

# Designing Evidence Based Road Safety Interventions

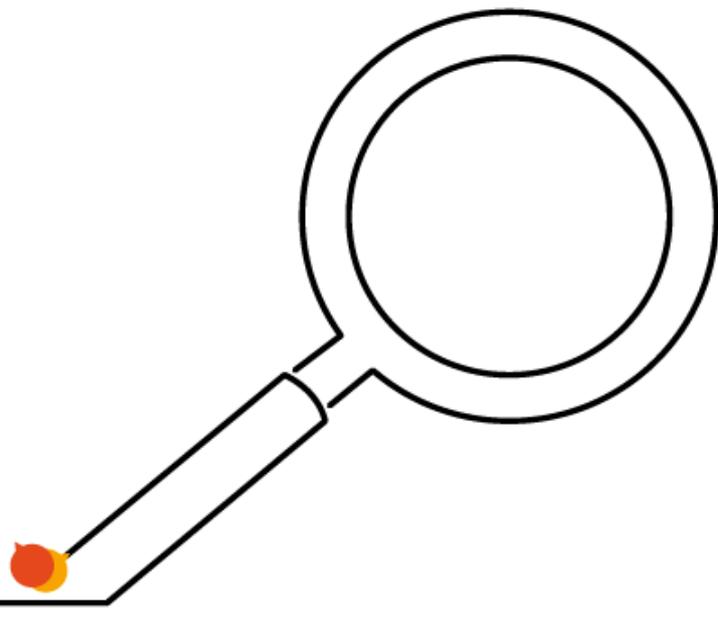
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## A Practitioner's Guide

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# Introduction

Road safety practitioners deliver a number of road safety education, training and publicity projects.

It is important that road safety interventions are based on evidence. This involves looking at accident, casualty and any other available data to be sure that the road safety issue needs to be addressed, and research and evaluation reports to check whether the type of intervention being considered is likely to be effective. Evidence based practice originated in medicine, but it has been translated to a number of policy areas, including road safety. Evidence based practice can:

- Help to ensure that new and existing interventions are successful, as they have been proven to work in a similar context.
- Maximize efficiency in times of budget cuts <sup>1</sup>.

There is evidence that some road safety practitioners are unsure of how to use evidence to design their road safety interventions, which can lead to limited resources being spent on potentially ineffective interventions <sup>2</sup>.

This guide is for anyone who would like to design their own evidence based intervention, whether it's a new intervention or a repeat of an existing intervention.

- **Designing a new road safety intervention-** this is an ideal time to do some research to find out which road safety issues need to be addressed and what approaches are most likely to be effective in addressing those issues.
- **Reviewing a road safety intervention that is already up and running-** even if an intervention was not evidence based to begin with, it is a good idea to go back and look at the evidence. This might seem like a long process, but going back and reviewing the evidence can help you to improve your intervention based on the best practice of other road safety practitioners. It will also help you to determine whether your road safety intervention is needed. For example, although there might be a lot of public concern about a road safety issue in your area, the local collision data might suggest that it is not a priority issue.

## Why use Evidence?

We often have preconceived ideas about groups and communities and their particular needs and problems. However, these ideas often do not match up to reality, and it is therefore important that interventions are based on evidence.

For example, it might be assumed that all young drivers are risk takers, but this is most likely not the case. If a group of young drivers are invited to a road safety workshop, and the content is designed on the assumption that they enjoy taking risks, the workshop is unlikely to be relevant to all of the drivers who attend. This would mean that the workshop is likely to be ineffective for some individuals.

Instead, by reviewing the research evidence about young drivers, it is possible to get a better idea of the **reality** of what young drivers are really like, rather than basing the intervention on an assumption that may not be true.

Educational interventions have been a popular approach to tackling road safety issues because they satisfy a number of goals. Education interventions allow authorities to address a matter of public concern, they are seemingly plausible and they are politically uncontroversial. However, evidence suggests that a lot of these interventions are not effective<sup>3</sup>.

One of the reasons that some of these interventions are ineffective is because they are often designed in the absence of theory or evidence. Lopez et al (2009)<sup>4</sup> suggest that designing an educational intervention without any guiding theory is like designing a medical intervention without an understanding of physiology. Just as it cannot be assumed that aspirin reduces the chances of a heart attack without evidence, intuition and what seems plausible cannot tell us how much delivering road safety workshops on seatbelt wear will modify behaviour<sup>5</sup>.

