



Policies and Procedures

Evidence Quality Assurance: Evidence Quality Guidance Note #4

Communicating Evidence Quality

1st December 2014

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Evidence Quality Guidance Note 4: Communicating evidence quality

1. General principles

The effective management and dissemination of scientific evidence is an essential part of JNCC's work. No less important, however, is communicating information about the *quality* of the evidence and advice provided. Information about parameters that have been used to define the quality of evidence is essential to validate, corroborate and support the advice that JNCC provides.

When communicating evidence, it is important to devise a communications strategy that includes measures to record the quality of the evidence supplied in order to help support any scientific conclusions and decisions that are made on the basis of that evidence. The evaluation of quality should be made available alongside the evidence that is supplied at the end of the investigative research.

During the initial work planning process it is important to make provisions for communications activities, including communicating evidence quality. JNCC's Communications Team can offer guidance on devising communications strategies and how best to communicate quality assurance measures. For example, it may be that the evidence quality information is not directly communicated to a target audience, but is simply made available through references in a document or via the JNCC website. However, the greater the uncertainty in the quality of evidence used, the greater the need to openly communicate reservations surrounding certainty.

2. Evidence quality in communications planning

Beyond an overarching communications strategy (the justification and reasoning for the communications activity to achieve the desired results – the 'why'), a communications plan (the 'what', 'where', 'how' and 'who') is needed for each piece of evidence work. The plan will need to reflect the decisions taken on the type of communication method to be used, the definition and location of the target audience(s), and how the communication products will be disseminated to target audiences.

The plan itself will also need to encompass descriptions of how the evidence, as well as quality assurances, is to be presented. Any final advice provided by JNCC should have at least a summary of potential variables affecting evidence quality. Examples of this may include: differing geographical scales used in aggregated datasets; complex accumulation methodologies applied to data of different ages and collected from various sources; or whether different methods for aggregating expert opinion have been applied (see EQGN 3 about expert opinion).

The communications plan will need to be reviewed periodically and may require revision as work progresses; any revisions to information about evidence quality will need to be accommodated during this process. It is important to note that not all communications activity will necessarily occur at the end of the work period. Where time allows, reviews of opportunities for additional communications activities may be explored.

Evidence – and information about the quality of that evidence - should be presented in a format most appropriate to the activity and be accessible to the target audience(s). Examples of appropriate mediums may include: email, press releases, newsletters, JNCC

web pages, reference lists, external websites, printed media or direct engagement in conference or meeting settings.

Technical publications are suitable for many types of evidence, from research reports to publishing results of monitoring activities. Publication in the scientific literature may be a suitable option, where the quality of evidence will always be independently peer reviewed, and which increases external confidence in the advice being provided. Other types of evidence will be suited to dissemination by other means, such as geographic databases (spatial datasets and analysis outputs) and maps, all of which require accompanying information about data quality.

3. Communicating Uncertainty

It is important to realise that being open in describing the uncertainty in how we understand a problem means that the strengths and weaknesses of the science underpinning the advice becomes clearer. Communicating uncertainty can also reassure users of the reliability and applicability of the evidence provided.

Levels of uncertainty in the interpretation of evidence should be identified explicitly and communicated directly in plain language. The approach to assessing uncertainty is described in EQGN1 (Bias, Conflicting Evidence and Uncertainty) and is taken from the UK NEA and IPCC approaches; this is also the terminology to be used when communicating uncertainty. It is important to state clearly what precautionary approaches are being taken in response to any uncertainties that have been identified throughout the course of the project.

There will inevitably be occasions where advice is required at short notice. In such cases, decision makers should be made aware of the period of notice which specialists have had to prepare evidence. The level of confidence in the quality of the data, and appropriate cautions, should be stated; this is particularly important where analysis and evidence has been time constrained.

4. Openness and transparency

4.1. Restrictions

When beginning any evidence advice work it is necessary to decide if there is a justifiable reason for restricting access to evidence or to the assessment of certainty regarding accuracy and quality (e.g. if it was 'commercial in confidence'). In cases where access needs to be restricted, the reasons for doing so must be recorded clearly. Advice on data restriction policy should be sought from JNCC Communications Team.

4.2. The benefits of open communication

In the majority of cases, it is essential to adopt an open and transparent approach to communicating scientific advice and ensure that the processes undertaken to acquire and assess the evidence are clearly presented. The qualification of the level of accuracy or uncertainty, whether in statistical or descriptive terms, is an important part of evidence provision. This openness is vital to ensure that all relevant streams of evidence are considered and that stakeholders are fully aware of these. Openness also increases the confidence of external experts and the public in JNCC's advice work.

5. Who should communicate the evidence and who should communicate information about its quality?

Selecting effective communicators to relay the message(s), and convey the evidence quality activities that were undertaken, is a key consideration. This may depend upon the intended audience(s) (stakeholder group) for each message and staff experience in working with them. It is necessary to identify the most appropriate methods for interacting with the different stakeholders, whether disseminating information, seeking consultation, or deliberating. The main communicator of the evidence itself may not necessarily be the person who conveys technical information, including quality, about the evidence. The evidence quality communicator may feel that the job is a subsidiary activity to the main message, but without it, the evidence itself could be called into question or even dismissed.

The methods of analysis and judgement that went into gathering evidence, and any important gaps in the data, should be clearly identified and presented in communication products. See EQGN 3 (Quality Assurance of expert knowledge and opinion).

Levels of confidence may be expressed mathematically for numerical data, but whatever statistical method is applied to present evidence, the derivation of error margins needs to be expressly shown. Activities that have been carried out to verify and corroborate evidence supplied are important in order to demonstrate that the evidence that has been used has a level of surety associated with it.

6. Dealing with challenge

6.1. A suitable process

Given the wide range of stakeholders with an interest in the evidence JNCC supplies, it is inevitable that there will be challenges to the way in which evidence has been acquired and the level of reliability of the evidence, which, if the challenge were correct, would undermine conclusions. It is important to have an agreed, open and transparent process of describing confidence and quality assurance of evidence in order to fully understand and deal with potential challenges to evidence and advice.

When responding to stakeholder concerns over emerging findings, it is important to:

- State clearly the level of quality assurance and peer review which has been carried out;
- Identify all the margins of error in variables and parameters, as well as any limitations of the methods used to aggregate data, particularly where diverse datasets have been conflated;
- Identify geographical scale and age of data used;
- Acknowledge the qualifications and experience of experts consulted and the breadth or the limitations of expert consultation (particularly in cases where time is a limiting factor);
- State whether the work will be subjected to any further assessment or peer review; and
- State when the outputs of the work are likely to be made available.

6.2. Additional evidence

Where external challenge involves the submission of additional evidence to which JNCC has not yet had access or prior knowledge of, this should be considered carefully. Depending on JNCC's evaluation of the validity and appropriateness of new information, it may be used to update the evidence base, and revise conclusions. However, the 'audit trail' of how any new

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evidence, evidence quality, and modifications of conclusions came about should be carefully recorded. All such additional evidence or data being considered for inclusion or exclusion in revised advice must be documented, including assessments of the accuracy and appropriateness of new data, along with the reliability of data gathering methods. The rationale for excluding any datasets from the assessment process needs to be published alongside the advice and evidence that is being communicated.

In cases where resolution of a challenge to our evidence provision is not possible the JNCC complaints procedure must be followed. Further information on this procedure can be found on the JNCC website at: <http://jncc.defra.gov.uk/page-5865>.