strategy 2013-2020

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Introduction

The Institute of Public Health in Ireland

The remit of the Institute of Public Health in Ireland (IPH) is to promote cooperation for public health between Northern Ireland and the Republic of Ireland in the areas of research and information, capacity building and policy advice. Our approach is to support the Departments of Health and their agencies in both jurisdictions, and maximise the benefits of all-island cooperation to achieve practical benefits for people in Northern Ireland and the Republic of Ireland.

IPH welcomes the opportunity to respond to this consultation given the significant burden of injury, disability and mortality associated with road traffic collisions on the island of Ireland. IPH supports the development of evidence-based strategies and actions which can maintain a transport system, in which the safety of all road users is paramount. IPH previously submitted to the Road Safety Strategy 2007-2011 (Institute of Public Health, 2006). We welcome the success of the Government's previous Road Safety Strategy (2007-2012) in achieving its target of no more than 252 deaths per annum, three years ahead of schedule (Road Safety Authority [RSA], 2010a).

IPH has been actively engaged in research and policy development relating to the interface between health, travel and the built environment. IPH published a review of the 'Health Impacts of Transport' (Kavanagh et al, 2005), 'Health Impacts of the Built Environment' (Lavin et al, 2006), 'Active travel - healthy lives' (Lavin et al, 2011). IPH submitted to the Department of the Environment's Road Safety Strategy 2010-2020 for Northern Ireland, in which we highlighted the importance of cross-sectoral working, our support for active travel, the benefits of a Health Impact Assessment and the need to consider inequalities in relation to road deaths and injuries (Institute of Public Health, 2010). More recently, we submitted to a Private Member's Bill on 20mph speed restrictions in residential areas, in which we supported the proposals on the basis of helping to reduce pedestrian deaths and injuries and promote active travel through safer walking and cycling routes (Institute of Public Health, 2012).

IPH is a member of the Injury Observatory for Britain and Ireland (IOBI). IOBI is an international collaborative venture representing public health observatories from Wales, Scotland, Ireland, and regions of England. It is managed by a steering group of public health professionals committed to injury prevention. The purpose of the thematic injury observatory is to support injury prevention practitioners working on the prevention of injuries caused by accidents, violence or self-harm, through relevant and easily accessible information, tools and analysis. These include injury trend data, policies and strategies, systematic reviews and prevention tools (Injury Observatory for Britain and Ireland, 2012).

IPH was also a partner in the development of the European Child Safety Report Card (part of the 'Tools to Address Childhood Trauma, Injury and Children's Safety' project).

In responding to this consultation, we have given cognisance to a number of data sources, in particular, the most recent road traffic collision statistics for Ireland, the effectiveness of road safety policies and strategies nationally and the European and global context for road safety.

Key Points

- IPH welcomes the opportunity to contribute to the development of evidence-based strategies and actions supportive of road safety.
- IPH acknowledges the significant progress made in terms of reductions in fatalities in recent years. However, the population health burden of injury, disability and mortality associated with road traffic collisions on the island of Ireland remains significant.
- IPH recommends that any future road safety strategy should be comprehensive with specific, measurable, attainable, relevant and time-bound (SMART) targets relating to the reduction of fatalities as well as the reduction of serious injuries.
- The development of indicators suitable to the monitoring of injury and disability could form a particular focus for the forthcoming strategy with a view to informing the development of meaningful targets in the future.
- The development of indicators suitable to the monitoring of particular vulnerable road users could be explored, with an emphasis on assessment of various aspects of social inequalities in injuries and deaths.
- Population ageing as well as an increasing birth rate is likely to result in higher numbers of vulnerable road users and specific provision should be made in the strategy to address their needs.
- The increase in cyclists on the road is welcome in terms of the positive benefits for public health associated with physical activity and air quality. Promoting the safety of cyclists should form a clear focus in the strategy and opportunities for synergistic and mutually supporting working with the implementation of the National Cycling Policy Framework should be realised.
- Policy and actions set out in the Road Safety Strategy should aim to be supportive of the Department of Health National Substance Misuse Strategy in terms of reducing alcohol-related harm on the roads. Opportunities for synergistic and mutually supportive working to reduce alcohol-related harm on the roads should be actively pursued.
- Improved understanding of the potential positive and negative harms associated with technologies used by drivers should form a distinct work programme in the strategy, with particular attention paid to appropriate data on mobile phone usage.

