

## Child Care Subsidy Literature Review



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## Members of the Child Care Policy and Research Consortium's Child Care Subsidy Workgroup

This product was developed by Child Trends researchers, in consultation with members of the Child Care Policy and Research Consortium's Child Care Subsidy Workgroup. The views expressed in this publication do not necessarily reflect the views of these members.

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## Overview

This review was produced as part of the Child Care and Early Education Policy and Research Analysis and Technical Expertise Project. The purpose of this project is to support the provision of expert consultation, assessment and analysis in child care and early education policy and research. It is funded through a contract with the Office of Planning, Research and Evaluation.

This review was co-authored by researchers from Child Trends, with input from members of the Child Care Policy and Research Consortium's Child Care Subsidy Workgroup. Policy-relevant responses to the research were provided by two state administrators, Melanie Brizzi from the Indiana Family and Social Services Administration and Leigh Bolick from South Carolina's Department of Social Services. The purpose of this review is to summarize research related to subsidy use, associations between subsidy receipt and parents' choice of high quality care, continuity of subsidized care arrangements, and associations between subsidy receipt and select family and child outcomes. It is intended to provide a foundation of empirical knowledge for state administrators, early childhood program developers, and policymakers who can use information about child care subsidies and outcomes to improve programs and services for families.

The review reflects current and seminal work from researchers throughout the U.S. Summarized literature includes published journal articles as well as reports from studies funded by the Office of Planning, Research, and Evaluation and other federal government agencies.

This literature review addresses the following topics:

- Child care subsidy usage rates
- Characteristics of subsidy recipients
- Associations between subsidy use and parental choice of high quality care
- Subsidy continuity
- Continuity within subsidized care arrangements
- Associations between subsidy use and parental employment
- Associations between subsidy use and family financial well-being
- Associations between subsidy use and children's developmental outcomes

## Executive Summary

The purpose of this review is to summarize recent research on topics related to child care subsidies. It is intended to provide a foundation of empirical knowledge for state administrators, program developers, and policymakers as they choose among and implement subsidy policies. This review reflects current and seminal work completed by researchers in the U.S. and includes published journal articles, dissertations, and reports from studies funded by the Office of Planning, Research, and Evaluation and other government agencies. The structure and content were selected to reflect topics of interest to child care subsidy state administrators.

The literature on child care subsidies is organized into three sections. The first section provides descriptive information about subsidy use, including a discussion of subsidy usage rates and characteristics of subsidy recipients. The second section reviews literature addressing the associations between subsidy receipt and two intermediate outcomes of interest to the Office of Child Care, parents' choice of high quality care and continuity of care with subsidized arrangements. The third section addresses associations between subsidy receipt and select family and child outcomes, including parental employment, family financial well-being, and measures of children's school readiness and health. Key findings from each of these sections are provided below.

### Key Findings

#### *Descriptive Information about Subsidy Use*

- Use of child care subsidies among eligible families is low (between 7-34%, depending on the study).<sup>1</sup> Subsidy use is limited by the amount of funding states have to serve eligible families along with other factors. Lack of awareness about subsidies, the burden of application/recertification, and stigma associated with receiving a subsidy have been cited in research studies as possible reasons for low utilization rates.<sup>2</sup>
- Characteristics of parents, families, and communities have been associated with whether or not eligible families use subsidies. For example, studies have found that low-income single mothers are more likely to receive subsidies than low-income married mothers<sup>3</sup>, low-income parents with at least a high school degree are more likely to receive a subsidy than families with less than a high school degree<sup>4</sup>, and among families eligible to receive a child care subsidy, those with higher income-to-needs ratios are more likely to receive a subsidy than families that are more financially disadvantaged.<sup>5</sup> Further research is needed to understand why families with different characteristics vary in subsidy utilization rates.
- Higher income eligibility limits and more generous provider reimbursement rates have been associated with increases in subsidy usage among eligible families.<sup>6</sup>

#### *Subsidies and Parental Choice of High Quality Care*

- Based on findings from experimental<sup>7</sup> and non-experimental studies<sup>8</sup>, child care subsidy receipt has been positively associated with the use of licensed/regulated, and particularly center-based, care.
- A limited number of studies suggest child care providers that serve subsidized children tend to be rated as lower quality than child care providers that do not serve subsidized children.<sup>9</sup> Likewise, providers that serve a higher proportion of children whose care is subsidized tend to be rated as lower quality than providers that serve a lower proportion of children whose care is subsidized.<sup>10</sup>

- Comparisons of the quality of care used by subsidy-eligible children whose care is or is not subsidized have yielded mixed findings. Two studies using data from the Early Childhood Longitudinal Survey-Birth Cohort and the Fragile Families and Child Well-being studies found that when Head Start and public pre-kindergarten programs were excluded from comparisons, quality ratings in programs serving subsidized children from low-income families were higher than quality ratings in programs serving children from low-income families that were not subsidized.<sup>11</sup> In contrast, one study examined global quality arrangements of young children who were in subsidized and non-subsidized care and found no difference in quality ratings.<sup>12</sup> Finally, one multi-state study found, controlling for household income, maternal education, child age and ethnicity, subsidized care arrangements for infants and preschoolers, but not toddlers, had higher child:adult ratios than non-subsidized arrangements.<sup>13</sup>

### ***Subsidy Continuity***

- Median subsidy spells vary by state and study. In six recent studies of state administrative data, the most common median spell lengths are approximately six to seven months.<sup>14</sup>
- Recent studies of administrative data in Illinois, Rhode Island, and Wisconsin suggest that families cycle on and off the subsidy program over time.<sup>15</sup>
- According to an experimental study in Illinois<sup>16</sup> and analyses of administrative data in six other states<sup>17</sup>, the length of subsidy spells is associated with the timing of subsidy redetermination, with shorter redetermination periods being associated with shorter subsidy spells and subsidy spells tending to end at the time of redetermination.
- There has been mixed evidence regarding subsidy policies and the duration of subsidy spells. An experimental study<sup>18</sup> in Washington and two recent studies of administrative data in Oregon and Wisconsin<sup>19</sup> found that more generous policies regarding parental co-payments and provider reimbursement rates are associated with longer subsidy spells. In contrast, one study found that increasing a family's copayment is associated with longer subsidy spells<sup>20</sup>, and another study found no correlation between copayment level, provider reimbursement rates, and subsidy spell lengths.<sup>21</sup>
- Studies have not found a significant association between income eligibility limits or the administration of subsidies as grants or contracts and subsidy duration.<sup>22</sup>

### ***Subsidies and Continuity of Care Arrangements***

- Changes in child care arrangements can be predictable (e.g., resulting from school year cycles or child maturation) or unpredictable (e.g., provider no longer being able to care for child).<sup>23</sup> Studies using administrative data have found that the proportion of children in subsidized care that change child care arrangements varies by state. For example, a five state study found that over the course of 18 months, over 70% of children in subsidized care in Oregon, but less than half in Illinois and Texas changed care arrangements.<sup>24</sup>
- According to two studies, subsidized care is more stable care than unsubsidized care.<sup>25</sup>

### ***Subsidy Use and Parental Employment***

- Low-income parents who receive a child care subsidy have a higher probability of being employed<sup>26</sup> and a shorter transition from welfare to work<sup>27</sup> than those who do not receive a subsidy. As these associations are derived from correlation-based analyses, causal association can't be assumed.

- Though an experimental study examining subsidized employment did not detect a causal association between subsidy receipt and length of employment, correlation-based studies have found that parents who use child care subsidies maintain work for longer periods of time than parents who do not use subsidies<sup>28</sup>
- State-based studies have found that additional funding allocated to the subsidy program<sup>29</sup> and more generous subsidy policies related to provider rates and income<sup>30</sup> are associated with a higher probability of employment for parents using subsidies.

### ***Subsidy Use and Family Financial Well-being***

- Though no association was found between subsidy receipt and earnings in an experimental study conducted in Illinois<sup>31</sup>, correlation-based studies have found child care subsidies to be positively associated with families' annual earnings<sup>32</sup> and negatively associated with their out-of-pocket child care expenses<sup>33</sup> (though studies have found subsidy recipients to have a relatively high child care cost burden<sup>34</sup>).

### ***Subsidy Use and Children's Developmental Outcomes***

- The association between subsidy use and children's developmental outcomes has been examined in a limited number of non-experimental studies. Thus causal assumptions about these associations should not be made.
- Researchers have examined associations between subsidy receipt and indicators of children's social-emotional, pre-academic, health, and behavioral development by comparing children in subsidized care to those not in subsidized care using non-experimental methods that account for some differences in child, family, and community characteristics. Findings across studies are mixed. One study found no differences in health, cognitive development, and social-emotional development comparing children who were and were not in subsidized care.<sup>35</sup> Another study found only one difference in children's academic and social-emotional skills upon kindergarten entry- specifically, children from low-income families in subsidized community-based center care had, on average, lower math scores than children in unsubsidized community-based center care.<sup>36</sup> Finally, one study found a positive association between subsidy receipt and children being overweight, and negative associations between subsidy receipt and outcomes related to children's school readiness.<sup>37</sup>
- Researchers who have compared the outcomes of children in different types of subsidized care have found preschool-aged children in subsidized center-based care to have better pre-academic outcomes than preschool-aged children in subsidized family child care/non-regulated home-based arrangements.<sup>38</sup> Both studies that explored this relationship used non-experimental methods, thus the association between type of subsidized care and children's pre-academic skills should not be interpreted as causal.

