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Evidence-Based Home Visiting Programs

Evidence Review Findings: Effective / Roadmap Strategy

Participation in evidence-based home visiting programs leads to small but positive impacts on parenting skills, but less consistent evidence exists for impacts on other important child and family outcomes, and more research is needed to understand which aspects of home visiting most contribute to positive outcomes. As a state strategy, providing evidence-based home visiting programs is effective for improving parenting skills, but current research does not support a specific state policy lever to guide the most effective implementation of home visiting programs.

Voluntary parenting programs vary in format, the specificity of their goals, their target populations, and in the extent to which they have demonstrated effectiveness for improving parenting behavior, skills, and knowledge. Home visiting programs, which provide support and education to parents in the home through a trained professional (e.g., nurse or social worker) or paraprofessional, have a growing evidence base and have expanded rapidly over the last decade as a state-based investment in supporting parents and children. Although research has examined a range of outcomes that may be impacted by home visiting, the scope of this review was intentionally limited to parenting outcomes, the policy goal for which the most evidence on home visiting exists. States differ in how they fund home visiting (i.e., state and/or federal sources), their level of investment, and how they define the scope and goals of home visiting programs.

Decades of research in the field of child development have made clear the conditions necessary for young children and their families to thrive.¹These conditions are represented by our eight policy goals, shown in Table 1. The goals positively impacted by evidence-based home visiting programs are indicated below.

Positive Impact	Policy Goal	Overall Findings
	Access to Needed Services	Policy goal outside the scope of this review
	Parents' Ability to Work	Policy goal outside the scope of this review
	Sufficient Household Resources	Policy goal outside the scope of this review
	Healthy and Equitable Births	Policy goal outside the scope of this review
	Parental Health and Emotional Wellbeing	Policy goal outside the scope of this review
	Nurturing and Responsive Child-Parent Relationships	Mixed impacts that lean positive for parenting skills and behaviors
	Nurturing and Responsive Child Care in Safe Settings	Policy goal outside the scope of this review
	Optimal Child Health and Development	Policy goal outside the scope of this review

Table 1: Impacts of Evidence-Based Home Visiting Programs on Policy Goals

What Are Evidence-Based Home Visiting Programs?

Voluntary parenting programs vary in format, ranging from one-on-one to group-based parent education programs, and they differ in the specificity of their goals and target populations. Some programs target specific changes in parenting or child behaviors, whereas other programs target general improvements in child and family wellbeing. Some programs target families with specific risk factors (e.g., parents with low income, teen parents) or identified problems (e.g., behavioral problems in children), and others enroll families more universally. The theoretical underpinnings and evidence of effectiveness for parenting programs also vary widely.^B

Home visiting programs, which provide parents with in-home support and education through a trained professional (e.g., nurse or social worker) or paraprofessional, have a growing evidence base and have expanded rapidly across the United States over the last decade.¹⁵ Although home visiting programs are only one model of programmatic support available to parents, they have the most robust history as a state-based investment in supporting parents and children, and are the focus of this review.

Since 2010, the federal Maternal, Infant, and Early Childhood Home Visiting program (MIECHV) has funded states, territories, and tribal entities to develop and implement evidence-based, voluntary home visiting programs for at-risk and high-priorityⁱ populations.² State investments in home visiting programs predate MIECHV (47 statesⁱⁱ funded home visiting programs prior to MIECHV), but data and tracking of states' home visiting programs were poor.³ In Fiscal Year 2010, states made approximately \$1.4 billion available for home visiting programs but could not account for the use of more than 40 percent of funds, nor did states provide adequate oversight to ensure program quality or require the use of program models with documented effectiveness.³

The MIECHV mandate to implement *evidence-based* home visiting programs brought the importance of evidence-based practice to the forefront of public policy and demonstrated the importance of rigorous program evaluation for helping policy-makers make informed decisions.^{4,5} The designation "evidence-based" among home visiting programs has been defined and determined through the federally funded Home Visiting Evidence of Effectiveness (HomVEE) review.¹⁵ To date, HomVEE has identified 21 home visiting models as "evidence-based," meaning the models have each demonstrated at least two favorable impacts in either randomized controlled trials (RCTs) or in studies with quasi-experimental designs (QEDs) rated to be of either high or moderate quality across measures of child and family wellbeing.^B

Many home visiting programs have been evaluated with RCTs, an evaluation method that is recognized by the National Academies of Sciences, Engineering and Medicine as providing "the highest level of confidence" in program efficacy or failure (p. 2).⁴ Findings from an internally valid RCT indicate what could be expected from a program if the program were replicated exactly like the RCT, but neither the random assignment of participants into treatment and control groups nor the careful control of the research design required in an RCT are likely to occur when programs are replicated during scale-up. Thus, the extent to which findings from an RCT can be generalized to a larger and often different population and context at a later time is limited—an "evidence-based" designation shows promise, but it is no guarantee of program effectiveness during wide-scale implementation.^{22,23}

Who Is Affected by Evidence-Based Home Visiting Programs?