An alternative idea is that some interventions might focus on the wrong variable, due to the lack of evidence behind them<sup>3</sup>. For example, traditionally, road safety officers spent a lot of their time working with children. However, it was then realised that most casualties involved drivers, and therefore road safety officers needed to spend more time with drivers. This is because when an intervention lacks a theoretical background, it can inadvertently focus on the wrong factor<sup>2</sup>.

The final reason that some education interventions are ineffective in addressing road safety issues is that practitioners tend to rely on an information deficit model when designing their interventions. This suggests that people suffer from a deficit of information, and therefore, if we provide them with this information, they will refrain from taking risks. It is also assumed that if the information is presented effectively enough, this will then result in a behaviour change and a reduction in harm<sup>3</sup>.



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However, there are a number of limitations to the information deficit model. For one, people do know which behaviours are harmful, and therefore they are not lacking information. For example, most drivers are likely to have seen serious collisions caused by excessive speed in the media, which highlight the danger of exceeding the speed limit, and therefore they will know that this is a dangerous behaviour. The model also assumes that when there is an improvement in knowledge, there is an improvement in behaviour, but this is often not the case <sup>3</sup>.

However, McKenna does note that educational interventions might have an indirect effect on road safety. For example, he suggests that an intervention which changes the perceived legitimacy of speeding could enable the introduction of a speed camera enforcement programme, which could in turn reduce collisions.

There are a number of reasons to use evidence to back up road safety interventions:

- **It enables the project to target funds more effectively-** it is always possible to develop interventions that could improve road safety. However, it is important to determine whether funds have been well spent and whether it has had a meaningful effect on road safety <sup>5</sup>. Using evidence to design an intervention provides a good understanding of the local road traffic collision and casualty data, which can help to target funds appropriately by identifying concerns around at-risk groups, crash-cluster sites and common treatable problems.
- **The project could make roads more dangerous-** it is often assumed that the effects of an intervention will either be positive or at worst neutral <sup>2</sup>. However, some road safety projects do have negative impacts on road safety, despite the best intentions of the road safety practitioners who designed them. These effects are completely unintended, but by reviewing evidence of existing road safety interventions tackling similar issues, the risk of this occurring can be reduced.

### Example

It has been highlighted that practical pre-driver education courses can lead to an increase in risky attitudes and a higher risk of being involved in a collision. Without evidence, this kind of intervention seems plausible on the assumption that more training behind the wheel must be better than less training <sup>3</sup>.



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- **The project could have no effect**- some road safety projects have no effect, positive or negative. Using evidence means that you can gain an understanding of what kinds of interventions have previously not been effective. You can then avoid delivering future ineffective projects, meaning that funds are used more wisely.

### Example

Safety city is an intervention which teaches young children about safety issues such as stranger danger and crossing the road safely. The intervention consists of lessons from the teacher on each topic and a game or practice session to reinforce the message. An evaluation of the intervention revealed that there was not the increase in knowledge expected, meaning the intervention had little to no effect <sup>6</sup>.



## Types of Evidence

Before planning a road safety intervention, it is essential to identify the road safety issues that need to be tackled and the most appropriate ways of dealing with them. This can prevent limited resources being spent ineffectively.

There are a number of types of evidence that can be used:

- STATS 19 casualty data, as this will help you to determine whether an intervention is needed.
- Research and evaluation reports to identify the best practice of other practitioners who have designed interventions to address similar road safety concerns. Websites that are particularly useful for finding research evidence are the [Road Safety Observatory](#), [Road Safety Knowledge Centre](#) and [Road Safety Evaluation](#), as they all host a variety of reports.
- Behavioural change theories which outline how the intervention is intended to change behaviour.

Unfortunately, relatively little evaluation takes place in road safety, and therefore it might be difficult to find research and evaluation reports that are relevant to your intervention. If you find it difficult to find reports that relate to your intervention, then at the very least use [behavioural change theories](#) as a basis for your intervention.