## **Key Questions to Consider in Developing, Modifying, and Testing Subsidy Policies, Practices, and Data Systems**

The findings highlight a number of issues that administrators could consider in developing, modifying, and testing subsidy policies, administrative practices, and data elements tracked to inform improvements in the child care subsidy program. In assessing current practices, considering new developments in subsidy policies and administrative practices, and refining the information collected in subsidy administrative data, administrators may wish to consider the following issues, opportunities, and questions.



## Subsidy Usage

- Using state administrative data, administrators could identify subsidy usage rates among eligible families in their state to answer the following questions: Are there certain populations (e.g., non-English speakers, parents with low education, or very low-income families) that are disproportionately under-using child care subsidies? If so, could changes in policies/practices be implemented to mitigate disparities in subsidy uptake rates (e.g., offering application assistance for eligible clients with low literacy)? *Note: changes in policies/practices could be evaluated by comparing subsidy usage rates before and after changes are implemented.*
- In the absence of additional funds to support serving more eligible families, could policy changes associated with subsidy usage rates (e.g., increases in income eligibility limits and reimbursement rates for providers) be implemented in a state to improve subsidy usage rates overall? If so, could administrative data be used to identify thresholds in state policies associated with differences in take-up rates for all eligible families or certain subgroups? Alternatively, could innovative administrative practices be piloted in certain jurisdictions within the state and evaluated through a comparison of administrative data across these and other jurisdictions?

## Quality of Subsidized Care

- If a state has a Quality Rating and Improvement System (QRIS), are administrators in that state able to use data from the QRIS to compare the quality of care received by subsidized and non-subsidized children in the state? This could be done by comparing providers within a designated locality that do and do not accept subsidies or by comparing providers with a high proportion of subsidized children in care to those with a low proportion. Also, what is the participation rate of subsidized programs in quality improvement initiatives and the state/local QRIS?
- If a state has data on the location and quality of providers, administrators could assess the availability of high quality providers that serve subsidized children, particularly in high poverty density areas. How does the quality of arrangements used by subsidized children (or a high proportion of subsidized children) compare to the quality of arrangements that don't serve subsidized children (or serve few subsidized children)? How does the quality of arrangements used by subsidized children compare to other publicly-funded early care and education programs (e.g., Head Start and pre-K) within designated localities?
- Can administrative data and planned variation in practices within the state be used to identify whether incentives (e.g., tiered reimbursement rates, awards, bonuses) are effective in promoting participation in a QRIS, and if incentives at a certain threshold are more effective than others?

## Continuity of Subsidy Receipt and Care in Subsidized Arrangements

- Through analysis of longitudinal administrative data on child care subsidy participation, state administrators can assess the median duration of subsidy spells in the state, how frequently children in subsidized care change child care arrangements, and whether children who leave the subsidy program return to the same provider. These data could be explored for specific subpopulations (e.g., infants and toddlers) or the full population of subsidized children.
- Administrative data can also be used to determine whether families leaving the subsidy program are eligible when they exit, and what proportion of families that leave the subsidy program re-enter the program within 1-2 years?

- Quality ratings from QRIS, in combination with child care attendance data (where available), could be used to determine the quality of care used by families when they leave the subsidy program, and how that compares to the quality of care used when receiving a subsidy?
- If it is feasible to alter policies in order to facilitate subsidy continuity (e.g., implementing a 12-month redetermination period, decreasing parent copays, or increasing provider reimbursement rates), administrators could assess variation in subsidy continuity in response to this policy change using longitudinal child care subsidy data.

### ***Subsidies and Family and Child Outcomes***

- Through analysis of subsidy administrative data, administrators can determine what proportion of household income low-income families in the state are spending on subsidized child care.
- Administrators may also be interested in reviewing policies and administrative data to determine 1) how many hours of care are supported by child care subsidies, 2) whether the maximum number of allowable hours adequately covers the hours low-income parents are working, and 3) whether subsidies are supporting children's ability to enroll in part- or full-day early education programs through the provision of wrap-around care.
- By linking subsidy administrative data with school readiness data from kindergarten entry assessments, administrators could identify associations between enrollment in subsidized vs. non-subsidized care and children's skills upon kindergarten entry.

## Endnotes

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## Introduction

The purpose of this review is to summarize recent research on topics related to child care subsidies. It is intended to provide a foundation of empirical knowledge for state administrators, program developers, and policymakers as they choose among and implement subsidy policies. This review reflects current and seminal work completed by researchers in the U.S. and includes published journal articles, dissertations, and reports from studies funded by the Office of Planning, Research, and Evaluation and other government agencies. The structure and content were selected to reflect topics of interest to child care subsidy state administrators.

### Introduction to the Child Care and Development Fund Subsidy Program

In order to facilitate interpretation of research findings, including those that are sometimes inconsistent across studies, this section provides background information on the largest child care subsidy program, the Child Care and Development Fund (CCDF). The CCDF program is funded through a mixture of federal and state dollars and administered by states under federal law, regulations, and guidance. In 2010, the CCDF program served approximately 1.7 million children per month (Office of Child Care, 2012a). Of these children, almost half lived in families whose income was below the federal poverty level, and the remaining were in low-income families that met state eligibility income criteria (Office of Child Care, 2012a). The CCDF program is used to subsidize the child care of children age birth to 13 years in a range of child care settings, including center care, family child care, and care in the child's own home. The purpose of the CCDF program is to "assist low-income families in obtaining child care so they can work or attend training/education" (Office of Child Care, 2012b). Additionally, the program "improves the quality of child care, and promotes coordination among early childhood development and afterschool programs" (Office of Child Care, 2012b). Recent guidance from the

Office of Child Care, reflective of the Government Performance and Results Act (GPRA) CCDF Performance Measures and High Priority Performance Goals, highlights the program's emphasis on supporting families in selecting high quality care and facilitating continuity in care arrangements (Office of Child Care, 2011a, 2011b, 2011c, 2011d).

As the CCDF program is administered through a block grant to states, states have flexibility in choosing how to administer the program to fulfill these purposes. For example, states vary in terms of investment of state dollars in the CCDF program, income eligibility limits, provider reimbursement rates, parental copayment rates, application and recertification requirements, policies regarding wait lists, and licensing/quality regulations for providers serving subsidized children. Because of the wide range of possible variation when considering all CCDF policy levers and how policies are implemented at the state level, and because the administration of the CCDF program occurs within a context of other policies and programs in each state (e.g., Quality Rating and Improvement Systems, publicly funded early education programs, etc.), developing generalizable knowledge across states is challenging.

## **Framework and Questions Answered in this Review**

Literature on child care subsidies included in this review spans multiple topics and is organized into three sections. The first section provides descriptive information about subsidy use, including a discussion of subsidy usage rates and characteristics of subsidy recipients. The second section reviews literature addressing the associations between subsidy receipt and two intermediate outcomes recently highlighted by the Office of Child Care, parents' choice of high quality care and continuity of care with subsidized arrangements. The third section addresses associations between subsidy receipt and select family and child outcomes, including parental employment, family financial well-being, and measures of children's school readiness and health.

There are a few important distinctions to consider prior to interpreting the findings presented in this review. Subsidy studies have used different methodologies, each of which has benefits and drawbacks. In this review, we delineate whether studies used certain research designs (e.g., experimental, quasi-experimental) and data (e.g., nationally representative/state/local survey data, administrative data, or qualitative data). See Methodology Box for a summary of unique benefits and drawbacks of various research designs and data. As many subsidy studies use survey data, two important caveats related to this methodology are worth mentioning. First, the accuracy of self-report data regarding subsidy receipt has been questioned; thus, findings based upon self-report measures of subsidy receipt should be interpreted with caution. Second, though econometric strategies are used to model causal relationships, true causal inferences can only be drawn from experimental studies, with relations from non-experimental studies providing important information about associations (which may or may not be causal).

Additionally, it is important to note that, like subsidy policies, research related to child care subsidies is constantly evolving. The research summarized in this review is offered to provide an empirical foundation for the ongoing and mutual learning process faced by administrators and researchers in the midst of evolving policy landscapes. Though we include detail regarding specific policy levers or contexts when it is available, research to date does not provide enough contextual information to fully understand how policies and administrative practices influence outcomes of interest. In the absence of detailed information on the integration of policy levers and administrative practices, specific policy/program recommendations are not warranted. In lieu of offering recommendations for policy or programmatic changes, we present a discussion of emerging insights and unanswered questions at the end of each of section. Finally, we conclude the review with key issues, opportunities, and questions to consider in developing or modifying policies, practices, and data systems; promising directions for future subsidy research; and insights from state administrators.

## Methodologies Used In Subsidy Research

Research described in this review can be distinguished according to study design and type of data analyzed.

Five types of study design are summarized in this review:

- **Experimental studies** are the “gold standard” for testing the effects of a change in policy or practice in that experimental study designs meet the conditions necessary for causal inference (e.g., random assignment of participants to the intervention or control conditions, intervention occurs prior to measurement of outcomes) (Engel & Schutt, 2012). Limitations of experimental studies are that samples tend to be constricted to a specific group of parents and a specific state or locality, experimental conditions tend to be narrow in scope, and (for some experimental studies) may not be applicable in a “natural environment”. For all of these reasons, the findings of experimental studies may not be widely generalizable. The Office of Planning, Research, and Evaluation recently funded a series of experiments related to child care subsidies in Illinois, Massachusetts, Washington, and Miami-Dade County (Florida).
- **Quasi-experimental studies** include an intervention and a control (or comparison) group, but participants in the study are not randomly assigned to each group. One must be cautious in making causal inferences based on quasi-experimental studies because study participants in the intervention and control groups may differ in systematic and unmeasured ways. One example of a quasi-experimental study is a wait list study, in which subsidy-eligible families receiving a subsidy are compared to subsidy-eligible families on a wait list for a subsidy.
- **Correlational studies** examine whether and to what degree certain variables are associated with one another. In addition to examining simple correlations between variables, correlational studies can include multivariate techniques (e.g., regressions) that examine associations between specific variables while controlling for others. This type of study does not involve the creation of intervention and control groups. Associations detected from correlational studies usually should not be interpreted as causal. One example of correlational studies is the analysis of the associations between participant characteristics and length of subsidy duration (see “Child Care Subsidies and Continuity of Care” section in this review).
- **Descriptive studies** describe the characteristics, actions, or knowledge of research participants. Descriptive studies are used to describe the population of families receiving a child care subsidy within a state (see the “Subsidy Usage Rate” section of this review for an example).
- **Inductive studies** are used to develop theories or a better understanding of a phenomenon based on information about the perceptions, attitudes, and experiences of study participants. Inductive research designs tend to rely on qualitative data. Inductive studies have been used to better understand barriers to subsidy, parents’ perceptions about subsidies, and child care quality (see Adams, Snyder, & Sandfort, 2002; Antle, et al., 2008; Scott, Leymon, & Abelson, 2011).



