

Improving the Usefulness and Use of Systematic Reviews and Meta-Analyses to Inform Policy and Practice

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Sound public policy depends critically on access to and responsible use of credible evidence to inform decision-making. The U.S., Canada and much of the European Union have accelerated their production of evidence to support public policy design, implementation and monitoring and mandated greater use of this evidence to support funding decisions. However, there is a rather sizeable gap between the production of evidence and its translation for and use in decision-making. In part, the gap is due to lagging infrastructure to support the production and meaningful use of evidence.ⁱ However, it also is due to failure of evaluators to design and report research in ways that support efficient synthesis and reporting of available evidence, including reliable assessments of the credibility (i.e., internal validity) of study findings and the range of population groups and settings to which they apply (i.e., their generalizability).

Recent shifts in the policy arena have stimulated advancements in the quantity and quality of evidence on the expected impacts of various programs, policies and practices and strengthened commitments to and support for consultation of that evidence by policy makers and practitioners. Increasing numbers of funders and shares of funding for public programs and policies are being shaped by evidence on expected impacts, returns on investment (benefits-costs), and efficiency (cost-effectiveness). For example, many of the evidence-based programs launched by federal agencies now carry with them evidence requirements for award of funds, as well as requirements for rigorous evaluations to substantiate (or not) their effectiveness.ⁱⁱ Yet too often there is scant credible evidence to support the requirements.

In an ideal world, there would be a large body of evidence, most likely from multiple studies conducted in varied contexts that could be synthesized in ways that inform policy and practice, including funding decisions, using Meta-Analysis as a central tool for synthesis. Meta-Analysis has been widely applied in medical for decades and, over the past decade, has gained traction in the social sciences. But efforts to expand production and use of Meta-Analysis in the social sciences have exposed challenges and limitations in applying Meta-analytic methods that have served the medical community well to evidence on the effectiveness of economic and social policies and practices. For example, it is not uncommon for there to be multiple and sometimes competing outcomes of interest associated with economic and social programs and policies and the impacts of economic and social policies tend to be more sensitive to contextual factors than is the case for medical trials. Moreover, the end-users of economic and social program and policy evaluations span a variety of disciplinary backgrounds that prioritize different types of evidence and outcomes.

This chapter provides an overview of current “best practices” using Meta-Analysis of economic and social policy making and provides an inventory of useful resources and tools to support the conduct and dissemination of findings from such analyses. Then, it discusses four

strategies for improving the usefulness and use of Meta-Analysis evidence: (1) design evidence-building efforts in anticipation that findings will be pooled with results of other studies and that they may be relevant to different audiences; (2) pre-register studies to ensure their existence is documented and that results will be findable before they appear in refereed publications and outside of a pay-wallⁱⁱⁱ; (3) follow study reporting guidelines to support meaningful Meta-Analysis; and (4) attend to issues of context and measurement when meta-analyzing and reporting study findings. The recommended strategies build on the past 20 years' experience establishing and refining evidence review platforms intended to support evidence-based policy and practice.^{iv}

Most studies identified as potentially relevant for inclusion in a systematic review or Meta-Analysis are “screened out” due to design deficiencies and/or inadequate reporting of methods and results. In many cases, these deficiencies could easily have been addressed through greater attention at the design stage to the likely credibility of the evidence on policy relevant questions and to ensuring there will be adequate supporting contextual information to situate the study findings in the larger policy landscape. The chapter will offer guidelines for designing impact evaluations that can more effectively and efficiently be integrated meaningfully with findings from related studies across policy areas— suggestions that build on prior efforts like the [Common Guidelines for Education Research and Development](#) and [Companion Guidelines on Replication and Reproducibility](#).