1. What should Ireland's road safety priorities be for the next 7 years?

Should the emphasis be on a reduction in fatalities or should there be increased emphasis on reducing serious injuries in the new strategy?

From the outset of this response, IPH would highlight the need for a comprehensive strategy that will encompass reductions in fatalities as well as serious injuries.

The primary aim of the previous Road Safety Strategy (2007-2012) was to reduce fatalities to no greater than 60 deaths per million population by the end of 2012, and 50 or fewer in the following years, with demonstrable downward reductions in each year of the Strategy (RSA, 2007). This was achieved by 2009, when the number of road collision deaths fell to 239 and continued to reduce with 212 and 186 road deaths in 2010 and 2011 respectively (An Garda Síochána, 2012).

Of the 212 fatalities in 2010, 91 were drivers, 55 passengers, 44 pedestrians, 17 bikers and 5 cyclists. Twenty-nine per cent of deaths were among those aged under 25, with the greatest percentage (43%) of all deaths occurring at weekends. It also emerged that 27 deaths (13%) occur between the hours of 6pm and 8pm (RSA, 2011a).

The previous strategy targeted a number of driving behaviours:

- Inappropriate and excessive speeding
- Impaired driving through alcohol, drugs (prescription or non-prescription) or fatigue
- Lack of use of seat belts and child safety constraints
- Unsafe behaviour towards / by vulnerable road users (pedestrians, motorcyclists, cyclists, young children and older people)

It is apparent that strategies relating to education, enforcement and road and vehicle engineering have been effective in reducing road deaths. However, further research is needed to determine why the number of people seriously injured has not fallen consistently with the dramatic reduction in road deaths. The population health burden of injury and disability relating to road traffic collisions should form a primary focus of equal importance to goals for a reduction of fatalities.

The extent and nature of serious injury and disability caused by road traffic collisions is currently poorly quantified and understood. IPH would suggest that the RSA work with public health professionals and relevant clinical specialists (eg rehabilitation medicine, orthopaedics, neurology) to develop a more comprehensive approach to capturing the nature and extent of disability associated with road traffic collisions (eg long term versus short term disability; immobility related to acquired brain and spinal injuries). This data would be beneficial in monitoring the effectiveness of road safety interventions on the extent of disability caused and to better understand the circumstances giving rise to long-term severe disability.

At societal level, the effect of injuries incurred from a road traffic collision impact on the quality of an individual's life, as well as having significant economic impact in terms of loss of productivity and potential reliance on the State for financial support during time off work. Significant health costs are also associated with road traffic collisions. A report by Sheridan et al (2011) found that between 2005 and 2009, persons with road traffic collision related injuries occupied, on average, 48 beds a

day in acute hospitals in Ireland, with the average hospital inpatient cost calculated at €6,395. According to the RSA's Annual Review (2010a) the estimated cost of a fatal collision is €2.5m and collisions resulting in serious injury cost €341,503. In addition to loss of life or reduced quality of life, road accidents carry many other consequences to the survivors, such as long term pain and suffering, emotional stress, legal implications, economic burden, home and vehicle adaptations as well as psychological consequences (European Transport Safety Council, 2007; International Transport Forum, 2008).

Others important policy and procedural developments over the course of the last road safety strategy include:

- Mandatory Alcohol Testing and lowering the legal alcohol limit
- Safety Camera Network
- Penalty Points for mobile phone usage
- National Car Testing
- Regulation of Driving Instruction and introduction of the Graduated Licensing Scheme
- New interurban routes and low cost safety improvements on regional and local roads
- Comprehensive education campaigns for children and young people

In developing the next road safety strategy, IPH would suggest that RSA consider the following issues from a public health perspective:

- Increasing number of cyclists - implications for cyclist safety and road network;
- Ageing population and increased birth rate - more vulnerable road users;
- Economic recession - budget constraints on development of road system; police presence on roads; older cars / vehicle safety;
- Increasing chronic disease - more people with diabetes, heart disease, stroke, visual impairment (Balanda et al, 2010);
- Improvements in road safety – need to monitor ongoing technological developments in terms of the positive and negative impacts on road safety;
- Public health Bill on banning smoking in cars with children – enforcement of this Bill could provide an opportunity to check for appropriate seating for children in cases where children are being exposed to tobacco smoke; and
- Promotion of safe environments which facilitate physical activity, without putting people at risk of road traffic collisions.