### *Types of data summarized in this review include:*

- **Survey data** can be collected from a nationally representative, state, or local sample. Nationally representative data provide information that is representative of families, children, or child care arrangements in the United States. Sample sizes in nationally representative studies are typically large enough to support sophisticated statistical models, and many nationally representative samples include an oversample of low-income families. However, nationally representative samples are usually not designed to also be representative of specific states or localities. The main drawback of survey data is the questionable accuracy of parent-report on certain measures (e.g., family income and child care subsidy receipt), the use of simple measures of subsidy receipt (e.g., allowing researchers to compare receipt vs. non-receipt only), and consequently the lack of information needed to study associations between individual policies/practices and outcomes (Giannarelli, Adelman, & Schmidt, 2003). The Early Childhood Longitudinal Study-Birth cohort and Early Childhood Longitudinal Study-Kindergarten cohort are two examples of nationally representative studies used in subsidy research. Each of these studies surveyed the parents of a cohort of children longitudinally. The National Survey of Early Care and Education is a forthcoming nationally representative study that will contain useful data for child care subsidy research.
- **Administrative data**, or data collected to administer programs, offers verified measures of program participation (e.g., subsidy receipt) and select demographics (e.g., family income). There are multiple examples of studies in this review that use administrative data. Some of these studies occur in one state, others use data from multiple states. Drawbacks of reliance on administrative data are that these datasets tend to include minimal information regarding child and family characteristics, do not include measures of parents'/providers' attitudes, perceptions, or experiences, and do not allow for comparisons of subsidy users to other low-income families that are not participating in the subsidy program. Some of these drawbacks can be mitigated by linking data with administrative data from other sources (e.g., Supplemental Nutrition Assistance Program) or survey data (e.g., individual-level state employment data).
- **Qualitative data** are captured through open-ended questions and observations of study participants. Qualitative data can be gathered on an individual basis or within groups (e.g., focus groups). Qualitative data can be useful for developing a better understanding of study participants' experiences and perceptions or identifying vocabulary used by the study population. A drawback of qualitative data is that it tends to use small samples and thus the generalizability of findings is sometimes unclear.

Researchers often utilize multiple methods and analyze data from multiple sources in a single study to alleviate the drawbacks of using any one type of data alone (e.g., combining survey and administrative data or analyzing both qualitative and quantitative data).

## Key Findings

### Descriptive Information about Subsidy Use

#### *Subsidy Usage*

Multiple strategies have been used to estimate the percent of eligible families who use a child care subsidy. Periodically, ACF's Office of the Assistant Secretary for Planning and Evaluation (ASPE) produces estimates of the number of children eligible for and using a subsidy. Based on the most recently published analyses of average monthly data from 2006, ASPE found that about 17% of children identified as eligible based on federal CCDF eligibility guidelines participated in the subsidy program (Assistant Secretary for Planning and Evaluation, 2010). A number of other researchers have conducted studies of subsidy usage rates using state CCDF eligibility guidelines. Timeframes and samples used for these studies vary. For example, some studies have focused on all eligible families, while others focused specifically on TANF leavers (e.g., Schumacher & Greenberg, 1999). Additionally, some studies have incorporated Census data to assist with determining usage rates (e.g., Goerge et al., 2009). Across methods using state CCDF eligibility guidelines, overall use of child care subsidies among eligible families is low, ranging from as low as 7% using 2001 data from Texas (Goerge, et al., 2009) to 34% using 1997-1999 data in Illinois and Massachusetts (Lee, et al., 2003).

It should be noted that jurisdictions do not have sufficient funding to serve all children who are eligible for CCDF subsidies. In addition to this limitation, the policies that states implement (e.g., eligibility limits, whether to have waiting lists) and the amount states invest in CCDF subsidies influence which and how many families can access subsidies. In studies that have focused on explanations for low subsidy usage rates, awareness and burden of application/recertification have been identified as barriers to families' use of subsidies. Shlay, Weinraub, Harmon, and Tran (2004) interviewed 196 subsidy-eligible families in Philadelphia and found that about half of eligible parents not receiving subsidies were unaware of their eligibility for the program. Shlay et al.'s (2004) interviews with eligible parents who were aware of, but did not receive, a subsidy found that parents cited stigma, concerns about how their child would be treated, or misconceptions that their choice of care arrangements would be limited to child care centers, as well as concerns regarding the burden of the application process and waiting lists. Based on interviews and focus groups with administrators, parents, and providers in 17 sites, Adams, Snyder, and Sandfort (2002) found a number of policy-related factors to be associated with families' ability/decision to apply (e.g., wait lists or holds on program enrollment), ability/willingness to complete the application process (e.g., mode of application- in-person, phone, or online, application processing practices and customer relations), and ability/willingness to maintain a subsidy (e.g., frequency of recertification). Adams and colleagues (2002) suggest redesigning subsidy policies and administrative practices to support families that face considerable barriers to subsidy use due to chaotic or unstable life circumstances, limited access to reliable transportation, challenges in navigating and coordinating services from multiple agencies, etc. Based on their observations of best practices in streamlining services, Adams and colleagues (2002) suggest allowing families to apply for subsidies over the phone and mail-in documentation and recertification materials, and eliminating the need to contact caseworkers for every change between reauthorization periods.

Some states have piloted studies to test the association between specific policy/ administrative shifts that aim at increasing subsidy usage and consequent changes in usage. For example, Rhode Island adjusted its eligibility policies during the 1990s to raise the income eligibility threshold from 185% to 225% of the federal poverty level, make subsidies available to all eligible families, and increase reimbursement rates for providers to the 75<sup>th</sup> percentile of the most recent market survey. These changes were associated with a 19% increase in provider payments to family child care homes providing care for infants and toddlers and a 78% increase in provider payments to child care centers providing before-school care for school-age children. Witte and Queralto (2003) compared participation of current and former welfare recipients in the child care subsidy program before and after the policy changes in Rhode Island and found families to be more likely to use a subsidy following the policy change.

## *Characteristics of Subsidy Recipients*

To contextualize findings regarding characteristics of subsidy recipients presented below, readers should remember that studies summarized in this section document associations from non-experimental studies. Thus, though associations have been documented between subsidy receipt and select characteristics of parents and families, these associations are not causal. Additionally, it is unclear whether documented associations are masking other associations (e.g., a strong association between race and subsidy use may be explained by a third factor- income), or indirectly reflecting families' ability to obtain a subsidy (e.g., two-parent households tend not to be eligible for subsidies as subsidy requirements that each parent be engaged in employment-related activities tend to result in combined wages that exceed income eligibility criteria) or maintain subsidy eligibility (e.g., subsidy-eligible parents with a high school degree may be more likely to maintain employment, and thus remain eligible for a subsidy, than subsidy-eligible parents with less than a high school degree).

**Parent characteristics and subsidy receipt.** Studies have documented associations between multiple parent characteristics and the likelihood of subsidy receipt. Specifically, research has addressed the associations between parental education, ethnicity, home language and subsidy receipt. Though the educational attainment of mothers receiving subsidies tends to be limited, multiple studies of nationally representative datasets and administrative data have documented a positive association between parental education and subsidy receipt among subsidy-eligible families, with parents who have at least a high school degree being more likely to receive a subsidy than families with less than a high school degree (Guzman Cox, 2009; Ha & Meyer, 2010; Herbst, 2008; Herbst & Tekin, 2010a; Johnson et al., 2011; Tekin, 2004). Descriptive analysis of the characteristics of subsidy recipients by Kinukawa, Guzman, and Lippman (2004) using the National Household Education Survey data provides more nuanced findings regarding this association. Kinukawa and colleagues (2004) found that among families that are financially eligible to receive a subsidy (0-150% of the federal poverty level), mothers with at least some college are more likely to have a subsidy for their child than mothers with less education. It should be noted that a small proportion of subsidy recipients have college degrees (Kinukawa, et al., 2004).

Multiple studies using administrative data as well as interview data from national and local samples have found that, controlling for other characteristics, African American mothers are more likely to receive subsidies than any other racial group (Burstein & Layzer, 2007; Guzman Cox, 2009; Ha, 2009; Herbst & Tekin, 2010b; Hirshberg, Huang, & Fuller, 2005; Lee, et al., 2003; Schaefer, Kreader, Collins, & Lawrence, 2005; Shlay, Weinraub, & Harmon, 2010; Tekin, 2004). Findings regarding the association between home language and subsidy receipt are mixed. An analysis of the ECLS-B dataset (Johnson, Martin, & Brooks-Gunn, 2011) and Ha's (2009) analysis of Wisconsin administrative data found the likelihood of subsidy receipt to be higher among English speakers than non-English speakers. However, a study of 1,974 parents moving from welfare to work in California found Spanish speakers to be more likely to receive subsidies than Vietnamese or English speakers (Hirshberg, et al., 2005).

