

Evaluation Methods for UK-Fire Rescue Services

Table of Contents

| | |
|--|-----------|
| Introduction | 4 |
| Purpose of the document..... | 4 |
| Why evaluate?..... | 4 |
| What is proportional? | 4 |
| When should an evaluation start? | 5 |
| How to use the document | 5 |
| Section 1 Evaluation Flow Chart..... | 6 |
| Section 2: Method Examples..... | 7 |
| Method Example 1 - (Prevention) Water Safety Social Media Campaign for 18's and over..... | 8 |
| Method Example 2 – (Prevention) Class-based Pre-driver Intervention (16- to 18-year-olds)..... | 14 |
| Method Example 3. (Prevention) Fire Safety Class-based Intervention - Key Stage 2 | 20 |
| Method Example 4. (Protection) Fire Safety Audits by Fire Safety Protection Officers | 27 |
| | 30 |
| Method Example 5. (Protection) Fire Safety Checks by Operational Officers/Firefighters | 31 |
| Method Example 6. (Protection) - Inspection of New Building Plans and Responses to Consultees | 35 |
| Method Example 7. (Response) Pilot of Emergency Medical Response..... | 39 |
| Method Example 8. (Response) Rescue or Evacuation from Water..... | 44 |
| Method Example 9. (Response) Road Traffic Collision (RTC)..... | 49 |

| | |
|--|-----------|
| Method Example 10. (Response) Animal assistance incidents | 54 |
| | 59 |
| Blank Method Example Template | 60 |
| Appendix A – Evaluation Guidance | 61 |
| What outcomes will the evaluation need to measure? | 61 |
| Evaluation designs | 65 |
| Pre-and post-design | 65 |
| Control group designs | 66 |
| Cross-sectional..... | 67 |
| Quantitative and qualitative data | 68 |
| Measures | 69 |
| Reliability | 69 |
| Validity | 69 |
| Triangulation | 69 |
| Questionnaires | 70 |
| Qualitative interviews..... | 72 |
| Focus Groups | 73 |
| Other sources of data..... | 74 |
| Sampling | 75 |
| Data Analysis | 76 |
| GDPR..... | 76 |
| Analysing quantitative data..... | 76 |

| | |
|---|------------|
| Analysing qualitative data | 79 |
| Reporting | 80 |
| Ethics and legal considerations | 81 |
| Common weaknesses in evaluation | 83 |
| Appendix B – Interventions outcome measures | 85 |
| Application to Prevention, Protection and Response..... | 86 |
| Appendix C – Case studies..... | 93 |
| Evaluation of the impact of Fire and Rescue Service (FRS) interventions in reducing the risk of harm to vulnerable groups of people from winter-related illnesses..... | 93 |
| ‘I want to, I can... be healthy, safe and secure’ | 97 |
| Exit Project – Response | 99 |
| Appendix D – Participant information sheet..... | 101 |
| References..... | 103 |

Introduction

Purpose of the document

This document is intended to further develop the UK FRS ability to complete robust evaluations across Prevention, Protection and Response. This is achieved through the provision of 10 method examples. These examples provide a guide to the types of approaches that a practitioner with limited evaluation experiences could undertake. This document focuses on outcome evaluations rather than process or economic evaluations, information about these types of evaluation can be found in the Magenta Book – Central Government guidance on evaluation https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879438/HMT_Magenta_Book.pdf.

Why evaluate?

Evaluation needs to be a central element of the work of the UK's Fire and Rescue Services (UK FRS) as it:

- Identifies areas of development
- Identifies what outcome the intervention has achieved
- Reduce the risk of poor practice being repeated
- Assists in the development of more effective and efficient practices
- Allows the sharing of good practice.

To achieve these outcomes, an evaluation must be designed so that it provides objective evidence of the intervention's outcomes, whether these outcomes are positive or not. Evaluation should not be seen as a 'checkbox' exercise; it needs to form an integral part of the intervention and be seen as having the same importance as the intervention itself. For these reasons the HMICFRS, in their round 1 inspections, identified the need to improve evaluation in the sector. More details can be found at: <https://www.justiceinspectors.gov.uk/hmicfrs/publication-html/assessment-framework-commencing-january-2023-fire-and-rescue-services/>.

What is proportional?

Evaluation is a complex process that will require resources. However, it also needs to be proportional to the scale of the intervention and its likely impact on the service or the community. Whilst it is difficult to be precise, a figure of 5 to 10 percent of the intervention budget is often suggested, but this will depend on many factors, including the availability of the resources, the impact the intervention will have, and the possible complexity of the evaluation.

When should an evaluation start?

The acronym SMART (Specific, Measurable, Achievable, Realistic, Time-bound) is often used in relation to setting an intervention's goals. The measurable element refers to what can be measured and how these should be measured, in other words, how the intervention will be evaluated. Evaluation is not a bolt-on; evaluation planning needs to be embedded into the design of the intervention from the start of the intervention design process to ensure that the evaluation and interventions are fully aligned.

How to use the document

After this introductory section, the document comprises 2 sections. Section 1 consists of a flow chart providing a guide to the evaluation process. You can access more information about each step mentioned in the flowchart by clicking on 'view guidance'. Section 2 contains ten method examples.

Section 1 Evaluation Flow Chart

This chart is a guide to the evaluation process. **(Please note, this is a mock-up and may change as the interactive PDF is developed)**

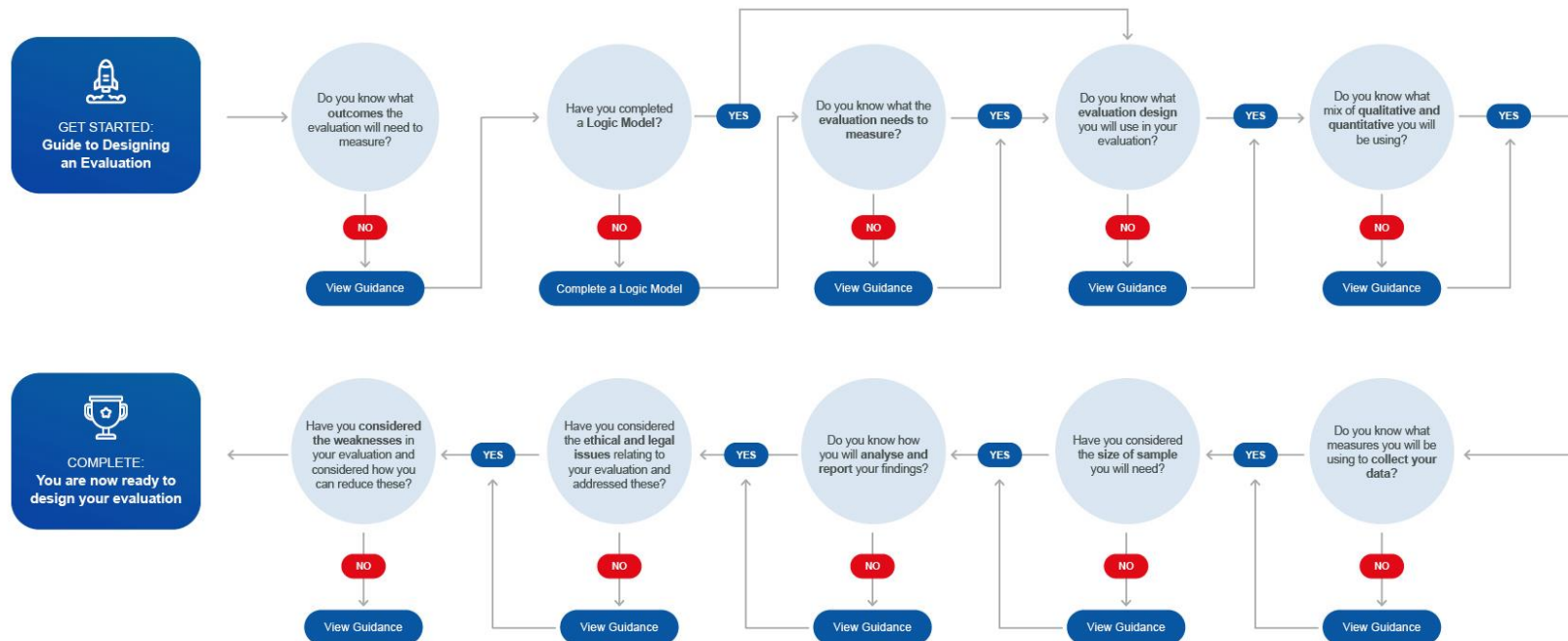
Figure 1. Evaluation design flow chart



Evaluation Flow Chart

A guide to help you through the evaluation process.

 Click on each question/topic button to learn more or proceed to the next question if completed.



Section 2: Method Examples

Every evaluation should have a document outlining how the evaluation process will be completed. This plan is often referred to as the evaluation method or methodology. This section contains ten examples based on the questions contained in the flow chart in Section 1 (Figure 1). They have been written as if someone is proposing the evaluation design.

The examples given have been designed to be delivered by a practitioner rather than by an expert in evaluation. They are designed to provide a reasonable level of evidence of the outcomes of an intervention, but it is also essential to recognise their limitations. If a greater and more robust level of proof is required and evaluation expertise is available, then these suggested designs can be further developed. Conversely, if insufficient resource is available, it would be possible to reduce the scope of the evaluation. However, this will reduce the robustness of the process. The ten outlines given are highly transferable to a wider range of interventions.

Table 1. Evaluation method examples and template

| Intervention | Service areas |
|--|---------------|
| Water Safety Social Media Campaign for 18 and over | Prevention |
| Class based Pre-driver Intervention (16- to 18-year-olds) | Prevention |
| Fire Safety class-based intervention Key stage 2 | Prevention |
| Fire Safety Audits by Fire Safety Protection Officers | Protection |
| Fire Safety Checks by Operational Officers/Firefighters | Protection |
| Inspection of New Building Plans and Responses to Consultees | Protection |
| Pilot of Emergency Medical Response | Response |
| Rescue or evacuation from the water | Response |
| Road Traffic Collisions | Response |
| Animal assistance | Response |
| Method template | All |

Method Example 1 - (Prevention) Water Safety Social Media Campaign for 18's and over

Background

This template outlines how an online social media water safety campaign could be evaluated. This example could be adapted and applied to various social media campaigns, including road and fire safety.

Question 1. What outcomes will you be seeking to measure?

The campaign's objectives are to:

- improve the target group's:
 - Understanding of what to do if someone fell into open water
 - Understanding of the dangers of cold-water shock and how to respond
 - Understanding of the dangers of entering open water after consuming alcohol
- Make them more cautious about entering open water.

The evaluation will also seek to identify how the campaign could be improved, its reach and if it was cost-effective.

Question 2. What design(s) will the evaluation use?

As it is impossible to limit the spread of a social media campaign, a pre-and post-evaluation would be an appropriate design. However, this is a relatively weak design as it fails to control for external influences that may impact the evaluation results.

Pre-measures (Time 1 (T1)) would be administered before the commencement of the campaign via social media, with the post-measures (Time 2 (T2)) being sent after the completion of the campaign. Whilst an additional post-measure could be sent, for example, 4 weeks post-completion of the campaign, it will be difficult to draw a firm conclusion from this, as a range of external influences may affect the results; therefore, a second post-intervention measure will not be used.

Question 3. What mix of qualitative and quantitative approaches will be used?

The primary measure will be an online questionnaire that will collect qualitative and quantitative data. The qualitative data will be collected using open questions, with quantitative data collected using closed questions. Further qualitative data will be collected by asking participants who complete the questionnaire if they would be willing to complete a short telephone interview to gain insights about the campaign's content and messages.

Question 4. What measures and sources of data will be used?

Four measures and sources of data will be used within the evaluation:

1. Online questionnaire
2. Semi-structured telephone interviews
3. Statistics provided by the social media sites
4. FRS financial information.

Online questionnaire

The online questionnaire will measure all 3 of the campaign objectives and collect demographic data relating to age, gender, and ethnicity. The questionnaire will also ask for a name and email address to allow the T2 questionnaire to be sent to the participants.

The questionnaire will ask 6 knowledge-based questions to identify if the participant's understanding of the issues covered in the campaign had improved from T1 to T2 concerning what to do:

- If someone fell into the water
- How to react to cold water shock
- The dangers of alcohol consumption when entering open water.

The questionnaire will include a scale that will ask the participants how likely they are to enter open water on a 7-point scale ranging from very unlikely to very likely, for example:

If you were near open water, how likely are you to enter open water:

on a nice day

when you have consumed alcohol

This scale will measure whether participants have become more cautious about entering open water.

The questionnaire will include open-text questions asking the participant what they felt were the main messages relayed by the campaign.

Semi-structured telephone

Semi-structured telephone interviews will also be used to gain insight into the participant's views about the campaign. The interviews will be completed once the social media campaign has been completed. This will give insight into what the participants liked and disliked about the campaign. These will be recorded and then transcribed for analysis.

Social media data and FRS financial information

Data relating to the number of people visiting the campaign and the number of Shares and Likes will also be used. This will be collected from social media sites analytics. Costs of production and staff time will also be collated for analysis.

Question 5. Who will complete the measures (Sampling)?

The minimum number required for this analysis will be 100 participants completing both the T1 and T2 questionnaires. The sample will be recruited through the social media sites used to promote the campaign. In addition, ten semi-structured telephone interviews will be completed.

Question 6. How will the data be analysed and reported?

An analysis will be completed to identify if the post-intervention scores have improved from the pre-intervention scores. If a change is found, the data will be passed to a data analyst to complete significance testing. The analysis will answer the following questions:

- Was there an improvement in:
 - Understanding of what to do if someone fell into open water
 - Understanding of the dangers of cold-water shock and how to respond appropriately
 - Understanding of the dangers of entering open water after consuming alcohol
 - Making the participants more cautious to enter open water.

- Was there any difference in the results by gender, age and ethnicity (subject to sample size).

Qualitative data will be analysed by use of a themed analysis. This analysis will seek to identify:

- What the participants felt were the main messages from the campaign, if they felt the campaign was relevant to them
- How the campaign could be further developed
- Their feelings about the look and feel of the campaign's imagery and content.

Costs will also be analysed against the reach and outcome of the campaign to identify the cost-effectiveness of the campaign.

The evaluation outcomes will be written up, reported to the FRS management team and then shared with other FRS.

Question 7. What ethical and legal issues need to be considered?

Informed consent and privacy

The questionnaire would include an information sheet explaining the purpose of the evaluation, how the data will be used, how it will be stored, who will have access to the data, and when the data will be depersonalised. A similar information sheet will be sent to the participants before commencing the telephone interviews. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how participants can have their data removed from the evaluation.

Harm to participant

No harm is anticipated to occur to the participants.

Deception

No deception will be used in this evaluation.