Should the focus be on road users, road vehicles, or the road infrastructure, or where should the balance lie?

A combined approach to road safety, incorporating education, enforcement and road and vehicle engineering would appear to be the most effective way to reduce deaths and injuries on the road (International Transport Forum, 2008; Australasian College of Road Safety, 2010). This approach has been implemented by the RSA and its partners through the implementation of 2007-2012 Road Safety Strategy (RSA, 2007).

Given that excessive and inappropriate speed and alcohol related driving are among the key causes of road traffic collisions, it is imperative that road safety education campaigns and law enforcement continue to focus on these causal factors. Significant steps forward have been achieved through the introduction of Penalty Points (2002), Mandatory Alcohol Testing (2006), Safety Camera Network (2010) and more recently, a reduction in the legal alcohol limit (2011) (RSA, 2012a). These measures are likely contributors to the reduction in road traffic deaths in Ireland, with a 34% reduction in road traffic deaths reported over the three-year period since the introduction of mandatory alcohol testing in 2006 (An Garda Síochána, 2006 and 2009).

Drink driving still presents a major challenge for policy makers and should remain a key area for education and enforcement. There are a number of policy changes currently underway in the Republic of Ireland and Northern Ireland. IPH welcomes the report by the Steering Group on a National Substance Misuse Strategy (2012) and the importance attached to addressing the health and social impact of alcohol misuse for the whole population. Recommendations which have the potential to impact positively on alcohol consumption include, increasing the price of alcohol so it becomes less affordable and introducing a legislative basis of minimum pricing per gram of alcohol.

Specific recommendations relating to drink driving include:

- hospital procedures for alcohol testing of drivers following fatal/injury collisions;
- driver rehabilitation programmes for repeat drink-driving offenders;
- use of alcohol ignition interlocks as a sentencing option for those convicted of repeat drink driving offences; and
- monitoring driver alcohol testing, including mandatory alcohol testing.

In Northern Ireland, the Social Development Minister recently launched a review of alcohol licensing laws. These proposals include further restrictions on mixed trading in supermarkets; extension of opening hours for public houses; alignment of alcohol and entertainment licences; formal approval of Codes of Practice on responsible retailing; and changes to the law affecting private members clubs (Department of Social Development, 2012). IPH believes these measures may contribute to more responsible consumption of alcohol and the opportunity to further highlight the dangers of drink driving.

The current and proposed measures outlined above highlight the seriousness of alcohol misuse and drink driving and how governments in both jurisdictions are seeking to address this issue. We would strongly recommend that the RSA actively engage with the relevant government departments in the development of policy and practice interventions needed to reduce alcohol-related harm.

In relation to law enforcement and punitive measures, the Minister for Transport recently published a review of the Penalty Points System in Ireland and internationally. The report's recommendations include consideration of penalty points for driving due to impairment by drugs (as detection methods allow) and unsafe behaviour towards vulnerable road users (Department of Transport, Tourism and Sport, 2012b).

We believe particular attention should be given to highlighting the dangers associated with the use of mobile phones whilst driving. An observational study by RSA (2010b) found that 6% of drivers used a handheld mobile phone whilst driving. Another study by the RAC (2011) highlighted the

illegal use of mobile phones as a continuing problem, particularly among young drivers. In this self-reported study, 27% of drivers reported using a mobile without a hands-free kit (although 15% say only while stationary at traffic lights, even though both are illegal). The results are considerably higher among younger drivers, with 37% of 17-24 and 38% of 25-44 year olds admitting to doing this. Of all drivers surveyed, 27% admitted to 'texting' whilst driving, with this increasing to 53% of 17-24 years. Other in-car distractions included accessing email, social networking sites or using apps on a mobile phone whilst driving. These practices were more common amongst younger drivers, with 24% of 17-24 year olds reporting to accessing email and social networking sites. IPH would recommend that mobile device usage, while driving, is monitored and evaluated more systematically, with trend data being available on a regular basis to help counteract unsafe behaviour related to the same.