**Family characteristics and subsidy receipt.** A number of family-level characteristics, specifically family structure, number of children, and family income, have also been associated with subsidy receipt, though findings regarding these associations tend to be inconsistent across studies. A review of studies using state-specific and nationally representative datasets found low-income single mothers to be more likely to receive subsidies than low-income married mothers (Danziger, Ananat, & Browning, 2003; Hirshberg, et al., 2005; Schaefer, et al., 2005; Shlay, et al., 2004). Whereas these findings are consistent, it is notable that the studies cited did not control for family income (a factor that is likely highly correlated with family structure). Studies addressing the association between household size, specifically the number of children in a household, and subsidy use have yielded inconsistent findings across states (e.g., Huston, Chang, & Gennetian, 2002; Johnson,

Ryan, & Brooks-Gunn, 2012; Schaefer, et al., 2005). Finally, although descriptive analyses from the 2005 National Household Education Survey found the greatest proportion of families receiving child care subsidies were impoverished (Kinukawa, et al., 2004), recent work that examined multiple variables related to subsidy usage indicates that among low-income subsidy-eligible families, those with higher incomes or income-to-needs ratios are more likely to receive a subsidy than more disadvantaged families (Johnson, et al., 2011; Shlay, et al., 2004).

**Community characteristics and subsidy receipt.** Region of the country, urbanicity, and distance to a human service agency have each been examined as predictors of subsidy receipt. For example, two studies analyzing survey data from the National Survey of America's Families, which used parental self-report of subsidy status, concluded that parents in the West and Midwest are more likely to receive subsidies than those in the South or Northeast (Guzman Cox, 2009; Tekin, 2004). Comparisons of subsidy use across urban and nonurban areas, however, have yielded conflicting results. Though Lee and colleagues' (2003) analysis of administrative data from Illinois, Maryland, and Massachusetts suggests that parents in urban areas who are eligible for subsidies are less likely to make use of those subsidies compared to parents in nonurban areas, Davis, Grobe, and Weber (2010) found the opposite based on analyses of Oregon administrative data. One possible explanation is that the probability of subsidy receipt is related to the distance between a family's home and the nearest human service agency. Some evidence of a negative association between this distance and subsidy receipt has been found in multivariate analyses of the ECLS-B by Herbst and Tekin (2012). However, as policies regarding online and mail-in application procedures have been evolving in recent years, further exploration of this association is warranted.

### ***Emerging Issues and Unanswered Questions***

A number of emerging issues and unanswered questions are related to subsidy usage and characteristics associated with subsidy receipt. First, research has consistently shown that subsidy usage rates are low. One factor accounting for low usage rates is that states do not have adequate funds to serve all eligible families. Additional reasons for low usage rates, based on the literature, include limited awareness and administrative barriers to application and recertification (Adams, et al., 2002; Shlay, et al., 2004). Recent research has found differences in subsidy usage rates associated with changes in income eligibility criteria (Witte & Queral, 2003).

Based upon the findings summarized above, there is mixed evidence regarding who is most likely to use child care subsidies. Inconsistencies likely reflect the different samples and methodologies used to study these topics as well as differences in state policies and administrative practices. Before administrators use this information to tweak policies and practices, additional research using verified measures of subsidy receipt and samples of all eligible families within states is needed to explore this topic. New research could be used to explore reasons for variability in take-up rates across states through cross-state studies. Specifically, studies could examine whether thresholds in state policies (e.g., income eligibility limits, length of wait lists, and frequency of redetermination) are associated with differences in take-up rates. As parents respond to a set of subsidy policies rather than a single policy in isolation, future studies are also needed to explore differences in usage rates while adjusting multiple policy levers or administrative practices. Likewise, research is needed to develop and test effective strategies for engaging the most disadvantaged families in the subsidy system.



## Subsidies and Intermediate Outcomes

Available literature on the associations between child care subsidies and two intermediate outcomes, parental choice of “high quality” care and continuity of care arrangements, is reviewed below. These intermediate outcomes were selected because of their known relations to family and child outcomes. For example, the observed quality of child care settings has been positively associated with children’s social-emotional and cognitive outcomes in numerous studies (Belsky, et al., 2007; Burchinal, Vandergrift, Pianta, & Mashburn, 2009; Howes, 1990; Peisner-Feinberg, et al., 2001; Romano, Kohen, & Findlay, 2010; Vandell & Wolfe, 2000). Likewise, continuity of care has been positively related to children’s socio-emotional and cognitive development (Elicker, Fortner-Wood, & Noppe, 1999; Harrison & Ungerer, 1997, 2000; Howes, 1988; Loeb, Fuller, Kagan, & Carrol, 2004; NICHD Early Child Care Research Network, 1998) and parental employment and family outcomes (Adams & Rohacek, 2010). It should be noted that while guidance regarding each of these topics was recently released by the Office of Child Care (Department of Health and Human Services, 2013), policy/practice changes in response to this guidance have not yet been evaluated by researchers.

### *Subsidies, Child Care Choices, and Choice of “High Quality” Care*

Child care subsidies are intended to provide parents access to child care arrangements that best meet their family’s needs. In doing so, subsidies are designed to alleviate cost constraints of care so that low-income parents can access the same choices as families with more resources. In addition to facilitating access to care providers, some states have also invested in strategies to help parents select high quality care (e.g., QRIS and consumer education campaigns). Literature in this section is broken into two sections. First, we review the association between subsidy receipt and type of care. Second, we review literature on the quality ratings of subsidized versus unsubsidized arrangements.

Before presenting the findings below, readers should be aware of two issues. First, there is some inconsistency in the definitions of “center-based care” across studies. The definition of center-based arrangements can be limited to community-based center child care arrangements, or inclusive of center-based early education programs, such as Head Start and pre-kindergarten (pre-K) programs. It is at times difficult to determine whether Head Start/pre-K is included in a center-based sample. This information is not always clear to researchers due to mixed funding streams within programs and because parents are not able to reliably distinguish between community-based center child care and other center-based programs on surveys. In the review below, when it is clearly written in the methodology of a study, we alert the reader to samples that include center-based early education programs. Second, as detailed in the *“Measurement of Child Care Quality in Subsidy Studies”* box below, the way that quality is measured and the current state of quality measurement may influence some research findings in this section.

**Subsidy receipt and type of care.** Evidence associating subsidy receipt and use of licensed/regulated care is well documented and worth acknowledging, as literature has documented higher ratings on observed global quality measures in licensed/regulated arrangements (Coley, Chase-Lansdale, & Li-Grining, 2001). An experimental study in Illinois randomly assigned 1,884 families to one of three conditions: 1) treatment group # 1: moderate-income families were provided a subsidy with a six-month redetermination period, 2) treatment group # 2: moderate income families were provided a subsidy with a twelve-month redetermination period, and 3) control group: low-income families received a subsidy with a six-month redetermination period. This study found parents in each of the two treatment groups to use more center care and less informal care than parents in the control group (Michalopoulos, Lundquist, & Castells, 2010). Additionally, Crosby, Gennetian, and Huston (2005) reviewed the effects of 13 experimental welfare programs and found programs that offered “efficient subsidy payment, encouragement of formal care, market-value subsidies, and reduced bureaucratic hassles” (p. 102) increased the use of center-based care.

A positive association between subsidy receipt and use of regulated/licensed care has also been documented using bivariate analyses (Lowe & Weisner, 2004), multivariate models (Gennetian, et al., 2002; Guzman Cox, 2009), and wait list studies (Forry, 2009; Gassman-Pines, 2003; Witte & Queralto, 2004). Studies using survey data from parents in Georgia and Pennsylvania have found parents using child care subsidies are more likely to use licensed care than parents not using subsidized care (Brooks, Risler, Hamilton, & Nackerud, 2002; Weinraub, Shlay, Harmon, & Tran, 2005). A strong, positive association between subsidy receipt and use of center-based care has been found in secondary analyses of national datasets (Ertas & Shields, 2012; Forry & Hofferth, 2010; Gassman-Pines, 2003; Greenberg, 2010; Herbst & Tekin, 2010a; Tekin, 2004) as well as analyses of smaller, local samples using wait list and administrative data (Forry & Hofferth, 2010; Gassman-Pines, 2003; Wolfe & Scrivner, 2004) and survey data (Weber & Grobe, 2011; Weinraub, et al., 2005).

### Measurement of Child Care Quality in Subsidy Studies

The measurement of child care quality is constantly evolving. A few points regarding the current state of quality measurement, as it relates to studies summarized in this review, are provided below.

- The term “quality” is used to describe the practices, environment, and relationships within a child care arrangement that support the development of a child. Recent research has found the association between global quality measures and children’s developmental outcomes to be significant but weak (Burchinal, Kainz, & Cai, 2011). Recent evidence also suggests that domain-specific measurements of quality (e.g., measures of supports for language and literacy supports) and measures of caregiver-child interaction (e.g., instructional support) are stronger predictors of specific developmental outcomes than global quality measures (Burchinal, Kainz, & Cai, 2011).
- Most research measuring child care quality has focused on centers serving preschoolers. Studies measuring quality in infant, toddler, and school-age classrooms, as well as home-based settings (and particularly unregulated home-based care), are limited.
- The term “quality” is typically used regardless of the measures applied (e.g., observed quality, parent report, provider report, or quality indicators from administrative data), though these measures may vary in rigor, reliability, and validity.
- There may be important features of child care quality that have yet to be defined and measured. For example, literature regarding the measurement of family-provider relationships in child care settings and quality practices supporting children’s math and science skills are less developed than research on the measurement of quality practices related to language and literacy. As the literature on measuring quality expands, new quality features may be identified.