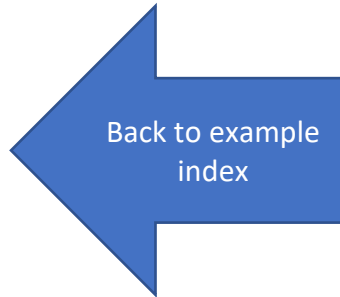
Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Bias or issues | Description | Mitigation |
|---|--|--|
| Lack of objectivity | The same team is delivering the evaluation and the social media campaign | Greater emphasis will be placed on the quantitative elements. Another team will review the questionnaire and semi-structured interview question sheet to ensure objectivity in the questions. An external team member will review the themed analysis and assist in coding. |
| Validity and reliability of the questionnaire | The questionnaire is being developed specifically for this intervention | The questionnaire will be tested with members of the public to ensure that they understand the questions. Content specialists will be asked to review the questionnaire to ensure that it is technically correct. |
| Actual behaviour not being measured | The evaluation has no measure of actual behaviour | Entering open water is affected by a range of possible factors, for example, the weather. Therefore, intention will be used as an indicator of behaviour as this is often a pre-cursor to actual behaviour as this links to the Theory of Planned Behaviour. |
| Social desirability | The participants may give the answers they think the evaluator wants to hear | The questionnaire will be carefully designed and tested to minimise this impact. |
| Sampling | Small sample size | A small sample size increases the chance of error. A small sample will also limit the analysis in relation to identifying differences in the results between genders, age groups and ethnicity. Therefore, 100 is seen as a minimum. If possible, this will be increased depending on the reach of the campaign. |
| Sampling | Self-selecting group of social media users | People seeing the campaign may already have an interest in this area and may not be representative of the population. Also, by its nature, the campaign will only reach social media users. |

Additional note

Consideration should also be given to sending out a questionnaire to any partner organisations involved in the campaign. This should explore the following themes:

- How successful they felt the campaign had been?
- How easily did they find the FRS to work with?
- Did the FRS listen to any concerns they had about the intervention?
- How did the FRS address these concerns?
- How willing would they be to work with the FRS again on this type of project?
- How could they improve their partnership working in the future?



Method Example 2 – (Prevention) Class-based Pre-driver Intervention (16- to 18-year-olds)

Background

This example outlines how a class-based pre-driver intervention could be evaluated. The approach could be adapted and applied to other class-based interventions.

Question 1. What outcomes will you be seeking to measure?

The intervention aims to decrease the participant's willingness to commit driving violations after passing their driving test.

This will be achieved by:

- Increasing participant's understanding of:
 - The need to obey traffic regulations
 - The dangers of driving when impaired or being carried as a passenger by a driver who is impaired through:
 - Fatigue
 - Distraction
 - Alcohol or other drugs.

- The development of coping strategies that can be used when they may feel tempted to engage in unsafe behaviours.

The evaluation will also seek to identify:

- How the delivery of the session could be further improved
- How the administration process supporting the intervention could be further enhanced
- If the intervention had altered the pupil's intentions to learn to drive
- If the intervention was delivered in the most efficient and effective manner.

Question 2. What design(s) will the evaluation use?

A control group design will be used. This will allow a comparison between a group that has received the intervention (Treatment group) and a group that has not received the intervention (Control group). Both groups will be tested prior to the Treatment group receiving the intervention (Time 1 (T1)) and 4 weeks after the intervention (Time 2 (T2)). The percentage of pupils receiving a pupil premium in each school will be used as a way of ensuring the Treatment and Control groups are matched. A list of schools/colleges will be produced and ordered by the percentage of children receiving pupil premiums. The first school on this list will be allocated to the treatment group, the second to the control group, the third to the treatment, the fourth to the control, etc., until the list is exhausted.

Question 3. What mix of qualitative and quantitative approaches will be used?

The pupils will complete an online questionnaire which will include the use of open questions and statistical scales. Given the age of the participants involved it would not be appropriate to ask them to complete one-to-one telephone interviews. Therefore, a post-intervention focus group will be conducted with the treatment schools/colleges to gain insight into the pupil's views of the intervention. In addition, all school staff attending the intervention will be asked to complete a post-intervention feedback questionnaire that includes a mix of open and closed questions.

Question 4. What measures and sources of data will be used?

Three measures will be used to collect data and sources of data:

1. Pupil online questionnaire
2. Pupil focus groups
3. Staff questionnaire
4. FRS financial data.

Pupil online questionnaire

This anonymous questionnaire will include the main outcome measures for the evaluation. These measures will be the Pre-driver Violation Willingness (PVW) scale¹ which is a validated scale designed explicitly for pre-drivers, and a knowledge assessment section to assess if participants' understanding of the dangers of driving whilst impaired had improved. Demographic data (gender, age, and ethnicity) will also be

collected. The T2 treatment group questionnaire will include additional questions relating to how effective they felt the intervention had been and what they think could be done to improve it.

Pupil Focus Group

A focus group will be completed with support from the participating schools/colleges. A semi-structured interview template will be used to provide a structure for discussion. The interview template will include a section that will present the group with a scenario and ask them what they would do in that situation. For example, what would the group do if they meet a group of friends on a night out who offered them a lift home but the driver had been drinking? This will provide insight into how useful they found the coping strategies discussed during the intervention. The focus group will be recorded and transcribed for analysis.

Staff questionnaire

All teachers/learning support staff attending the intervention will be asked to complete a questionnaire, which will ask them to rate the session for:

- Level of pupil engagement
- Effectiveness
- Effective use of school time
- The appropriateness of the content
- How well the booking and other arrangements operated.

Open questions will ask the school's staff how they felt about the session and how the supporting administrative processes could be improved.

Data on the number of sessions being delivered and the number of young people attending will be recorded and reported, as will information about the cost of providing the intervention.

FRS Financial data

This will be used to assess the cost of delivering the intervention.

Question 5. Who will complete the measures (Sampling)?

All the pupils will be offered the opportunity to complete the online questionnaire. A relatively large sample will be required as the analysis will seek to explore how effective the intervention had been by gender, age and ethnicity.

At least 4 schools will be asked to participate in the focus group. These will be selected by identifying the schools in the area with the highest and lowest pupil premium rates; these schools will then be asked to participate in this element of the evaluation. In this way, both ends of the socioeconomic spectrum will be represented. The pupil premium rate will be used as an indicator of levels of socioeconomic activity.

All school staff who attended the session will be asked to complete the staff feedback questionnaire.

Question 6. How will the data be analysed and reported?

The pupil questionnaire incorporates an academic measure which will need to be analysed by a data analyst to identify what impact the intervention had on the treatment group compared to the control group.

The questions the analysis of the data will need to answer include the following:

- Were there any statistical differences between the control and treatment groups at T1
- Were there any statistical differences between the control and treatment groups at T2
- Were there any differences at any time points by age, gender and ethnicity.

Qualitative data will be analysed by use of a themed analysis. This analysis will seek to identify what the participants felt were the main messages from the intervention, if they thought the campaign was relevant to them, how the intervention could be further developed and their feelings about the look and feel of the intervention imagery and content.

The staff questionnaire will be analysed to identify what they felt about the intervention in relation to the following:

- The students' levels of engagement
- The overall effectiveness
- If it was good use of school/college time
- The appropriateness of the content
- How well the booking and other arrangements had operated.

The data relating to costs and the number of pupils attending the presentation will be analysed to provide a delivery cost.

The evaluation outcomes will be written up, reported to the FRS management teams, and shared with other FRS.

Question 7. What ethical and legal issues need to be considered?

Informed consent and privacy

The questionnaire would include an information sheet explaining the purpose of the evaluation, how the data will be used, how it will be stored, who will access it, and when the data will be depersonalised. Participants must confirm that they have read this before commencing the questionnaire. A similar information sheet will be sent to the participants before commencing the focus group, and they will have to confirm they have read this prior to starting the interviews. All participating schools/colleges will be sent an information sheet as they will need to confirm they are willing for their students to participate in the evaluation. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how participants can have their data removed from the evaluation. This will not be possible for the anonymous online questionnaire.

Harm to participant

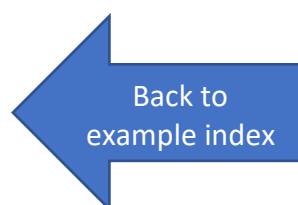
No harm is anticipated to occur to the participants through their participation in the evaluation process. To ensure that the schools who act as the control group do not miss out on the intervention, it will be provided to them upon completion of the data gathering phase of the evaluation.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|------------------------------|---|---|
| Lack of objectivity | <p>The same team is delivering the intervention and are completing the evaluation</p> <p>School staff may be overly positive about the intervention as they were pleased to have a guest presentation</p> <p>School staff will not have detailed road safety or behavioural change knowledge.</p> | <p>Another team will review the questionnaire and semi-structured interview question sheet to ensure objectivity.</p> <p>An external team member will review the themed analysis and assist in coding.</p> <p>Both the qualitative and quantitative analyses will be reviewed externally.</p> |
| Behaviour not being measured | The evaluation has no measure of actual behaviour | An academic measure is being used that has been rigorously tested to demonstrate it is predictive of future behaviours. |
| Social desirability | The participants may give the answers they think the FRS wants to hear | The questionnaire will be carefully designed and tested to minimise this impact. |
| Sampling | The control and treatment groups need to be well matched and of sufficient size. | <p>Pupil premium will be used to match schools.</p> <p>Care will need to be taken to ensure that sufficient returns are received from both groups.</p> |



Method Example 3. (Prevention) Fire Safety Class-based Intervention - Key Stage 2

Background

This intervention is a Key Stage 2 classroom fire safety intervention. However, this could be adapted and applied to a wide variety of other class-based interventions.

Question 1. What outcomes will the evaluation need to measure?

The intervention aims to increase the participant's ability to consider situations in the home where a fire hazard may develop and be able to suggest how to prevent them. The learning outcomes for the session are for the participants to be able to:

- Manage risk in the home
- Identify possible fire risks and know how to reduce them
- Respond and react in an emergency

The evaluation will test the outcomes above and will also gain insight into the following areas:

- How the intervention could be improved
- Delivery costs

Question 2. What design(s) will the evaluation use?

A control group design will be used. This allows a comparison to be made between a group who has received the intervention (Treatment group) with a group that has not received the intervention (Control group). Both groups will be tested prior (T1) to the Treatment group receiving the intervention and 4 weeks after the intervention (T2). The percentage of pupils receiving a pupil premium will be used as a way of ensuring the Treatment and Control groups are well-matched. A list of schools will be ordered by the percentage of children receiving pupil premiums. The first school on the list will be allocated to the treatment group, the second to the control group, the third to the treatment, and the fourth to the control group, etc., until the list is exhausted.

Question 3. What mix of qualitative and quantitative approaches will be used?

A pupil questionnaire will be used to produce both quantitative and qualitative data. Focus groups will also be held with the pupils. Due to the pupils' age, the group size will be limited to approximately 6 pupils.

School staff attending the sessions will also be asked to complete an online questionnaire. This questionnaire will include open and closed questions to generate qualitative and quantitative data.

Question 4. What measures and sources of data will be used?

The evaluation will use the following measures and sources of data:

1. A paper-based pupil assessment questionnaire
2. An online school feedback questionnaire
3. Data will also be collected on the number of pupils attending the presentations
4. FRS financial records

Paper-based pupil assessment questionnaire

The primary measure used will be a paper-based assessment questionnaire. This will include the following:

- Several pictorial questions where the children will be asked to circle any potential fire hazards. A point will be allocated for each hazard correctly identified
- A set of knowledge-based questions will assess their recall of the critical message contained within the session, including what to do in an emergency, how to call the emergency services, how to reduce risks in the home, etc.
- Age and gender questions.

To allow the pre-and post-questionnaires to be matched, 4 questions will be asked that will provide a personal code. These questions will be included: the first 2 letters of the street where they live, the first 2 letters of their family name, and the first 2 letters of the month they were born. This approach will remove the need to collect personalised data from children.

Fire service staff will administer the questionnaire at 2-time points 4 weeks apart. The schools receiving the intervention will receive the presentation one week after the administering of the initial questionnaire.

Staff attending the session

Staff attending the sessions will be asked to complete an online questionnaire sent immediately after the session has been delivered. This will investigate their views relating to the following:

- The content of the presentation
- How appropriate it was to the level of pupil
- How engaged they felt the pupils were
- How it could be further improved
- The effectiveness of the administration arrangements.

FRS financial data

Data on the number of sessions being delivered and the number of pupils attending will be recorded and reported, as will information about the cost of providing the intervention.

Question 5. Who will complete the measures (Sampling)?

All the pupils completing the intervention will be offered the opportunity to complete the questionnaire. A relatively large sample will be required for analysis, as the evaluation will need to explore the intervention's effectiveness by gender and age. It is estimated that a sample in excess of 150 in both the control and treatment groups will be needed to complete this analysis.

All treatment group schools will be asked to participate in the focus group. A semi-structured focus-group interview template will be used to provide a structure for discussion.

All school staff who attended the session will be asked to complete the online staff feedback questionnaire.

Question 6. How will the data be analysed and reported?

A simple analysis of the data will be completed to identify whether the post-intervention scores have improved from the pre-intervention scores. If this is found to be the case the data will be passed to a data analyst to complete significance testing. The questions the analysis will need to answer include the following:

- Were there any statistical differences between the control and treatment groups at T1
- Were there any statistical differences between the control and treatment groups at T2
- Were there any differences in the results by gender or age.

Qualitative data will be analysed by use of a themed analysis. This analysis will seek to identify what the participants felt were the critical messages from the intervention, if they thought the messages were relevant to them, and how the intervention could be further developed.

The staff questionnaire will be analysed to identify what they felt about the intervention in relation to the following:

- The pupil's levels of engagement
- The overall effectiveness
- If it was a good use of school/college time
- The appropriateness of the content
- How well the booking and other arrangements had operated.

The data relating to costs and the number of pupils attending the presentation will be analysed to provide a delivery cost.

The outcomes of the evaluation will be written up and will be reported to the FRS management teams and will be shared with other FRS.

Question 7. What ethical and legal issues need to be considered?**Informed consent and privacy**

Schools would need to be made aware of the scope of the evaluation and their advice sought as to whether they were happy for the evaluation to occur without seeking parental/carer permissions. For this reason, all schools would be sent an evaluation information sheet. Given that no personalised information is being recorded, it is anticipated that most schools will be happy for the questionnaire to proceed without parental/carer permission. However, if this is not the case, a parental information sheet and parental information form would need to

be prepared and issued to the parents/carers via the schools. A system would also have to be developed for registering which parents/carers have or have not given permission.

Both the school, and if required, the parental/carer information sheet would need to explain the purpose of the evaluation, how the data will be used, how it will be stored, who will be able to access it and when the data will be depersonalised/destroyed. A similar information sheet will be sent to the children before commencing the focus group.

A similar approach to that outlined in the previous paragraph would need to be followed for the participants of the focus groups. The schools are more likely to require parental/carer permission for this phase of the evaluation.

A similar information sheet will form part of the staff online questionnaire. Participants will need to confirm that they have read the information sheet prior to commencing the online questionnaire.