The Irish Government is committed to upgrading the road infrastructure in Ireland to facilitate economic and social development as well as improving road safety (National Roads Authority, 2000). This commitment has been supported by a recent announcement by the Minister for Transport, Tourism & Sport with the allocation of almost €1 billion to significant transport projects (Department of Transport, Tourism & Sport, 2012a). Adaptions to vehicles have also been proposed as ways of reducing speed and limiting recidivist behaviour (Whitelegg and Haq, 2006; International Transport Forum 2008; RSA, 2011b).

In summary, IPH would support the view of the International Transport Forum (2008), in that the overarching message in terms of where the balance should lie, is that road safety requires acceptance of shared overall responsibilities and accountability between system designers and road users.

With regard to road users, should the focus of safety measures be on particular road users and if so, who are they?

Road traffic statistics revealed that 40% of fatalities occur among vulnerable road users, that is, pedestrians, motor cyclists, cyclists, young children (aged 14 or below) and older people (65 or older). Coupled with the fact that there are more cyclists and older people using the roads, there is an even greater need to consider safety measures for these road users. Specific educational measures have been implemented to protect vulnerable road users, including the use of high visibility materials for pedestrians, cyclists and motorcyclists.

In the context of active travel and the associated health benefits of increased physical activity, IPH welcomes the fact there are more cyclists on the roads. However, this raises the issue of cyclist safety. In its mission, the National Cycling Policy Framework seeks to create a strong cycling culture in Ireland, where 10% of all trips will be by bike by 2020, recognising that the infrastructure needs to be safe, coherent and comfortable (Department of Transport, 2009). A report by Pucher and Buehler (2007) highlighted that the Netherlands, Denmark, and Germany have been especially successful in promoting safe and convenient cycling. Despite high rates of car ownership, these three countries have achieved high overall bike shares of urban travel, ranging from 9% in Germany to 19% in Denmark and 27% in the Netherlands. IPH believes the RSA and relevant agencies should consider

the approaches adopted by other European countries in achieving high cycling rates and seek to replicate these in Ireland where appropriate. We would endorse the aims and objectives of the National Cycling Policy Framework and advocate that the road safety measures outlined in this framework are reflected in the new Road Safety Strategy 2013-2020.

In terms of road collisions involving pedestrians, 25% of all pedestrian fatalities were among persons aged 65 or older and in 2010 and two thirds of the children who died on the roads were pedestrians. The National Pedestrian Safety Action Plan aims to target older pedestrians with information and publicity campaigns to enhance the safe use of pedestrian facilities at junctions, improve traffic awareness and awareness of the potential dangers of the road environment (RSA, 2010c). To improve child safety on the roads, the RSA has rolled out a comprehensive education programme among pre-school, primary and post-primary school age children and among students in third level education. In addition, the RSA has implemented a programme of practical road-side training for children aged 5-8 years, which focuses on the development of three key skills in young road users (choosing safe places and routes; crossing safely in the vicinity of parked cars and crossing safely near junctions) (RSA, 2011a). We welcome the implementation of these programmes and believe their continuation is vital for establishing safe attitudes and behaviours among children and young people as road users.

IPH welcomes the plans already in place to address road safety for vulnerable road users. We would advocate an inter-agency approach in the delivery of these plans to ensure a reduction in death and serious injury is achieved in a cost-effective way.

Are there categories of road user for whom there should be greater emphasis e.g. road users travelling in the course of work?

IPH is engaged in research and policy development to address health inequalities across the island of Ireland. It is well recognised and documented that significant socio-economic inequalities exist in relation to the risk and incidence of road fatalities and serious injuries, even in high-income countries (World Health Organization, 2004).

We would recommend that socio-economic inequalities are better understood in order that policy interventions target the disadvantaged groups and areas most at risk of fatality and injury. There is a need for a particular stream of work that considers the road traffic collisions in the context of inequalities and vulnerable road users (although these are distinct groups, there is some overlap, eg children).

