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HEALTH AND SAFETY EXECUTIVE

The HSE Board

Knowing our knowns & unknowns¹ (AKA managing and using evidence)

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Issue

1. How can HSE use evidence better to inform and improve policy development and operational and programme activity?

Timing

2. Not urgent but the sooner we improve our use of evidence, the sooner we reap the benefits of a sounder evidence-base for our policies, programmes and interventions.

Recommendation

3. The Board is invited to:
 - a. Consider and endorse the proposal in para 8 (and annex 2) for making 'what works' evidence quickly and easily available on the intranet;
 - b. Consider and endorse the proposed arrangements in para 14 and the new guidelines in annex 3 for improving the quality and co-ordination of HSE evaluations;
 - c. Advise whether the budgetary model used elsewhere in government for funding evidence-gathering should be investigated for HSE (para 15 refers), and
 - d. Note and support the proposals in para 16-17 for helping HSE staff interpret and use evidence through a series of seminars and early involvement of analysts in the policy cycle.

Background

4. It is now widely accepted across government that policy-making should be based on an analysis of the available evidence. In HSE this evidence comes from various places and ranges from expert opinion/knowledge (held by staff) to the results of scientific research. HSE's expert knowledge has been translated over the years into operational and policy guidelines and still provides much of the raw material from which new policies and projects are developed. This has been, and remains, a valuable resource that should be considered alongside the harder evidence available. But this knowledge

¹ "There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know." Donald Rumsfeld.

is not evidence that would necessarily convince third parties. It also carries the risk of repeating previous mistakes and reducing our inclination to think outside the box.

5. There are also practical limits on the use of harder evidence. HSE operates in very complex environments, for example with multiple factors bearing on the behaviours we need to influence. Complete and incontrovertible evidence that sets a clear direction for our policies will rarely be attainable. Our more realistic aim should be to ensure people making decisions have ready access to what is known and understand the implications for their work. Managing knowledge in large organisations is notoriously difficult and our performance is very patchy. This presents the biggest hurdle for policy and other decision-makers. To plagiarise Donald Rumsfeld, we have too many '*unknown knowns*', i.e. things we don't know we know.
6. The Fundamental Review and more recently the Fine Tuning Review have both emphasised the need for HSE to improve its use of evidence with specific reference to:
 - A better understanding of 'what works', and
 - A more corporate and cost-effective approach to evaluation.

Our proposals below address these two specific issues as well as steps to improve people's ability to understand and use the evidence available. CoSAS analysts have an important role in helping policy and operational staff find and interpret the evidence they need. They can offer advice throughout the life of a policy or project, from problem identification and options appraisal to final evaluation (see annex 1). Their advice will help with delivery of ideas that do come to fruition as policies but also to avoid those that have little chance of success and to terminate those that are not working.

Argument

7. Our proposals involve:
 - a. Making the evidence on 'what works' (mostly coming from previous evaluations) more accessible;
 - b. Improving guidance on, and strategic oversight of, evaluation to ensure we fill gaps in our knowledge of 'what works' and avoid evaluating things we already know about, and
 - c. Helping policy and operational staff understand better how to interpret and use evidence, e.g. through a series of seminars and by promoting the service offered by CoSAS analysts.

'What works?'

8. There are over 500 reports on previous evaluations of HSE interventions that have been reviewed and analysed repeatedly to improve our understanding of what works, most recently to help develop the Guide for Regulators². None of these reviews (some producing long, impenetrable reports) has succeeded in making the existing body of knowledge accessible. Therefore we recommend that we capture this evaluation knowledge once and for all by summarising it and making it quickly and easily accessible on the intranet. We are examining how other organisations do this successfully and will continue to discuss with key users in HSE how best to present the

² The Guide to Regulators was being developed to meet a Strategy 2010 commitment. In agreement with FOD, who lead on developing the Guide, we suggest that the proposals in recommendation (a) should be deemed to fulfil the Strategy commitment.

information. Annex 2 describes our suggested approach at this stage, including a framework for the summaries of evaluation reports.