In 2018, evidence-based home visiting programs were implemented in all states, five territories, 25 tribal communities, and 51 percent of US counties, serving more than 286,000 families through 3.2 million home visits.⁶ However, US Census estimates suggest that, of the approximately 1.3 million pregnant women and 16.7 million families with children under 6 years old not yet in kindergarten in the US, approximately 9.1 million families meet at least one of the "high-priority" criteria, indicating that home visiting programs reach a small fraction of the families who might benefit from participation.⁶

ⁱ The five targeting criteria for "high-priority" include: (a) having an infant, (b) income below the federal poverty level, (c) pregnant women and mothers under 21, (d) single/never married mothers or pregnant women, or (e) parents without a high school education. ⁱⁱ State counts include the District of Columbia.

What Are the Funding Options for Evidence-Based Home Visiting Programs?

In 2018, the Bipartisan Budget Act reauthorized MIECHV and allocated \$400 million per year through Fiscal Year 2022.² MIECHV requires state maintenance of effort (MOE), which means that states must maintain existing levels of state spending on home visiting as a condition of receiving federal MIECHV funds. According to the US Government Accountability Office, from Fiscal Years 2016 through 2018, state-reported MOE spending varied from \$0 (28 states) to more than \$25 million.⁷ States can report \$0 in MOE spending if "a state's only home visiting spending was on programs that did not meet MIECHV criteria... State-reported MOE spending does not necessarily reflect all state spending on all home visiting services" (p. 9).⁷

According to the National Conference of State Legislatures (NCSL), states use a variety of funding sources to support home visiting programs, including state general funds, federal MIECHV grants, the Title V Maternal and Child Health (MCH) Block Grant, tobacco settlements and taxes, Temporary Assistance for Needy Families (TANF), Medicaid, federal child welfare funds (e.g., through the Family First Prevention Services Act of 2018), the federal Project LAUNCH (Linking Actions for Unmet Needs in Children's Health) and private funds.⁸ It is not clear from the research what the optimal funding mechanism or level is, and the data available on how states are using funds often come from surveys, many of which do not include responses from all states. For example, only 38 states responded to the most recent NCSL survey.⁹ See Table 3, at the end of this review, for further funding details by state.

States have a long history, dating to the 1990s, of using Medicaid to fund home visiting services, often combining Medicaid with other sources of funding.¹⁰ In 2016, the Centers for Medicare and Medicaid Services (CMS) and the Health Resources and Services Administration (HRSA) provided guidance to states permitting them to use Medicaid funding to pay for home visiting when provided to Medicaid beneficiaries.¹¹ In 2018, 20 states were using Medicaid through a variety of mechanisms (e.g., managed care, waivers) to fund home visiting.¹⁰

Why Should Evidence-Based Home Visiting Programs Be Expected to Impact the Prenatal-to-3 Period?

Parents play a critical role in shaping children's early development, and supporting families in the early years has the potential to produce long-term benefits for families and for society.^{12,D} Programs designed to support parents to ultimately produce positive outcomes for children are founded on decades of empirical evidence demonstrating the association between various aspects of parenting and child wellbeing.^{13,14,16} Improving parents' knowledge, social support, and coping and problem-solving skills, as well as connecting families to community and health resources during the prenatal and early childhood periods, promotes positive long-term developmental trajectories in children.¹⁷ Teaching parents the skills for warm and responsive caregiving can buffer the long-term negative effects of childhood stress and adversity.¹⁸

Home visiting may be a particularly effective model of parenting education, and parenting skills are the outcome of focus for this review. The convenience of home-based service delivery may maximize the likelihood that families will participate by eliminating or reducing barriers such as transportation costs and child care needs.^D Additionally, by providing support to families in their homes, it may be easier for the entire family, including fathers, to participate and may facilitate more personalized, individual attention, potentially increasing families' engagement in the programs.¹⁷

What Impact Do Evidence-Based Home Visiting Programs Have, and for Whom?