Road traffic accidents involving children are more prevalent among those living in socially and economically deprived areas. According to the AA (2003) a child from a low-income family is five times more likely than a child from a high-income family to be killed on the road. Another study of deprivation and road safety in London revealed that the strongest relationship with deprivation is for pedestrians, where the most deprived are over twice as likely to be injured compared with the least deprived. This relationship was also found for adult cyclists in London (Edwards et al, 2006). A study of children presenting to four emergency departments in North and West Belfast, revealed that

children living in the most deprived areas were more likely to be involved in road traffic accidents (Silversides et al, 2005).

The RSA (2010a) report highlighted that the highest number of fatalities occurred between 1800 and 1900 hours. Coupled with the fact that fatigue is among the key contributory factors in road traffic collisions, greater consideration should be given to identifying the causes of collisions at this time of day and addressing driver behaviour.

Drink driving in the workplace is an issue closely associated with the commercial transport industry, and so we could call on employers within this sector to review their policies and procedures in relation to alcohol consumption by employees. A seminar jointly hosted by the European Transport Safety Council, RSA, Health and Safety Authority and An Garda Síochána brought together key stakeholders to raise awareness among employers of drink driving in the workplace, particularly in the commercial transport industry. The seminar included a demonstration of an alcohol interlock device which prevents a vehicle from starting if alcohol is detected on the driver's breath. IPH would encourage more widespread use of these devices, given that up to a third of deaths in Ireland are work-related and that a proportion of these are linked to drink driving (RSA, 2012b).

2. How should we address these priorities?

What should be the balance between education, engineering and enforcement measures?

Based on the internationally accepted Safe System approach, there is a case for focusing efforts on the design and management of road infrastructure, vehicles and travel speeds, supported by education, regulation, enforcement and penalties (Australasian College of Road Safety, 2010). Without conducting a comprehensive review of the international evidence, it is difficult for IPH to recommend the balance between education, engineering and enforcement. IPH would welcome greater investment in research and evaluation to determine the effectiveness of these measures in reducing fatalities and serious injuries, as part of a long term strategy for road safety in Ireland. In this climate of austerity, we would suggest that any research and evaluation should be aligned with the work of other European countries.

Are current drink driving laws adequate or are further initiatives needed?

IPH believes reducing the legal alcohol limit has been an important move forward, aligning Ireland with the majority of EU countries. Implementation of the new alcohol limits has been supported by a public information campaign. Ongoing review of the incidence of drink driving behaviour through the number of alcohol tests conducted would prove useful in determining changes in driver behaviour as a result of the new drink driving laws.

How should speeds be managed, particularly in respect of the non-primary road network?

Given current budgetary constraints, we recognise that police presence on non-primary roads may be restricted. We would suggest that speed cameras and traffic calming measures are implemented as part of a programme of activity to increase safety on these roads. Local authorities should consider how resources can be most efficiently allocated to maximise road safety in their areas.

Do we need to change road design guidelines to build in safety features to a greater extent?

In a review of road safety remedial measures, Bohane (2008) reported that the National Roads Authority will continue to research, recommend, and implement engineering road safety schemes with our counterparts in the local authorities around the country. These engineering solutions will assist in minimising risk factors across the national road network. IPH welcomes the ongoing review of road safety engineering measures and in line with the Safe Systems approach, would support the implementation of any structural changes in road design which will help reduce the risk of death or serious injury.

What measures do we need to adopt to mitigate the risks associated with young drivers?

We acknowledge the seriousness of inappropriate and excessive speed as one of the leading causal factors in road deaths and serious injuries, particularly among young drivers. Thirty-nine per cent of the people killed due to excessive speed were young males aged 17-24 (RSA, 2010a). Findings from a study of 1500 drivers on the relationship between psychology and risky driving behaviour revealed that frequency of speeding among young male drivers was associated with positive attitudes towards speeding and a higher prevalence of personality traits such as impulsiveness and excitement seeking (Sarma, 2011). Dr Sarma reported that addressing speeding attitudes is important, but highlighted the fact that deeper psychological factors are also linked to dangerous driving. A study of children and young people's attitudes to driving suggested that family and peer influence is critical in forming attitudes and behaviour towards driving and that the pre-driving period may present the best opportunity for forming positive attitudes to driving (Durkin and Tolmie, 2010). IPH would recommend a greater focus on men's health and health promotion to address current attitudes and inappropriate and unsafe driving behaviour.