9. If the Board accepts this proposal we will need to both capture existing knowledge from previous evaluations and start summarising and recording all new evaluation reports in this way. Our work so far suggests 4 hours analyst (band 2 or 3) time for each evaluation report, not a significant burden for new reports but involving more than one staff year to review and capture all the evidence from previous reports. The task could either be done by CoSAS analysts, by HSL or by a contractor. The work should be manageable within existing budgets given time. It should be possible to prioritise existing reports for analysis so that those of most use to policy and operational teams are dealt with first.
10. This system could be extended to capture useful evidence from third party evaluation reports, whether done for other UK regulators and organisations or international agencies.
11. We have reviewed a sample of previous evaluation reports to develop this proposal and found mainly anecdotal rather than hard evidence about the impact and cost effectiveness of our main intervention techniques. There are also many shortcomings in evaluation methodology that weaken the evidence and conclusions drawn. This does not bode well for the current state of our 'what works' evidence-base. If this initial picture is confirmed, we will return to the Board with proposals for filling the evidence gaps. Options are likely to include full impact evaluations for each intervention type where the evidence-base is weak or evaluating combinations of intervention types in particular campaigns. The former is more challenging (because of the need to isolate all other influences). In contrast, we have already begun to glean some robust and useful evidence recently, e.g. from Watch Your Step and Backs campaign evaluations.

Evaluation – improving quality and co-ordination

12. The Board (at the December meeting) agreed that the Chief Scientific Adviser should sign-off all evaluation proposals and that small-scale evaluations should be stopped. The CSA wrote to Board members in January with interim arrangements for putting this into effect. The proposals below build on those arrangements.
13. There is significant variation in what we mean by 'evaluation' across HSE. It is used to describe everything from full impact evaluation of a major project (such as Workplace Health Connect) to gathering feedback to help manage a local project. The main source of guidance in HSE is GAP 6 'Policy and project impact evaluation' which translates government guidelines (the 'Magenta' and 'Green' books) in an HSE context. This sets the high standard needed for impact evaluation of major government policies, that is occasionally needed for HSE policies and projects. Unfortunately it is not designed as practical guidance for policy-makers to help with evidence gathering for routine evaluation and feedback.
14. To overcome this we have produced some simpler guidance on evaluation for policy and operational staff – see annex 3. This stresses the need for people to seek help from analysts early in a project so that fit-for-purpose evidence gathering can be planned and 'designed-in' from the outset. The occasions when full impact evaluation is needed can be identified at this stage and CoSAS can provide closer involvement and support as well as the necessary independent author for the evaluation report in such cases. GAP 6 is being revised as well and will be retained essentially as 'the text

book' for analysts and other staff who want to understand more about the detail of impact evaluation.

15. Impact evaluation often involves costly survey work (that HSL does not have the capacity to deliver). The budget available for extramural research is diminishing and therefore may constrain HSE's ability to gather reliable evidence on the impact of its interventions. The model across government is for such evidence gathering to be funded from the relevant programme budget, typically 5-10% of programme budgets being allocated for this work. The Board is invited to consider whether the pros and cons of this budgetary model should be investigated for HSE.

Improving the interpretation and use of evidence

16. We plan to run a series of seminars for policy and operational staff to improve understanding of how best to interpret and use evidence. This will provide an opportunity to promote the new arrangements recommended in this paper for making 'what works' information more accessible and for co-ordinating evaluation. If these seminars prove successful and useful we would aim to repeat the series periodically (perhaps annually) using updated material.
17. We stressed earlier the need for analyst involvement throughout the policy cycle to ensure policy developments are soundly based on and supported by the available evidence. There are several developments that should encourage this to happen:
 - The requirement for the CSA to sign-off evaluations;
 - The new arrangements for impact assessment (IA) being introduced across government. These will require an IA for all major policy initiatives with a similar sign-off requirement (probably by the Chief Economist on behalf of the Chief Executive), and
 - The likely proposal for an 'evidence' section in all Board papers³ with a similar clearance requirement (by the CSA) to that currently required for the communications and financial implications.

Consultation

18. Policy Group, OPSD, FOD, Comms Directorate, RPD.

Presentation

19. There are no particular presentational issues although early analysis suggests that completing the review of 'what works' evaluation evidence is likely to reveal a significant shortfall in hard evidence for the impact and cost effectiveness of many of the intervention techniques we use. This will require careful handling both in HSE and externally. We believe that the analyses and summaries of our evaluation reports should be available outside HSE and, therefore, should probably be placed on the external-facing web pages rather than the intranet.