**Quality ratings of subsidized versus unsubsidized arrangements.** Studies have used three approaches to compare the observed quality of subsidized versus unsubsidized care arrangements. The first approach compares quality across a sample of programs that serve subsidized children and a sample of programs that do not. Second, studies examine the association between proportion, or “density”, of subsidized children in care and observed quality of care. Third, studies use samples of children from low-income families to compare the quality of care used by children who are in subsidized versus unsubsidized care. Before reviewing findings from these studies, it should be noted that state regulation of child care providers varies, both across states and, in some cases, within states, with providers serving subsidized children sometimes being held to a higher quality standard/level of regulation than non-subsidized providers.

**Comparisons of providers who do and do not accept child care subsidies.** Jones-Branch, Torquati, Raikes, and Pope Edwards (2004) compared the global quality of one preschool-age classroom in each of 19 centers with subsidy service agreements and 15 centers without subsidy service agreements in Nebraska. Their results indicated that quality ratings in centers with subsidy service agreements were lower than in centers without subsidy service agreements. The authors stipulated that differences in teacher salary might explain these findings, given that teacher salary was lower in centers with higher subsidy density. It should be noted that, although the authors sampled roughly equal proportions of subsidized and non-subsidized centers from geographic areas that varied on sociodemographic features, it is not clear whether there were differences in the family income of children served in subsidized and non-subsidized centers.

**Comparisons of providers by subsidy density.** Two studies have examined the association between observed child care quality and subsidy density (i.e., the proportion of subsidized children served by a program). Raikes, Raikes, and Wilcox (2005) collected quality data from 120 home-based providers from four different states using the Family Day Care Rating Scale (FDCRS) and the Arnett Caregiver Interaction Scale (CIS). Using a sample stratified upon whether providers accepted subsidies, they found subsidy density to be negatively correlated with both quality measures. Similar to Jones-Branch et al. (2004), it is not clear whether the income of families served in subsidized versus unsubsidized arrangements differ in Raikes and colleagues’ study. Additionally, Antle and colleagues (2008) collected quality data from one classroom in each of 91 centers serving young children in Kentucky. Programs in this study were selected based on stratification characteristics that included a measure of urbanicity based upon a region’s average family income, population size, and industry density. Antle and colleagues found subsidy density to be negatively predictive of global quality (as measured by the ECERS-R and ITES-R) and supports for early language and literacy (as measured by the Child/Home Early Language and Literacy Observation [CHELLO]) in preschool-classrooms, but not infant/toddler classrooms. It should be noted that Antle and colleagues did find teacher salary to be predictive of quality in infant/toddler classrooms, but not in preschool classrooms.

**Quality ratings of providers used by subsidized versus non-subsidized children.** Most analyses comparing the quality of subsidized and unsubsidized care arrangements used by low-income families have used nationally representative and multi-state survey studies, though a few studies have collected data using state or local samples. As findings across these types of samples differ, studies using nationally representative/multi-state data are provided first, followed by studies using primary data collection in geographically limited areas.

Johnson and colleagues (2012), using nationally representative data from the ECLS-B and a constructed measure of subsidy receipt based upon both parent- and provider- reported data, found that, though Head Start programs and public pre-kindergarten programs serving children from low-income families had higher quality ratings than child care programs serving subsidized children, child care programs serving non-subsidized children had lower quality ratings than those used by subsidized children. In a study of data from the Fragile Families and Child Well-being Study, which sampled urban families from 20 cities, Ryan, Johnson, Rigby and Brooks-Gunn (2011) reported similar findings. Specifically, these authors found that subsidized home care

was of higher quality than unsubsidized home care, but subsidized center care was of lower quality than Head Start or public pre-kindergarten programs. In contrast, a multi-state phone survey representative of families with children in Illinois, Mississippi, Ohio, South Carolina, and Washington, found that across center-based and family child care settings, the subsidized care arrangements of infants and preschoolers had higher parent-reported child: adult ratios than nonsubsidized arrangements after controlling for household income, maternal education, child age, and child ethnicity (Maher, Frestedt, & Grace, 2008). In contrast to the findings for infants and preschoolers, an association between subsidized care and child: adult ratio was not found among toddlers in the study. Finally, Weinraub and colleagues (2005) examined the global quality of arrangements used by 111 African American families with children under four years of age, half of whom were using a child care subsidy. Arrangements included centers, family child care arrangements, and informal providers. Weinraub and colleagues found no differences in global quality between providers who accepted subsidies and those who did not accept subsidies.

**Emerging issues and unanswered questions.** Identifying emerging insights regarding the associations between subsidy use and the use of high quality care arrangements is challenging due to conflicting findings in the literature. These conflicting findings may reflect unanswered questions or potential biases among existing studies, introduced through the sample selection process or differences in comparison groups across studies. For example, existing studies comparing the quality of subsidized versus non-subsidized providers suggest a negative association between both subsidy acceptance and subsidy density and quality of care. Though it has not been tested, this association may reflect constraints in subsidy payments for providers that serve subsidized children, and lower revenues in subsidized programs compared to programs that don't accept subsidy payments. Alternately, it may be that these associations are biased by a lack of comparability between subsidized providers in the studies and providers in the comparison group (e.g., it is not always clear whether providers that aren't accepting subsidies are serving low-income families). More research is needed to test possible explanations for these associations. As an example, some evidence of indirect pathways between subsidy and quality through teacher salary is available (Jones-Branch, et al., 2004); however, this finding is not consistent across studies (see Antle, et al., 2008).

Another issue to consider relates to definitions and measures of quality within care settings. Existing research relies primarily upon measures of global quality, with some studies including measures targeting specific aspects of quality (e.g., supports for early language and literacy or caregiver sensitivity). Recent research suggests that global quality measures are not related to changes in child outcomes until a relatively high quality rating is obtained (Zaslow, et al., 2010), and questions have been raised about the psychometric properties of the ECERS (Hofer, 2008; Perlman, Zellman, & Le, 2004). For these reasons, additional research is needed to determine whether studies should expand the measures of quality included. For example, measures of specific aspects of child care quality may be more closely aligned with child outcomes. Additionally, measures are currently limited in that publicly available measures of quality are not applicable across all types of care settings, with relatively few measures being available for observations of the quality of informal care arrangements. Finally, it is possible that existing quality measures do not tap into all possible aspects of child care quality. For example, a recent review by Forry, Moodie, Simkin, and Rothenberg (2011) has highlighted the importance of facilitating strong family-provider relationships in early care and education since these have been associated with both child and family outcomes, yet few studies assess this domain of quality.

It is likely that variation in quality across subsidized arrangements influences the findings presented in this section. Though a few researchers have conducted subgroup analyses to explore this variation (e.g., Johnson, et al., 2012; Ryan, et al., 2011), further work is needed to analyze associations between child care subsidy use and quality of care in center- and home-based arrangements separately and to compare the quality of child care within and across states that vary in terms of subsidy policies and professional development systems.



## *Child Care Subsidies and Continuity of Care*

There are several ways in which the association between subsidy receipt and continuity of care has been explored. Literature has addressed duration of subsidy receipt, factors associated with subsidy duration, and continuity of care within subsidized arrangements. As estimations of duration and continuity can be largely impacted by the sample and analytic methods used, as well as policies and administrative practices used in different states, it comes as no surprise that there is some variation in findings across studies on each of these topics. In this section, we first review literature on the average duration of subsidy receipt. As part of this discussion, we review associations between subsidy continuity and redetermination periods, the actual and perceived values of subsidies, and other policy levers within the subsidy program. Second, we review the association between subsidy receipt and continuity of care arrangements.

**Continuity of subsidy receipt.** A number of studies have examined the average duration of subsidy receipt. Most existing studies are state-specific, though some compare the duration of subsidy spells (i.e., periods of uninterrupted subsidy use) across states. Although studies vary in sample selection criteria, study durations, analytic methods, and how subsidy breaks (interruptions in subsidy use) are defined, most have found median subsidy spells to last about six to seven months. Using administrative data from 2004-2008 in 38 states, Swenson (2011) found the median subsidy spell length to be between four and eight months. Analyses using data from The Dynamics of Child Care Subsidy Use five state study found median spell lengths among all subsidy recipients whose care was paid for via vouchers between 1997 and 1999 to be between three and seven months, depending upon the state (Meyers, et al., 2002). In a seven year study of families who started receiving child care subsidies between 1996 and 2000, which used a longer break (two months) in defining subsidy breaks than most other studies, Witte and Queralto (2006) found families in Rhode Island to have a median spell length of nine months. Ha, Magnuson and Ybarra (2012), using Wisconsin administrative data from 2000 to 2005, found children who started receiving subsidized care before age three experienced an average of two subsidy spells at a median length of six months each. In recent analyses of Illinois administrative data from 2004-2007, restricted to new entrants to the subsidy program, Ros, Claessens, and Henly (2012) found a median spell length of four months. Finally, analyses of administrative data from Maryland found the median length of families' first spells between 2007 and 2010 to be approximately seven months (Forry, Welts, Davis, Kraft, & Daneri, 2012).

In addition to studies of median spell duration, Ha and Meyer (2010) conducted analyses to explore how many parents with young children had subsidy spells longer than a year. Using Wisconsin administrative data from 2000-2005, Ha and Meyer found that more than half of parents discontinue subsidy use by the end of their first year in the program. Anderson, Ramsburg, and Scott (2005) examined subsidy administrative data for a cohort of families using license-exempt care in Illinois and found over three years only 35.8% of families were still receiving a child care subsidy at the end of three years.