All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how a pupil's data can be removed from the evaluation. This will be possible as the pupils will have a unique code identifying them.

Harm to participant

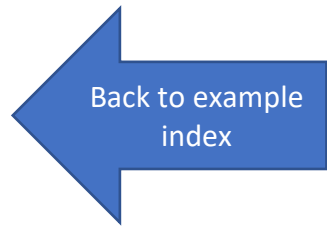
No harm is anticipated to occur to the participants through their participation in the evaluation process. To ensure that the schools who act as the control group do not miss out on the intervention, it will be provided to them upon completion of the data gathering phase of the evaluation.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Bias or issues | Description | Mitigation |
|---|---|--|
| Lack of objectivity | The team completing the evaluation is also delivering the intervention. | <p>Greater emphasis will be placed on the quantitative elements</p> <p>The questionnaire and semi-structured interview question sheet will be reviewed by another team to ensure objectivity in its design.</p> <p>An external team member will review the themed analysis and assist in the coding process.</p> |
| Validity and reliability of the questionnaire | The questionnaire is being developed specifically for this intervention | <p>The questionnaire will be tested with children who are not participating in the intervention, either as part of the control or treatment groups.</p> <p>Content specialists will be asked to review the questionnaire to ensure that it is technically correct.</p> |
| Actual behaviour not being measured | The evaluation has no measure of actual behaviour | <p>The evaluation is limited as it only looks to test knowledge rather than behaviour. Furthermore, given the age of the children, it is difficult to implement any form of assessment to identify if the children would do anything different in the future. However, this does not mean the evaluation is not worthwhile. Before any behaviour can alter, it is necessary to know what the correct behaviour is; this requires an understanding of the issues, which is what this intervention is looking to achieve.</p> |
| Sampling | The small sample sizes increase the chance of error and limits analysis in relation to identifying differences in the results between gender and age groups | 150 participants is seen as a minimum and may be increased. |
| Sampling | The control and treatment groups need to be well matched and of sufficient size. | <p>Pupil premium will be used to match schools.</p> <p>Care will need to be taken to ensure that sufficient returns are received from both groups.</p> |



Method Example 4. (Protection) Fire Safety Audits by Fire Safety Protection Officers

Background

This provides a possible method to evaluate the outcome of a fire safety audit completed by a Fire Safety Protection Officer. This evaluation will be exploratory in nature as it will aim to identify areas where the service can be improved rather than evaluating a new intervention.

Question 1. What outcomes will you be seeking to measure?

The evaluation will seek to answer the following questions:

- Did the attending officer identify risks appropriately and provide correct advice at the audit which reduced risk.
- Did the attending officer complete an appropriate audit record and correspondence/Notices if required?
- How long did it take from the Audit being completed to the issuing of any correspondence or Notices?
- How did the Responsible Person respond to the audit
- Were any actions identified to reduce risk (verbally or by correspondence/Notice) completed?
- How could the outcomes and process be further improved?

Question 2. What design(s) will the evaluation use?

The evaluation will use a mix of pre-and post and cross-sectional designs.????

Question 3. What mix of qualitative and quantitative approaches will be used?

The measures will mainly generate quantitative data, but some qualitative data will be generated from the open-text questions.

Question 4. What measures and sources of data will be used?

The following measures and data sources will be used:

- A review of the Audit record completed by the officer.
- A review of correspondence and/or Notices issued.
- Revisiting of high-risk premises to ensure actions were completed.
- A questionnaire for the Responsible Person or their representative.

Audit officer evaluation

The evaluation manager/team would complete a review of 4 audits per competent officer. This will identify if preparation and the audit process were appropriate, risks identified and recorded, and correct advice, correspondence or Notices issued. A scoring matrix will be developed to standardise this process. This matrix will ask the protection team to indicate how the Audit and outcomes could have been improved.

Audit process review

Audit records will be reviewed to identify how long the process took from Audit completion to issuing of correspondence/Notices over a 12 month period.

Audit outcome review

At least 2 Audits per officer which resulted in correspondence/Notices will be reviewed by the evaluation team at appropriate periods post-audit to identify if the recommendations/ requirements identified by the Officer have been implemented and risks reduced.

Owner questionnaires

The building owner will be asked to complete a questionnaire that will ask them about their experience of the Audit. This would include measures of how useful they felt the audit had been, if they agreed with recommendations and when they intend to implement any remedial actions. It will also include open questions asking them how they felt the process could have been improved.

Question 5. Who will complete the measures (Sampling)?

All Responsible Persons/representatives being audited will be invited to complete the questionnaire. However, it is anticipated that take-up will be low.

Question 6. How will the data be analysed and reported?

Statistical analysis will be performed on the quantitative data to answer the following:

- Effectiveness of the Audit preparation, inspection process and identification of risks.
- Effectiveness of Audit recording and correspondence/Notices
- What was the mean time taken from audit to issuing of correspondence/Notices
- How satisfied were the Responsible Persons/representatives with the process.

A themed analysis will be completed on the open-text questions to identify recurring themes.

A written report will be completed and shared with the FRS management and other FRS.

Question 7. What ethical and legal issues need to be considered?**Informed consent and privacy**

The Responsible Person/Representative questionnaire would include an information sheet explaining the purpose of the evaluation, how the data will be used, how it will be stored, who will access it, and when the data will be depersonalised. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how the business owner can have their data removed from the questionnaire element of the evaluation.

Harm to participant

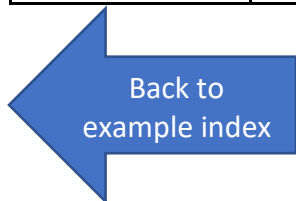
No harm is anticipated to occur to the participants. However, there may be an increased risk of financial cost being incurred due to the Audit that would not have occurred without the audit. This is deemed to be acceptable as it is a Regulatory process designed to achieve compliance with a Statutory duty to maintain safety.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|---------------------|---|--|
| Lack of objectivity | The team completing the evaluation is also delivering the intervention. | The questionnaire will be reviewed by an external team to ensure it is not biased. An external team member will review the themed analysis and assist in the coding process. |
| Limited sample size | The sample sizes suggested here is low to minimise the impact the evaluation has on the resources | If anything of concern is found the sample sizes could be increased |
| Social desirability | The Responsible Persons/representatives may give answers that they feel the service wishes to hear rather than truthful ones. | The questionnaire will need careful design to reduce this issue The review may allow some judgement to be made on how much of an issue this is and therefore to what confidence can be placed in these replies. |
| Biased answers | An owner who felt the audit was unfair may downgrade the process. | The analysis could cross-check the responses with the audit outcome to identify if the audit outcome impacts satisfaction ratings. |



Method Example 5. (Protection) Fire Safety Checks by Operational Officers/Firefighters

Background

This provides a possible method to evaluate the outcome of a fire safety check completed by Operational Officers or Firefighters. This evaluation will be exploratory in nature as it will aim to identify areas where the service can be improved rather than evaluating a new intervention.

Question 1. What outcomes will you be seeking to measure?

The evaluation will seek to answer the following questions:

- Did the attending Firefighter/Officer provide the required information to the protection team?
- Are crews referring appropriately?
- How did the owner of the building respond to the audit?
- How could the outcomes and process be further improved?

Question 2. What design(s) will the evaluation use?

The evaluation will use a mixed approach incorporating some elements of pre-and post and cross-sectional designs.

Question 3. What mix of qualitative and quantitative approaches will be used?

The measures will mainly generate quantitative data, but some qualitative data will be generated from the open-text questions.

Question 4. What measures and sources of data will be used?

The following measures and data sources will be used:

- A review of the Fire Safety Check record completed by the officer/firefighter
- A review of referrals by officers/firefighters to the protection team
- A questionnaire for the Responsible Person or their representative.

Operational Officer/firefighter referrals

The protection team will review a percentage (dependant on the size of the service) of crew referrals to identify if:

- Risk was identified correctly
- The information provided was sufficiently detailed
- The referral met the criteria to initiate an Audit by a Fire Safety Protection Officer.

A scoring matrix will be developed to standardise this process. This matrix will ask the protection team to indicate how the referral could have been improved.

Fire Safety Check Process review

Records will be reviewed to identify how long the Fire Safety Check process took.

Fire Safety Check outcome review

A percentage (dependant on the size of the service) of Fire Safety Checks will be reviewed by the evaluation team. These reviews will identify if any recommendations/referrals resulted in reductions in risk.

Responsible Person questionnaires

The Responsible Person will be invited to complete a questionnaire that will ask them about their experience of the fire safety check. This would include measures of how useful they felt the check had been for them, if they agreed with recommendations and when they intend to implement any remedial actions. It will also include open questions asking them how they felt the process could have been improved.

Question 5. Who will complete the measures (Sampling)?

The evaluation team will review a percentage (dependent on the number of fire inspections completed) of fire safety checks – these will be randomly selected. The evaluation team will review a percentage of crew referrals (dependent on the number completed by the service) – these will be randomly selected. All owners being audited will be asked to complete the questionnaire. However, it is anticipated that take-up will be low.

Question 6. How will the data be analysed and reported?

Statistical analysis will be performed on the quantitative data to answer the following:

- Effectiveness of Officer in preparation, inspection process and identification of risks.
- Effectiveness of recording and correspondence
- Effectiveness in referring to Fire Safety Protection
- How satisfied were the Responsible Persons/representatives with the process

A themed analysis will be completed on the open-text questions to identify recurring themes.

A written report will be completed and shared with the FRS management and other FRS.

Question 7. What ethical and legal issues need to be considered?**Informed consent and privacy**

The building owner questionnaire would include an information sheet explaining the purpose of the evaluation, how the data will be used, how it will be stored, who will access it, and when the data will be depersonalised. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how the business owner can have their data removed from the questionnaire element of the evaluation.

Harm to participant

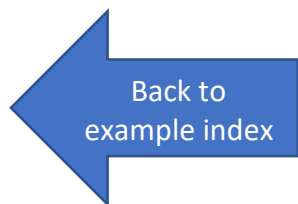
No harm is anticipated to occur to the participants however, there may be an increased risk of financial cost due to the fire safety check that would not have occurred without the check. This is deemed to be accepted as the aim is to improve safety.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|---------------------|---|---|
| Lack of objectivity | The team completing the evaluation is also delivering the intervention. | The questionnaire will be reviewed by an external team to ensure it is not biased An external team member will review the themed analysis and assist in the coding process. |
| Limited sample size | The sample sizes suggested here is low to minimise the impact the evaluation has on the resources | If anything of concern is found the sample sizes could be increased |
| Social desirability | The building owners may give answers that they feel the service wishes to hear rather than truthful ones. | The questionnaire will need careful design to reduce this issue The re-audits may allow some judgement to be made on how much of an issue this is and therefore to what confidence can be placed in these replies. |
| Biased answers | An owner who felt the audit was unfair may downgrade the process. | The analysis could cross-check the responses with the audit outcome to identify if the audit outcome impacts satisfaction ratings. |



Method Example 6. (Protection) - Inspection of New Building Plans and Responses to Consultees

Background

This example provides a method to evaluate the effectiveness of the information given by protection teams when asked to provide feedback on plans relating to new buildings or alterations to existing buildings. This evaluation will be exploratory as its aim is to identify areas where the service can be improved rather than evaluating a new intervention.

Question 1. What outcomes will the evaluation need to measure?

The evaluation will assess the following:

- If any advice given by the FRS Protection teams to Architects, Developers, Approved Inspectors, Local Authority Building Control, Planning or Licensing Departments (Consultees) is acted upon and if not, why not.
- How useful they find the information provided
- Their opinion about the level of service they receive
- How the information provided, and the service can be improved.

Question 2. What design(s) will the evaluation use?

The evaluation will use a cross-sectional design as the evaluation is looking to assess the current situation rather than a new intervention.

Question 3. What mix of qualitative and quantitative approaches will be used?

The main measure will be an online questionnaire that will use a mix of open and closed questions to produce both quantitative and qualitative data. In addition, further qualitative data will be produced through 6 semi-structured telephone interviews.

Question 4. What measures and sources of data will be used?

Two measures will be used in this evaluation, a consultee questionnaire and semi-structured interviews.

Consultee questionnaire

An anonymous online questionnaire will be sent to consultees who have submitted plans over a 6 to 12 months (depending on sample size) asking them to comment on the following:

- How useful the feedback was to them
- If the information was easily understood
- How often they implement the recommendations (this will use a 7-point scale ranging from 'I rarely need to implement the feedback' to 'always implement the feedback in full')
- An open-text question will ask them what elements of the feedback given were most and least useful
- Open questions will ask them to suggest how the information sent could be improved; for example, were there any areas they felt should have been covered but were not
- Their general level of satisfaction with the service, including how long the process took
- If they would be willing to complete a short telephone interview about the service. If they reply yes, a link will take them to a second questionnaire for them to provide their details. This process will maintain the anonymous nature of the initial questionnaire.

Semi-structured interviews

Six semi-structured interviews will be completed. These will be completed once the analysis of the questionnaire data has been completed, as this will allow any issues identified in the analysis to be further explored in the interviews. The questionnaire results will inform the development of a semi-structured interview template that will be used to provide a structure for discussion. The interviews will be recorded and transcribed for analysis.

Question 5. Who will complete the measures (Sampling)?

The link to the questionnaire will be sent whenever feedback on a planning application is sent to the local government or an architect over a 6 to 12-month period.

Question 6. How will the data be analysed and reported?

At the end of the 6 months, a statistical analysis will be performed on the quantitative data to answer the following:

- The level of compliance reported
- How useful the architects and local government planners found the feedback
- How clear they felt the feedback was
- Level of overall satisfaction with the service

A themed analysis will be completed on the qualitative data to identify any reoccurring themes or areas of interest.

Question 7. What ethical and legal issues need to be considered?**Informed consent and privacy**

The online questionnaire will include an information sheet explaining the purpose of the evaluation, how the data will be used, how it will be stored, who will access it, and when the data will be depersonalised. It will only be possible to proceed past the information sheet once the participant has clicked to say they have read it and have agreed to proceed. Interview participants must read and agree to a similar information sheet before registering to be interviewed. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining that as the questionnaire is anonymous, it will not be possible to remove their data from the evaluation. However, telephone interviewees will be able to have their data removed, and this will be explained to them before the commencement of the interview.

Harm to participant

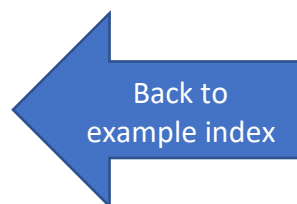
No harm is anticipated to occur to the participants.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|-----------------------------------|---|---|
| Lack of objectivity | The team completing the evaluation is also delivering the intervention. | The questionnaire will be reviewed by an external team to ensure it is not biased An external team member will review the themed analysis and assist in the coding process. |
| Sample size | Requests for this service are not constant and therefore the sample may not be large. | Continue the data collection process over a longer period. |
| Biased answers | The consultees may say they intend to implement all the suggested amends but do not do so | Inspections of the completed building could be completed to check if the information provide had been acted upon. However, given the build time involved this may not be possible. |
| Cross-sectional evaluation design | This design does not allow for the data produced to be cross-checked with other data. | The evaluation aims to identify ways the service can be improved. If areas of improvement are identified, interventions can then be implemented. The data produced from this evaluation could then be used as a baseline for a further evaluation. |



Method Example 7. (Response) Pilot of Emergency Medical Response

Background

This example provides an outline of how a new response intervention could be evaluated.