Costs and Benefits

20. These proposals should place no additional, direct costs on duty holders but could provide indirect benefits, e.g. through HSE development of more cost effective policies and programmes and an improved understanding of the impact of our various intervention techniques.

³ A paper reviewing Board ways of working is currently being developed by Strategy Division and is likely to include a recommendation on 'evidence' sections in Board papers.

Financial/Resource Implications for HSE

21. Completing the proposed capture of existing 'what works' evidence would take 1-1.5 staff years of band 2/3 analyst time plus approx. 0.1 staff years of CDS time to develop and populate the intranet pages. Providing this work can be spread over the next couple of years it should be possible to free up the necessary analyst resource within CoSAS/HSL. Once established, the marginal costs of ensuring new evaluation reports are analysed and recorded on the intranet should be small and manageable within existing CoSAS/CD resources.
22. The new arrangements for co-ordinating evaluation work are, for 'user' directorates/divisions, largely a re-direction of effort already expended. Demand for analyst support from this proposal and the others mentioned in para 19 is likely to increase. Initially it should be possible to manage this within CoSAS by adjusting priorities and reducing effort on work that supports CoSAS customers less directly. A separate paper will be put to the Board in July on resource levels in CoSAS Analytical Services Division.
23. Development and delivery of the seminar series is likely to require 0.2-0.3 staff years for band 2-4 analysts this year. This would reduce to 0.1-0.2 staff years for maintenance and delivery of the series in future years. This resource will be managed within CoSAS by adjusting priorities and redirecting effort. A limited amount of senior staff time will also be needed to introduce and support the series. There will be some additional T&C/T&S costs for those delivering the seminars, manageable within the existing CoSAS budget.