This review focuses on the evidence supporting home visiting's impact on parenting outcomes among families with children under age 3. The review does not focus on a particular program model, but rather examines the effectiveness of a variety of program models as demonstrated in rigorous meta-analyses. Program models in the studies reviewed include, but are not limited to, Early Head Start (EHS) Home Visiting, Healthy Families America (HFA), Healthy Start, Home Instruction for Parents of Preschool Youngsters (HIPPY), the Nurse-Family Partnership (NFP), Parents as Teachers (PAT), Play and Learning Strategies (PALS) Infant, and SafeCare. The effects of individual program models have been presented independently in other reviews.^{B,E}

The research discussed here meets our standards of evidence for being methodologically strong and allowing for causal inference, unless otherwise noted. Each strong causal study reviewed has been assigned a letter, and a complete list of causal studies can be found at the end of this review, along with more details about our standards of evidence and review method. The findings from each strong causal study reviewed align with one of our eight policy goals from Table 1. The Evidence of Effectiveness table below displays the findings associated with evidence-based home visiting programs (beneficial, null,ⁱⁱⁱ or detrimental) for each of the strong studies (A through E) in the causal studies reference list, as well as our conclusions about the overall impact on each studied policy goal. The assessment of the overall impact for each studied policy goal weighs the timing of publication and relative strength of each study, as well as the size and direction of all measured indicators.

Policy Goal	Indicator	Beneficial Impacts	Null Impacts	Detrimental Impacts	Overall Impact on Goal
	Parenting Knowledge and Attitudes	А			Mixed
Nurturing and	Positive Parenting	А	B*		
Responsive Child- Parent	Quality of Family Relationships and the Home Environment	E	Α		
Relationships	Parental Supportiveness		E		
	Parenting Behaviors and Skills	C, D			

Table 2: Evidence of Effectiveness for Evidence-Based Home Visiting Programs by Policy Goal

*The HomVEE study found positive impacts on parenting in most of the 21 home visiting models included, but because the study examined a very large set of outcomes, null effects outnumbered significant effects.

Nurturing and Responsive Child-Parent Relationships

Among parenting programs, home visiting programs are the most extensively studied, likely in part because of MIECHV and the emphasis on implementing evidence-based programs. Parenting has been conceptualized and measured in a variety of ways as an outcome across studies of home visiting, including: "positive parenting,"^{iv,A} "parenting behavior and parenting attitudes,"¹⁷ "parenting skills,"^{v,E} "positive parenting practices,"^{vi,B} and "maternal parenting behavior."^{vii,D} Studies have consistently shown small but significant effects for improving parenting behaviors (overall effect sizes on parenting outcomes from meta-analyses range from 0.09 to 0.37),^{A,17,C,D,E} but studies have failed to consistently demonstrate significant impacts for other outcomes (birth outcomes,^{A,19} child maltreatment,^{C,17} child health,^{A,C} etc.). Importantly, across outcomes, including parenting, the significant effects that emerge do so within the context of many more null findings.^{B,E} Further, studies have done little to clarify which components of home visiting are particularly effective for outcomes (e.g., targeted population, frequency of visits).

A 2010 meta-analysis of 29 RCT and QED studies of home visiting programs targeting families at risk found a weighted mean effect size for home visiting that was significant and positive for maternal behavior (0.37).^D A 2013 meta-analysis of 51 studies (experimental and nonexperimental, but with comparison groups) of home visiting programs targeting pregnant women and families with young children (ages 0 to 3) found a significant average effect size of 0.23 on parent behaviors and skills.^c A 2016 meta-analysis of 156 studies (experimental and nonexperimental, but with comparison groups) of home visiting programs targeting behaviors and skills.^c A 2016 meta-analysis of 156 studies (experimental and nonexperimental, but with comparison

ⁱⁱⁱ An impact is considered statistically significant if p<0.05.

^{iv} Positive parenting referred to positive observed parent-child interactions; positive self-reported quality of relationships (supportive, accepting); positive behaviors (nonviolent discipline, praise, provision of play materials, reading to child); and parent involvement.

^v Parenting skills encompassed the quality of the home environment and parental supportiveness.

^{vi} Positive parenting practices included observational measures of parent-child interactions or of the home environment and parent self-reports of parenting attitudes and practices.

