



Keeping kids in care: What makes a difference in state CCDF policy?

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Child care subsidies play an important role in stabilizing parental employment and helping low-income families access care. With limited federal requirements under CCDBG, states developed divergent subsidy program policies. Our study examines how variations in six state policy levers that capture CCDF administrative burdens and generosity relate to stability in children's care in the CCDF program, known as subsidy "spells.": (1) length of eligibility redetermination; (2) reporting requirements for income changes; (3) grace period for care before termination; (4) provider reimbursement rates; (5) parent copay amounts; and (6) difference between initial and continuing eligibility income thresholds. We exploit states' changes in these policies during a 10-year period (2004-2013) using state fixed effects analyses to identify their impact on spell length. We find that administrative burdens robustly affect child care spell length; increasing states' redetermination period length by one month increased state median subsidy spell length by 1.4 weeks, but requiring all changes in family income to be reported while enrolled in CCDF decreased spell length by 2.3 weeks. Switching to a 12-month redetermination period increased median spell length by 30%. CCDF policy generosity was not related to spell length. Results are discussed in the context of the 2014 CCDBG reauthorization.

VERSION: August 2019

Keeping kids in care: What makes a difference in state Child Care and Development Fund policy?

ABSTRACT

Child care subsidies play an important role in stabilizing parental employment and helping low-income families access care. With limited federal requirements under the Child Care Development Block Grant (CCDBG), states developed divergent subsidy program policies. Our study examines how variations in six state policy levers that capture Child Care and Development Fund (CCDF) administrative burdens and generosity relate to stability in children's care in the CCDF program, known as subsidy "spells.": (1) length of eligibility redetermination; (2) reporting requirements for income changes; (3) grace period for care before termination; (4) provider reimbursement rates; (5) parent copay amounts; and (6) difference between initial and continuing eligibility income thresholds. We exploit states' changes in these policies during a 10-year period (2004-2013) using state fixed effects analyses to identify their impact on spell length. We find that administrative burdens robustly affect child care spell length; increasing states' redetermination period length by one month increased state median subsidy spell length by 1.4 weeks, but requiring all changes in family income to be reported while enrolled in CCDF decreased spell length by 2.3 weeks. Switching to a 12-month redetermination period increased median spell length by 30%. CCDF policy generosity was not related to spell length. Results are discussed in the context of the 2014 CCDBG reauthorization.

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INTRODUCTION

Dependable, quality, and affordable care is closely related to family work stability and income, and to children's development (Capizzano & Adams, 2000; Han & Waldfogel, 2001). Conversely, frequent or sudden disruptions in care are detrimental to children's health and well-being and compromise parents' employment security and family income, especially for low-income and single-parent families (Adams & Rohacek, 2010; OECD, 2006). The Child Care Development Fund (CCDF) provides block grant funding (CCDBG) for states to offer subsidized child care to families who are low-income or receiving welfare. States have substantial authority over CCDF in determining the income requirements for eligibility, provider reimbursement rates, parent sliding-scale copayments, and initial application and recertification procedures. As a result, fifty versions of CCDF policies exist in the U.S. today, with little research on how these policy bundles influence families. Thus, a central concern is whether and how states can structure policies that facilitate stable care coverage and enhance economic self-sufficiency for vulnerable families and those transitioning from welfare to work.

Prior literature suggests that two key dimensions of CCDF policy may be particularly consequential for child care stability: administrative burden and generosity. "Administrative burden" describes the onerous policy implementation experience of citizens claiming benefits due to the hassle, frustration, and confusion from the "red tape" of rules and procedures (Brodkin & Majmundar, 2010; Heinrich, 2018; Moynihan, Herd, & Harvey, 2014; Pandey & Scott, 2002). Means-tested programs in particular involve more administrative processes to distinguish between eligible and ineligible applicants, and these additional burdens create greater costs for families in terms of their time and capacity (Heinrich, 2016; Herd, DeLeire, Harvey, & Moynihan, 2013). For example, states may require families to recertify their eligibility every few months with employment and income documentation to maintain program enrollment. This makes it more costly for resource-strained families with young children to comply with the

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policy; failure to do so creates discontinuity in CCDF benefits, leading to disruptions in care. Such burdens were recognized in the 2014 reauthorization of CCDF, which included lengthening the subsidy eligibility redetermination period and mandating grace periods for job search activities in between employment to mitigate potential disruptions. These burden reductions may provide families with financial stability while also supporting the continuity of relationships between children and their care providers. Yet there exists little empirical work on whether, and the extent to which, such changes will influence policy outcomes.