The statistics for road deaths and serious injuries still point to unacceptably high numbers of young people being killed on the roads. IPH believes reducing the legal alcohol limit is an important move forward in addressing both drink driving among all drivers and adopting a culture, whereby learner and newly qualified drivers know that drink driving will not be tolerated and could lead to disqualification from driving. Public information campaigns have an important role in raising awareness of the new legal alcohol limits and serve to reinforce the message that driving under the influence of alcohol can cause death.

IPH welcomes the introduction of the 'Essential Driver Training' programme and believes it will have a positive influence on the driving knowledge, skills and behaviour of young drivers. However, due

to the recent introduction of this programme (April 2011), it is too early to determine its effect on driving behaviour among young people.

In light of the above evidence, IPH would recommend that the RSA continue to develop, expand and evaluate programmes of road safety education, starting with parents and children through to young drivers. We believe continual reinforcement of the messages that dangerous driving can kill or cause serious injury will help young people adopt safe attitudes to driving.

3. What are the most appropriate mechanisms to achieve these priorities?

Should an explicit target be set in the new Strategy for the reduction in fatalities?

IPH would support the identification of an explicit target for reducing fatalities in the new Strategy. The benefits of setting targets are well recognised and have been acknowledged by the Organisation for Economic Cooperation and Development (OECD). Target setting can result in more realistic and effective programmes, greater integration of institutional efforts and, by securing political commitment, often produce a more focused allocation of resources (OECD, 2002).

IPH believes that setting explicit targets for a reduction in fatalities and serious injuries, demonstrates government's commitment to reducing road deaths, it imposes greater accountability and enables progress to be measured. Target setting is important, not only nationally, but at a European and International level, to facilitate monitoring of progress and as a means of identifying and promoting best practice. IPH believes that specific targets to reduce road traffic fatalities and serious injuries are important in the evaluation road safety measures and determining the cost effectiveness of the same.

Whilst target setting does not guarantee achievement (International Transport Forum, 2008), research suggests that countries with quantitative targets perform better than countries without targets. A study by Wong et al (2006) revealed that the majority of countries with quantified road safety targets experienced a reduction in road fatalities in period 1981-1999.

In addition to setting targets for overall fatalities and serious injuries, IPH would also recommend that the strategy adopt a wider suite of indicators to capture information on particular aspects of road traffic collision to inform the development of future targets. Performance indicators relevant to this strategy might include:

- Inequalities in fatalities and serious injuries
- Vulnerable road users (in particular, children)
- Road users who travel as part of their work
- Alcohol and drug-related road injuries and fatalities

Ireland's success in the European Transport Safety Council's Performance Index Programme could usefully form the basis for developing new or additional performance indicators to further enhance its road safety strategy.

In light of the economic uncertainties, should there be greater emphasis on periodic review and updating of the Strategy over its lifetime?

Annual review of the existing strategy is a useful means of monitoring progress and identifying outstanding actions. We would support a similar approach to evaluation within the new strategy. It is essential that RSA can demonstrate that the measures implemented are effective in reducing fatalities and serious injuries in an economic way.

Is there greater room for synergistic actions by the various stakeholders involved in the delivery of safer roads and what are they?

It is essential that reducing road traffic deaths and serious injuries is not viewed exclusively as the responsibility of one government department (ie Department of Transport), but rather, adopted by all relevant departments, in a joined-up way, to address this very serious issue. Whilst recognising the achievements of the previous strategy, IPH believes the new 2013-2020 strategy will allow all stakeholders to embrace road safety with renewed vigour and work together to reduce road deaths even further and achieve the much needed reduction in serious injuries.

How can political support for road safety be maintained?

We believe the new road safety strategy should have cross-party and cross-departmental support to ensure effective implementation and successful outcomes. This is particularly important in terms of road safety being appropriately resourced from national to regional and local level through local government and policing decisions. We also endorse the role of a road safety 'champion' in highlighting current issues and promoting safety for all road users.

What is the role of research in supporting the Road Safety Strategy and where should the emphasis of research lie?