A few studies have analyzed subsidy cycling, that is the process of entering and exiting the subsidy system over time. Ros, Claessens, and Henly (2012) found that, on average, subsidized children in Illinois experienced two subsidy spells during a two year period. Ha, Magnuson and Ybarra (2012), using Wisconsin administrative data on children between the ages of three and five, also found children to have, on average, two subsidy spells. Witte and Queralto (2006) found about half of the families they studied for seven years to have two or more subsidy spells within the study period, with subsidy cycling being closely associated with transitions related to the school year and redetermination periods.

***Continuity and subsidy redetermination periods.*** Research indicates that the length of subsidy spells is associated with the timing of subsidy redetermination. In addition to Witte and Queral's (2006) Rhode Island study, Meyers and colleagues' (2002) analyses of child care subsidy administrative data in five states (Illinois, Maryland, Massachusetts, Oregon, and Texas) found subsidy spells to be shorter in states that required families to recertify their eligibility every six months or less, when compared to states with longer redetermination periods. This finding was supported by Grobe, Weber, and Davis' (2008) analysis of administrative data in Oregon, which found subsidy exits among employed parents to be 3.3 times more likely to happen during their last month of eligibility than at any other time. Further support for this finding comes from Michalopoulos et al.'s (2010) randomized experiment of moderate income families given a subsidy with six- or twelve-month redetermination periods, which found that, within the two year study period, families with the twelve-month redetermination period received subsidies 2.5 months longer than families with the six-month redetermination period.

***Continuity and actual or perceived value of the subsidy.*** Two indicators of the value of child care subsidies are the amount of money parents pay out-of-pocket for care and the amount providers are reimbursed by the state to provide services. Some studies have found associations between each of these policy levers and subsidy spell length. An experimental study of subsidy-eligible families in Washington State found an association between copayments and subsidy duration (Michalopoulos, 2010). In this study, a control group, who received subsidies under the state's standard copayment schedule, was compared to families in the experimental condition, who received an alternative copayment schedule that lowered copayments for most families (Michalopoulos, 2010). Results showed that families in the experimental group received subsidies for one month longer than families in the control group. Likewise, recent research using administrative data from Oregon found that, controlling for demographic and community characteristics of the family and other factors that could influence child care choices, higher subsidy payments to providers and lower family co-pay amounts were associated with a lower likelihood of exiting the subsidy program (Grobe, et al., 2008). In their analysis of Wisconsin administrative data from 2000-2005, Ha and Meyer (2010) found that the fiscal value of the child care subsidy used by parents was positively associated with longer subsidy spells. These associations were found using both descriptive statistics and regression models controlling for a number of parent, household, and community characteristics associated with subsidy continuity, as well as the type of care used.

It should be noted that a few studies have not found lower copays to be associated with longer subsidy durations. For example, Schexnayder and Schroeder (2008) analyzed administrative data from Texas before and after the state changed its child care subsidy policies and found that increasing a family's copayment was strongly correlated to longer subsidy spells. This association was found with and without the addition of a policy shift that increased income eligibility. Further, the authors found that raising a copayment when it was in consort with increased income eligibility slightly increased subsidy durations. In speculating about these unexpected findings, the authors suggest that parents may value subsidies with a higher copay for a couple reasons: 1) parents are financially invested in the child's care, or 2) parents recognize that even with a larger copayment, they are able to purchase higher quality care than they could without a subsidy. Neither of these theories has been tested. Meyers and colleagues' (2002) analyses of administrative data as part of the Child Care Subsidy Dynamics Study did not find a significant correlation between copayment levels or provider reimbursements and spell length, though this discrepancy may be due in part to the fact that the data used in this study were collected during the late 1990s before many states enacted reforms in their child care subsidy programs.

***Continuity and other features of child care subsidies.*** Two other characteristics of subsidy programs have been explored in relation to subsidy length: income eligibility and type of subsidy. Meyers and colleagues (2002) studied the association between income eligibility and length of subsidy spells in Illinois, Maryland, Massachusetts, Oregon, and Texas and found no significant associations. Additionally, Holod, Johnson, Martin, Gardner, and Brooks-Gunn (2012) analyzed child care subsidy administrative data from New York City and found that whether subsidies were administered as vouchers or direct contracts with providers was not associated with the length of the subsidy spells.

**Continuity of subsidized care arrangements.** The association between child care subsidies and continuity of care has been approached in three ways: 1) comparing the stability of arrangements across families who are and are not using a child care subsidy, 2) examining child care stability among subsidy recipients across a period of time, and 3) exploring the association between subsidy stability and changes in child care arrangements. Before reviewing findings from studies using each of these approaches, it is important to acknowledge that there are numerous reasons a parent may change his/her child's care arrangement. These reasons include normative changes (e.g., switching programs in response to a child's changing needs) and unplanned changes (e.g., child care changes that occur in response to unexpected job loss or loss of trust in a provider).

Two studies have compared the stability of arrangements across families who are and are not receiving a child care subsidy. Brooks and colleagues (2002) studied differences between a small sample of subsidy recipients and a sample of demographically matched non-subsidy recipients from Georgia and found subsidy receipt to be predictive of more stable care arrangements. Similarly, Danziger and colleagues (2003) found that within their sample of 529 subsidy-eligible mothers in Michigan (all with AFDC/TANF histories), a greater proportion of parents who did not receive subsidies stopped using non-parental care compared to parents who did receive subsidies.

Multiple researchers have examined the relationship between subsidy receipt and care stability within a certain time period. Lowe, Weisner, and Geis (2003) conducted an experimental evaluation of a welfare program in Milwaukee that included child care subsidies, wage supplements, health insurance subsidies, and community service jobs. Though no differences were found between the intervention group and control group, who had access to the usual federal and state assistance programs, approximately 80% of families in both of these groups had experienced a change in care within a two year period. Using a three-year study period, Anderson and colleagues (2005), who analyzed administrative data from 45,445 families receiving subsidies in Illinois, found half of families had used more than one child care provider. Ros and colleagues (2012) had similar findings in their two-year study of 72,562 children in Illinois. In their sample, 41.5% of subsidy recipients had at least two providers within the two-year time frame. Finally, two studies used a one-year study period and found changes in care arrangements. Meyers and colleagues (2002), using administrative data, found half of children in subsidized care from five states (Illinois, Maryland, Massachusetts, Oregon, and Texas) had experienced at least one change in provider. Weber (2005), using administrative data from Oregon, found approximately 30% of children in subsidized care had changed their provider in the last twelve months.

Finally, a few studies have explored the association between subsidy stability and changes in care arrangements. An analysis of National Study of Child Care for Low-Income Families data found that the vast majority of parents receiving a subsidy opted to keep their children in the care arrangement they had in place prior to entering the subsidy program. Further, when parents exited the subsidy program, most opted to keep their children in the care arrangement that the subsidy had previously covered (Layzer & Goodson, 2006). Ros and colleagues (2012) found that the majority of children receiving subsidies in Illinois (62%) did not experience a change in providers between subsidy spells over a two year period. However, two studies using administrative data found subsidy spells to be associated with changes in care providers. First, Ha and colleagues (2012) found that only 37% of children in a Wisconsin sample who had multiple subsidy spells

returned to the same provider when starting a new spell. Second, Weber (2005) found that among children who received a subsidy for a year in Oregon, only 30% remained with the same primary provider, and less than 25% of children returned to the same provider after a break in subsidy receipt.

Few studies have examined why care fluctuations occur among families receiving child care subsidies. Meyers and colleagues (2002) examined the association between generosity of payments given to providers and care continuity in their study of five states and found no significant results. Based on in-depth interviews with low-income families, Lowe, Weisner, and Geis (2003) distinguished between predictable change (e.g., school year cycles and child maturation) and instability (e.g., provider no longer able to care for the child). Miller (2005) found care stability to be correlated with work stability.

**Emerging issues and unanswered questions.** A couple of emerging insights arise from research on child care subsidies and both subsidy duration and continuity of subsidized care arrangements. First, average subsidy durations tend to be relatively short (< 1 year) and cycling on and off subsidies has been documented in multiple studies (Ha, et al., 2012; Witte & Queralto, 2006). Second, though a number of reasons can precipitate changes in child care arrangements, research consistently finds that subsidy exits tend to occur at the same time that families are asked to recertify eligibility for the subsidy program.

Future research building upon these insights can be used to inform policies and practices. For example, additional insights are needed regarding the reasons families cycle on and off child care subsidies. Additionally, though research is consistent in finding that subsidy exits are more likely to occur during redetermination, the reasons for this pattern are unclear. For example, is it that families are no longer eligible or the burdens of determination are too large, or could it be that the probe to recertify is associated with parents re-evaluating their child care preferences? It may also be that factors such as employment instability drive instability in subsidy use and child care arrangements. Finally, mixed findings regarding the value of subsidies, as indicated by parental copayments and reimbursement rates to providers and continuity of care warrants further research. Specifically, qualitative studies could be used to explore parents' and providers' perspectives regarding the role of child care subsidy policies and practices in supporting or hindering child care continuity.

## Subsidies and Child and Family Outcomes

Evidence from the literature has documented associations between child care subsidies and select family and child outcomes. In this section, we will first review findings regarding the association between subsidies and select family outcomes: parental employment and family financial well-being. As a note, because the literature associating subsidies with parental employment is vast, we will only review a few key findings from this literature. Next, the smaller body of literature associating child care subsidies with children's developmental outcomes will be reviewed.