^{vii} Improvements in maternal behavior were measured using observational scales, including the Home Observation for Measurement of the Environment (HOME) Scale, the Nursing Child Assessment Satellite Training (NCAST) scale, the CARE-Index of adult-child interaction, and the Maternal Interactive Behavior Scale.

groups) of nine evidence-based home visiting programs focusing on children under age 5 found larger effects for positive parenting (0.26) and parenting knowledge (0.21) compared to other outcomes, including birth outcomes (0.08), child health (0.03), and child behavior (0.05).^A

The federally funded HomVEE review of home visiting programs reviewed over 400 RCT or QED studies of 50 home visiting programs and identified 21 home visiting models as "evidence-based," and most have demonstrated favorable impacts on positive parenting practices.^B However, the favorable impacts on positive parenting practices emerged in the context of many more null findings.^B The authors of the federally funded RCT evaluation of MIECHV (the Mother and Infant Home Visiting Program Evaluation—MIHOPE) provided a summary of the evidence from past studies of the four program models in MIHOPE (HFA, EHS, NFP, and PAT) and noted that "the quality of the home environment during early childhood is one of the most examined outcomes in the home visiting literature, but most estimated effects from studies have not been statistically significant" (pp. 48–49).^E The authors went on to quantify the number of significant impacts relative to null impacts across outcomes in past studies and concluded that only "125 of the 1,104 estimated effects – or 11 percent – are statistically significant and indicate improved outcomes for families" (p. 20).^E In addition to the review of past studies, the MIHOPE report also presented a current analysis of findings from 88 home visiting programs in 12 states across the four key program models. The analysis found a significant effect (0.09 effect size) for improving the quality of the home environment, but no significant effect on parental supportiveness.^E

Finally, a 2004 meta-analysis of research articles and reports (both experimental and nonexperimental, including prepost designs) of 60 home visiting programs¹⁷ serving families prenatally through age 5 that were included in a larger 2001 meta-analysis of family support programs²⁰ found small but significant effects on parenting behavior and parenting attitudes (weighted mean standardized effect sizes were 0.14 and 0.11, respectively). The 2004 study is not included in the evidence review (Table 2) because of the inclusion of pre-post analyses.¹⁷

Several of the meta-analyses conducted in the last decade have examined studies across home visiting program models to identify the specific characteristics or components of home visiting programs that are associated with positive impacts, but a consistent pattern has failed to emerge.^{C,17} Targeting programs to families with one or more risk factors produced larger effect sizes overall compared to universal programs in one meta-analysis (0.20 versus 0.18),^A but not in the MIHOPE evaluation of four program models.^E And, in another meta-analysis, targeting higher-risk families was associated with smaller effect sizes for some outcomes, including parenting behavior, compared to universal approaches.¹⁷ Dosage demonstrates a similarly inconsistent trend—one meta-analysis^D found that programs with more frequent visits were more likely to demonstrate improvements in maternal behaviors, but in the MIHOPE study, estimated effects were not larger among families who received more visits compared to families who received fewer visits.^E

Is There Evidence That Evidence-Based Home Visiting Programs Reduce Disparities?viii

Recent meta-analyses of home visiting programs have attempted to identify which factors or components, including targeting high-risk families versus taking a more universal approach to enrollment, are associated with program impacts on outcomes. No consistent pattern has emerged from these analyses—program impacts for families of higher socioeconomic risk have been larger,^A smaller,¹⁷ and null^E compared to the effects of programs for families of lower socioeconomic risk or more universal approaches.

The MIHOPE study examined differences in effects across subgroups based on race and ethnicity, but no parenting differences emerged.^E The only significant difference found was in the number of Medicaid-paid well-child visits: non-Hispanic White mothers showed no increase in the number of Medicaid-paid well-child visits as a result of home visiting, whereas all other subgroups, including families of Mexican origin, other Hispanic origin, non-Hispanic Black, multiracial, and other ethnicities, showed positive impacts on this outcome. The HomVEE study, however, was not able to examine effects by race/ethnicity, and the authors noted that sample size was a limitation: "Overall, the studies included in the HomVEE review had fairly diverse study samples in terms of race/ethnicity and socioeconomic status. However, sample sizes in these studies are not typically large enough to allow for analysis of findings separately by subgroup" (p. 21).^B

viii Disparities are defined here as differential outcomes by race, ethnicity, or socioeconomic status (SES).

A third study found that home visiting programs that matched clients and home visitors on race and/or ethnicity had better effects on birth outcomes, but this finding did not hold for parenting outcomes.^C The final two studies in the review did not examine impacts by race or ethnicity.^{A,D}

Has the Return on Investment for Evidence-Based Home Visiting Programs Been Studied?