The translation of the best available evidence into effective and efficient public health policy and practice is IPH core business. Therefore, IPH would strongly advocate that the Road Safety Strategy 2013-2020 is formulated based on sound evidence, which will further substantiate the purpose and scope of the policy.

IPH believes research should focus on:

- enhanced understanding of the factors associated with injury, disability and death from road traffic collisions in Ireland;
- meeting the needs of the increasing numbers of vulnerable road users;
- new and emerging elements of road safety including the appropriate recruitment of technologies; and
- effectiveness of the road safety measures outlined in the strategy.

It is essential that government and all stakeholders know that the measures being implemented are working and to what extent. This information will help formulate the government's long term approach to road safety and, where appropriate, provide opportunities to share best practice on a European and global platform.

4. What can we learn from others?

Are there lessons from abroad as to how road safety strategies should be constructed?

In its Global Plan for the Decade for Road Safety, the World Health Organization (2011) highlights that an adequately funded, lead agency and a national plan or strategy with measureable targets are crucial components of a sustainable response to road safety. IPH would endorse this recommendation and believes lessons can be learnt from a number of regions, in particular, the UK, Sweden, the Netherlands, Norway and Switzerland, which have the lowest levels of road traffic fatalities (OECD, 2012).

In its recent road safety strategic framework, the Department for Transport (2011) sets out its proposed actions and approach to continuing to reduce death and injuries, by allowing local authorities to determine their own specific priorities and solutions, engaging communities in the decision making process and making local service providers more accountable. These principles may be worthy of consideration in the development of the new road safety strategy.

What is the contribution of putting in place a long term vision based around concepts such as Vision Zero, Sustainable Safety, or Safe Systems?

According to the International Transport Forum (2008) it is recommended that all countries, regardless of their level of road safety performance, move to a Safe System approach to road safety. This approach builds on existing road safety interventions, but reframes the way in which road safety is viewed and managed. It addresses all elements of the road transport system, in an integrated way, to avoid fatal or serious injury. The Safe Systems approach recognises the need to make the road transport system more forgiving of human error and to minimise the level of unsafe road user behaviour (National Road Safety Council, 2010). It is based on the premise that as long as mistakes are likely, all road users need to be protected through safer roads, safer speeds, safe vehicles and safer road users (Australasian College of Road Safety, 2010).

It was reported by OECD, that in 2009 the UK and Sweden had the lowest road fatality rate (38 and 39 road deaths per million population), followed by Norway and the Netherlands (44 per million population), Switzerland (46), Germany (51), Finland and Ireland (53) (OECD, 2012). The Safe Systems approach has formed the basis of Sweden's *Vision Zero* and the Netherlands' *Sustainable Safety* strategies. IPH would recommend that consideration be given to the approaches adopted by these countries in respect of continuing to achieve a reduction in fatalities and serious injuries.

Sweden is one of the countries with the lowest number of road traffic fatalities (OECD, 2012). However, in spite of this excellent record, in 1997 the Swedish Parliament introduced *Vision Zero*. Vision Zero is based on a refusal to accept human deaths or lifelong suffering as a result of road traffic accidents (Tingvall and Haworth, 1999; Elvik and Amundsen, 2000). It requires moving the emphasis away from reducing the number of accidents to eliminating the risk of chronic health impairment caused by road accidents. In Sweden, Vision Zero requires fatalities and serious injuries to be reduced to zero by 2020. This approach is based on the premise that by designing roads, vehicles and transport services in a way that the road user can withstand the impact of an accident, fatalities and serious injuries can be eliminated (Whitelegg and Haq, 2006).

In the Netherlands, *Sustainable Safety* aims to prevent (serious) crashes, and where this is not possible, to eliminate the risk of severe injury as much as possible. This approach seeks to prevent human error, and in doing so, mitigate the consequences by designing the traffic systems accordingly (firstly by road and vehicle design and secondly by information and education). The introduction of Sustainable Safety based measures resulted in a total reduction of 30% in the number of fatalities in 2007. The measures were particularly effective in the prevention of severe injury in crashes involving at least one motor vehicle (Institute for Road Safety Research, 2010).