### Family Outcomes

**Employment.** Examining the association between subsidy usage and employment is complicated because one eligibility criterion for the subsidy program is engagement in employment-related activities. Researchers have used a variety of statistical techniques and study designs to isolate the role of subsidy receipt in employment outcomes. Though statistical models can be used to estimate effects of subsidy use on employment outcomes, randomized experiments remain the most rigorous approach for identifying causal linkages between subsidy use and employment outcomes.



**Subsidies and probability of employment.** Various studies using national samples (Ahn, 2012; Baum, 2002; Crawford, 2006) as well as smaller local samples (Brooks, et al., 2002) have found that parents who receive subsidies have a higher probability of being employed than those who do not receive subsidies. Using nationally representative data from the National Survey of America's Families, Tekin (2007) found that reductions in the cost of child care are associated with increases in the probability of maternal employment. Witte and Queralto (2003), in their study of outcomes associated with changes in subsidy policy in Rhode Island, found that more generous provider rates and income and age eligibility were positively associated with an increase in employment for parents using subsidies. Finally, Lemke, Witte, Queralto, and Witte (2000) analyzed data collected over a fourteen-month period between 1996 and 1997 in Massachusetts and concluded that an increase in the funding of the subsidy program is associated with a higher probability of former welfare recipients being employed. Studies have also found that subsidies are associated with shorter transition times from welfare to work (Cochi Ficano, Gennetian, & Morris, 2006; Gennetian, Morris, & Vargas, 2012; Witte & Queralto, 2003). In addition to quantitative evidence of this association, studies have found that parents perceive child care subsidies as an effective work support (Scott, et al., 2011; Weber & Grobe, 2011).

**Subsidies and maintaining employment.** Evidence from multiple states has shown that parents who receive subsidies are able to maintain work for longer periods of time than parents who do not receive subsidies (Danziger, et al., 2003; Goerge, et al., 2009; Lee, et al., 2003). Additionally, survey-based studies using local and multi-state datasets have found that child care subsidies are associated with a reduction in the likelihood of parents experiencing child care-related work disruptions (Forry & Hofferth, 2010; Press, Fagan, & Laughlin, 2006). Though this evidence has been documented in correlational studies, Michalopoulos and colleagues' (2010) experimental study, in which moderate-income families in Illinois were randomly assigned to receive a subsidy or be in a control group, found no differences in the total length of employment over two years between the experimental group (who received subsidies) and control group (who did not), with both groups being employed an average of 7 out of 8 quarters.

**Family financial well-being.** Multiple studies have found child care subsidies to be positively associated with annual earnings and families' financial resources and negatively associated with their out-of-pocket child care expenses. Before reviewing findings on the association between child care subsidies and family financial well-being, it should be noted that child care subsidies can be used by families to either decrease their cost burden, or to allow for the purchase of a more expensive preferred care arrangement (which may result in having no change, or an increase in child care costs). Ha (2009) analyzed administrative data from 16,544 mothers in Wisconsin and found that annual earnings increased over time among mothers using subsidies. Likewise, Danziger and colleagues (2003) found that subsidy users had higher monthly earnings than non-users in their study of 529 subsidy-eligible mothers in Michigan. Michalopoulos and colleagues' (2010) experimental study of moderate-income families in Illinois assigned to receive a subsidy or be in a control group found no differences between these groups in earnings throughout the two-year study period.

Studies have used multiple methods to examine the association between child care subsidy receipt and out-of-pocket child care costs. In their review of findings from 21 experimental studies of welfare programs, Gennetian and colleagues (2002) found that parents who participated in programs that provided enhanced subsidy assistance, meaning programs that "offered some combination of the following policies in addition to standard assistance: programmatic promotion of formal care, direct reimbursement of care providers, access to child care resource and referral agents, and easier transitions to other care funding stream when people left assistance" (p. 2) had reduced child care-related work disruptions and lower out-of-pocket costs.

In addition to reductions in out-of-pocket costs associated with expanded subsidies, multiple researchers have found state subsidy programs to be associated with lower out-of-pocket costs for families. Forry (2009) analyzed data from a subsample of single mothers eligible for child care subsidies from the Fragile Families and Child Well-being study, a multistate sample of urban families, and found that the ratio of out-of-pocket costs for child care to income was, on average, 12 percentage points lower among mothers receiving subsidies than mothers not receiving subsidies. Forry also analyzed data from a smaller sample of mothers on a subsidy wait list in Maryland and found out-of-pocket costs to decrease by 7-10 percentage points (depending upon the number of subsidized children in the household) once these mothers received a subsidy. Multiple other studies using state-specific survey samples also found out-of-pocket child care costs to be lower for parents receiving subsidies than for parents not receiving subsidies (Brooks, et al., 2002; Grobe, Weber, Darisd and Scott, 2012); Weinraub, et al., 2005). For example, through a telephone survey of 2,036 households in Oregon that were either receiving subsidies or had recently stopped receiving subsidies, Grobe and colleagues found parents who were not receiving subsidies to have out-of-pocket child care costs of, on average, \$251.25/month, compared to \$215.68/month for subsidy recipients. Additionally, Danziger and colleagues' (2003) survey-based study of 529 subsidy-eligible mothers from Michigan found fewer parents who received subsidies reported having out-of-pocket child care costs than parents not receiving subsidies. Despite the consistency of findings above, it is important to note that subsidy recipients still have a relatively high cost burden (Grobe, Weber, Davis, & Scott, 2012).

Studies associating subsidy receipt with families' financial well-being have mixed findings. Using open-ended questions, Forry (2009) found subsidy-eligible families who switched from being on a child care subsidy wait list to receiving a subsidy report having more resources for making purchases, paying bills in a timely manner, eliminating debts, and saving money. However, analyses of phone interview data from 508 Oregon parents who were current and past subsidy recipients found no differences in financial stress, as measured by the Perceived Stress Scale (PSS) (Grobe et al.,(2012).

### **Child Outcomes**

By expanding parents' choices of child care, subsidies may indirectly impact children's early development. The body of literature addressing associations between subsidies and child development is relatively new and underdeveloped. The most consistent findings relate to child outcomes associated with types of subsidized care. Two research teams have compared child outcomes among children in different types of subsidized care. Using different methods and statistical controls, both Ansari and Winsler (2011) and Forry, Davis, and Welti (2013) found that among children in subsidized care, those in subsidized center-based arrangements had stronger pre-academic skills than those in subsidized family child care.

Research comparing child outcomes among subsidy-eligible children were or were not in subsidized care has yielded mixed findings. Differences in findings may be related to variations in the sample and methods used to study these associations, though available findings are too sparse to make general conclusions. In his study of 52 subsidy recipients and 50 non-recipients from Georgia, Brooks (2002) found no associations between a dichotomous measure of subsidy receipt and child outcomes, including health, cognitive development, and social-emotional development. In this analysis, Brooks (2002) controlled for various demographic characteristics, such as age of caregiver and child, race, maternal education and employment, and number of children in the family. Johnson and colleagues (2013) found only one significant association in an investigation of the relation between subsidy receipt during the year prior to kindergarten and children's reading, math, and social-emotional skills in kindergarten using a subsidy-eligible subsample drawn from the nationally representative ECLS-B dataset. Specifically, children in subsidized community-based center care had, on

average, lower math achievement scores than those in unsubsidized community-based center care. Johnson and colleagues' analyses included statistical controls for family demographic characteristics (e.g., maternal race, education, relationship status, employment, household income and English proficiency; number of children in the home; urbanicity, etc.), children's earlier skills and age at assessment, use of center care, child care quality, amount paid for care, and cognitive stimulation at home. Using a subsample of families with unmarried mothers from the ECLS-K study, Herbst and Tekin (2010a; 2010b; 2011; 2012) have documented positive associations between child care subsidies and children's body mass index (BMI) and likelihood of being overweight, and negative associations between subsidy receipt and outcomes related to children's school readiness while controlling for a number of child characteristics (age, gender, race, weight, birth weight, and health), family background characteristics (maternal age, education, children in the home, English in the home, family income, urbanicity), and state-level characteristics (median income, population density, proportion of Hispanics, over 65 years, Title 1, and free/reduced lunch recipients).

### ***Emerging Issues and Unanswered Questions***

Based upon extant findings in the literature, there is considerable evidence to suggest that compared to subsidy-eligible families who do not receive subsidies, families that do receive subsidies are more likely to have positive employment outcomes, including a shorter time transitioning from welfare to work, a higher probability of employment, and a lower likelihood of experiencing a child care-related work disruption. Additionally, research suggests that child care subsidies may assist families financially by either decreasing the cost of care or allowing families to purchase formal care arrangements. As few studies have been published, to date, on the association between child care subsidies and child outcomes and published studies have mixed findings, it may be premature to offer conclusions based on existing findings. Since studies have found most subsidy spells to be relatively short, it will be important for future research to incorporate measures of dosage (e.g., number of hours in subsidized care or how many months a child received subsidized care) when looking for associations with child outcomes.

With regard to associations between child care subsidy receipt and both employment and child outcomes, a number of unanswered questions remain. First, the role of selection effects in existing studies is unknown. Though some studies address selection effects through experimental designs, instrumental variables, propensity score matching, and other techniques, the majority of studies cannot rule out the possibility that families who choose to use child care subsidies differ in important (and unmeasured) ways from parents who don't choose to use subsidies. Additionally, though numerous studies compare outcomes according to subsidy status, the specific policy choices and implementation issues administrators face are addressed in few studies related to family and child outcomes. Likewise, explanations for associations between child care subsidies and family and child outcomes may not be clear. For example, when assessing the relation between child care subsidy use and children's school readiness, could positive (or negative) associations be explained by the quality of care used, additional financial resources available to families, sample selection effects, or a combination of these? Alternately, could the association between subsidy receipt and child outcomes be influenced by the availability and use of early education programs by subsidy recipients? In conclusion, though literature on the association between child care subsidies and family/child outcomes has expanded over the last ten years, continuous improvement using research designs and statistical methods that allow for causal inference, nuanced analyses of subgroups, and identification of mechanisms or conditions under which change occur is needed.

