# Synthesizing evidence for science advice using four principles

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Decision makers need access to timeous, rigorous and unbiased information, rooted in verifiable sources to help best inform decisions that address often recurrent, predictable and enduring problems. These problems can vary widely from public health policy to natural disaster management planning. Evidence synthesis is a process. It involves using information from different sources and disciplines to inform discussions about different topics. The body of work produced is intended to equip decision makers with simply communicated yet comprehensive and clear evidence to inform in the decision-making process that can lead to better policy development.

Although evidence syntheses are performed frequently by many parties, there are few who really understand WHAT an evidence synthesis is and how to produce a "good" one. Among the issues that hinder the quality of the syntheses that are produced, are that evidence that is used is often outdated and/or parties are not objective when constructing their syntheses

Syntheses can be performed in various ways. Evidence syntheses can be rapid, where assessments are performed relatively speedily and are specific in focus. Conversely, syntheses can be more systematic. This means having broader focus, with content that is more comprehensive and in depth. Both forms of evidence synthesis have their own respective pros and cons. Rapid syntheses are relatively quickly performed compared to systematic syntheses, usually when needed urgently under limited time. However, this means that the synthesis may not be in depth. Although Systematic reviews cover a wider scope of content and go into greater detail, they generally take longer to complete- but time may not always be available.

When synthesizing evidence, the party should embody four principles which are interconnected and interdependent. They are:

Inclusiveness

Ensure that a wide range of relevant skills and sources of evidence are identified and utilized. The targeted audience of the synthesis should be involved throughout the process, from structuring the research questions or topics to how the evidence-based findings are interpreted.

Rigor

Rigor refers to ensuring through continuous scrutiny, that the content and sources drawn that are from are robust and relevant to the research question(s). Rigor is essential to minimise avoidable mistakes like expressing bias in the synthesis. Large amounts of time can be spent ensuring that rigor is exercised.

Transparency

This is in terms of the clarity exercised in addressing a research question that may be marked by complexity or contention. Transparency further includes openly communicating what

methods are employed, what sources are used and even acknowledging assumptions, uncertainties or limitations of the evidence or declaring whether any personal interests exist and/or if conflict develops among party members from it. Maintaining transparency provides credibility and usefulness to the synthesis on which it can be further improved.

Accessible

Syntheses should try to be accessible in that they should be written using language that is plain and easy to understand. Accessibility refers to the availability of syntheses, to access especially in the public domain, e.g., open access online, within a reasonable time frame.

Evidence synthesis for science advice requires collaboration, among people of different disciplines as well as between public life and academia in general.

Summary

- Though evidence syntheses are produced regularly, few understand what they are and what characterises a good synthesis.
- There are many forms of evidence synthesis, but they can broadly be grouped into rapid and systematic reviews of evidence.
- When synthesizing evidence for science advice, the synthesis should be written such that it is inclusive, accessible, rigorous and transparent.