

What Works, Under What Circumstances, and How?



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METHODS FOR UNPACKING THE “BLACK BOX” OF PROGRAMS AND POLICIES

DOES IT WORK?

Evaluation research, traditionally conceived, aims to address this central question about a policy or program of interest. The answer often takes the form of average treatment effects: did individuals who were offered a program or service end up, on average, better off than those who were not? Yet, estimating average effects may conceal substantial variations in success. It is also important to understand a second set of questions: What, in particular, about a policy or program works? For whom? In what context? And how?

Within today’s broad climate of evidence-based policymaking, impact evaluations increasingly influence policy and program decisions, including program funding, making these additional questions particularly salient. Recent methodological advances build on a long history of evaluation research, offering opportunities to unpack the so-called “black box” of programs and policies to understand “what, under what circumstances, and how?” On September 3rd and 4th, 2014, the Office of Planning, Research and Evaluation in the Administration for Children and Families, U.S. Department of Health and Human Services, convened a diverse group of participants from federal agencies, foundations, research firms, and academia to explore how existing and emerging methodological tools can advance research on social policies and programs.

WHAT WORKS?

Presenters covered two broad categories of methodological innovations that can help researchers identify effective program components, clarifying *what* works. *Design-based methods* require

This brief is based upon an innovative methods meeting that OPRE sponsored on September 3 and 4, 2014. The meeting agenda and materials can be found at www.opremethodsmeeting.org.

that researchers and program staff collaborate to systematically vary program components during the implementation of an intervention. Conference presenters discussed a variety of methods for designing variation in program components, including the multiphase optimization strategy (MOST); sequential, multiple assignment randomized trials (SMART); and rapid cycle evaluation. By using a clear theory of action to decide which parts of an intervention to offer, to whom, and/or when, researchers using these experimental approaches enable causal inference about the specific program component(s) that contribute to a program or policy’s effects.

When it is not possible to use design-based methods, established *analytic*

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techniques allow researchers to pursue questions about what works after the data are collected. Specific techniques to identify the effectiveness of program components using available data include meta-analysis of previously published studies; distillation and matching to compare features of programs with the contexts in which they were implemented; and learning from natural and planned variation in program components across multiple program sites. An advantage of these approaches is they allow the use of existing data to explore questions about what works. Meta-analyses and multisite studies can also allay concerns about external validity by combining results across many program settings.

UNDER WHAT CIRCUMSTANCES?

In order to generalize from evaluation, it's also important to understand the conditions that shape a policy or program's effectiveness. *Moderation* or *subgroup analyses* are analytic techniques that illuminate how details like the level of program participation, site characteristics, and neighborhood context factor into program impacts. Studies that explore outcomes for subgroups, different program settings, neighborhoods, or policy environments can inform judgments about whether it is reasonable to expect positive impacts to transfer from one context to another. Specific techniques discussed included principal stratification analysis and Analysis of Symmetrically-Predicted Endogenous Subgroups (ASPES), which allow researchers to define groups of interest based on respondents' post-treatment behavior.

HOW DOES IT WORK?

Another key piece of understanding a program, service, or policy more deeply is to explore the

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causal chain, or the mechanisms underlying how the program leads to change.

Mediation analysis can provide information about whether the

program changes the processes it is meant to change, and whether changing those processes actually leads to improvements in outcomes. Presentations at the meeting focused on instrumental variable analysis in multisite randomized controlled trials, causal mediation analysis, and conditional process models. These kinds of approaches can shed light on whether the program is working as expected, and if it is not, they can offer clues about how to target services or adjust the theory of change.

WHAT'S NEXT?

Throughout the meeting, participants identified potential steps to advance research that unpacks the "black box" of policy and program effects. First, to improve the quality of moderation and mediation analyses and facilitate meta-analysis, funders could encourage or require researchers to collect and report on consistent baseline variables for evaluations in similar areas. Second, funding opportunity announcements for grant programs with a research component could suggest variations in interventions to allow for design-based methods and analytic strategies that answer questions about "what works," "under what circumstances," and "how." Finally, the government and other funders can strive to develop comprehensive research agendas—using a strategic combination of research designs across multiple studies—that answer "black box" questions in addition to measuring average program impacts.

WANT TO LEARN MORE?

For more details about methods and how they can be used to inform programs and policies, see the special forum in the December 2015 issue of the [American Journal of Evaluation](#). The forum includes peer-reviewed papers from a subset of the meeting presenters.

You can also find a straightforward guide to mediation analysis on the OPRE website. This brief includes an overview of how the method can address questions about the "black box," examples of analytic approaches, and best practices.

To access the online meeting archive, including a detailed schedule, meeting materials, and presentation slides, please visit the [OPRE Innovative Methods Meeting website](#). The site also includes materials from other innovative methods meetings that OPRE has organized and will be updated to include future meetings.

PRESENTATIONS

Overview: Setting the Stage

Why unpacking the “black box” is important for policy – Naomi Goldstein, Director of OPRE

Learning about and from variation in program effects – Howard Bloom, MDRC

What Works? Analyzing Natural Variation in Program Components

Natural and systematic variation in treatment – Mark Lipsey, Vanderbilt University

Identifying effective components of parenting programs: Two meta-analyses – Jennifer Kaminski, CDC

Distillation and matching: Identifying components of evidence-based practice – Kimberly Becker, University of Maryland

Learning more from a multisite intervention: Combining natural and planned variation in program experience – Eleanor Harvill, Abt Associates

What Works? Designing Systematic Variation in Program Components

Testing program components using the Multiphase Optimization Strategy (MOST) – Linda Collins, Pennsylvania State University

Adaptive interventions and SMART design: What, Why, and How? – Kelley Kidwell, University of Michigan

Rapid cycle evaluation: What works better, and what works for whom? – Scott Cody, Mathematica Policy Research

Under What Circumstances? Variation in People and Contexts

Moderation: How program participation, site characteristics, and neighborhood context can inform our understanding of what works – Pamela Morris, New York University

Using Analysis of Symmetrically-Predicted Endogenous Subgroups (ASPEs) to understand variation in program impacts – Laura Peck, Abt Associates

Compared to what? Variation in the impacts of Head Start by alternative child-care setting – Lindsay Page, University of Pittsburgh

Unpacking the black box in Moving to Opportunity – Jeffrey Kling, Congressional Budget Office

How? Uncovering Steps Along the Causal Chain

Techniques for establishing causal pathways in programs and policies – Antonio Morgan-Lopez, RTI

Using instrumental variables analysis to investigate mediation processes in multisite randomized trials – Sean Reardon, Stanford University

Causal mediation analysis – Luke Keele, Pennsylvania State University

How do contextual factors influence causal processes? Conditional process models – Amanda Fairchild, University of South Carolina

Panel on Implications for Policy and Research

Bob Granger, Past President of the William T. Grant Foundation

Ruth Neild, Institute of Education Sciences

Larry Orr, Johns Hopkins University

Belinda Sims, National Institute on Drug Abuse

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