Environmental Implications

24. None

Other Implications

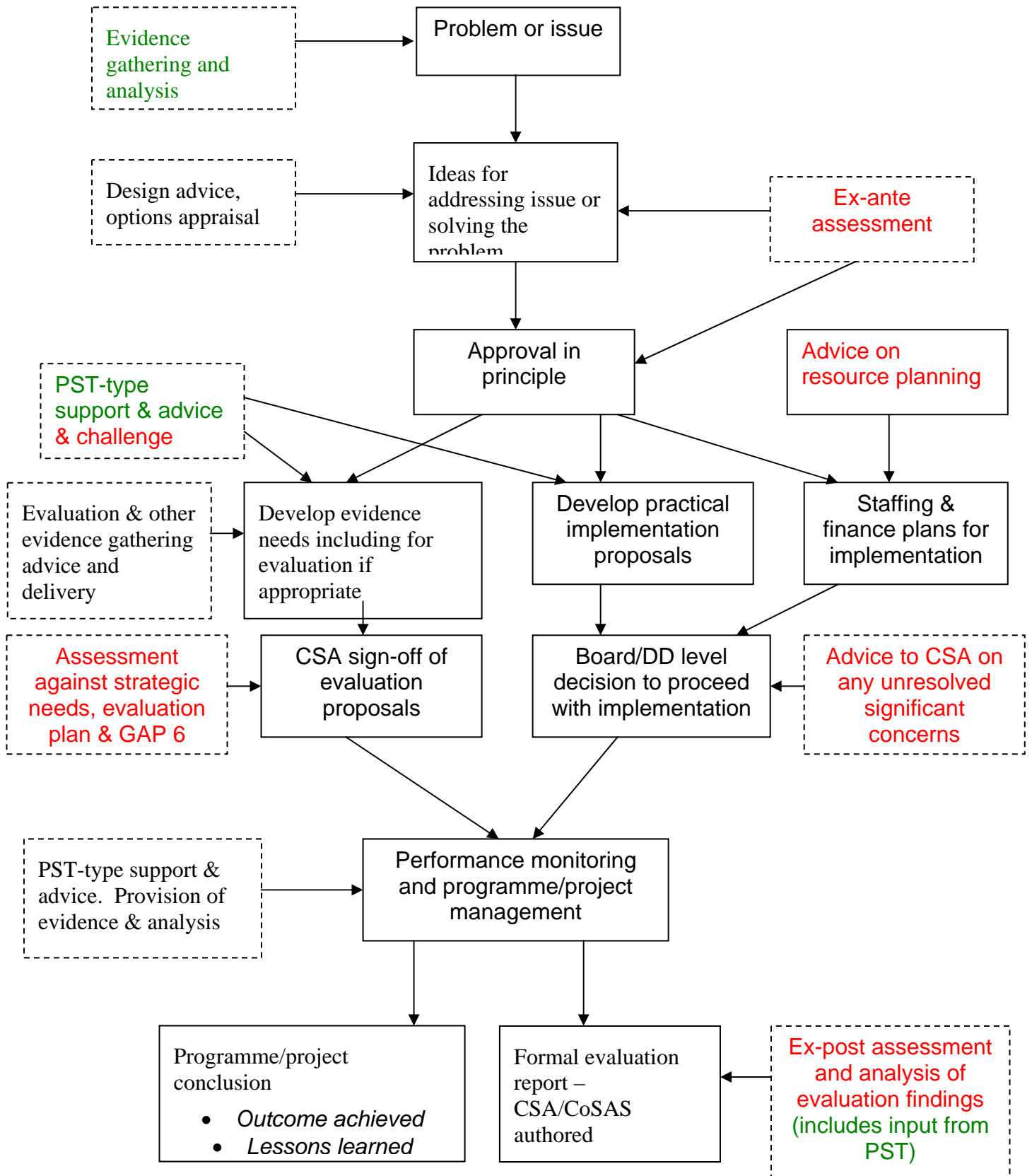
25. None

Action

26. The Board is asked to take the action set out in para 3.

Analytical input to policy process

Annex 1



Key

Xyyyyy

= Stage in policy process

Xyyyyy

= CoSAS ASD support/advice

Xyyyyy

= CoSAS ASD challenge

Locking down our evidence on ‘what works’

We propose that the evidence from all evaluations should be analysed and presented in three levels of detail. For each evaluation report there would be: an entry level (one screen) summary of the key points linking to a 2-3 page analysis that ‘locks down’ what the report tells us and how strong that evidence is. Finally there would be a link from the analysis pages to the full report (already held in the research projects directory).

Even summarised in this way, existing evaluations will present a formidable body of information, potentially daunting to policy-makers and operational staff. This will continue to grow as we add summaries of new reports. We will need to help people find what they need by good searching facilities and support from analysts. It may also be worth developing entry pages on the intranet for particular topics. For example, the summaries for evaluations of a particular intervention technique, e.g. inspection, could be linked to a page giving an overview of all available evidence on that technique – this would be updated as and when new evaluation reports were received.

Below is an example framework for how the information might be presented on the intranet. The ‘one screen’ summary of key points would link to a second level with more detailed analysis. There would be a link from the analysis pages to the full evaluation report (held in the Research Projects directory).

LEVEL 1: QUICK GUIDE

WHAT EVIDENCE DOES THE RESEARCH PROVIDE?	
WHAT WAS THE RESEARCH DESIGNED TO DO?	
WHAT IS THE OVERALL ASSESSMENT? (with traffic light indicator)	

Evaluation and monitoring

Information for those designing and implementing interventions

Evaluation and monitoring are important elements of any policy process and must be capable of providing reliable information on the effectiveness of what HSE and others do. In the past in HSE we have used the term 'evaluation' to describe a range of activities and this has led to uncertainty. In light of the Board's decision (in December 2006) that all 'evaluations' should be signed-off by the Chief Scientific Advisor (CSA) and minor evaluations should be curtailed, it is important to have a clearer definition. The terms 'evaluation' and 'monitoring' and how we will use them in HSE are explained below.

The Chief Scientific Advisor will only formally sign off the more significant HSE evaluations and then only after taking advice from staff in CoSAS. In other cases, sign-off will be implied providing advice has been sought from CoSAS by those designing and implementing interventions. But the CSA retains the right to intervene if CoSAS consider an evaluation proposal is substantially flawed (e.g. because poor design will give misleading results or costs are excessive in relation to the intervention).

These pages explain what those designing and implementing interventions should do and why, but they do not provide a tool-kit for undertaking evaluations. You should discuss the need to evaluate interventions with colleagues in Economic Advisers Unit, Social Sciences Unit or the Customer and Programme Support Group in CoSAS. These teams will support you in identifying the depth of evaluation, the type of evaluation and the methods necessary to fulfil your needs.