However, the use of behavioural change theories is not just for those who are struggling to find research and evaluation reports relating to their intervention. These theories can also be used alongside research and evaluation reports, and can be really useful to help you to design your intervention and predict its possible effects.

## Local casualty data

The first step to making the most effective use of road safety resources is to ensure, as far as possible, that they are targeted at the most pressing road safety concerns. These issues should be identified through an analysis of local road casualty data and trends.

This would involve carrying out a needs assessment, which is a process used by practitioners to determine priorities and to accurately allocate resources. A needs assessment involves using data and evidence such as local casualty data to identify whether an intervention is needed to address a particular road safety issue. This is a vital step. If the intervention is not needed, there could be an unnecessary waste of resources.

Casualty data can be used to identify: the what, where, when and who in relation to the road safety issue. It can help to identify particular roads, regions or road user groups that might benefit from a road safety intervention. The relative size of the road safety issue can then be assessed to plan a cost effective solution to the issue, meaning that budgets can be spent accordingly.

If you work for a local authority, there may be a member of staff who analyses collision data, who can be asked for advice on road safety trends in the local area. Alternatively, you could analyse [government collected statistics](#) yourself or use a tool such as [MAST](#) or [CrashMap](#).

If you manage occupational road risk within an organisation, you could also review internal data such as telematics, accident reports and licence checks to determine whether a road safety intervention is needed.

## Research and evaluation reports

If local casualty data determines that you need an intervention to address your chosen road safety issue, the next step is to research the kinds of interventions that have been successful in the past.

Not only should the need for an intervention be based on evidence, the intervention chosen should also be based on evidence. For example, if you choose to present a workshop on seatbelt wearing, it should be informed by evaluation reports that suggest that this approach is effective in encouraging more road users to wear their seatbelt.

It might seem like a long process, but using evidence means that the intervention is more likely to be successful in meeting its aims and objectives, which should be clear and set out right at the start of planning the intervention.



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There are a number of places you can look for this evidence:

- [Road Safety Observatory](#)- provides summaries of published research on particular road safety topics.
- [Road Safety Knowledge Centre](#)- evidence reports and case studies submitted by local authorities.
- [ORSA Case Studies](#)- case studies of how individual companies have managed their occupational road risk.
- [E-valu-it Reports](#)- evaluation reports that were written using the e-valu-it toolkit. There are also a number of other [reports](#) on the website.
- [Google Scholar](#)- allows you to search for scientific journal articles.
- [Cochrane Reviews](#)- a collection of scientific review articles, which bring together the available evidence on specific topics.
- [Travelwest Essential Evidence](#)- brings together evidence on road safety topics. The documents published on this website are short, are presented in an easy-to-read format and are jargon free.

### Tips for using evidence

- If you find a really useful article, it can be helpful to follow up relevant articles that are cited directly in the text or in the bibliography to form a strong evidence base.
- Read articles cautiously, particularly if they are not academically robust. Academically robust articles are usually featured in academic journals, are peer reviewed and have a clear methodology and bibliography. You should be cautious because some reports might claim that their intervention was effective purely because it was delivered on a large scale- however, this does not necessarily tell us that the intervention was effective!



## Behavioural change theories

Behavioural change theories can be used to underpin your intervention, especially if there is a lack of research and evaluation reports on the road safety issue you have chosen to address.

Behavioural change theories attempt to explain why behaviours change. They cite environmental, personal and behavioural characteristics as the major factors in determining our behaviour. They are useful when you are designing a road safety intervention because they can help to explain how the intervention is intended to produce the desired behaviour change, and predict its possible effects.

This section briefly outlines four popular behavioural change theories and how you might use them to design your intervention.

### Azjen's theory of planned behaviour

Azjen's theory of planned behaviour is designed to predict and explain human behaviour in specific contexts and is an extension of the theory of reasoned action, which is an earlier behavioural change theory, developed by Fishbein and Azjen (1975) <sup>7</sup>.

According to Azjen's theory of planned behaviour, whether a person will perform a behaviour depends on a combination of particular individual and social factors. It is thought that the presence or absence of these factors can predict someone's future behaviour.