Question 1. What outcomes will you be seeking to measure?

The evaluation will seek to identify the impact on the FRS responding to incidents where a patient is experiencing a life-threatening condition, which the ambulance service would typically attend.

The evaluation will look specifically at the following:

- The speed of response from the FRS compared to the ambulance service response time
- If the enhanced training given to the crews was sufficient to provide them with the necessary skills
- The patient's reaction to being attended by a firefighter rather than a paramedic
- The number of incidents the FRS was asked to attend, including their location and time of day
- The type of medical conditions they attended
- How the process and outcomes could be further enhanced.

Question 2. What design(s) will the evaluation use?

This would be a cross-sectional design. Data would be collected over 6 months of the trial.

Question 3. What mix of qualitative and quantitative approaches will be used?

The evaluation would mainly generate quantitative data, but some qualitative responses will be gained through the semi-structured interviews completed with the firefighters and the open-text questions in the questionnaire sent to the firefighters and members of the public.

Question 4. What measures and sources of data will be used?

The following measures and data sources will be collected as part of the call-out process:

Incident logs

A crew questionnaire

Semi-structured interviews with the crews

A public questionnaire

Incident logs

The incident logs will be reviewed to collect the following data:

- Incident category and medical type (e.g., breathing difficulties)
- Location, date, and time of the incident attended by the FRS
- The response times
- Number of incidents attended
- The time that is taken to attend each incident
- How quickly ambulance crews arrived on the scene.

Crew interviews and questionnaire

Two months into the pilot, 6 firefighters will be asked to participate in semi-structured interviews to gain insight into their experiences. These will be recorded and then transcribed for analysis. This can be used to report initial findings and to help develop a questionnaire that will be administered to all participating firefighters. This questionnaire will be administered to all participating firefighters at the end of the pilot and will ask to gain insight into the following:

- How well the advance medical training had prepared them to deal with the emergencies they attended
- How this training could be further improved
- Their experience of the pilot.

Public survey

An online anonymous questionnaire will be developed to survey people's attitudes to the fire service taking on this role and their feelings about the firefighter attending a medical incident rather than an NHS responder. Demographic data will also be collected (i.e., gender, age, ethnicity, and postcode) to identify any differences in views between groups and geographical locations.

Question 5. Who will complete the measures (Sampling)?

Six firefighters will complete the semi-structured interviews. Consideration will be given to ensure that the firefighters completing the interviews are representative of both rural and urban areas.

All participating firefighters will be asked to complete the questionnaire.

The public attitude survey will be online and made available via the FRS communication channels. No target has been set, but it is hoped that the sample will be more than 1,000.

All other data will be collected over the 6 months trial period.

Question 6. How will the data be analysed and reported?

Statistical analysis will be performed on the quantitative data to answer the following:

- What was the average response time, and how did this relate to the ambulance response time
- What was the most common response time
- When were the peak demand periods, and how did this impact the FRS core activities
- How many medical emergencies were attended
- What was the geographical spread of the callouts
- What types of medical emergencies were attended
- Did the firefighters feel sufficiently trained to deal with the situations they were called to
- What were the views of the public towards the FRS taking on this role

A themed analysis will be completed on the open-text questions and the semi-structured interviews to identify recurring themes.

A written report will be completed and shared with the FRS management and other FRS.

Question 7. What ethical and legal issues need to be considered?

Informed consent and privacy

The public attitude questionnaire will include an information sheet explaining the purpose of the evaluation, how the data will be used, how it will be stored, who will access it, and when the data will be depersonalised. It will only be possible to proceed past the information sheet once the participant has clicked to say they have read it and have agreed to proceed. A similar sheet will be included in the firefighter questionnaire. Before commencing the semi-structured interviews, the firefighters will be asked to read the information sheet and confirm they are willing to proceed. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining that as the questionnaire is anonymous, they will not be able to withdraw their data from the survey.

Harm to participant

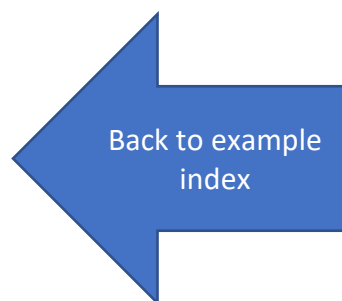
Whilst no physical harm is anticipated to occur to the participants there is the possibility that asking firefighters or members of the public to recount traumatic events may cause psychological harm. Consideration needs to be given to how best to support an individual if this occurred.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|-------------------------|---|---|
| No patient outcome data | No data will be collected on patient outcomes | Due to patient confidentiality, it is difficult to get this data from the NHS. However, the NHS will be asked to complete this type of study. |
| Bias replies | Firefighters may bias their replies in support or in opposition to taking on this role. | All participating firefighters will be asked to complete the firefighter questionnaire to provide a large sample. |
| Lack of control group | As this is a cross sectional design that does not include a control group it is not possible to compare the outcomes. | This is a pilot study; if there is sufficient evidence to justify a more comprehensive randomised trial, this could be commissioned in the future. |
| Lack of objectivity | The team completing the evaluation is also delivering the intervention. | An external team will review the questionnaire and semi-structured interview question sheet to ensure objectivity in its design. An external team member will review the themed analysis and assist in coding. |



Method Example 8. (Response) Rescue or Evacuation from Water

Background

This evaluation aims to provide insight into the effectiveness of FRS in dealing with water rescue. As these rescues are part of the UK FRS role, an evaluation of this nature will seek to identify areas of improvement. If an area of improvement is identified, an intervention can then be developed to address it. The evaluation or specific element(s) of this evaluation could then be repeated to ascertain if the new intervention has improved the situation using the results of this evaluation as a benchmark.

Question 1. What outcomes will the evaluation need to measure?

The evaluation will assess the effectiveness of rescue or evacuations from water by identifying the following:

- If the information provided to the response team was appropriate to their needs, including: **(Taken from <https://www.ukfrs.com/guidance/water-rescue?bundle=section&id=34365&parent=15396> on the 3 Jan 2023)**
 - Background to the incident, risks and hazards
 - Access to the incident
 - Location of the incident
 - If anyone is attempting a rescue
 - If other emergency services are in attendance
 - If the water is still or moving
 - If the casualty is submerged and when they were last seen.
- Response time to the incident
- Effectiveness and appropriateness of the resources sent (were these appropriate to the incident)
- Knowledge of the crews attending of the potential hazards and how to react to these
- If the correct control measures were implemented in line with national operational guidance (<https://www.ukfrs.com/guidance/water-rescue>)
- The effectiveness of communications with external partners.

Question 2. What design(s) will the evaluation use?

As the evaluation looks to assess the current situation rather than evaluate a new intervention, it will use a cross-sectional design.

Question 3. What mix of qualitative and quantitative approaches will be used?

Quantitative data will be produced using a partner organisations questionnaire, a crew knowledge assessment and a review of incident logs. Qualitative data will be generated by semi-structured interviews and the use of open questions within the questionnaire sent to the partner organisations.

Question 4. What measures and sources of data will be used?

The following measures will be used in the evaluation:

- An online partners questionnaire
- Firefighter knowledge assessment
- Semi-structured interviews
- Review of incident logs.

Partners questionnaire

An online questionnaire will be sent to organisations frequently associated with water rescue. The questionnaire will aim to assess the following:

- If the communication between them and the FRS was effective
- How the communication process could be improved
- If there were any other areas in which FRS could improve their performance.

The questionnaire will use a mix of scaling and open questions.

For example, the questionnaire could ask the partnership organisation to rate how effectively they felt the FRS service communicated with them at the scene of incidents using a 7-point scale ranging from very poor to very good; this could then be followed up with an open question asking them to provide a detailed answer of how they feel this score could be improved. A similar approach could be used to ask them to rate the appropriateness of communication after the incident, how well any communication equipment used had performed, if they were clear on who was their point of contact and the clarity of the language used.

Firefighter knowledge assessment

Firefighter knowledge relating to water rescue will be assessed using an online assessment relevant to their water rescue capability (Module 1,2,3 responder etc.). The assessment tool will be aligned with the FRS guidelines for water rescue.

Semi-structured interviews

Twenty semi-structured interviews will be completed with incident commanders who have attended incidents in the last 3 to 6 months. A semi-structured interview template will be developed to guide the discussion. The interviews aim to seek to identify if the service requires improvement. The themes explored would include:

- If the information passed from the command room provided the required information
- The effectiveness of the communication between FRS and partner organisations
- The level of resources sent and its appropriateness to the needs of the operation
- The overall effectiveness of the response
- What could be implemented to improve the efficiency of the response

Review of incident logs

Six months of incident logs will be reviewed to ascertain the response effectiveness and identify areas of improvement. This analysis will look at response times, geographical data and the demographics of the casualties.

Question 5. Who will complete the measures (Sampling)?

All organisations routinely associated with water rescue will be contacted (e.g., police, ambulance, British Waterways, HM Coastguard, etc)

All firefighters in the service will be asked to complete the knowledge assessment.

Twenty semi-structured interviews will be completed with incident commanders who have attended an incident in the last 3 to 6 months.

Six months of incident logs will be reviewed.

Question 6. How will the data be analysed and reported?

At the end of the evaluation period, the analysis will look to answer the following questions:

- What level of knowledge do firefighters have about water rescue
- If the correct level of resources was provided when attending the incident
- The effectiveness of FRS communications with partner organisations
- The effectiveness of partner organisations communication with the FRS
- Response times
- Ease of access to the incident site
- Where and when the incidents occur
- Who is involved in the incidents (age, gender and ethnicity)
- Areas of improvement.

A themed analysis will be completed on the qualitative data to identify any reoccurring themes or areas of interest.

Question 7. What ethical and legal issues need to be considered?

Informed consent and privacy

All participants will be required to read an information sheet at the beginning of the questionnaire/assessment/interviews explaining the purpose of the evaluation, how their confidentiality will be protected, and how the data will be stored and depersonalised. It will not be possible to proceed past the information sheet until the participant has clicked to say they have read it and have agreed to proceed. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how to withdraw their data from the survey.

Harm to participant

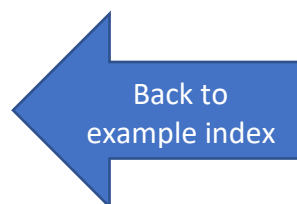
Whilst no physical harm is anticipated to occur to the participants there is the possibility that asking firefighters to recount traumatic events may cause psychological harm. Consideration needs to be given to how best to support an individual if this occurred.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|---------------------|--|--|
| Lack of comparison | No benchmarking | As water rescue is a requirement for UK FRS, an evaluation of this nature will be exploratory with the aim of identifying areas of improvement. If an area of improvement is identified, an intervention can then be developed to address this. The evaluation, or element of it, could then be repeated to ascertain if the intervention has addressed the area of concern. |
| Lack of objectivity | Internal evaluation | An external team will review the questionnaire and semi-structured interview question sheet to ensure objectivity in its design. An external team member will review the themed analysis and assist in coding. Another FRS could conduct the interviews. |
| Untested measures | The measure will be bespoke to this evaluation | Measures to be reviewed by an expert group and to be reviewed by an external FRS prior to use. |
| Social desirability | The participants may give the answers they think the FRS wants to hear | The questionnaire will be carefully designed and tested to minimise this impact. |



Method Example 9. (Response) Road Traffic Collision (RTC)

Background

This evaluation aims to provide insight into the effectiveness of FRS in dealing with road traffic collisions (RTC). As these rescues are part of the UK FRS role, an evaluation of this nature will seek to identify areas of improvement. If an area of improvement is identified, an intervention can be developed to address this area. The evaluation or specific element(s) of it could then be repeated to ascertain if the new intervention has improved the situation using the results of this evaluation as a benchmark.

Question 1. What outcomes will the evaluation need to measure?

The evaluation will assess the effectiveness of FRS response to road traffic collisions by measuring the following:

- If the RTC incidents are being dealt with in line with national occupational guidance (<https://www.ukfrs.com/scenarios/road-traffic-collision>).
- Was the information passed to the attending crew correct and appropriate, including the following:
 - Background to the incident, risks and hazards
 - Access to the incident
 - Location of the incident
 - If other emergency services are in attendance
 - Potential hazards.
- Response time to the incident
- Effectiveness and appropriateness of the resources sent (were these appropriate to the size of the incident)
- Knowledge of the crews attending to potential hazards and how to react to these
- If the correct control measures were implemented
- The effectiveness of communications with external partners.

Question 2. What design(s) will the evaluation use?

As the evaluation aims to assess the current situation rather than evaluate a new intervention, it will use a cross-sectional design.

Question 3. What mix of qualitative and quantitative approaches will be used?

Quantitative data will be produced using a partner organisations questionnaire, a crew knowledge assessment and a review of incident logs. Qualitative data will be generated by semi-structured interviews and the use of open questions within the questionnaire sent to the partner organisations.

Question 4. What measures and sources of data will be used?

The following measures will be used in the evaluation:

- An online questionnaire for partner organisations
- Firefighter knowledge assessment
- Semi-structured interviews
- Review of incident logs.

Partner organisation questionnaire

An online questionnaire will be sent to organisations frequently worked with by the FRS when attending road traffic collisions. The questionnaire will aim to assess the following:

- If the communication between them and the FRS was effective
- How the communication process could be improved
- If there were any other areas in which FRS could enhance their performance.

The questionnaire will use a mix of scaling and open questions. For example, the questionnaire could ask the partnership organisation to rate how effectively they felt the FRS service communicated with them at the scene of incidents using a 7-point scale ranging from very poor to very good; this could then be followed up with an open question asking them to provide a detailed answer of how they feel this score could be improved. A similar approach could be used to ask them to rate the appropriateness of communication after the incident, how well any communication equipment used had performed, if they were clear on their point of contact and the clarity of the language used.

Firefighter knowledge assessment

Firefighter knowledge relating to dealing with RTC will be assessed using an online assessment. The assessment tool will be aligned with the FRS guidelines.

Semi-structured interviews

Twenty semi-structured interviews will be completed with incident commanders who have attended incidents in the last 3 to 6 months. A semi-structured interview template will be developed to guide the discussion. The interviews aim to seek to identify if the service needs to be improved in some areas. The themes explored would include:

- If the information passed from the command room provided the required information
- The effectiveness of the communication between FRS and partner organisations
- The level of resources sent and their appropriateness to the needs of the operation
- The overall effectiveness of the response
- What could be implemented to improve the efficiency of the response.

