

## Executive Summary



# Nudging Change In Human Services

Final Report  
of the Behavioral  
Interventions  
to Advance  
Self-Sufficiency  
(BIAS) Project

OPRE REPORT 2017-23

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Executive Summary

NUDGING CHANGE IN HUMAN SERVICES:  
FINAL REPORT OF THE BEHAVIORAL INTERVENTIONS TO  
ADVANCE SELF-SUFFICIENCY (BIAS) PROJECT

OPRE Report 2017-23

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# Nudging Change In Human Services

**Research in** behavioral economics has shown that small changes in the environment can make it easier for people to act and make decisions that support their goals. The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, launched in 2010, was the first major project to apply behavioral insights to the human services programs that serve poor and vulnerable families in the United States. The goal of the project — sponsored by the Office of Planning, Research and Evaluation of the Administration for Children and Families in the U.S. Department of Health and Human Services, and led by MDRC — was to learn how tools from behavioral science could be used to deliver program services more effectively and, ultimately, improve the well-being of low-income children, adults, and families.

Following a systematic approach called behavioral diagnosis and design, 15 state and local agencies participated in the project, which consisted of identifying problems that are appropriate for behavioral interventions, designing interventions, and conducting rigorous tests — where appropriate — to determine whether the interventions improved outcomes. The team launched 15 tests of behavioral interventions, involv-

ing close to 100,000 clients, in eight of the participating agencies. These tests spanned three domains: child support, child care, and work support. While each intervention

# Overview

was customized to fit its context, all involved at least one of the behavioral principles described by the “SIMPLER” framework, which stands for social influence, implementation prompts, making deadlines, personalization, loss aversion, ease, and reminders. Evaluated through randomized controlled trials, all BIAS sites had at least one intervention with a statistically significant impact on a primary outcome of interest. The magnitude of the improvements typically ranged from 2 to 4 percentage points (in line with other behavioral research findings) — but, in several cases, impacts were much larger. These impacts may be considered large relative to the costs for the interventions, which ranged from \$0.15 per person to \$10.46 per person.

The project’s findings suggest that small changes in, for instance, program outreach or the way that information is conveyed can help reduce some of the complexities that low-income populations face when they interact with human services agencies. While such “nudges” — defined as subtle and modest changes that help improve individual decision making — are shown to be an important aspect of the behavioral toolkit, the BIAS findings also suggest that it may be fruitful to extend the approach beyond program implementation to program design (at the local or state level) and policy formation (at the state or federal level). In this way, changes to program rules and agency practices may induce larger or longer-term changes in behavior among both clients and program staff.

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*A low-income mother holds two part-time jobs and needs reliable care for her child. Fortunately, she may be eligible for a child care voucher, permitting her to employ the services of a quality child care provider. The agency offices, which are typically open from 9:00 A.M. to 4:00 P.M., require her to take time out of her schedule to complete the complex application process. As a result, she misses her shift — and loses her pay. After two separate trips to apply, she is put on a waiting list. Given that her work hours are inconsistent, she may be required to go through recertification again in two months to prove she is still meeting the minimum number of hours required to receive the benefit. She needs to repeat separate, but similar, processes to receive food assistance and housing assistance, which do not coincide and cannot be completed together at one location.*

# Executive Summary

## Research in

behavioral economics has shown that small changes in the environment can make it easier for people to act and make decisions that support their goals.<sup>1</sup> For example, research suggests that small

changes to make processes easier — such as simplifying application instructions, pre-populating forms with available required information, and streamlining procedures — can improve human services program design and outcomes.<sup>2</sup> The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project — sponsored by the Office of Planning, Research and Evaluation (OPRE) of the Administration for Children and Families (ACF) in the U.S. Department of Health and Human Services, and led by MDRC — used behavioral insights to address issues related to the operations, implementation, and efficacy of social service programs and

<sup>1</sup> Behavioral economics combines findings from various fields such as sociology, psychology, and economics. See Thaler and Sunstein (2008) and Kahneman (2011) for an overview. The term “behavioral science” is used interchangeably with “behavioral economics” in this report.