A 2017 report, as part of the Mother and Infant Home Visiting Program Evaluation (MIHOPE), examined the lifetime return on investment for Healthy Families America (HFA), the Nurse-Family Partnership (NFP), and Parents as Teachers (PAT).²⁴ The study projected that long-term benefits are 25 percent greater than costs in HFA, 88 percent greater than costs in NFP, and 244 percent greater than costs in PAT. Benefits of the NFP program were greatest for single mothers with low income, with each \$1 spent producing over \$5 in benefits for this group, compared to \$1.10 in benefits for other families. The authors explained that lifetime benefits typically accrue in the form of increased earnings for both mothers and their children through reduced child maltreatment, better academic achievement among children, and better high school graduation rates among mothers.

According to a review by the National Conference of State Legislatures, high quality home visiting programs have been found to produce \$1.75 to \$5.70 of cost savings for every dollar spent on the program; savings attributed to home visiting programs have been identified in areas including child welfare, special education, and criminal justice.²¹ However, these cost savings are not necessarily attributable to home visiting's impact on *parenting* outcomes. A more comprehensive analysis of the return on investment is forthcoming.

What Do We Know, and What Do We Not Know?

In summary, home visiting programs have clearly defined parameters to determine whether a program is "evidencebased" and have a long history as a statewide investment to support families with young children. Studies have consistently found small but positive impacts on measures of parenting, but they have found far less consistent evidence for impacts on other important child and family outcomes and for which aspects of home visiting matter for impacts. This review was limited in scope to examining parenting outcomes, but future reviews may examine home visiting's impact on other policy goals as well. Additionally, null impacts continue to outnumber the positive impacts for all outcomes, including parenting. Future research should continue to address the gaps in evidence for which aspects of home visiting are associated with impacts on outcomes. Studies should be designed to identify the components of home visiting programs that matter most for families, rather than relying on meta-analyses to assimilate findings across studies that were largely not designed to identify those components. Research should evaluate whether aligning program models with the specific identified needs of client families produces larger effects. Further research on differential impacts by race, ethnicity, and socioeconomic status is also needed.

Is Evidence-Based Home Visiting an Effective Policy for Improving Prenatal-to-3 Outcomes?

Evidence from five rigorous meta-analyses suggests that families who participate in evidence-based home visiting programs see small but positive impacts on parenting skills. More research is needed to understand which aspects of home visiting most contribute to positive outcomes, and whether home visiting has consistent impacts on other policy goals besides nurturing and responsive parenting. As a state strategy, providing evidence-based home visiting programs is effective for improving parenting skills, but current research does not support a specific state policy lever to guide the most effective implementation of home visiting programs. Funding sources and level of investment vary widely by state.

How Do Evidence-Based Home Visiting Programs Vary Across the States?

In 2018, all states, five territories, and 25 tribal communities were implementing home visiting programs using federal funds or a combination of federal and state funds.^{6,9} States' primary leverage for home visiting is determining how to fund the programs (i.e., state and/or federal sources) and how much to invest. See Table 3 below for details by state.

Table 3: State Variation in Evidence-Based Home Visiting Programs

	Generosity and Variation				
State	State Supplements Federal Funding to Implement Home Visiting Programs (Yes/No/NR-Not Reported)	Number of Evidence-Based Program Models with Demonstrated Impact in Parenting Being Implemented in the State	Estimated % of Eligible Children < 3 Served by Home Visiting Programs		
Alabama	Yes	6	1.9%		
Alaska	No	3	7.0%		
Arizona	Yes	6	9.4%		
Arkansas	Yes	5	2.6%		
California	Yes	8	3.5%		
Colorado	Yes	5	14.0%		
Connecticut	Yes	3	11.0%		
Delaware	Yes	4	9.3%		
District of Columbia	Yes	4	5.7%		
Florida	No	5	7.6%		
Georgia	NR	4	2.1%		
Hawaii	Yes	5	6.1%		
Idaho	NR	4	6.8%		
Illinois	Yes	7	8.6%		
Indiana	Yes	4	12.4%		
lowa	Yes	5	16.9%		
Kansas	Yes	5	21.8%		
Kentucky	Yes	4	11.3%		
Louisiana	Yes	5	4.2%		
Maine	Yes	2	23.7%		
Maryland	Yes	8	6.3%		
Massachusetts	Yes	3	6.2%		
Michigan	Yes	5	7.0%		
Minnesota	Yes	6	9.9%		
Mississippi	No	4	1.4%		
Missouri	Yes	6	17.4%		
Montana	NR	5	11.9%		
Nebraska	Yes	4	4.6%		
Nevada	No	4	0.8%		
New Hampshire	NR	2	5.1%		
New Jersey	Yes	6	10.0%		
New Mexico	Yes	4	4.7%		