Review of historical data

Six months of incident logs will be reviewed to ascertain the response's effectiveness and identify areas of improvement. This analysis will look at response times, geographical data and the demographics of the casualties.

Question 5. Who will complete the measures (Sampling)?

All organisations routinely associated with RTC incidents will be contacted (e.g., police, ambulance, National Highways, etc.)

All firefighters in the service will be asked to complete the knowledge assessment.

Twenty semi-structured interviews will be completed with incident commanders who have attended an incident in the last 3 to 6 months.

Six months of incident logs will be reviewed.

Question 6. How will the data be analysed and reported?

At the end of the evaluation period, the analysis will look to answer the following questions:

- If RTC are being dealt with in line with national occupational guidance
- What level of knowledge do firefighters have about dealing with RTC
- If the correct level of resources was provided when attending the incident
- The effectiveness of FRS communications with partner organisations
- The effectiveness of the partner organisations communication with the FRS
- Response times
- Where and when the incidents occur
- Who is involved in the incidents (age, gender and ethnicity)
- Areas of improvement.

A themed analysis will be completed on the qualitative data to identify any reoccurring themes or areas of interest.

Question 7. What ethical and legal issues need to be considered?

Informed consent and privacy

All participants will be required to read an information sheet at the beginning of the questionnaire/assessment/interviews explaining the purpose of the evaluation, how their confidentiality will be protected, and how the data will be stored and depersonalised. It will not be possible to proceed past the information sheet until the participant has clicked to say they have read it and have agreed to proceed. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining how to withdraw their data from the survey.

Harm to participant

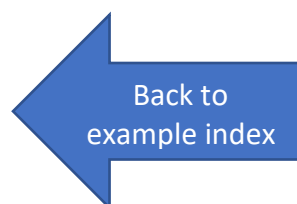
Whilst no physical harm is anticipated to occur to the participants there is the possibility that asking Firefighters to recount traumatic events may cause psychological harm. Consideration needs to be given how best to support an individual if this occurred.

Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation, and how will these be mitigated?

| Weakness | Description | Mitigation |
|---------------------|--|---|
| Lack of comparison | No benchmarking | As attending RTCs is a requirement for UK FRS, the evaluation will be exploratory with the aim of identifying areas of improvement. If an area of improvement is identified, an intervention can then be developed to address this. The evaluation could then be repeated to ascertain if the intervention has addressed the area of concern. |
| Lack of objectivity | Internal evaluation | An external team will review the questionnaire and semi-structured interview question sheet to ensure objectivity in its design. An external team member will review the themed analysis and assist in coding. Another FRS could conduct the interviews. |
| Untested measures | The measure will be bespoke to this evaluation | Measures to be reviewed by an expert group and be reviewed by an external FRS prior to use. |
| Social desirability | The participants may give the answers they think the FRS wants to hear | The questionnaire will be carefully designed and tested to minimise this impact. |



Method Example 10. (Response) Animal assistance incidents

Background

This evaluation aims to provide insight into the effectiveness of animal rescues and can be applied to both small and large animal incidents. An evaluation of this nature will be exploratory, with the aim of identifying areas of development. If an area of improvement is identified, an intervention can then be developed to address the area of concern. The evaluation, or specific element(s) pertaining to the identified issue(s), can then be repeated to ascertain if the intervention has improved the situation using this evaluation as a benchmark.

Question 1. What outcomes will the evaluation need to measure?

The evaluation will assess the effectiveness of animal rescues by identifying the following:

- If the information provided to the response team was appropriate to their needs, including:
 - Animal type and size
 - Location of the incident
 - Background to the incident
 - Condition of the animal, including its age, any pre-existing conditions, etc.
 - If someone at the scene of the incident is familiar with the animal
 - Restraint methods that the animal is used to
 - Who owns the animal.
- If the correct equipment was sent to the incident
- How the risk of injury to the crew and others from the animal was minimised
- How the animal's distress and suffering were minimised
- If specialist resources and personnel were required, were they contactable and available (e.g., veterinarians, animal charities, etc.)
- If the FRS team attending had received training for animal rescue and animal first aid
- Where animal rescues are most likely to occur

Question 2. What design(s) will the evaluation use?

This would be a cross-sectional design. Data would be collected over a 12-month period.

Question 3. What mix of qualitative and quantitative approaches will be used?

The use of online questionnaires and a crew knowledge assessment will produce quantitative data. Qualitative data will be produced through semi-structured interviews completed with incident commanders.

Question 4. What measures and sources of data will be used?

The following measures will be used in the evaluation:

- An online animal owner questionnaire
- Online knowledge assessment
- A crew commander questionnaire
- Semi-structured interviews with crew commanders
- Incident logs.

Online animal owner questionnaire

An online questionnaire will be sent to the owners of the rescued animals to assess how well the rescue was conducted with regard to the following:

- Minimising the animal's stress
- Minimising any injuries suffered to the animal
- Minimising any damage done to property accessed by the FRS to complete the evaluation.

This questionnaire will use a mix of open and closed questions to generate quantitative and qualitative data. Rating scales will also be used; for example, the participant may be asked to rate a statement similar to:

On a scale of 1 to 7, with one being very poor and 7 being very good, how well do you feel the FRS minimises the stress the animal experienced during the rescue?

This would then be followed up with an open question asking what the FRS have done to improve this score.

This questionnaire will also collect information about the type of animal, its age at the time of the incident, and if the animal suffered any long term impact because of the incident.

Firefighter knowledge assessment

Firefighter knowledge relating to animal rescues will be assessed using an online assessment. Topics included in this assessment will include:

- Law and regulation on animal welfare pertinent to animal rescue
- Animal first aid
- Animal rescuer procedures

Crew Commander Questionnaire

All crew commanders will be sent an online questionnaire asking them to reflect on their experiences of attending animal rescues over the last 6-months. The questionnaire will ask them to rate and comment on the following areas:

- Did they have the correct equipment to complete the rescue
- Was the resource allocated appropriate to the rescue e.g., too little or too much
- If the information they had been given prior to attending the incident was sufficient and correct
- What steps were taken to protect their crews from injury
- If the animal had to be restrained
- What was done with the animal once rescued
- If they needed to call a vet or animal charity

This questionnaire will use a mix of open and closed questions. Open questions will be used to maximise the depth of answers given. This analysis will then be used to develop a semi-structured interview template that will be used to inform 6 semi-structured interviews to be completed with Officers who have attended animal rescue incidents in the last 6 months. The interviews will aim to explore in greater depth any themes identified from the questionnaires. The interviews will be recorded and transcribed for analysis.

Incident log

The previous 12 months incident reports will be reviewed to identify where animal rescues are most likely to take place, time of day, type of animals, etc. This review will also focus on whether any injuries occurred to crews or others during the rescue to identify trends in the causation factors.

Question 5. Who will complete the measures (Sampling)?

- Over a 12-month period all owners of animals who were present at the time of the rescue will be asked if they would be happy to complete an online questionnaire
- All response crews will be asked to complete the knowledge assessment
- All Crew commanders who have attended an animal rescue will be asked to complete the online questionnaire asking about their experiences
- Six semi-structured interviews will be conducted with crew commanders who have attended an animal rescue in the last 6 months
- Twelve months of incident report data to be reviewed.

Question 6. How will the data be analysed and reported?

At the end of the evaluation period, a statistical analysis will be performed on the quantitative data to answer the following:

- What level of knowledge do firefighters have about animal rescue
- If the information provided to the crews about the incident was sufficiently detailed
- What was the outcome for the animal once rescued
- If the correct level of resources was provided when attending the incident
- The ease at which charities and veterinarians could be contacted
- What steps were taken to protect crews and others when dealing with the animal
- How the animal's stress levels were managed
- Where and when the incidents occurred.

A themed analysis will be completed on the qualitative data to identify any reoccurring themes or areas of interest.

Question 7. What ethical and legal issues need to be considered?**Informed consent and privacy**

All participants will be required to read an information sheet at the beginning of questionnaire/assessment/interviews explaining the purpose of the evaluation, how their confidentiality will be protected, how the data will be stored and depersonalised. It will not be possible to proceed past the information sheet until the participant has clicked to say they have read it and have agreed to proceed. All GDPR will be adhered to in line with FRS policies and practices.

Right to withdraw

The information sheet will include a section explaining that as the questionnaire is anonymous, they will not be able to withdraw their data from the survey.

Harm to participant

Whilst no physical harm is anticipated to occur to the participants there is the possibility that asking Firefighter or members of the public to recount traumatic events may cause psychological harm. Consideration needs to be given how best to support an individual if this occurred.

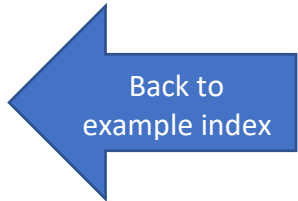
Deception

No deception will be used in this evaluation.

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|---------------------|--|---|
| Lack of comparison | No benchmarking | As responding to an animal rescue situation is undertaken by the UK FRS, the evaluation will be exploratory with the aim of identifying areas of improvement. If an area of improvement is identified, an intervention can then be developed to address this. The evaluation could then be repeated to ascertain if the intervention has addressed the area of concern. |
| Lack of objectivity | Internal evaluation | An external team will review the questionnaire and semi-structured interview question sheet to ensure objectivity in its design. An external team member will review the themed analysis and assist in coding. Another FRS could conduct the interviews. |
| Untested measures | The measure will be bespoke to this evaluation | Measures to be reviewed by an expert group and be reviewed by an external FRS prior to use. |

| | | |
|---------------------|--|--|
| Social desirability | The participants may give the answers they think the FRS wants to hear | The questionnaire will be carefully designed and tested to minimise this impact. |
|---------------------|--|--|



Blank Method Example Template

Background

Question 1. What outcomes will the evaluation need to measure?

Question 2. What design(s) will the evaluation use?

Question 3. What mix of qualitative and quantitative approaches will be used?

Question 4. What measures and sources of data will be used?

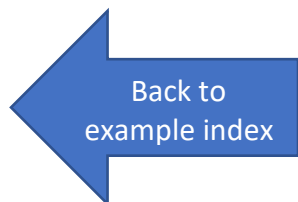
Question 5. Who will complete the measures (Sampling)?

Question 6. How will the data be analysed and reported?

Question 7. What ethical and legal issues need to be considered?

Question 8. What are the main weaknesses in the proposed evaluation and how will these be mitigated?

| Weakness | Description | Mitigation |
|----------|-------------|------------|
| | | |
| | | |
| | | |
| | | |



Appendix A – Evaluation Guidance

What outcomes will the evaluation need to measure?

Before an evaluation can be planned, the intervention must be clear about the outcome(s) it is aiming to deliver. A useful way to clarify these and to review the underpinning assumptions about the intervention is to complete a logic model². There are many versions of logic models, but all share some commonalities. A simple example is shown below (Figure 1) with a completed model shown in Figure 2. By completing a logic model the evaluator will gain a clear insight as to what needs to be measured and when.

| | | | | |
|---|----------------|-------------------------|--------------------|------------------|
| Name and description of the intervention | | | | |
| Inputs | Outputs | Outcomes | | |
| | | Short term | Medium term | Long term |
| | | | | |
| Assumptions | | External factors | | |
| | | | | |

Figure 2. Logic model

| Name and description of the intervention | | | | |
|--|--|---|---|---|
| Water Safety Social Media Campaign for 18 and over | | | | |
| Inputs | Outputs | Outcomes | | |
| | | Short term | Medium term | Long term |
| The development of the social media campaign and supporting materials and resources | The number of social media impressions, clicks and reshares. | <p>For the participant to feel positive about the intervention</p> <p>To have learnt:</p> <p>What to do if someone fall into open water</p> <p>The dangers of cold water shock and how to respond</p> <p>To form a stronger intention not to engage in unsafe open water activities</p> | To maintain their intention not to engage in unsafe open water activities | To maintain their intention not to engage in unsafe open water activities |
| Assumptions | | External factors | | |
| <p>That social media is an effective media to engage with the target group</p> <p>That intention is a good indicator of actual behaviour</p> | | <p>That the campaign may be lost if a 'big' news story occurs that overshadows the campaign</p> | | |

Figure 3. Complete logic model

Once a logic model has been completed it should be relatively simple to produce a clear set of objectives against which the intervention can be measured. Below is a set of objectives from an evaluation completed by Public Health England (now UK Health Security Agency) and the FRS for a pilot intervention addressing ill health over the winter. The objectives were to:

1. Build capacity within pilot areas to deliver Safe and Well visits, which systematically focus on a broader range of health issues, including issues relating to winter related ill-health, including falls, social isolation, cold homes, and flu.
2. Identify households vulnerable to falls, social isolation, cold homes, and flu within pilot areas.
3. Provide targeted interventions to reduce the risk of falls, social isolation, cold homes, and flu, which may lead to a reduction in the pressures on public services in local areas (for example, A&E admissions to hospitals, fire service callouts, demands for GP and social care services).
4. Build and strengthen relationships between the FRS and local service partners, including developing the referral pathways into other forms of help and support within the community.
5. Reduce the risk of excess winter deaths.
6. Demonstrate the value of the FRS in supporting partners to improve health and well-being and reduce demand for health and social care services.

The case study explaining how this evaluation was conducted is given in Appendix C.

It may only sometimes be possible for an evaluation to measure an outcome directly. If this is the case, measuring something related to that outcome may be necessary. The Theory of Planned Behaviour³ is an example of a model that shows this type of relationship (Figure 3). This theory outlines that behaviour is based upon our intentions and that intentions are a product of an interlinking relationship between our attitudes, subjective norms (what we think others who are important to us may do or may approve of) and how much control we feel we have over our behaviour. A model such as this can be particularly useful for behavioural change interventions. For example, a pre-driver intervention covering drink-driving could use a measure of intention or willingness. This could be achieved by asking the participant to rate a question, using a 5-point scale ranging from not at all willing to very willing, such as: If you were at a party how willing would you be to have a drink and then drive home?

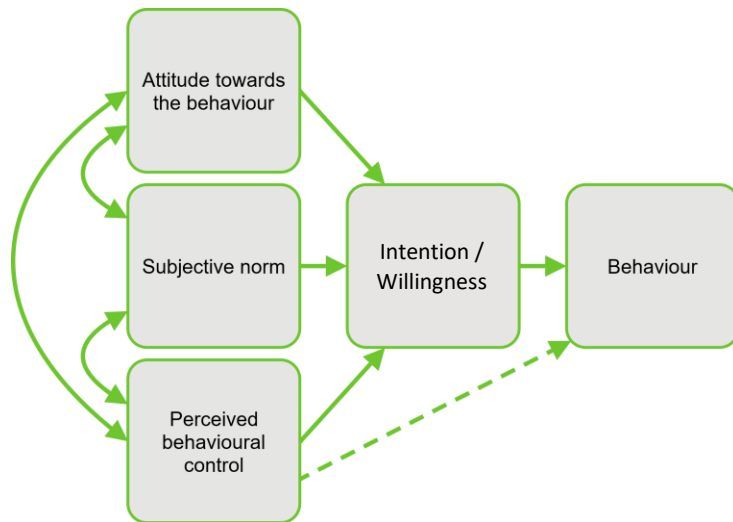
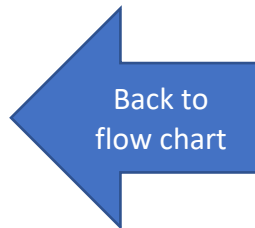


Figure 4. Theory of Planned Behaviour (Ajzen, 1985)

Further guidance on how to identify what to measure in an evaluation and examples is given in Appendix B.