<sup>2</sup> Some of these and other barriers are noted as explanations for why low-income families do not use child care subsidies in Shlay, Weinraub, Harmon, and Tran (2004). Reducing the effort required to perform a task is one of four principles for influencing behavior change cited by The Behavioural Insights Team, a “social purpose” company dedicated to the application of behavioral science to public services; see Service et al. (2014).

policies. The goal was to learn how tools from behavioral science can be used to deliver programs more effectively and, ultimately, to improve the well-being of low-income children, adults, and families.

Between 2012 and 2015, 15 state and local agencies participated in the project, and the team launched 15 tests of behavioral interventions, involving close to 100,000 clients, with 8 of these agencies. These tests spanned three domains: child support, child care, and work support. All BIAS sites had at least one intervention with a statistically significant impact — or an impact that was unlikely to have resulted from chance alone — on a primary outcome of interest. The magnitude of the improvements typically ranged from 2 to 4 percentage points (in line with other behavioral research findings) — but impacts at 4 of the 8 agencies were much larger. These impacts may be considered large relative to the costs for the interventions, which ranged from \$0.15 per person to \$10.46 per person.

This final report of the BIAS project details the approach taken to use behavioral science concepts when designing or modifying human services programs, summarizes the common behavioral concepts that were incorporated into interventions across sites, provides operational lessons on implementing the behavioral diagnosis and design process (described below), and looks forward to what the future of applied behavioral science could entail. It also includes commentaries by leading economists and academics in public policy, as well as a practitioner involved in a BIAS project.<sup>3</sup>

## BEHAVIORAL DIAGNOSIS AND DESIGN PROCESS

In all sites, the BIAS team used a method called “behavioral diagnosis and design” to identify potential behavioral bottlenecks to reaching desirable outcomes in human services programs. Then, adopting the perspective of the program’s clients and staff, the BIAS team searched for possible behavioral reasons for the bottlenecks — those related to decision-making processes and action — and tested the effects of behavioral interventions where appropriate. The process, depicted in Figure ES.1, consists of four phases:

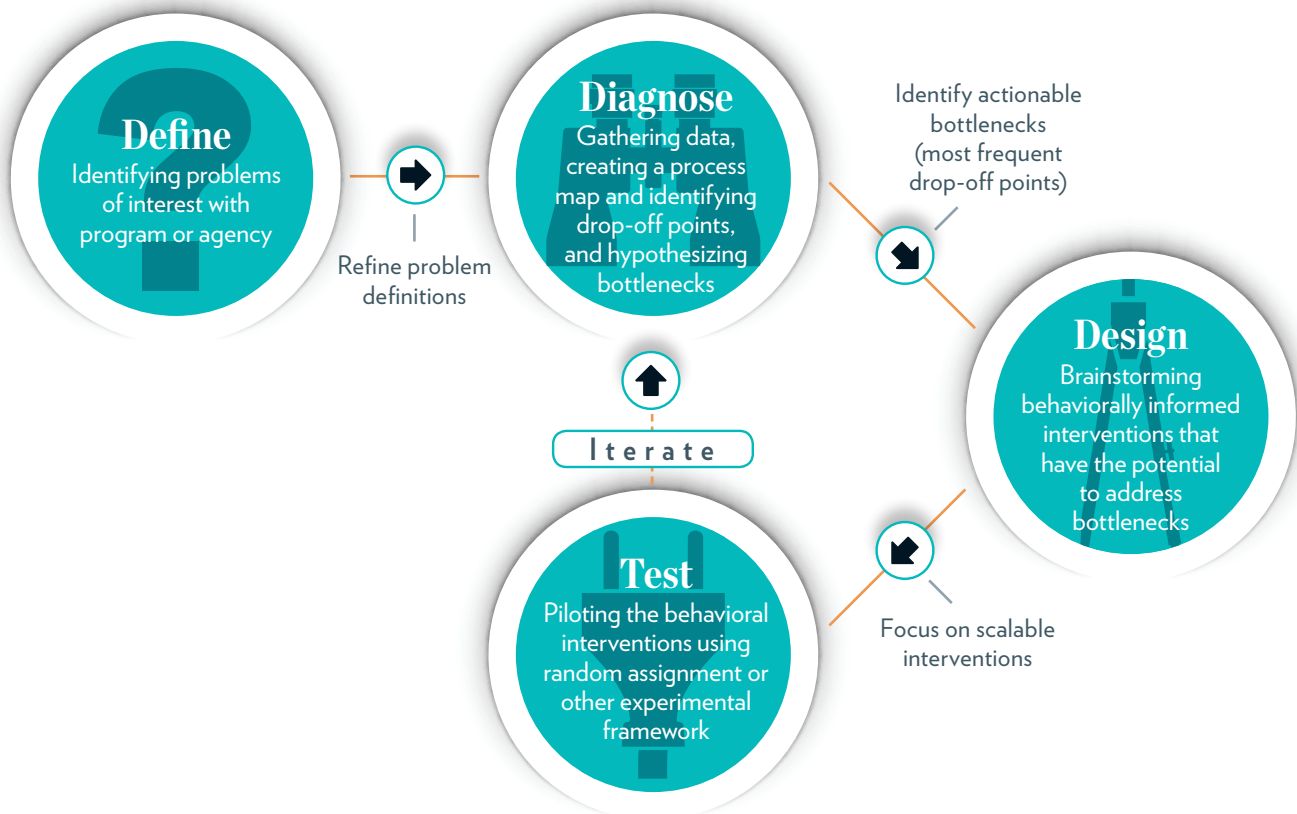
- 1. DEFINE:** The research team works with each human services agency to carefully define a problem in terms of the desired outcome, without presuming to know the reason for the problem. The goal of this phase is to develop a question that does not automatically suggest a particular solution, yet is precise enough to be testable.
- 2. DIAGNOSE:** The team collects both qualitative and quantitative data to identify factors that may be causing the problem, and uses the data to develop theories based on behavioral research about why the hypothesized bottlenecks are occurring.
- 3. DESIGN:** The team uses these theories and other behavioral insights to design an intervention aimed at ameliorating the hypothesized bottlenecks.