What is evaluation?

There are two main types of evaluation, impact evaluation and process evaluation.

Impact evaluation uses a wide range of research methods to

- systematically investigate the effectiveness of policy interventions, implementation and process,
- and determine their merit, worth, or value in terms of improving the social and economic conditions of different stakeholders.

Process evaluation uses mainly qualitative evidence to determine whether, how and why a project, programme or policy has impact.

All evaluations have five main steps:

- *Specify the objectives and define the assumptions;*
- *Select the success indicators*
- *Identify the counterfactual (what might happen anyway)*
- *Collect and analyse (relevant) data*
- *Report the findings*

At one end of the scale an evaluation can involve pre- and post-intervention surveys and detailed analysis; at the other, they may need no more than properly designed 'happy sheets' for a SHAD. Colleagues in CoSAS can support you in dealing with all these steps for your particular evaluation.

What is monitoring?

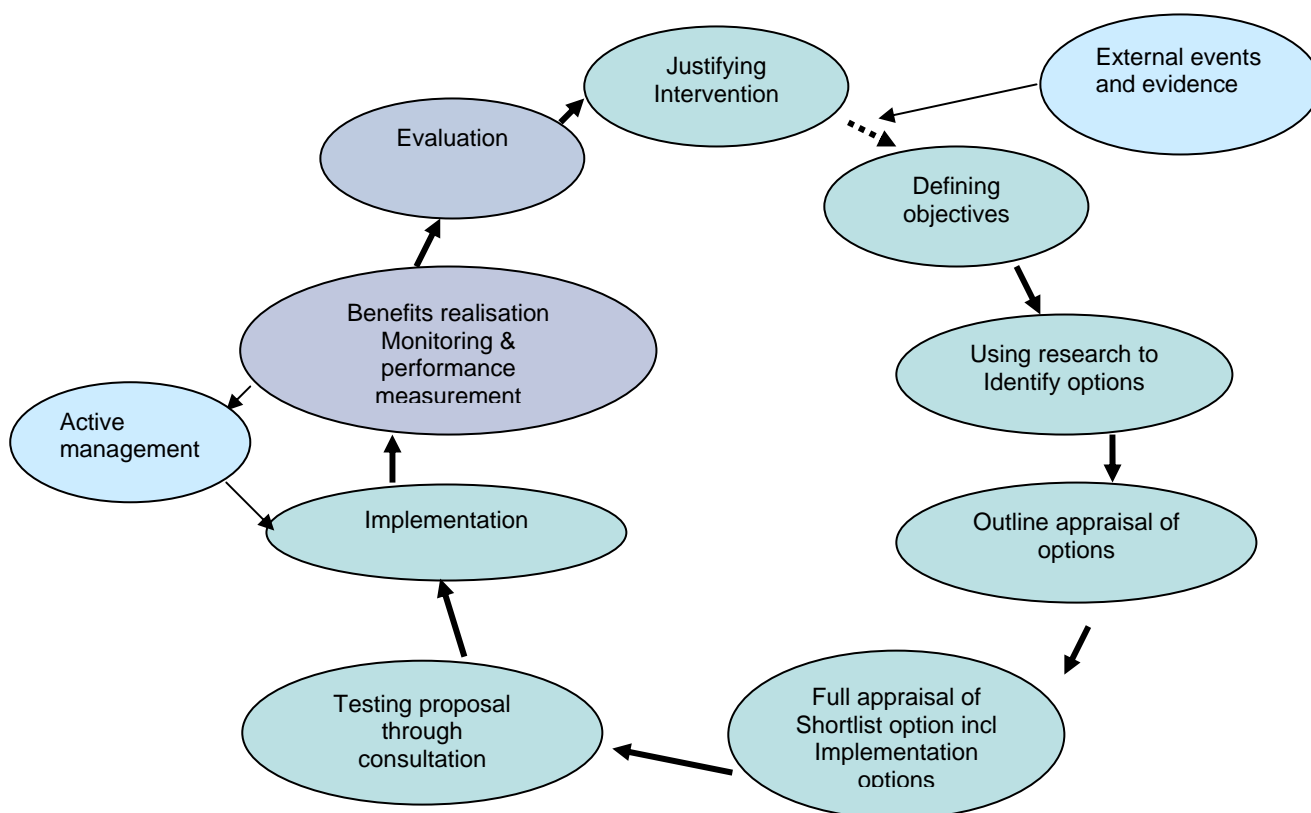
Monitoring is the collection of information about inputs, outputs and if possible outcomes during and after the policy, programme or project is introduced. Its main purpose is to support active management of the programme, project etc.