Evaluation designs

Whilst there are many approaches to evaluation, these can be broadly placed under 3 headings of:

- Pre- and post-design
- A control group design
- A cross-sectional design.

These approaches can be equally applied to both a person focused intervention, for example has someone learnt something new, and to more engineering type interventions, for example, adding lifebuoys near to a lake. Prior to deciding on the design to be use it is worth researching how other similar evaluation have been conducted. A good starting point for this research is Google Scholar <https://scholar.google.com>.

Pre-and post-design

In the pre-and post-design, the group being assessed against the intervention's outcomes will be measured before the start of the intervention and then again afterwards (Figure 6). The pre-measure provides a baseline against which the results of the post-measure can be compared.

Weakness

Whilst this design has the benefit of being simple to implement, it fails to control for other influences that may impact the results. For example, if a group of young children were tested about fire safety, then given an intervention covering the subject and then tested again immediately afterwards, you would be relatively sure that the result was a true reflection of the outcome. However, if they were tested 6 weeks or 3 months later, any improvement found could be a result of other influences.



Figure 5. Pre- and post-evaluation design (red indicates a reduced level of confidence in the results)

Control group designs

These designs have at least 2 groups. One group will receive the intervention and complete the evaluation measures, this group is often referred to as the treatment or intervention group. The second group is called the control group, and this group will not receive the intervention but will complete all elements of the evaluation. The results of the intervention/treatment group are then compared with the results of the control group to see if the group receiving the intervention have improved. The aim of having a control group is to control for factors that may influence the results of the evaluation, such as gaining experience. The design shown in figure 7 uses a type of pre- and post-design which is good practice as it allows for a check to be made at a pre-intervention timepoint to ensure the groups are well matched.

Treatment/intervention group



Control group



Figure 6. Control group design

Weakness

If the control group is not a good match with the treatment group, the results of the evaluation will be compromised. The best way to achieve a good match is to randomly allocate individual participants to either the control or treatment/intervention group; this approach is called a Randomised Control Trial (RCT) and is frequently used for drug trials. To do this successfully a RCT requires a large sample that can be kept apart to stop cross-contamination of ideas between the groups. Due to these challenges, it is not always possible to randomly allocate participants. For example, if the evaluation were assessing a new shift pattern, it would be difficult to randomly allocate different firefighters at the same station to the different patterns.

In a case like this, a matched control would be used. In this example, a similar FRS station could be used as the control group. However, great care must be taken to ensure the control station(s) are well-matched to the intervention station(s). Depending on what was being tested, consideration would need to be given to such things as geographical location, social/economic factors, the age, and experience of the firefighters, etc.

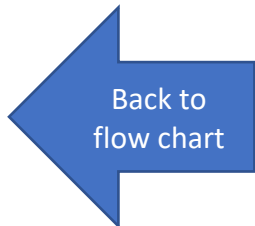
Experimental designs are associated with several ethical issues, most notably, it may be unethical to withhold an intervention that may be beneficial to the target group.

Cross-sectional

This type of evaluation takes a measure at a point in time. For example, the UK National Census takes a snapshot of the UK's population on a specific day. These are more exploratory in nature and are often used to inform a more in-depth evaluation. As they only take a measure at a single point, they have limitations. Most notably they do not compare the outcomes of the intervention either within the same group or between a control or treatment group.

Weakness

Unless the existing data is available against which to compare the outcomes simply taking a snapshot of a situation will not allow conclusions to be drawn about the outcome of the intervention.



Quantitative and qualitative data

Quantitative approaches to evaluation are much more than counting outputs, for example, how many times an intervention has been delivered; they aim to assess the outcome of an intervention. When used for this purpose quantitative data is commonly collected through attitudinal questionnaires, knowledge-based quizzes, video assessments, observational assessments, geographical locations, etc. Often quantitative data is seen as being more reliable as it is less open to interpretation by the evaluator. However, when used to measure societal issues and concepts it is often criticised for not always being genuinely reflective.

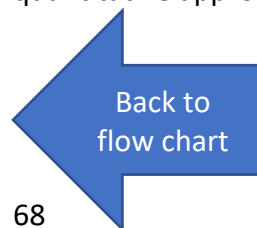
Qualitative data is language based and can provide deep insights as to why something has occurred, and people's feelings and views. Methods used to generate this type of data are focus groups, one-to-one interviews, and open-text questions. Whilst qualitative data can be highly beneficial it can be time-consuming to analyse and, unless great care is taken, is open to interpretation. The results can also be challenging to replicate.

Most evaluations will use a mix of approaches with statistics being used to demonstrate the outcomes of the intervention and qualitative data being used to explain why the findings have occurred. However, this approach can also be problematic, as the qualitative and quantitative evidence may not always match. For example, a focus group may say they enjoyed an intervention but there may be no evidence to indicate this caused them to alter their behaviour.

There are no hard and fast rules relating to what mix of approaches is used and will be dependent on a number of issues including:

- What question the evaluation is to answer
- The target audience for the evaluation
- The risks associated with the intervention
- The resources available.

This link provides information about the economic and social value of the UK FRS which may be useful in considering the best mix to use <https://www.ukfrs.com/economic-and-social-value-uk-frs-phase-i-based-english-data-only>. More information on the use of qualitative and quantitative approaches can be found at: <https://www.simplypsychology.org/qualitative-quantitative.html>.



Measures

Measures provide the evaluator with the data they need to identify the outcomes of the intervention. Therefore, a measure must provide reliable and valid information⁴.

Reliability

Measures must provide consistent results. The result should only alter if something has changed. This is often tested by administering a measure to a group at 2 time points with a gap of a few weeks between to see if the scores remain constant. More information about this process can be found at: <https://www.statisticshowto.datasciencecentral.com/test-retest-reliability/>

Validity

Validity is a term used to describe if the measure measures the outcome the evaluator is looking to assess. For example, is a test of general knowledge a test of intelligence? The answer is that it is not; it is a test of memory, recall and exposure to the information being tested. Testing validity is complex, but it often means cross-checking the outcome of a measure with the behaviour to see if they correlate. For example, if you were developing a questionnaire to predict the likelihood of someone being prosecuted for speeding, you would want to cross-check the questionnaire's results with actual speeding offences. If the questionnaire predicted this, it could be said to be a valid measure. Validity testing is a very complex area, therefore where possible it is better to use a measure that has been rigorously tested rather than trying to develop one. To find out more visit: <https://www.simplypsychology.org/validity.html>

Triangulation

Where possible, evaluators should try and use different sources of data rather than relying on one source to add greater reliability to the results. For example, if an evaluation was looking at the effectiveness and usefulness of information passed from a FRS protection team to local government planners several sources of data could be used including:

- Previous records and logs relating to the requests
- Questionnaire data sent to the planners to gain their insights about the information provided
- Semi-structured interviews with the planners to see how the information and process can be improved
- Inspection of completed buildings
- Etc.

If all these sources produced similar results this would greatly increase confidence in the findings of the evaluation.

Questionnaires

Using a well-designed questionnaire is an inexpensive way of producing both qualitative and quantitative data. Questionnaires can be used to collect a wide variety of data, including demographic data such as age, gender, ethnicity, etc. They can also be used to measure attitudes, intentions, willingness, frequency of a behaviour, etc. Often questionnaires will use some type of scale, for example, a strongly disagree to strongly agree scale, that enables the participant to rate their response.

It is important to keep a questionnaire as short as possible as this helps to maximise the number of returns and improves the quality of the data. The more questions asked the more the participant will get fed up and not think about their replies or opt-out of the process.

Weaknesses

Whilst this type of approach can produce very useful data it has several weaknesses including:

- Participants may provide biased answers
- There may be a ceiling effect in the scoring
- It will only provide answers to the questions asked.

Participants may provide biased answers

This can be addressed by ensuring the questionnaire is well-designed and structured. For example, if the owner of a business has recently failed a fire audit, they may not want to give the process a high rating. However, including a filter question about the outcome of the audit would allow different levels of satisfaction to be reported against different levels of audit compliance.

Ceiling effect

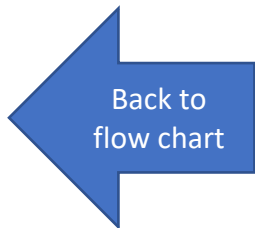
This occurs when the answer given to a question at the first time of asking enlists a strong response leaving no room for further improvement. For example, a questionnaire could ask a participant to rate how strongly they disagree or strongly agree with the statement: Do you know how important it is to have a smoke alarm?

Most participants, even if they don't have one fitted, are likely to agree with this statement. However, after they have attended an intervention on the subject, they may realise that they did not really know how important it was but cannot give a higher answer as their initial

answer was at the top of the scale. This effect can be avoided by ensuring that questionnaires are tested to ensure this issue is not evident. Any questions that produce this type of effect should be reworded or removed.

It will only provide answers to the questions asked

If only closed questions are used in the questionnaire the answers given will only be to the questions asked. This is an important limitation that must be considered carefully. This is generally addressed by including open-text questions. For example, a questionnaire could ask; How could the intervention be further improved? Whilst open questions can be very useful, they can also be very difficult to analyse in an objective manner. One way this is often done is by identifying recurring themes, this process is discussed in the data analytics section.



Qualitative interviews

The aim of a qualitative interview is to gain insight into the participant's views.

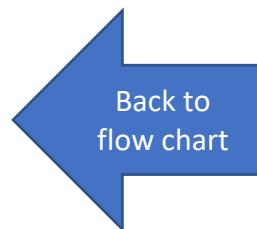
There are 3 types of qualitative interviews:

Structured interviews use a fixed set of questions that allow little room for further discussion on the subject raised during the discussion.

Semi-structured interview uses a similar approach to a structured interview, but the evaluator is given scope to explore the participant's responses in more depth. This type of interview is frequently used in evaluation as it allows the capture of both qualitative and quantitative data.

Open interviews are exploratory in nature and have little or no structure other than providing the topic for discussion, for example, 'tell me what you know about fire safety?'.

It is normal for an interview to be recorded and then transcribed for analysis. The participants need to agree to this prior to the commencement of the focus group.

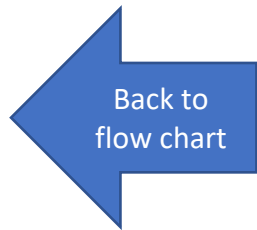


Focus Groups

Focus groups usually use the same structure as a semi-structured interview (see section above) use but rather than being delivered on a one-to-one base there is a facilitator(s) and several participants. Focus groups can be challenging to facilitate, particularly if the issues being discussed are contentious or there are strong views. It is important that the facilitator ensures that all voices within the group are heard. The outcomes of focus groups can also be challenging to analyse.

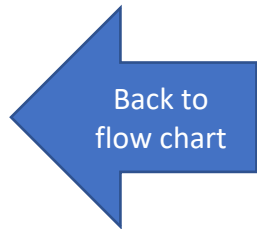
Careful consideration also needs to be given to the make-up of the group to ensure that the group can provide the insight that the evaluator is looking to gain.

Focus groups are often recorded and transcribed for analysis. The participants need to agree to this prior to the commencement of the focus group. Sound quality can also be an issue which needs to be carefully considered, as the participants may be sat some distance away from the microphone.



Other sources of data

There may be other potential sources of data that can be used for evaluation, much of which may already be routinely captured. For example, the number of safety audits completed, the number of road collisions attended, the time of day fires occur, etc. This data can be highly useful but, as with all data sources, care must be taken to ensure the data is both valid and reliable. The [EXIT](#) project, case study is a good example of this type of approach.



Sampling

A sample needs to be large enough to identify if something has changed in the targeted behaviour. This is complex as it is related to effect size. Put simply, the bigger the impact (effect size) your intervention has on the target group the smaller the sample size needed to detect it. If the impact (effect size) is small the larger the sample needed to detect it.

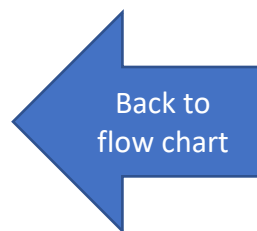
However, if the sample is too small, the results may be disproportionately affected by individual results. Therefore, you need to have a sample that is large enough to minimise this possibility.

Consideration needs to be given to subgroups within the sample. For example, if the evaluation wanted to explore the impact of the intervention on different age groups the sample would need to include enough people in each of the age groups.

Another issue to consider is the use of repeat a measures. Depending on who, when and what is being measured, it is normal to see the return rate drop when people are asked to complete a measure several times. For example, if 100 people complete an initial measure the returns for the repeated measure may only be 25. Therefore, if 100 participants were needed at the second time point the initial sample would have to be in the region of 400.

To generalise an evaluation's finding to a wider population the sample needs to be representative. Many things would impact on this including age, gender, ethnicity, social-economic background, etc. It falls outside of the scope of this document to cover all of these issues, but further information can be found at: <https://www.investopedia.com/terms/r/representative-sample.asp>

It is possible to calculate sample sizes but this requires some statistical knowledge, and if this expertise is available, a sample size calculator can be found here: <https://www.surveymonkey.com/mp/sample-size-calculator/>



Data Analysis

In this section it is only possible to provide basic advice and guidance of how data should be dealt with and analysed. Where possible someone with expertise in this area should complete this element of the evaluation.

GDPR

It is important that all data is handled in line with the GDPR. More information relating to this can be found at: <https://www.firestandards.org/standards/approved/data-management-fse-dat01/>.

Analysing quantitative data

Quantitative data can be analysed in a range of ways, but in many evaluations the aim will be to show a change in the data either between groups and/or between time points. For example, a questionnaire could ask the participants to indicate how strongly they agree or disagree with a set of statements as shown in the Table 1. Their replies could then be coded into a spreadsheet (Table 2).