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<sup>3</sup> Commentaries are provided by Marianne Bertrand, University of Chicago; Susan A. Brown, Franklin County Child Support Enforcement Agency; Sheldon Danziger, Russell Sage Foundation and University of Michigan; Crystal Hall, University of Washington and Office of Evaluation Sciences; Lawrence Katz, Harvard University; Philip Oreopoulos, University of Toronto; Sim Sitkin, Duke University and Behavioral Science and Policy Association; and Dilip Soman, University of Toronto.



**FIGURE ES.1** Behavioral Diagnosis and Design Process



**4. TEST:** The team evaluates the behavioral intervention using random assignment, the gold standard in evaluation methodology.

The process is ideally iterative, allowing for multiple rounds of hypothesis development and testing, and aims to connect the problem, behavioral bottleneck, and design solution.<sup>4</sup> Most interventions were designed and put into the field within one calendar year, and data collection lasted for approximately six months.

## SIMPLER

This report introduces a framework — SIMPLER — that describes the behavioral principles applied across BIAS tests: social influence, implementation prompts, making deadlines, personalization, loss aversion, ease, and reminders. Although each intervention was created independently while adher-

<sup>4</sup> The behavioral diagnosis and design process that is presented in this report was adapted for the BIAS project from a methodology, also called behavioral diagnosis and design, that was developed by the nonprofit organization ideas42 for applying insights from behavioral economics. For a more detailed description of behavioral diagnosis and design, see Richburg-Hayes et al. (2014a).

ing to the behavioral diagnosis and design approach, a retrospective look across the tests identifies common bottlenecks in many BIAS program areas that various human services settings may share. SIMPLER provides a framework for applying several behavioral science concepts that may be relevant to other human services programs.