## Key Questions to Consider in Developing, Modifying, and Testing Subsidy Policies, Practices, and Data Systems

The findings from this review highlight a number of issues that administrators could consider in developing, modifying, and testing subsidy policies, administrative practices, and data elements tracked to inform improvements in the child care subsidy program. In assessing current practices, considering new developments in subsidy policies and administrative practices, and refining the information collected in subsidy administrative data, administrators may wish to consider the following issues and questions.

### *Subsidy Usage*

- Using state administrative data, state administrators could identify subsidy usage rates among eligible families in their state? Are there certain populations (e.g., non-English speakers, parents with low education, or very low-income families) that are disproportionately under-using child care subsidies? If so, could changes in policies/practices be implemented to mitigate disparities in subsidy uptake rates (e.g., offering application assistance for eligible clients with low literacy)? (Note: implemented changes could be evaluated through comparisons of subsidy usage rates before and after changes are implemented.)
- In the absence of additional funds to support serving more eligible families, could policy changes associated with subsidy usage rates (e.g., increases in income eligibility limits and reimbursement rates for providers) be implemented in a state to improve subsidy usage rates overall? If so, could administrative data be used to identify thresholds in state policies associated with differences in take-up rates for all eligible families or certain subgroups? Alternatively, could innovative administrative practices be piloted in certain jurisdictions within the state and evaluated through a comparison of administrative data across these jurisdictions?

### *Quality of Subsidized Care*

- How is the quality of child care arrangements assessed in a state? (What measures are considered, and why are these measures used?)
- If a state has a Quality Rating and Improvement System (QRIS), are administrators in that state able to use data from the QRIS to compare the quality of care received by subsidized and non-subsidized children in the state? This could be done by comparing providers within a designated locality that do and do not accept subsidies or by comparing providers with a high proportion of subsidized children in care to those with a low proportion. Also, what is the participation rate of subsidized programs in quality improvement initiatives and the state/local QRIS?
- If a state has data on the location and quality of providers, administrators could assess the availability of high quality providers that serve subsidized children, particularly in high poverty density areas? How does the quality of subsidized providers compare to the quality of unsubsidized child care arrangements and other publicly-funded early care and education programs (e.g., Head Start and pre-K) within designated localities?
- Can administrative data and planned variation in practices within the state be used to identify whether incentives (e.g., tiered reimbursement rates, awards, bonuses) are effective in promoting participation in a QRIS, and if incentives at a certain threshold are more effective than others?



### ***Continuity of Subsidy Receipt and Care in Subsidized Arrangements***

- Through the use of longitudinal administrative data on child care subsidy participation, state administrators can assess the median duration of subsidy spells in the state, how frequently children in subsidized care change child care arrangements and whether children who leave the subsidy program return to the same provider. These data could be explored for specific subpopulations (e.g., infants and toddlers) or the full population of subsidized children.
- Administrative data can also be used to determine whether families leaving the subsidy program are eligible when they exit, and what proportion of families that leave the subsidy program re-enter the program within 1-2 years?
- Quality ratings from QRIS, in combination with child care attendance data (where available) could be used to determine the quality of non-subsidized care used by families when they leave the subsidy program, and how that compares to the quality of care used when receiving a subsidy?
- State administrators could also assess whether it would be feasible to alter policies in order to facilitate subsidy continuity (e.g., implementing a 12-month redetermination period, decreasing parent copays, or increasing provider reimbursement rates), and if so, could assess variation in subsidy continuity in response to this policy change using longitudinal child care subsidy data.

### ***Subsidies and Family and Child Outcomes***

- Using subsidy administrative data, administrators can determine what proportion of household income low-income families in the state are spending on subsidized child care.
- Administrators may also be interested in reviewing policies and administrative data to determine 1) how many hours of care are supported by child care subsidies, 2) whether the maximum number of allowable hours adequately covers the hours low-income parents are working, and 3) whether subsidies are supporting children's ability to enroll in part- or full-day early education programs through the provision of wrap-around care.

### **Promising Directions for Future Research**

A number of promising directions for research have been discussed in the “Emerging Insights and Unanswered Questions” summaries stated throughout this review. General suggestions for researchers include improving research through careful sample selection, using rigorous and innovative statistical methods that take into account the full range of policies, programs, and administrative practices within a state/locality and capturing differences across subgroups of parents and providers. Additionally, researchers are encouraged to provide adequate contextual information regarding the sociodemographic features, policies, programs, and administrative practices of the locality/state in which their study took place to allow administrators and policymakers to assess the applicability of findings to their state. The Office of Planning, Research, and Evaluation (OPRE) has invested in multiple projects to support subsidy researchers in accessing and analyzing administrative data, data on Child Care Development Fund policy levers, nationally representative benchmarks regarding child care availability and utilization, and the conceptual and empirical work of colleagues. To learn more about these and other child care research projects, see OPRE's research home page: <http://www.acf.hhs.gov/programs/opre/research/topic/overview/child-care>.

## From Research to Policy and Practice: Perspectives from State Administrators

This review of subsidy literature underscores the need for CCDF State Administrators to balance the issues of policy, regulation, quality and quantity of services, data, and research in a way that results in effective services for families and is accountable for child outcomes. The reality is that while there is quite a bit of data about subsidy access and usage, there remain many lingering questions about how to structure programs that result in documentable successful outcomes for children and families.

At the heart of all subsidy administration lies the tension between program integrity and family friendliness. The pressure for the eligibility process to be absolutely accurate is increasing at the agency, state, and federal levels, and includes the Improper Payments process implemented for CCDF grantees. Continuity of care and stability of subsidy receipt become critical issues, often controlled by available funding and work participation policies related to TANF or other state work requirements.

What is within state control is making access to subsidy programs easier for families. South Carolina has implemented a seamless eligibility process that facilitates program participation from one year to the next and generally results in fewer families losing services at the time of eligibility redetermination. Longer eligibility periods (annual) promote more stability in subsidy receipt, and, with proper internal controls, do not result in increased paperwork errors. South Carolina has also consolidated eligibility determination into centralized call centers, which allows for faster processing time of subsidy applications and less time spent waiting for assistance. (As a note, applicants that need more personal attention than the call center can provide are still able to apply at their local county office.) The use of the call center and scanned applications that can be easily routed to child care subsidy case managers has made the child care subsidy program more responsive to families in addition to minimizing errors. We are hoping that these combined outcomes will result in less cycling of families on and off of the subsidy program.

Helping families choose quality care can be more difficult than it may appear because child care choices are often made prior to receipt of subsidy, and are based on family, neighborhood, or cultural values. Continued research into how and why families choose the providers they do is essential, particularly in areas where good quality care is not plentiful. It would be helpful to research how, when, and at what child ages attitudes about child care form and change. This information would help states structure the content of consumer awareness materials and help them to deliver those materials in ways that meet the needs of different populations of potential subsidy parents.

What is truly unclear is whether or not subsidy programs can be definitively linked to positive child outcomes. Children don't operate in a vacuum, nor do state subsidy programs. While research has been done on some of the child and family characteristics for those receiving subsidies, states also need to know which children (i.e., children from families with which risk factors) would benefit most from access to high quality care. This will inform decisions about the approaches that work best for a given family. In addition, could other existing resources improve these child outcomes? For instance, do services like home visitation and interventionist programs, when paired with quality child care services, improve the chances that a particular child and his family will achieve success? Answers to these questions and how to target and blend existing resources will result in more effective administration of the child care subsidy program.

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This review of the subsidy literature highlights the balance that must be maintained by State Administrators between ensuring program integrity and promoting family friendly policies. States must consider what documentation is an administrative convenience versus what is critical to determining eligibility and how often this information must be collected and verified. Indiana has found that our database system, which allows for document imaging for the retention of records, simplifies the recertification process for families.

Research that allows States to understanding the barriers that exists for families, such as transportation to an Intake office, highlights the importance of promoting access. For example in Indiana, Intake Agents are responsible for meeting families in their counties of residence, must be open evening and Saturday hours and in some of the most rural areas, will meet families in a location that is convenient for them, when a face-to-face appointment is required. As often as possible, mail-in and faxed redetermination is promoted, but it must also be understood that these options may have barriers as well.

The research that indicates that the low participation rate in the CCDF subsidy program is due to a misconception by families on how vouchers can be used highlights the need to carefully consider how and when information about the program is conveyed to families. More research is needed in Indiana to determine how best to share information with families. Indiana has a waitlist for services and attempts to utilize this time to get information about child care choices out to families while they are waiting for funds to become available. We are careful about the content and delivery of the information but need more details on how (and if) this communication is impacting use of the voucher and provider choice.

A number of questions remain unanswered. In addition to the balance between program integrity and family friendliness, research is needed on the balance between CCDF as a work support program versus CCDF as an early education support. Additionally, much more needs to be understood about how CCDF supports working families. For example, what is the optimal threshold for co-pays, redeterminations, and definitions of service need? Also, what is the impact of reimbursement rates and overages that lower the cost of work to a level that truly impacts a family's ability to work effectively. Why do families drop off before the twelve-month period, and does the length of time between redeterminations impact work stability? Finally, as noted in the review, many unanswered questions remain around the type, spells and dosage of child care received by children. These questions have significant policy implications. For example, how can subsidy usage be leveraged to improve child outcomes? How does dosage impact these outcomes? How can States inform and encourage families to choose high quality child care for their voucher utilization?

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