#### Intention

Central to the theory of planned behaviour is the intention of an individual to perform a particular behaviour. For Azjen, intention captures the motivation someone has to achieve a particular behaviour, such as how much effort they are willing to put in <sup>8</sup>.

As a rule, the more intention an individual has to perform a behaviour, the more likely they are to perform it. The theory of planned behaviour suggests that there are three factors that influence a person's intention to carry out a particular behaviour: self efficacy, attitude towards the behaviour and social norms.

#### Self efficacy

Self efficacy is someone's self-rated ability to perform a behaviour, which is dependent on a number of factors.

Firstly, an individual's self-rated ability often depends on how much they actually want to carry out the behaviour. For example, an individual might want to stick to the speed limit when they are driving, but they might feel unable to do so due to feeling pressured to keep up with the rest of the traffic.

It also depends on the resources an individual has available (time, money, skills and co-operation from others). For example, it would be difficult to learn to drive if you did not have the money to pay a driving instructor to teach you to do so, or access to a car for private practice due to financial constraints.



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However, if an individual has low self efficacy towards a behaviour, they are less likely to attempt it. For example, if an individual believes that they would not be able to stick to the speed limit and resist the temptation to speed, they might choose not to attempt to stay within the limit.

Finally, if someone believes in their ability to successfully perform a behaviour, regardless of their ability to do so, they are more likely to attempt the behaviour. For example, if an individual believes that they are a skilled driver and are able to control their vehicle at high speeds, they may be more likely to attempt to exceed the speed limit than someone who feels unsure whether they would be able to control their vehicle at a high speed.

### Attitude towards the behaviour

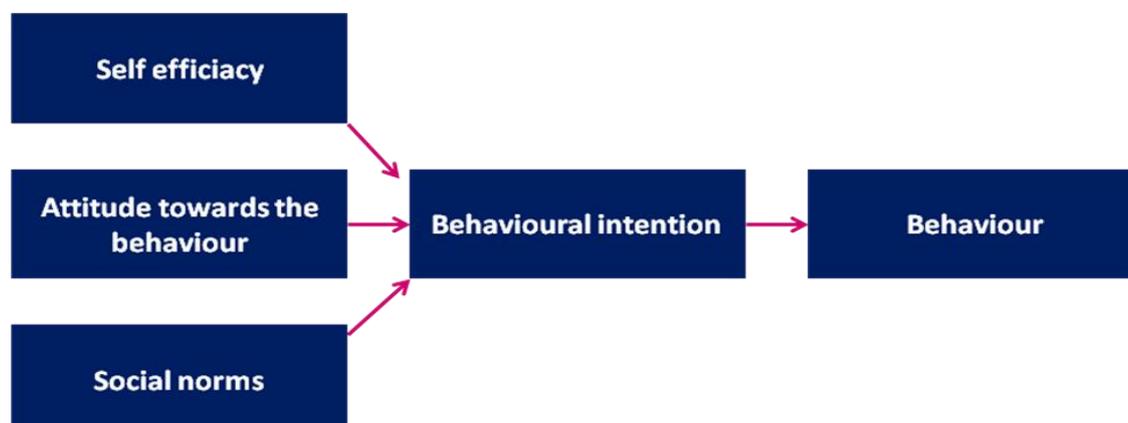
The second factor that influences intention to perform a behaviour is attitude towards the behaviour. If a person believes that a behaviour is likely to have positive consequences for them, they are more likely to have a positive attitude towards the behaviour, and therefore attempt to behave in that way. For example, a driver might believe that speeding is a positive behaviour because he has impressed his passengers, meaning that he is likely to hold a positive attitude towards the behaviour.

On the other hand, if an individual believes that their behaviour might have negative consequences, they are likely to hold a negative attitude towards that behaviour and view it unfavourably. For example, if a driver exceeds the speed limit and is given a fine and points on their licence, they may be likely to avoid performing this behaviour again.

### Social norms

The final factor that influences intention is social norms. Social norms are an expected form of behaviour in a given situation. Most behaviour has social norms attached to it, which encourage us to conform, or not conform, to a certain behaviour. This influence can come from friends, family, figures of authority, work colleagues and any significant others who an individual might refer to when forming their beliefs and values. For example, if a young driver has lots of friends who like to exceed the speed limit when they are driving, the young driver might view this behaviour as acceptable and be more likely to perform that behaviour too.