Table 2. Questionnaire response

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree strongly agree | Strongly agree |
|--|--------------------------|-----------------|-----------------------------------|-----------------------------|-----------------------|
| Q1. It is more dangerous swimming in a river or lake than it is swimming in an indoor pool | | x | | | |
| Q2. If I fall into the sea, I should not immediately start to swim to safety | | x | | | |

Table 3. Coding of responses

| Participant | Q1. It is more dangerous swimming in a river or lake than it is swimming in an indoor pool | Q2. If I fall into the sea, I should not immediately start to swim to safety |
|-------------|--|--|
| 1 | 2 | 2 |

Once the data has been fully entered into the spreadsheet, it should start to look like Table 4. In this example, T1 stands for the first time the participant completed the measure and T2 for the second time they completed the measure. It is now a relatively simple process to compute mean scores and counts, this type of analysis is shown in the green section of Table 4. It is now possible to see differences in the mean scores. The mean score for Q1 had improved from 2.80 at T1 to 3.90 at T2. The mean scores for Q2 had also improved from 1.90 at T1 to 3.70 at T2. It would also be possible to report the number of participants who selected each answer option. This data can be used to produce graphs and tables showing the results. However, care would need to be taken when reporting this data as no test of statistical significance has been completed on the data. These tests assess whether any alteration in a score is due to a real change and is not simply due to a chance fluctuation in the data. You can find out more about these tests at: <https://www.brookes.ac.uk/students/academic-development/maths-and-stats/statistics/inferential-statistics/> More in-depth statistical analysis of this data will require some knowledge of statistics and spreadsheets. This falls outside the scope of this document.

Table 4. Simple analysis using a spreadsheet

| | T1 Q1 It is more dangerous swimming in a river or lake than it is swimming in an indoor pool | T1 Q2 If I fall into the sea, I should not immediately start to swim to safety | T2 Q1 It is more dangerous swimming in a river or lake than it is swimming in an indoor pool | T2 Q2 If I fall into the sea, I should not immediately start to swim to safety |
|--|--|--|---|--|
| Participant 1 | 2 | 2 | 2 | 5 |
| Participant 2 | 3 | 2 | 5 | 4 |
| Participant 3 | 2 | 1 | 4 | 4 |
| Participant 4 | 2 | 2 | 4 | 3 |
| Participant 5 | 2 | 2 | 5 | 4 |
| Participant 6 | 2 | 1 | 5 | 3 |
| Participant 7 | 3 | 2 | 4 | 3 |
| Participant 8 | 5 | 4 | 2 | 3 |
| Participant 9 | 3 | 2 | 4 | 4 |
| Participant 10 | 4 | 1 | 4 | 4 |
| Mean scores | 2.80 | 1.90 | 3.90 | 3.70 |
| Number of people who strongly agreed | 1 | 0 | 3 | 1 |
| Number of people who agreed | 1 | 1 | 5 | 5 |
| Number of people who neither agreed nor disagreed | 3 | 0 | 0 | 4 |
| Number of people who disagreed | 5 | 6 | 2 | 0 |
| Number of people who strongly disagreed | 5 | 6 | 2 | 0 |

Analysing qualitative data

The general approach taken to analysing this data is to record the interview/focus groups and then have it transcribed. The transcription can then be used to complete a themed analysis. To do this the data is reviewed to identify recurring ideas and concepts. One simple way of doing this is to enter the data onto a spreadsheet (below is an example) and then, in the next cell identify a theme(s) associated with that piece of text.

Example of a themed analysis

| Participant | What will you remember most about the course | Coding |
|-------------|---|--------------------------------|
| 1 | I had never thought about how cold water would impact on me and the need to give myself some time before I tried to swim. You need to know where you are too! | Coping strategy - location |
| | | Recovery time |
| | | Cold water shock |
| 2 | Cold water shock was a shock to me. Must take friends if you're going swimming. Make sure you have a signal on your phone | Cold water shock |
| | | Coping strategy - friends |
| | | Coping strategy - mobile phone |

Once completed findings can be reported in the following way: Coping strategies were a recurring theme being mentioned X number of times by Y number of participants.

Whilst this may provide insight into what people are thinking care must be exercised as the process requires a great deal of interpretation on the part of the analyst. It is also a time-consuming process.

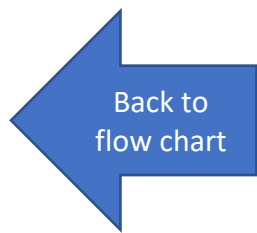
The NHS approach to analysing qualitative data can be viewed at: <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-13-117>

Reporting

Your evaluation report should contain the following sections:

- **Executive summary:** In this section you should provide an outline of the intervention, how the evaluation was conducted, the key findings and recommendations.
- **Description of the intervention:** This section should look to provide an outline of the intervention and its aims and objectives.
- **Description of the evaluation methodology:** This should clearly describe the evaluation design, the measures used and how they were administered and how the data was analysed. A good way of approaching this is to imagine you are writing a set of instructions that would allow someone to duplicate your evaluation.
- **Results:** You should present the results of your analysis clearly using an appropriate mix of text, tables, and graphs.
- **Discussion:** Here you should lay out what you feel your results mean and highlight any concerns you have about the evaluation and its limitations.
- **Recommendations for improvements:** Here you would explain how the results of the evaluation can be used to improve the intervention.

It is very important that the results of the evaluation are shared within the service. This is easy when the results are positive but more challenging if the results are poor. However, if poor results are not shared this prevents others learning from the evaluation, increasing the chance that an unsuccessful intervention will be used again.



Ethics and legal considerations

When designing an evaluation careful consideration needs to be given to any ethical and legal issues. Often these issues are addressed through an information sheet given to the participants prior to them commencing the evaluation. Some of the main areas include:

- **Do no harm** - the evaluator has a responsibility to protect the participant from physical and psychological harm. One consideration relating to this is when a control group design is being used, as this will require the withholding of the intervention whilst the evaluation is taking place. If the intervention is found to be beneficial it could be argued that harm has taken place as something beneficial has been withheld. Therefore, when designing an intervention, careful consideration needs to be given to the impact withholding the intervention may have on the control group. Information on equality impact assessment can be accessed at: <https://www.ukfrs.com/index.php/community-risk/crmp-equality-impact-assessment>. One way often used to overcome some of the ethical issues associated with the use of control groups is to offer the intervention to the control group once the evaluation has been completed, but this will not always be possible or an appropriate way forward.
- **Informed consent and privacy** – the participants should be made aware and understand the nature of the evaluation, how it will be used and how their privacy will be protected. Careful consideration needs to be given when dealing with vulnerable groups, such as children or young adults. This guidance should include and explain about how their privacy will be protected in any reports or documents that may be shared with other organisations or released into the public domain.
- **Right to withdraw** – participants should be told if and how they can withdraw their data
- **Deception** – the participant should not be deceived in any way about the nature of the evaluation without careful ethical consideration.

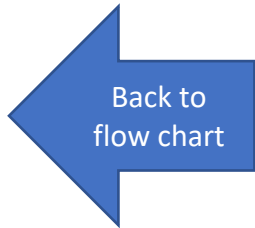
Much of the above will be covered within the General Data Protection Regulation (GDPR) and FRS health and safety processes but these issues need to be carefully considered when designing and conducting an evaluation. If in any doubt you should seek guidance, further information about this is available at: <https://www.firestandards.org/standards/approved/data-management-fse-dat01/>. In all cases it will be necessary to develop some type of information sheet advising the participants how the evaluation will be conducted and how any ethical issues will be addressed. A set of common questions can be found in appendix D to this document.

Consideration also needs to be given to the following ethical questions:

- **Integrity** – the evaluator needs to be honest about the results of the evaluation. This can be a challenge if the outcomes are poor and not in line with expectations

- **Open** – the evaluator needs to ensure that the results and methods used in the evaluation are communicated and shared openly and effectively (within legal and organisational constraints)
- **Competency** – the people completing the evaluation should have sufficient knowledge and skills to complete the evaluation.

Further guidance on ethics can be found at: <https://www.betterevaluation.org/methods-approaches/methods/ethical-guidelines>.



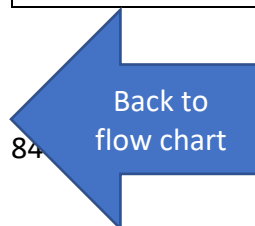
Common weaknesses in evaluation

There are many issues that could impact the robustness of an evaluation. Table 5 contains some of the most common issues and suggests ways these weaknesses can be addressed.

Table 5. Common weaknesses in evaluation

| Weakness | Description | Mitigation |
|-------------------------|--|--|
| Evaluator bias | The person or group completing may have preconceived ideas about the outcome of the evaluation or a vested interest in the result leading them to subconsciously influence the results | Have the methodology reviewed by an external person Use a mainly quantitative design Include an external person when coding and analysing qualitative data |
| Sample size too small | This increases the chance of an incorrect finding being made. | Increase the sample size Use several measures to provide other sources of data Use qualitative measures to check the outcome |
| Unrepresentative sample | If the sample is not representative of the group the intervention aims to affect, the results cannot be generalised to the larger group | Ensure a large sample Ensure that the sample is taken from different locations Consider demographics such as age, ethnicity and gender Consider social economic factors |
| Unreliable measure | The term unreliable means the measure does not provide a consistent result | Pilot measures If data is being used from other sources check this is collected and reported accurately |

| | | |
|---|--|---|
| | | Where possible use academic measures that have been tested |
| Validity of the measure | Is the measure collecting data on the required outcome? | <p>Pilot measures</p> <p>If data is being used from other sources check this is collected and reported accurately</p> <p>Have content experts review the measures</p> <p>Where possible use academic measures that have been tested</p> |
| Lack of a control group | This limits what can be said about the outcomes of the intervention as external factors that may impact on the evaluation are not being controlled | <p>Where possible use a control group design</p> <p>Where possible use academic measures that have been tested</p> <p>Minimise the time between pre-and post-measures</p> |
| Poor match between the control and treatment groups | If the control and treatment groups are not a good match, then it is not possible to draw reliable conclusions about the outcomes | <p>If possible, randomly allocate participants to treatment and control groups</p> <p>If a group such as a school, fire station, college are going to be allocated to the control or treatment group, consideration such be given to factors such as age, experience, ethnicity, gender and social-economic factors.</p> <p>Administer the measure prior to the treatment group receiving the intervention. This allows those results to be checked to ensure that both groups have similar scores.</p> |
| Biased responses to question | The participants fail to give truthful answers either because they want to be seen in a positive light or wish to make a particular point | <p>Where possible use academic measures that have been tested</p> <p>If possible, use a control group design</p> |



Appendix B – Interventions outcome measures

For the evaluation process to be successful, the evaluation needs to be measuring the correct variables. What is measured will depend on the intervention being evaluated, but most evaluations will cover some or all of the categories shown below. These headings are adapted from a model of evaluation called the Kirkpatrick⁴ model, which was initially developed to assess the return on investment from training interventions, but the concepts are highly transferable.

Reaction

This relates to how the participants reacted to the intervention.

Learning

If an intervention includes a training element the evaluation would probably want to identify if this training had delivered its learning outcomes, for example, had a participant's knowledge, skills, attitudes, etc. improved. Even if there was not a specific training element an evaluation may wish to measure if the participants had the correct levels of knowledge, skills and attitudes to complete the task being assessed.

Behaviour

Here the evaluation would seek to identify what impact the intervention has on their behaviour. This is often a challenge, as it is not always possible to directly measure a behaviour. Where a direct measure of behaviour is not possible, some form of proxy measure is used. These measures should be predictive of the actual behaviours, such as people's intentions or willingness to engage in the desired behaviour. More information about proxy measures and their use is available [here](#).

Organisational results

Areas of evaluation here could include:

- Were the organisational goals achieved
- Were resources used effectively and efficiently
- Did the intervention represent good value for money
- How could the intervention be further developed.

Application to Prevention, Protection and Response

Prevention - Training and publicity campaigns and interventions

Reaction

What did the participant feel about the campaign or training intervention in relation to:

- Its usefulness
- Its relevance to them
- Their level of engagement
- Appropriateness of the content
- The resources used
- What they feel they learnt
- How it was presented
- How they feel it could be improved.

The use of some type of post-feedback questionnaire is often used to assess the above.

Consideration should also be given to partner organisations such as schools, other services, etc. Areas of consideration here could include:

- Their view of the intervention
- How they think it could be further improved
- How well they feel the FRS had communicated with them
- Did any administrative processes work effectively.

A frequent mistake made in evaluation is associating positive feedback with success. People often enjoy training, and it may be well delivered, but this on its own does not mean they have learnt anything or that it will alter their behaviour.

Learning

Did the participant's knowledge and/or skills improve in relation to subject(s) being addressed by the training/campaign? For example:

- Pre-driver interventions, depending on their learning outcomes, may look to measure changes in knowledge related to:
 - Impairment (alcohol, fatigue, distraction and drugs)
 - The role speed has in the frequency and severity of collisions
 - Coping strategies for minimising risks both as a driver and passenger
 - The need to maintain personal control in relation to impulsivity and peer pressure.

- A water safety intervention, depending on its learning objectives, may measure changes in the following:
 - The danger of entering open water after drinking alcohol or using other drugs
 - The risks of cold-water shock and how to react to it
 - What to do in an emergency
 - Understanding the differences between swimming in open water and in a swimming pool.

- A fire awareness intervention may consider measuring changes in the following:
 - The importance of smoke detection equipment and how to test and maintain it
 - Not overloading electrical sockets
 - The importance of closing doors
 - Not charging phones overnight
 - What to do in an emergency.

Some comparison needs to be made to establish if the learning outcomes have been achieved. Ideally, by using a control group design, but if this is not possible by the use of a pre-and post-evaluation design. It is also important to recognise that an improvement in knowledge and skill will not necessarily alter behaviour. For example, a driver may know the speed limit and have the skills to drive a car at the limit, but this does not mean they always will!

Behaviour

- Pre-driver interventions may look to measure changes in:
 - Intention to drive whilst impaired
 - Willingness to be carried by a driver who was impaired
 - Their willingness to speed or of being in a speeding vehicle
 - Their intention to maintain personal control in relation to impulsivity and peer pressure
 - Their willingness to use risk-reducing coping strategies
 - Their willingness to commit driving violations.

- A water safety intervention may measure the participant's:
 - Intention to enter open water
 - Willingness to drink alcohol or use other drugs before entering open water
 - Willingness to enter the water to rescue someone in difficulties
 - Their willingness to use risk-reducing coping strategies.

- A fire awareness intervention may consider measuring the participant's:
 - Intention to test smoke alarm equipment
 - Intention to reduce the use of extension leads in their home
 - Willingness to close all doors in the house at night
 - Intention to not charge their phones overnight
 - Their willingness to use risk-reducing strategies.

None of the options outlined measure actual behaviour as often this requires some type of observational study. Whilst this can be done, for example, it would be possible to inspect someone's home prior to them attending a fire awareness intervention and re-inspecting their home after the intervention, this would be highly resource intensive and could be challenging to organise. It would also only provide some of the information needed; for example, it is unlikely to provide evidence of their night-time routine. Whilst this type of direct evidence is the ideal, it is likely to have to be completed as part of a much more extensive evaluation.