SIMPLER — as shown in Figure ES.2 — illustrates how the BIAS team was able to create behavioral interventions to address bottlenecks such as the completion of complex, detailed forms required to participate in agency programs and to do so within the constraints of these systems. This framework provides a guide based on the experience of BIAS and does not encompass the full range of available behavioral techniques.<sup>5</sup>

## OPERATIONAL LESSONS

Lessons were learned from all the project sites' implementation of the behavioral diagnosis and design process, including those sites in which evaluations were not completed because of unanticipated changes in the operational context. In general, program administrators and staff used their engagement with the BIAS project to envision new approaches to service delivery. Staff were generally excited to participate in the work — despite the lack of discretionary funding to support their efforts and the interventions — and programs benefited from the process beyond the specific interventions that were tested. Several primary operational lessons emerged from this work:

- **BEHAVIORAL DIAGNOSIS IS MOST RELIABLE AND EFFICIENT WHEN PROGRAMS HAVE HIGH-QUALITY PERFORMANCE DATA.** Given that the first step in the diagnosis process is to collect information about the way a program has functioned in the past, access to detailed administrative records on proximal or process outcomes (for example, how many people attend their first recertification appointment to maintain their benefits) is important. The team often had to rely on qualitative and incomplete quantitative data sources.
- **THE BEHAVIORAL DIAGNOSIS PROCESS LEADS TO THE DISCOVERY OF AREAS OF TENSION AND NEW INSIGHTS FOR STAFF AT EVERY LEVEL.** The diagnosis process tends to reveal mismatches at several levels: between policy and practice, between the rules governing a process and the way frontline staff implement them, and between what staff believe they have communicated and what clients understand. Simplifying program procedures and eliminating barriers to following those procedures generally required resolving these contradictions.

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<sup>5</sup> The SIMPLER framework incorporates many of the common types of behavioral interventions cataloged in a review of field experiments. For a short description of each of these interventions, see Appendix Table A.2 in this report. For a more detailed description of each and examples of how the intervention has been applied, see Richburg-Hayes, et al. (2014a).

- **SIMPLIFICATION IS NOT (ALWAYS) SIMPLE.** One of the reasons program procedures can become complicated is because a seemingly simple issue may be affected by multiple interests, policy considerations, and laws. Any attempt to make a change requires a thorough understanding of *why* programs operate the way they do, and many changes must be reviewed by various interested parties and evaluated according to the impact on multiple areas, such as compliance with law, mandatory timeframes, and client privacy.
- **INNOVATION CAN BE HINDERED BY OUT-OF-DATE TECHNOLOGY.** Government agencies are becoming increasingly sophisticated in the use of personalized and digital communication, but some of this infrastructure is still in development. As a result of legacy technology (that is, older technology and computer systems that need updating), many agencies struggle to upgrade their methods in ways that align with insights from behavioral science.

**FIGURE ES.2** Behavioral Techniques Used in BIAS Interventions

	Technique	Description	BIAS Site	Message to Enrollees
S	SOCIAL INFLUENCE	Persuade by referencing peers	in Texas →	Other parents have had courts lower their child support by \$200 to \$500 per month.
I	IMPLEMENTATION PROMPT	Bridge intention with action	in Indiana →	Remember to bring: □ Proof of address
M	MAKING DEADLINES	Make deadlines prominent	in New York →	All you need to do is come to a Food Bank office by March 29, 2014.
P	PERSONALIZATION	Individualize interaction	in Oklahoma →	This notice includes a red list of your DHS clients whose benefits will end on the last day of this month.
L	LOSS AVERSION	Emphasize risk of losses	in California →	By not attending your appointment, you may: LOSE up to \$2,508 a year in cash benefits.
E	EASE	Reduce steps in a process	in Washington →	(via a tip sheet) Forms need to have: 1. A signature every place that asks for it. 2. A date next to every signature.
R	REMINDERS	Use phone calls, texts, postcards	in Ohio →	Your child support payment is due in 3 days. Pay on time to avoid penalties.

The operational findings suggest that using behavioral insights is a way for innovators within the government to gain a voice and justify, in many cases, doing *more* for clients. However, in order for behavioral diagnosis and design to become a regular part of government’s continuous program improvement efforts, there is a need to have a more flexible technological infrastructure, data systems that collect process and outcome data and produce reports on demand, and staff with time available to engage in innovation or special projects who can lead the charge from within.

## IMPACT FINDINGS

In 11 of the 15 randomized controlled trials that were conducted for the BIAS project — and in each of the eight sites where tests were launched — behavioral “nudges,” defined as subtle and modest changes that help improve individual decision making (such as reminders or simplified, personalized letters), had a statistically significant impact on at least one primary outcome of interest, as shown in Table ES.1.