IPH would recommend that the RSA give careful consideration to the various approaches outlined above and seek to identify, where appropriate, how these measures can be applied to road safety approaches in Ireland.

Has international research identified measures that are particularly cost effective and reduce road safety risks quickly?

According to the Royal Society for the Prevention of Accidents (ROSPA), 'Local Safety Schemes' have been proven to provide the most cost effective means of delivering accident reduction. Local schemes include anti-skid, traffic calming measures, signal improvements, speed cameras, junction improvements and mini roundabouts. In comparison with other construction projects, Local Safety Schemes are relatively low-cost (<£100,000), yet the level of funding earmarked for such works across Great Britain does not even equal 1% of the true cost to the economy of all the road traffic accidents. A greater level of funding should be allocated to local safety schemes, and far greater importance needs to be placed upon them. Their contribution to the creation of a safer environment cannot be understated (ROSPA, 2007).

Norway boasts one of the lowest road traffic death rates in the world (OECD, 2012). A study by Elvik, (2008) used a policy analysis approach to examine the type of road safety measures which make the greatest contribution to improving safety. The three policy analyses were compared with the main types of road safety measures contributing to the estimated reduction of the number of fatalities according to the maximum efficiency policy option. Results revealed major changes in the contributions various types of road safety measures can give to improving road safety. In the 1980s, it was still traffic engineering measures that could contribute the most to improving road safety. In the most recent policy analysis (2007), by far the largest contribution has been attributable to vehicle safety features.

We have highlighted some approaches to road safety, which are reported to be economical and effective in their contribution to reducing fatalities and serious injuries. However, we would recommend a comprehensive review of the published literature in this area to provide a more accurate representation of the effectiveness of road safety strategies internationally.

How can Ireland engage effectively with other countries so as to benefit from knowledge transfer?

The International Transport Forum (of which Ireland is a member) offers a valuable opportunity to engage with international partners and learn about effective strategies in other countries. This forum comprises representatives from countries (such as Norway and Sweden) with some of the highest levels of road safety in the world, placing Ireland in the advantageous position of learning from best practice.

As a member of the Injury Observatory for Britain and Ireland, IPH has the opportunity to engage with other countries in identifying effective strategies and tools for injury prevention and share information as part of its knowledge transfer and health intelligence work. Our involvement with IOBI places IPH in the unique position of engaging with and learning from our colleagues in Great Britain in identifying effective and successful approaches to injury prevention in the context of road safety.

IPH has sought to address a number of public health issues on a North South level. Our work in research and policy development has provided opportunities for mutual learning and enhanced the effectiveness of addressing public health issues on all-island basis.

There may be opportunities for further North South collaboration as an extension of the recent cross border road safety initiatives. Under the auspices of Cooperation and Working Together, the 'Steering to Safety' project brought together a range of health and road safety professionals from both sides of the border to work together to address the problem of road traffic collisions in the border region. The current context of peace and increasing political stability provided an opportunity to look objectively and rationally at infrastructural arrangements and the optimal provision of services, and enabled opportunities for exchange and joint learning across the border region (Mack and Gillespie, 2006).

The current cross border road safety project, 'Driving Change', aims to reduce the number of people killed or seriously injured in road traffic collisions. It is targeted in Northern Ireland (excluding Belfast) and the 6 border counties of the Republic of Ireland. This is a collaborative project between the Fire and Rescue Services, the Department of Health, Social Services and Public Safety, the Department of Environment, Community and Local Government, the Department of Environment, Road Safety Branch, Cooperation and Working Together and Public Achievement (a youth focused voluntary organisation). The aim of this project is to provide a better service of casualty care, improve survival rates and work with young people (aged 16-25 years) encouraging them to identify local road safety issues and supporting them in developing a project to tackle these issues (Public Achievement, 2012).

Based on previous and current North South collaboration on road safety in the border counties, IPH would suggest further exploration of how these approaches could be developed throughout the island of Ireland. One area, in which the Republic of Ireland has already explored Northern Ireland approaches, is in relation to the recent review of penalty points (Department of Transport, Tourism and Sport, 2012b). Further consideration should be given to how the penalty point system in the two jurisdictions could be more closely aligned to improve driver behaviour and reduce the number of fatalities and serious injuries.

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