Summary of Azjen's theory of planned behaviour:



## How do I use this theory to design my intervention?

Ajzen's Theory of Planned Behaviour is one of several behavioural theories that could be used to inform the design of interventions, and help to estimate their effects.

For example, a young driver believes that she has the skills and the experience to drive at 50mph in a 30mph zone (high self-efficacy). Her family and friends typically drive at this speed in the same area (approving social norms), and she thinks that she will be able to save time and avoid being late for an appointment, if she continues at this speed (positive attitude). She also does not think that she will get caught by the police (high self-efficacy) so is not worried about getting a ticket (positive attitude).

Based on the Theory of Planned Behaviour, interventions to change this young driver's behaviour would focus on reducing her perceived ability to drive at 50mph in a 30mph zone: for example, by educating her about stopping distances and local enforcement for instance, and on changing her currently positive attitude towards speeding by making her more aware of the potential negative consequences of doing so. The opinions of her friends and family could also be targeted through local publicity campaigns.

## Gibbons and Gerrard's willingness model

Like Ajzen, Gibbons and Gerrard recognise that intentions are very important in determining and predicting behaviour. However, they also believe that **behavioural willingness** is another key trigger. Gibbons and Gerrard designed their willingness model to account for unplanned behaviour, particularly in young people, who are less likely to be able to predict how they will act in certain situations due to their lack of life experience to base their judgements on<sup>10</sup>.

Behavioural willingness is how likely a person thinks they are to carry out a particular behaviour, dependent on the circumstances. This is different to intending to perform, or not perform a particular behaviour, as willingness takes into account the circumstances a person might find themselves in.

To simplify, in these situations the issue is framed as what an individual is willing to do, rather than what they plan to do. Many young people do not intend to engage in risky behaviours, but find themselves in situations where the opportunity to perform these behaviours is presented to them. For example, a young person might find themselves driving a car full of friends who are encouraging them to exceed the speed limit or perform a risky manoeuvre.

The willingness of a young person to perform a particular behaviour can also be influenced by social images associated with that behaviour. Young people are very conscious of these images because their behaviour typically occurs in social spaces, such as with friends. If a behaviour has a negative social image associated with it, the young person will want to avoid performing that behaviour. This means that although young drivers know what they should do to be safe on the road, they are willing to modify their behaviour to fit into a socially desirable group.



### How do I use this theory to design my intervention?

Gibbons and Gerrard's theory can be used to help design interventions, as it shows how social images can be developed to positively influence the behaviour of young people. Interventions could reduce risky behaviour by associating negative social images with risky behaviours such as not wearing a seatbelt or exceeding the speed limit. For example, people might be less likely to speed if they believed that a local newspaper was going to publish a picture of them and describe an incident where they were driving dangerously. Positive behaviours could be increased by associating positive social images with desired behaviours. For example, a road safety presentation for children might highlight the benefits of walking the extra distance to the pedestrian crossing to cross the road safely.

However, it is important to note that some individuals might be intent on taking risks, and efforts may not work to alter their behaviour. In some cases, raising the awareness of a risk of a behaviour may increase the attractiveness of the behaviour for some individuals. For example, if risk is a positive value for some young people, portraying an activity as risky will make them want to do it more. While those delivering the intervention might consider the negative aspects of risk taking, those receiving the intervention might be more concerned with the positive aspects of risk. In addition, some of these activities, such as driving at excessive speed, might be perceived as pleasurable by some individuals, and therefore a weak intervention is likely to fail as it will not compete with the attraction to the activity<sup>3</sup>.



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### Health belief model

The health belief model is another popular behavioural change theory.

It contains two main components:

- Perceptions of health threat
- Evaluations of behaviours aimed at counteracting the threat

Perceptions of health threat result from an individual's beliefs about the perceived susceptibility to the event or illness and the perceived severity of its consequences. The individual will decide on the action to be taken by evaluating possible alternatives. This usually involves the individual evaluating alternatives in terms of their perceived benefits or efficacy (such as reducing the risk of crashing) and by their perceived costs or barriers (such as it being inconvenient, unpleasant or expensive).