While most of these impacts are small to moderate, they suggest that the corresponding interventions are worthwhile given their low cost and the relatively low effort they require to implement. In addition, several such interventions — when combined with more traditional approaches — may yield accumulated impacts to produce outsized improvements. In general, the project’s results demonstrate the notable promise of behavioral interventions as a tool that agencies can use to improve the efficacy and service delivery of their programs.

## IMPLICATIONS AND NEXT STEPS

Nudges are an important aspect of the behavioral toolkit, but there is more to explore than these process changes. For example, principles from behavioral science can be integrated at two critical stages beyond program implementation (the level of all the sites in BIAS): *program design* (local or state level) and *policy formulation* (state or federal level). The findings from the BIAS project have implications for future directions for behavioral science in public policy. In addition to highlighting the results of the BIAS tests across sites — illustrating, for example, how behavioral economics might be used to enhance the delivery of child support services — the full report considers larger lessons about how behavioral economics can be applied to human services delivery for low-income populations. It explains how leverage points can be identified within programs where the application of behavioral insights could improve the system, and it provides a framework for designing different types of behavioral interventions — from smaller-scale nudges to policy restructuring. The full report also discusses limitations to this approach.

As an alternative to the long-standing rational economic model on which many programs are based, behavioral economics offers a tool to reduce the cognitive and administrative burdens that low-income families often face in order to receive benefits or services.<sup>6</sup> Some commentators note that

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<sup>6</sup> See the commentaries of Sheldon Danziger following Chapter 1 and Marianne Bertrand following Chapter 6 in the full report.

**TABLE ES.1** Summary of BIAS Findings, by Domain

Each test used a customized behavioral intervention for a desired outcome.		While effects were usually modest...		... they are meaningful due to their scalability...	... and low cost.
Problem of Interest	State	Intervention Results		Sample Size	Estimated Intervention Cost
		BIAS group (%)	Status quo = Impact (%)	= 1,000 people	Per person/month
<b>C H I L D S U P P O R T</b>					
Increase order modification requests by incarcerated noncustodial parents	Texas	38.7	– 27.7 = 11.0***		\$1.73
	Washington	41.3	– 9.4 = 31.9***		\$10.46
Increase payment rates on existing child support orders	Ohio, Franklin County <sup>a</sup>	51.5	– 48.5 = 2.9***		\$2.53
	Ohio, Franklin County <sup>b</sup>	57.2	– 57.9 = -0.8		\$0.15
	Ohio, Cuyahoga County <sup>c</sup>	40.7	– 38.2 = 2.4***		\$3.25
	Ohio, Cuyahoga County <sup>d</sup>	50.5	– 47.3 = 3.2**		\$3.25
	Ohio, Cuyahoga County <sup>e</sup>	36.4	– 35.7 = 0.6		\$0.40
	Ohio, Cuyahoga County <sup>f</sup>	54.8	– 52.5 = 2.3		\$0.50
<b>C H I L D C A R E</b>					
Increase take-up of quality-rated providers	Indiana	14.7	– 12.6 = 2.1*		\$1.40
Increase attendance at first scheduled renewal appointment	Indiana <sup>g</sup>	52.6	– 50.0 = 2.6*		\$1.93
	Indiana <sup>h</sup>	54.7	– 44.1 = 10.6***		\$2.79
Increase on-time subsidy renewals	Oklahoma <sup>i</sup>	36.7	– 34.4 = 2.4*		\$1.10
<b>W O R K S U P P O R T</b>					
Increase meeting attendance for tax credit program	New York <sup>j</sup>	28.5	– 16.5 = 12.0***		\$1.75
	New York <sup>k</sup>	34.8	– 34.3 = 0.5		\$1.30
Increase engagement in Temporary Assistance for Needy Families	California	29.2	– 25.6 = 3.6*		\$1.79

continued

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SOURCE: MDRC calculations using agency data.