CCDF policy bundles can also affect continuity in care through their relative generosity. Higher reimbursement rates that more closely match local market values give families better purchasing power to secure a stable, formal care arrangement; less generous rates increase the odds of lower-quality and more unstable care, or families not taking-up CCDF benefits because they offer limited value added—especially when considering the costs of administrative burdens. When families' incomes increase during their CCDF enrollment, aggressive “claw back” policies that cap eligibility from income growth too quickly could disrupt a family's precarious stability before they become firmly self-sufficient. In turn, CCDF policies with low income ceilings for continuing eligibility may cause interruptions in care and in family employment—right when families are on an upward income trajectory.

Our study uses a combination of state-by-year data from 38 states to examine how six key CCDF policy levers across dimensions of administrative burden and generosity relate to stability in children's care in the CCDF program: (1) length of eligibility redetermination period; (2) reporting requirements for income changes; (3) grace period for care before termination of services; (4) provider reimbursement rates; (5) parent copay amounts; and (6) difference between initial and continuing eligibility income thresholds. We exploit states' changes in these policy levers during a 10-year period (2004-2013) with state fixed effects to identify the causal impact on the length of children's continuous enrollment in the subsidy program, known as care

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“spells”. The first three levers capture administrative burdens of CCDF policy; if minimized (or in the case of grace periods, extended), we hypothesize that these factors will increase spell length. The latter three levers represent policy generosity; if increased, we predict that spell length would also increase. The redetermination period is an especially important lever since it was a central feature of the 2014 CCDBG reauthorization, allowing us to estimate the impact of this national policy change on an important child outcome and policy goal. Prior studies examining subsidy spell length have been correlational, using data from a single state (e.g., OR, Weber, Grobe, & Davis, 2014; RI, Witte & Queralt, 2004), or comparing policies in two different states (IL and NY; Pilarz, Claessens, & Gelatt, 2016), with one strong experimental study conducted in Illinois with relatively higher income families than those typically enrolled in CCDF (Michalopoulos, Lundquist, & Castells, 2010). Therefore, our study’s strong research design and use of national data allow us to provide causal evidence of how a state’s CCDBG policy levers affect children participating in the program.

BACKGROUND

Since the 1930s, growing public concern with child well-being stemmed from increased female participation in the workforce and the gradual realization that children’s cognitive and social skills are malleable and amenable to policy intervention (Rose, 2010). The federal government began funding child care when large numbers of women entered the workforce during World War II, and has gradually (but selectively) increased its role in the care of young children (Karch, 2013). In 2018, two-thirds of mothers with children under age 6 were in the labor force compared with less than one-third in 1970 (Bureau of Labor Statistics, 2019; Hofferth & Phillips, 1987; Waldfogel, 1998). Spending on children’s programs now comprises 9 percent of the federal budget, with \$15 billion allocated towards child care and education programs (Isaacs et al., 2018).

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Much of this increased policy interest in children stems from the multidisciplinary research corroborating the long-term individual and societal benefits of investing resources in children in early life, between birth and five-years of age. Evidence from education, neuroscience, developmental psychology, and economics demonstrate the importance of children's environments and experiences during early life, which lay the biological foundation for learning, health and behavior, and for long-term well-being (Barnett, 2011; Bowman, Donovan, & Burns, 2000; Hackman & Farah, 2009; Heckman & Masterov, 2007; NICHD Early Child Care Research Network, 2005; Shonkoff & Phillips, 2000). For these reasons, early childhood has become an increasingly important policy area at both the federal and state level. Such policies target low-income families with children ages birth to five to provide educational, health, and nutritional interventions to mitigate the detrimental effects of poverty on child development (Brooks-Gunn & Duncan, 1997; Duncan & Magnuson, 2013; Gormley, 2007). Key among these policies is the CCDF child care subsidy program for ensuring children from low-income families have continuous, stable, and enriching care during early childhood while their parents work or transition off of welfare.

State CCDF Policy

Though the federal government is vital for policy funding, state government has become the most active locus for developing and implementing child and family policies (Jenkins, 2014; Zigler, Gilliam, & Jones, 2006). The intergovernmental reform styles of the 1970s through the 1990s, with the Republican agenda for federalism resulted in the federal government devolving or decentralizing programs by transferring power to the states using block grants (Conlan, 1998; Kettl, 2000; Nathan, 1996). In 1996, the Personal Responsibility and Work Opportunities Reconciliation Act (PRWORA) welfare reform legislation fully devolved the authority over welfare programs to the states (Fellowes & Rowe, 2004; Kamerman & Kahn, 2001). These changes were especially consequential for child policy because states gained more