A further predictor in the health belief model is cues to action, which are strategies that can be used to encourage the individual to be 'ready' to take action. Cues to action are commonly divided into factors which are internal (e.g. physical symptoms) or external (e.g. mass media campaigns) <sup>9</sup>.

### How do I use this theory to design my intervention?

The health belief model can be used in the design of your road safety interventions.

For example, the model could help you to determine that a driver is likely to avoid speeding if:

- They believe that they are susceptible to negative outcomes of speeding, such as being fined or involved in a collision, and that these outcomes are serious
- The perceived benefits of not speeding outweigh the costs

Based on an understanding of the perceived benefits or costs of alternative behaviours, you can then design an intervention to provide information about the potential consequences of exceeding the speed limit and to promote the benefits of not exceeding the speed limit <sup>9</sup>.



## Transtheoretical model

The transtheoretical model is different to other behavioural change theories because it suggests that behaviour change is achieved in stages. The model predicts the stages that an individual will transition through while attempting to change a behaviour rather than predicting the behaviour itself<sup>9</sup>. The model proposes that behaviour change is a process of six stages:

- **Pre-contemplation-** at this stage, an individual is not intending to make a change within the near future, for example, 'I am happy speeding, and I intend to continue'.
- **Contemplation-** the individual does intend to change their behaviour within the next 6 months. At this stage, the individual is likely to be aware of the pros and cons of changing their behaviour. For example 'Perhaps I should make sure that I don't speed in the future, because I know that it is dangerous'.
- **Preparation-** represents the stage when the individual has a plan of action and is planning to make a change in the immediate future, for example 'I will try to stop speeding in residential areas'.
- **Action-** the stage at which an individual makes a behavioural change, for example, 'I have stopped speeding'.
- **Maintenance-** at this stage, the individual is working to prevent a relapse in their behaviour, for example, 'I have not been speeding for months'.
- **Termination-** this is the stage at which an individual has 100% efficacy and will maintain their behaviour. This is difficult, and therefore people often remain in the maintenance stage for life<sup>9,11</sup>.

It has often been assumed that people move through these stages in order, but this might not be the case. For example, an individual might relapse from the action stage to an earlier stage. An individual might also cycle through the stages several times before achieving a long term behaviour change<sup>9</sup>.

## How do I use this theory to design my intervention?

The transtheoretical model can be really useful in helping you to design your road safety intervention because it is really important to match behaviour change interventions to the stage that people are at. For example, if an individual is in the pre-contemplation stage and has no intention of stopping exceeding the speed limit within the near future, you will need to design an intervention that will raise their awareness of the consequences of their behaviour for them to even contemplate making a change.

Without a well-planned intervention relating to the stage the individual is at, it is likely that they will remain as not contemplating changing their behaviour at all, or intending a change, but lacking the motivation to do so.



## Pilot Studies

It is often useful to run a small scale test, known as a pilot study, to help you to improve the design and delivery of your intervention. At this stage, you might be unsure of some of the practicalities of delivering your intervention, and so decide to carry out a small scale trial run.

For example, you might decide that you would like to deliver a small scale presentation on the dangers of drink driving to young people. However, during the pilot study, you might realise that a particular activity in the workshop is not being well received by young people, or that they have a higher level of knowledge on the dangers of drink driving than you expected.

This means that the pilot study will enable you to decide what improvements need to be made to your intervention before you roll it out any further.



## Evaluation

Finally, it is important to evaluate your intervention, to determine whether it has been successful in meeting its aims and objectives, and to identify any changes that might need to be made. The basic steps to evaluating your road safety intervention are as follows:

- **Define the aims and objectives of the evaluation** – consider why you have chosen to evaluate your project, and how you are going to carry it out. Ask yourself what the intervention is trying to achieve and work from there to develop specific aims and objectives.
- **Define the target population**- at this stage, you will need to decide who you are going to collect data from. For example, you might collect data from those who attend your intervention or those who deliver it.
- **Decide on an evaluation design**- consider whether you will choose an experiment, quasi experiment or a non-experiment.
- **Select and design data collection methods**- you will then need to decide whether you would like to collect quantitative data, qualitative data, or both and what method you are going to use to collect this data.
- **Collect the data**
- **Analyse the data you have collected**
- **Write up and publish your results**- even if they are negative, in an evaluation report. Reports are really useful because they can act as an evidence base for future projects, and can help you and other practitioners to avoid delivering previously unsuccessful interventions. You can use the [e-valu-it toolkit](#) to help you create your evaluation report, and you can publish this on our website for other road safety practitioners to use when designing future interventions.
- **Make any identified improvements to the intervention**- based on the recommendations included in your report.