NOTES: Statistical significance levels are indicated as follows: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup> This test was targeted to noncustodial parents not currently being sent a notice of payment due from the state. Given that the Franklin County study involved a factorial design involving five intervention groups and one control group, the findings show the outcome for the combined intervention groups. This corresponds to Test 1 in the site report (Baird et al., 2015). The highest cost of the various intervention arms is shown. The average cost across all arms is lower.

<sup>b</sup> This test was targeted to noncustodial parents currently being sent a notice of payment due from the state. The test measures the efficacy of the behaviorally informed reminder notice over the version used by the state.

<sup>c</sup> This test evaluated a paper reminder for those without cell phone numbers on file. The Cuyahoga study involved three distinct tests; the findings from the first test are depicted in the table (Baird, Cullinan, Landers, and Reardon, 2016).

<sup>d</sup> This test evaluated the use of paper reminders for those with cell phones on file. This corresponds to the second test in the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

<sup>e</sup> The findings are from a test of behaviorally redesigned payment reminders sent to parents to whom a notice was already being sent. This intervention corresponds to the third test in the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

<sup>f</sup> The findings show the impact of a new welcome letter for parents with new child support orders — the fourth test of the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

<sup>g</sup> This test evaluated streamlined materials versus the agency's recertification materials. This corresponds to Round 1 in the Indiana report (Dechausay and Anzelone, 2016).

<sup>h</sup> This test represents a rapid-cycle iteration of the prior test, adding a behavioral solution to simplify the work determination instructions for the BIAS group. This corresponds to Round 2 in the Indiana report (Dechausay and Anzelone, 2016).

<sup>i</sup> The figures reported for this test represent an intervention targeted at child care providers to encourage them to help their clients renew their child care benefit on time (Mayer, Cullinan, Calmeyer, and Patterson, 2015).

<sup>j</sup> This test represents a study of behavioral postcards and behavioral text messages through a factorial design. The row entry compares the highest-intensity outreach — combined behavioral postcards and behavioral text messages — with standard postcards. This corresponds to Round 1 in the Paycheck Plus report (Dechausay, Anzelone, and Reardon, 2015).

<sup>k</sup> This test represents a rapid-cycle iteration of the prior test, changing the meeting format to permit phone calls for the BIAS group. This corresponds to Round 2 in the Paycheck Plus report (Dechausay, Anzelone, and Reardon, 2015).

the focus on small changes made popular by Richard Thaler and Cass Sunstein's book *Nudge* may counterproductively restrain how policymakers and administrators currently conceive of using behavioral sciences insights when formulating public policy. Several of the commentators note that an extension of the behavioral "toolbox" is important to induce longer-term changes in behavior, as traditional nudges like the ones studied in this report seem most effective when they are aimed at immediate, short-term behavioral changes, such as getting a public benefits client to attend a required meeting with a case worker.

In an effort to move beyond nudges, ACF is expanding the human services program areas examined through a behavioral science lens with the BIAS Next Generation project, which is geared toward exploring more intensive behavioral interventions that affect individuals as well as entire systems.

In this way, BIAS Next Generation is focused on the design of new, system-level interventions that would implement rules incorporating behavioral insights, in addition to designs to get low-income individuals to respond more effectively to programs through nudges.

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## EARLIER PUBLICATIONS FROM THE BEHAVIORAL INTERVENTIONS TO ADVANCE SELF-SUFFICIENCY (BIAS) PROJECT

### *Simplify, Notify, Modify: Using Behavioral Insights to Increase Incarcerated Parents' Requests for Child Support Modifications*

2016. Asaph Glosser, Dan Cullinan, and Emmi Obara. OPRE Report 2016-43. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

### *Cutting Through Complexity: Using Behavioral Science to Improve Indiana's Child Care Subsidy Program*

2016. Dechausay, Nadine, and Caitlin Anzelone. OPRE Report 2016-03. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

### *Framing the Message: Using Behavioral Economics to Engage TANF Recipients*

2016. Farrell, Mary, Jared Smith, Leigh Reardon, and Emmi Obara. OPRE Report 2016-02. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

### *Nudges for Child Support: Applying Behavioral Insights to Increase Collections*

2016. Baird, Peter, Dan Cullinan, Patrick Landers, Leigh Reardon. OPRE Report 2016-01. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

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