Organisational results

The main reason a FRS engage in prevention activities is to improve safety. However, care must be taken when relating interventions to reductions in casualties or incidents. These can occur for a range of reasons; for example, in driving, improved vehicle design has reduced the numbers killed, in water safety the weather will impact the number of incidents, and improvements in the design of electrical equipment may reduce house fires. For these reasons, it is very difficult to draw firm conclusions about the effectiveness of these types of interventions. However, the interventions must be able to demonstrate that it is an efficient use of FRS resources. Therefore, an evaluation should consider if the intervention is:

- Good value for money
- How can the intervention be further improved
- If technological advances can be used to enhance delivery and/or reduce costs
- Was the FRS reputation enhanced by providing good service to partner organisations.

Protection

The model can also be applied to protection activities with some slight adjustments.

Reaction

As with prevention, all elements of protection's work are based around a client. Be this a business owner, local authority, or an architect. Therefore, an evaluation would want to investigate their reactions to:

- The level of service received
- The clarity and relevance of the advice given
- The speed of service
- Ease of access to the service
- Etc.

The evaluation may want to gain insight into what partnership organisations think about the protection activities including:

- What was their view of the current provision
- How do they think it could be further improved

- How well did they feel the FRS communicated with them
- Do any administrative processes work effectively.

Learning

At this level, the evaluation may want to identify if:

- The protection team had the correct level of knowledge to complete the role competently
- Their clients were learning from visits and had a greater understanding of what is required to maintain safety
- The response crews who refer premises for audit have the correct level of knowledge to do this effectively
- Audits being reflected on by the protection team to identify areas of learning and development
- Etc.

Behaviour

Here the evaluation may want to address the following:

- Did an audit/inspection improve the behaviour of the business
- Are the audit/inspection recommendations being implemented
- How quickly were the recommendations implemented
- If legal action was required, how quickly was this action taken
- How many prosecutions were required
- Are the right premises being targeted?

Organisational results

Under this heading, the evaluation may consider if FRS are achieving its goals, if the service is being delivered efficiently, and how it can be improved.

Response

A good starting point when considering what needs to be measured when evaluating a response activity is the National Operational Guidance website <https://www.ukfrs.com> which provides a detailed list of areas that an evaluator should consider.

For example, the road traffic collisions section breaks the response down into:

- Objectives
- Tactical priorities
- Operational tactics
- Communication
- Control
- Incident closure and handover.

The model can then be used to consider how best to complete the evaluation process.

Reaction

Response activities will nearly always require some form of partnership working, be this with other emergency services, national highways, recovery services, landowners, etc. Therefore, the evaluation will want to investigate these partner's views relating to the following:

- How well the FRS dealt with the incident
- How well the FRS communicated with them
- How this could have been improved.

Learning

At this level, the evaluation may want to consider if:

- The crews had the required level of knowledge to deal with the incident
- How the crews were encouraged to reflect on incidents and communicate learning to others
- Where, when and how frequently does this type of event occur

- Who is most likely to be involved in this type of incident.

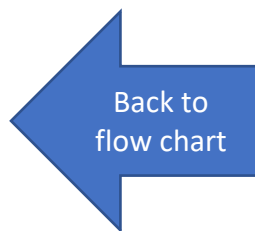
Behavioural level

Here the evaluation may seek to identify if:

- The crew attending the incident had received the necessary information
- The speed of response
- The incident had been dealt in line with FRS guidance
- If all the resources needed were available and had worked correctly
- If the correct resources and amount had been sent
- If specialist resources or specialised personnel were required, could these be accessed easily and quickly (for example, a veterinarian in the case of animal rescue)
- What was the outcome of the incident
- The effectiveness of the communication at the incident with other partners.

Organisational results

Under this heading, the evaluation will want to consider if the FRS is achieving its goals and if the service is being delivered efficiently and how it can be improved.



Appendix C – Case studies

Evaluation of the impact of Fire and Rescue Service (FRS) interventions in reducing the risk of harm to vulnerable groups of people from winter-related illnesses.

Who conducted the evaluation: Public Health England

Date of publication: 2016

Background

The evaluation sought to assess the impact that FRS interventions had in reducing winter-related illnesses in vulnerable groups.

Outcomes

The project set 6 objectives against which to evaluate:

1. Build capacity within pilot areas to deliver Safe and Well visits which systematically focus on a broader range of health issues, including issues relating to winter-related ill-health (including falls, social isolation, cold homes, and flu).
2. Identify households vulnerable to falls, social isolation, cold homes, and flu, within pilot areas.
3. Provide targeted interventions to reduce the risk of falls, social isolation, cold homes, and flu, which may lead to a reduction in the pressures on public services in local areas (for example, A&E admissions to hospitals, fire service callouts, demands for GP and social care services).
4. Build and strengthen relationships between the FRS and local service partners, including the development of the referral pathways into other forms of help and support within the community.
5. Reduce the risk of excess winter deaths.
6. Demonstrate the value of the FRS in supporting partners to improve health and wellbeing and reduce demand for health and social care services.

Method

In many ways, this evaluation used a pre- and post-design as the main outcome measure used was NHS data, which was not yet available at the time of publication. This data would have allowed a comparison to be drawn between the outcomes in the pilot areas and previous years' data. However, relying solely on the NHS data would have limited the conclusions of the evaluation, as winter-related illnesses will be impacted by several variables including the severity of the winter and the effectiveness of that year's flu vaccine. For these reasons, a mix of qualitative and quantitative measures was used to assess the project's objectives. The measures used were:

Interviews with:

- 22 Operational leads (Mix of telephone and face-to-face interviews)
- 22 Frontline staff delivering the intervention
- 18 Staff working for partner organisations
- 60 Beneficiaries (Telephone interviews)

An e-survey of frontline staff

Analysis of management information (Fire callouts, data collected during the home visits, the referrals made and costs)

Analysis of national data sets (NHS databases covering A&E attendance, flu vaccination rates).

Results

The pilot achieved 4 of its 6 objectives:

1. Build capacity within pilot areas to deliver Safe and Well visits which systematically focus on a broader range of health issues

A total of 1,200 staff received training to deliver the intervention. Staff reported improved skills and knowledge in relation to falls prevention, cold homes, flu vaccinations, and social isolation. Face-to-face training was more effective than webinars at achieving this.

2. Identify households vulnerable to falls, social isolation, cold homes, and flu, within pilot areas.

A total of 6,304 visits were conducted. Of these, 4,917 (78%) households included at least one person over 65 years old, 1,800 (29%) households included someone with a long-term condition, and 1,619 (26%) reported someone living with a disability.

3. Provide targeted interventions to reduce the risk of falls, social isolation, cold homes, and flu, which may lead to a reduction in the pressures on public services in local areas.

A total of 3,296 (52%) people received advice to prevent a fall and 1,378 (22%) were referred for a falls assessment. Similarly, 3,296 (52%) people received advice to prevent cold homes and 406 (6%) were directly referred or signposted to further support. A total of 462 (7%) people were identified as at risk of social isolation and offered advice or referral. The majority had already received their flu immunisation. Beneficiaries trusted FRS to provide Safe and Well visits

4. Build and strengthen relationships between the FRS and local service partners, including development of referral pathways into other forms of help and support within the community.

Nearly all partner organisations indicated that the pilot had led to improved communication and relationships between themselves, and the FRS and they intended to further develop joint working in the future. Most partner organisations reported that the pilot had led to an increase in referrals and demand for their services. Referrals were considered appropriate, supporting the aims of partner organisations to deliver services to people in need. Partners indicated that a longer lead in time to the start of the pilot would have allowed better joint planning around data sharing and referral pathways.

5. Reduce the risk of excess winter deaths.

6. Demonstrate the value of the FRS in supporting partners to improve health and wellbeing and reduce demand on health and social care services.

The pilot was not able to report on objectives 5 and 6 within the timeframe because a detailed breakdown of the use of NHS services had not been released.

However, the evaluation did report:

- The additional time required to add the winter pressure components to the Safe and Well visit was estimated to be 30 minutes per visit.
- The additional cost was £13 per visit on an ongoing basis.
- To break even, every 1,000 visits would need to prevent 65 A & E attendances or 8.4 emergency admissions or 3 mid to high-risk falls.

Conclusion

This was a complex evaluation that would require external assistance for most FRS. It is included in this document as it provides an excellent example of the need to have clear objectives against which to measure. It also demonstrates the concept of triangulation. In this case, this triangulation is provided by incorporating a range of both qualitative and quantitative measures and the use of existing data sources to assess each of the intervention's objectives.

‘I want to, I can... be healthy, safe and secure’

Who conducted the evaluation: Leicestershire Fire and Rescue Service

Type of project/ interventions: Prevention - educational

Description of the intervention

An education workshop delivered within a specific geographical location.

Objectives

The workshops covered: the promotion of self-care (with an emphasis on mental health), the development of life aspirations, the meaning of life skills and their importance, the factors related to violence prevention, and the proper use of emergency services. The workshops had an average of 12 attendees.

The evaluation aimed to assess if the participant's abilities had improved in relation to:

- Self-care (Mental health)
- Emergency services
- Self-esteem
- Assertiveness
- Decision making
- Identification and management of emotions
- Empathy.

Method

The evaluation compared the outcomes of a group that received the intervention against a control group that did not.

Measure

A questionnaire measure was administered at 2 time points approximately 4 weeks apart. The intervention group received the intervention after the initial administering of the questionnaire. The questionnaire contained twenty-one items. Ten items looked to assess knowledge and

used a 3-point scale of true, false, don't know / not sure. Life skills were assessed by 6 items on a 4-point scale ranging from very rarely to almost always. This scale was also used for: 2 items measuring psychological barriers, 2 items addressing empowerment, and a single item measuring personal agency.

An additional 6 items were added to the post-questionnaire administered to the intervention group to gain insight into the delivery of the intervention. This used a 4-point scale ranging from totally disagree to totally agree. Two open-text questions were also included, asking them about the content of the course and if they had any further comments.

Sample

There were 263 participants in the treatment group with 31 participants in the control group the age range was from 12 to 88. The analysis found there was a statistically significant age difference between the groups with the mean age for the control group being 49.1 compared to 37.2 for the intervention group.

Analysis

The evaluation was conducted by an external specialist organisation that were able to complete a range of statistical tests including t- and Chi tests. This testing enabled a detailed analysis of the data to be presented, including levels of significance. The results of the qualitative findings were supported by qualitative analysis based on the replies given in the open text questions.

Results

The evaluation concluded that the community workshops did have a positive effect on participants knowledge and personal tools; life skills, personal agency, empowerment, and self-efficacy, which are expected to lead to changes in their behaviour in the community, regarding the proper use of emergency services, mental self-care, and violence prevention.

Exit Project – Response

Who conducted the evaluation: EXIT project team with funds from the Road Safety Trust

Type of project/ interventions: Response

Date of publication: 2022

Description of the intervention

This was a wide-ranging professional study that aimed to review current extraction techniques to identify how these could be improved.

Objectives

The work aimed to develop evidence-based guidance for the extrication of patients from vehicles.

Method

Ten separate studies were completed looking at all aspects of extraction relating to spinal injuries and time-dependent injuries in trapped and non-trapped patients.

Measure(s)

A wide range of measures was used across the 10 studies including:

- Literature reviews
- Semi-structured interviews
- Review of medical data
- Focus groups

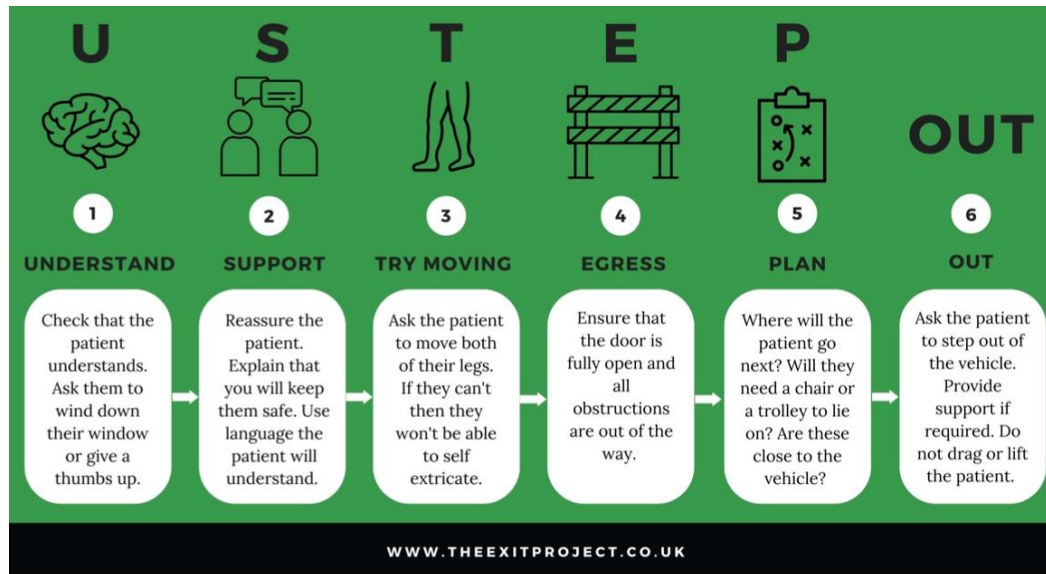
Analysis

An in-depth analysis was completed on both the qualitative and quantitative data.

Results

The study resulted in new guidance being given based on the USTEPOUT – how-to guide. The full report can be accessed here:

<https://static1.squarespace.com/static/61d570b3a2957b5f755587d2/t/639c51144abc4f591e2d7f56/1671188772570/EXIT+Project+2022+final+report+Dec+2022.pdf>



Appendix D – Participant information sheet

Common questions that may need to be addressed in a participant information sheet are given below. This sheet only relates to the evaluation and not the intervention as a whole. Please note, this is not a definitive list as each evaluation is different and different FRS may have different policies relating to GDPR and health and safety.

What is the purpose of the evaluation?

You are being asked to take part in this evaluation to help us to...

Who is organising and funding the research?

The project is being completed by

What do they have to do?

You will be asked to complete this questionnaire and one other. The questionnaires will take 10 minutes to complete. You will be asked to complete the final questionnaire in approximately 4 weeks via your school or college.

What are the possible disadvantages and risks of taking part?

Participating in the research will not cause you any disadvantages or discomfort.

What type of information will be sought and why is the collection of this information relevant for achieving the aims of the evaluation?

The questionnaire will be collecting information... (Check with your data protection officer)

What are the possible benefits of taking part?

You will be helping to...

Do they have to take part?

Your participation is completely voluntary, you do not have to complete this questionnaire.

Can they withdraw their answers?

This will not be possible as the questionnaire is anonymous, and it will not be possible to identify your responses. Therefore, please ensure you are happy to continue before commencing the questionnaire.

Alternatively, this could read: Yes, please contact (contact name) before the (add date). After this date your data will be depersonalised meaning this will not be possible.

What if something goes wrong?

If you have any complaints about the project in the first instance you should contact...

What will happen to the results of the research project?

Results from the project will be published. You will not be identified in any report or publication.

Contact information

To be added

References

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