Evaluation is a cyclical process, meaning that the final outcomes of evaluation inform your future activities, contributing to the evidence base.

For more advice on designing your intervention and the evaluation process, visit the [roadsafetyevaluation website](#), where you can access [help and guidance](#) on the evaluation process and the [e-valu-it toolkit](#).



## References

<sup>1</sup> Connexions (2001) 'A Little Book of Evaluation'

URL: <http://www.roadsafetyevaluation.com/docs/little-book-of-evaluation.pdf> Date Accessed: 24/11/2016.

<sup>2</sup> Box, E. (2010) 'RAC Foundation response to: Education in road Safety: are we getting it right?'

URL:

[http://www.racfoundation.org/assets/rac\\_foundation/content/downloadables/education%20in%20road%20safety%20-%20mckenna%20-%20080910%20-%20report.pdf](http://www.racfoundation.org/assets/rac_foundation/content/downloadables/education%20in%20road%20safety%20-%20mckenna%20-%20080910%20-%20report.pdf) Date accessed: 23/11/2016.

<sup>3</sup> McKenna, F. (2010) *Education in Road Safety: Are we getting it right?* London: RAC Foundation.

<sup>4</sup> Lopez et al. (2009) 'Theory-Based Interventions for Contraception' *Cochrane Database of Systematic Reviews 2009*, Issue 1, Art. No.: CD007249. DOI: 10.1002/14651858.CD007249.pub2

<sup>5</sup> Hauer, E. (2007) *A case for evidence-based road-safety delivery*, Washington: AAA Foundation for Traffic Safety.

<sup>6</sup> Luria et al (2000) 'An Evaluation of a Safety Education Program for Kindergarten and Elementary School Children' *Arch Pediatr Adolesc Med.* 154: 227-231.

<sup>7</sup> Fishbein, M., & Ajzen, I. (1975) *Belief, attitude, intention, and behaviour.*

<sup>8</sup> Azjen, I. (1991) 'The theory of planned behaviour', *Organisational Behaviour and Human Decision Processes*, 50(1): 179-211.

<sup>9</sup> Fylan, F. et al (2006) *Road Safety Research Report No. 66: Effective Interventions for Speeding Motorists.* DfT.

<sup>10</sup> Gibbons, F. X., & Gerrard, M. (1995) 'Predicting young adults' health risk behaviour', *Journal of Personality and Social Psychology*, 69: .505-517.

<sup>11</sup> CommGAP (2016) 'Theories of Behaviour Change'

URL: <http://siteresources.worldbank.org/EXTGOVACC/Resources/BehaviorChangeweb.pdf> Date Accessed: 28/09/2016



## Useful Links

Road Safety Evaluation: <http://www.roadsafetyevaluation.com/>

E-valu-it Toolkit: <http://www.roadsafetyevaluation.com/toolkit/login>

Road Casualties Great Britain: <https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2015>

MAST: <http://www.roadsafetyanalysis.org/portfolio-item/mast-online/>

CrashMap: <http://www.crashmap.co.uk/>

Google Scholar: <http://scholar.google.co.uk/>

Cochrane Reviews: <http://www.cochranelibrary.com/cochrane-database-of-systematic-reviews/>

Road Safety Observatory: <http://www.roadsafetyobservatory.com/>

Road Safety Knowledge Centre: <http://www.roadsafetyknowledgecentre.org.uk/>

ORSA Case Studies: <http://www.orsa.org.uk/case-studies/>

E-valu-it Reports: <http://www.roadsafetyevaluation.com/reports/e-valu-it>

Non E-valu-it Reports: <http://www.roadsafetyevaluation.com/reports/none-valu-it>

Travelwest Essential Evidence: <https://travelwest.info/essentialevidence/safety>





accidents don't have to happen

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