Table 3: State Variation in Evidence-Based Home Visiting Programs (continued)

	Generosity and Variation				
State	State Supplements Federal Funding to Implement Home Visiting Programs (Yes/No/NR-Not Reported)	Number of Evidence-Based Program Models with Demonstrated Impact in Parenting Being Implemented in the State	Estimated % of Eligible Children < 3 Served by Home Visiting Programs		
New York	NR	7	4.7%		
North Carolina	Yes	8	7.3%		
North Dakota	NR	5	6.4%		
Ohio	Yes	6	8.9%		
Oklahoma	Yes	7	10.4%		
Oregon	Yes	6	11.8%		
Pennsylvania	Yes	7	10.4%		
Rhode Island	Yes	4	23.7%		
South Carolina	NR	4	5.1%		
South Dakota	No	4	4.8%		
Tennessee	Yes	4	2.2%		
Texas	Yes	6	2.0%		
Utah	Yes	5	3.9%		
Vermont	Yes	4	11.7%		
Virginia	Yes	5	7.0%		
Washington	Yes	4	8.8%		
West Virginia	Yes	3	7.4%		
Wisconsin	Yes	7	9.5%		
Wyoming	No	4	12.0%		
Best State	N/A	8	23.7%		
Worst State	N/A	2	0.8%		
Median State	N/A	5	7.3%		
State Count	38	N/A	N/A		

Data for supplementing federal funding are as of June 11, 2020. National Conference of State Legislatures. FY19 state documents such as statutes and adopted budgets.

Data for number of home visiting programs are as of June 11, 2020. National Home Visiting Resource Center. Home Visiting Evidence of Effectiveness. Data for percentage served are as of June 11, 2020. National Home Visiting Resource Center. 2018 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS).

"NR" indicates that the state did not report these data to the National Conference of State Legislatures, or in statutes or adopted budgets for FY19. For additional source and calculation information, please refer to the Methods and Sources section of <u>pn3policy.org</u>.

How Did We Reach Our Conclusions?

Method of Review

This evidence review began with a broad search of all literature related to the policy and its impacts on child and family wellbeing during the prenatal-to-3 period. First, we identified and collected relevant peer-reviewed academic studies as well as research briefs, government reports, and working papers, using predefined search parameters, keywords, and trusted search engines. From this large body of work, we then singled out for more careful review those studies that endeavored to identify causal links between the policy and our outcomes of interest, taking into consideration characteristics such as the research designs put in place, the analytic methods used, and the relevance of the populations and outcomes studied. We then subjected this literature to an in-depth critique and chose only the most

methodologically rigorous research to inform our conclusions about policy effectiveness. All studies considered to date for this review were released on or before March 31, 2020.

Standards of Strong Causal Evidence

When conducting a policy review, we consider only the strongest studies to be part of the evidence base for accurately assessing policy effectiveness. A strong study has a sufficiently large, representative sample, has been subjected to methodologically rigorous analyses, and has a well-executed research design allowing for causal inference—in other words, it demonstrates that changes in the outcome of interest were likely caused by the policy being studied.

The study design considered most reliable for establishing causality is a randomized control trial (RCT), an approach in which an intervention is applied to a randomly assigned subset of people. This approach is rare in policy evaluation because policies typically affect entire populations; application of a policy only to a subset of people is ethically and logistically prohibitive under most circumstances. However, when available, randomized control trials are an integral part of a policy's evidence base and an invaluable resource for understanding policy effectiveness.

The strongest designs typically used for studying policy impacts are quasi-experimental designs (QEDs) and longitudinal studies with adequate controls for internal validity (for example, using statistical methods to ensure that the policy, rather than some other variable, is the most likely cause of any changes in the outcomes of interest). Our conclusions are informed largely by these types of studies, which employ sophisticated techniques to identify causal relationships between policies and outcomes. Rigorous meta-analyses with sufficient numbers of studies, when available, also inform our conclusions.

Studies That Meet Standards of Strong Causal Evidence

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