Meta-analyses are constrained by the size, quality and accessibility of the extant evidence base. The guidelines will encourage researchers to anticipate the range of policy contexts in which the study findings may be relevant (e.g., the initial test of a policy or practice; evidence pooled with other tests conducted in different contexts or with different populations; cost-effectiveness comparison with other policies or practices targeting the same outcome(s)). They also will offer ways for providing adequate and accessible documentation of the policy or practice under study, the outcomes being measured and the design and analytic procedures that support unbiased impact estimates. The guidelines will include recommendations on reporting, documentation and data sharing that will optimize the usefulness and use of the evidence for Meta-analyses.

Many of the same principles that apply to effectiveness studies apply to Meta-Analysis. This includes careful planning and pre-registration of the study plans aligned with intended applications of the findings. Study plans should detail strategies for ensuring the credibility of the findings, the context to which they will apply and the plans for ensuring transparency of and access to the results. Pre-registration of these plans elevates the importance of clarity primary audience for the study findings, and both the credibility and the limitations of the findings. Pre-registrations also provides essential information for optimal replication and/or extension of the evidence base. Moreover, it reduces the “file-draw” problem which plagues many Meta-analyses and simplifies discovery and use of study findings.

The chapter will conclude with a discussion of “rooms for improvement.” One example is devising more systematic strategies for prioritizing high-leverage evidence building initiatives both within and across policy areas. A second example is improving the quality and consistency in outcome measures (e.g., to address inherent limitations of using standardized mean differences

and clearly delineating when multiple measures are tapping the same outcome domain) and encouraging more and better use of micro-data in Meta-Analysis. Finally, there are endless ways to improve efficiency and effectiveness of Meta-Analysis through continued development and harmonizing of data software and archives.^v

Endnotes

ⁱ See, for example, van de Goor I, Hämäläinen RM, Syed A, Juel Lau C, Sandu P, Spitters H, Eklund Karlsson L, Dulf D, Valente A, Castellani T, Aro AR; REPOPA consortium. Determinants of evidence use in public health policy making: Results from a study across six EU countries. *Health Policy*. 2017 Mar;121(3):273-281. doi: 10.1016/j.healthpol.2017.01.003. Epub 2017 Jan 20. PMID: 28139253; PMCID: PMC5754321.

ⁱⁱ See, for example:

Baron, Jon. (2018). A brief history of evidence-based policymaking. In [ANNALS of the American Academy of Political and Social Science](#) (R. Haskins, ed.). Volume 678, Issue 1, July 2018, Pages 40-50.

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Stack, K. (2018). The Office of Management and Budget: The Quarterback of Evidence-Based Policy in the Federal Government. In [ANNALS of the American Academy of Political and Social Science](#). Volume 678 Issue 1, July 2018, pp.

Pew Trusts (2014). A Guide to Evidence-based Budget Development. <https://www.pewtrusts.org/-/media/assets/2016/07/aguidetoEvidencebasedbudgetdevelopment.pdf>

ⁱⁱⁱ See, for example, Spybrook et al. Spybrook, J., Maynard, R., & Anderson, D. (2022). Study registration for the field of prevention science: Considering options and paths forward. *Prevention Science*, 23(5), 764-773.

^{iv} These platforms range from those with a very broad focus, like the [Campbell Collaboration](#) which has an international reach and includes reviews across policy areas (social welfare, disability, crime & justice, international development, education, business management) to platforms targeted on specific policy areas like the [What Works Clearinghouse](#) and the [Education Endowment Foundation \(EEF\) Evidence Reviews](#) (education), the [Clearinghouse for Labor Evaluation and Research](#) (employment) and [Crime Solutions](#) (justice). Then, there are specialized review platforms tailored to particular governmental initiatives like the Washington State Institute of Public Policy's ([WISIPP](#)) benefit-cost review platform, which includes reviews across myriad policy areas, and more narrowly focused platforms like [Evidence for ESSA](#), which synthesizes evidence on education policies and practices that may be eligible for federal funding.

^v [MetaReviewer](#), produced under a grant from the National Science Foundation, is an example of a recent software product that can improve the pace, quality, and use of systematic reviews conducted using Meta-analytic methods.