Why do evaluations?

Just about everything that HSE does to bring about improvements in health & safety could be called an intervention. We need to know whether our interventions are effective and whether they represent good value for money

It is good practice to evaluate the spending of resources – financial and human in HSE and outside - and learn for future development of policies, programmes and projects. Figure 1 shows the project/policy/programme cycle and the place of evaluation and monitoring in it.

Figure 1: Project/Policy Assessment Cycle



When to do an evaluation?

Every policy, programme or project should monitor progress and have some kind of evaluation to assess whether it had the intended outcome or output. In some cases such as a small information event this will mean a very informal discussion with stakeholders in others a more formal process.

The nature and depth of the evaluation will differ between interventions. The following questions have to be considered to identify the depth of evaluation:

- Is it **possible** to evaluate the intervention and at **what cost**?

If it is not possible to evaluate an intervention or the costs are too high, it is still appropriate to collect monitoring information to ensure the project, programme or policy is on the right track.

If it is possible and the costs are affordable (in the context of the costs of the intervention) the following questions have to be considered:

- How much money will be spent on the intervention? (In the case of a pilot, potential evaluation costs should be compared with the full cost of roll out).
- Is this a new (i.e. not well established-or evaluated) intervention?
- Does HSE's reputation depend on it?
- Could it have a significant influence on future policy making?
- Is the evaluation looking at an intervention that involves a particular risk or an area where the scientific basis of the approach is uncertain?⁴

The answers to these questions will determine the depth of the evaluation. CoSAS is able to help identify the right level of evaluation. For example, a policy such as the introduction of Workplace Health Connect would, if rolled out, introduce a new service using significant resources and so the pilot merits a full impact evaluation. In contrast, individual SHADs in the agricultural sector use only limited resource and so require much simpler evaluation.⁵

The following sections will explain three different types of evaluation and monitoring. For more detail, see the links to the detailed guidance.

Types of evaluation

Impact evaluation [add link to detailed guidance]

Impact evaluation aims to measure the net impact of a project/programme or policy intervention including any unintended consequences, using robust methodologies. Whenever practicable this should include a cost-benefit analysis and an overall value for money judgement. Sensitivity analyses will take on board any uncertainties in costs and benefits.

⁴ An example is the development of new management standards dealing with risks connected to mental health. Such interventions while addressing a particular risk in the work place may on the other hand create new risks to workers – so far unexplored.

⁵ In contrast, if HSE decides to evaluate SHADs as a generic intervention technique, this would require a full and costly impact study.

A full impact evaluation should be applied if one of the questions posed above is answered with yes and the programme, policy or project costs more than £ 5 million in total of HSE's budget or more than £ 20 million of others' resources? (Total including costs to others.)

For smaller projects, programmes or policies a less rigorous form of evaluation may be more suitable. For an example see [add link to James's paper].

Process evaluation [add link to detailed guidance]

Process evaluation asks whether an intervention has operated as intended, and if not seeks to understand, how, why, and under what circumstances it has failed? These questions are important in determining the effective implementation and delivery of policies, programmes or projects. It seeks information on the context for, and the mechanisms and processes underlying a policy's success or failure.

Process evaluation strengthens the attribution of outcomes to interventions.

When to use a process evaluation?

Process evaluation is useful when we want to know whether a programme, project or policy is working in the way intended. For example, this could be when:

- The method used for delivering the policy is new to HSE or when
- Monitoring shows that the policy, programme, project may not be achieving its objectives or there are serious problems in delivery

Monitoring [add link to more detailed guidance]

Monitoring provides information and feedback on the progress of a project/programme or policy intervention against its milestones and targets.

Data collected for monitoring purposes will also usually make an important contribution to any impact or process evaluation.

Examples for monitoring information could be the number of people attending SHADs, the information they provided in their evaluation sheets, or the data regularly produced from the Labour Force Survey or the FIT3 surveys.

CoSAS contacts:

Head of EAU:

Head of SSU:

Head of CPS