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responsibilities for public programs targeting young children and their families which included CCDF and Temporary Assistance to Needy Families (TANF) (Conlan, 1998; Kagan & Rigby, 2003; Lombardi, 2003; Meisels & Shonkoff, 2000; Sandfort, 2010). These are two of the largest welfare programs, accounting for more than one-third of the total amount of money the federal government spends on children under age five (\$18.5 billion in 2017; Isaacs et al., 2018). State governments were now able to define the major dimensions of child care subsidies for low-income families including the program benefits, sanctions, time limits, and eligibility requirements (Blank, 2002; Capizzano & Adams, 2000; Hecl, 1997; Kamerman & Kahn, 2001; Martinson & Holcomb, 2002; Meyers, Gornick, & Peck, 2001, 2002; Soss, Schram, Vartanian, & O'Brien, 2001). As a result, the characteristics of subsidy programs vary extensively between states (Blau, 2001; Bruch, Meyers, & Gornick, 2018; Doherty, 2002; Jenkins, 2014; Lombardi, 2003; Meloy, Lipscomb, & Baron, 2015; Rigby, Ryan, & Brooks-Gunn, 2007). This state-level variation in child care policy dimensions is central to both our study's policy relevance and identification strategy.

The federal CCDF program provides block grants to states to subsidize the cost of early childhood education (ECE) services for low-income and working poor families so that they can maintain employment or transition off of welfare, especially for young children who are not yet school-aged and attend full-time care. When a parent qualifies for child care subsidies, in most states they are provided with a voucher (valued at the state's child care reimbursement rate) which they can use towards care tuition at a child care provider of their choice, so long as the provider meets the minimum standards of the state's policy. Parents also contribute towards the cost of care with copayments to the provider. Copayment amounts are set by the state based on a sliding scale.

Several studies have examined the overall impact of participation in the child care subsidy program on parental employment and children's development. Strong quasi-

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experimental studies have used cross-state variation in CCDF policies to identify the impact of subsidy receipt on parent employment, and find that child care subsidies increase the employment rates of single mothers (Blau & Tekin, 2007; Herbst, 2010; Tekin, 2005), and do not increase welfare receipt (Blau & Tekin, 2007). Other quasi-experimental studies in Kentucky (Berger & Black, 1992), Illinois (Zanoni & Weinberger, 2015), and Minnesota (Davis, Carlin, Krafft, & Forry, 2018) found positive impacts of CCDF on employment for key policy subgroups (e.g., single mothers, those with incomes just below the eligibility cutoff), as shown in correlational work (Ha & Miller, 2015; Meyers, Heintze, & Wolf, 2002). A set of welfare experiment studies showed impacts of expanded subsidy receipt on reduced child care related work disruptions (Gennetian, Crosby, Huston, & Lowe, 2004) also found in correlational studies (Forry & Hofferth, 2011; Press, Fagan, & Laughlin, 2006). Experimental results from different state contexts (Crosby, Gennetian, & Huston, 2005; Michalopoulos et al., 2010) and a nationally representative quasi-experimental study (Tekin, 2005) indicate that parents who use subsidies are more likely to select center-based care for their child, found in other correlational studies with single-state and nationally representative samples (De Marco & Vernon-Feagans, 2015; Johnson, Martin, & Brooks-Gunn, 2013; Ryan, Johnson, Rigby, & Brooks-Gunn, 2011; Weber et al., 2014; Weinraub, Shlay, Harmon, & Tran, 2005).

Recent work has examined how child care subsidy receipt influences children's development. Two papers by Herbst and Tekin (2010, 2016) examine the relationship between child care subsidy receipt and children's cognitive development outcomes using a sample of children of single mothers in the Early Childhood Longitudinal Study, Kindergarten Cohorts of 1998 and 2010. They find that subsidy receipt in the year prior to kindergarten is associated with lower reading and math scores and increased behavior problems at kindergarten entry, although the negative effects appear to fadeout by third grade. A propensity score matching study also found no difference in outcomes at school entry by subsidy status, comparing eligible non-

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recipients to recipients (Johnson et al., 2013). However, using a strict policy change in the discontinuity in prices of child care in Norway (a very different child care policy regime), Black and colleagues (2014) find positive long-run impacts of child care subsidies on student achievement in junior high and high school. Though the impacts of early life investments in children's education are well-known, less understood is the role of the CCDF program in ensuring low-income children's continuous access to early care and education.

Subsidy Stability and Child Development

Dependable, quality, and affordable child care is vital for family and child well-being (Capizzano & Adams, 2000; Han & Waldfogel, 2001). But the perennial challenge with child care subsidies is that it is caught between two policy goals: facilitating parent employment to increase family income and self-sufficiency, and improving the quality of direct care to children. Though in theory these goals are complementary, the program's origins as an employment supplement first and foremost makes achieving both somewhat difficult; policies governing participation are strict with respect to parents' work, which can conflict with providing high quality, continuous care for children.

Although access to quality care is a concern across all early childhood programs, stability in children's care is a central concern in research on CCDF program outcomes. The literature indicates that children's continuous care arrangements while enrolled in the subsidy program, referred to as "spells", are quite short, averaging from three to seven months (Chaudry, 2004; Grobe, Weber, & Davis, 2008; Ha, 2009; Meyers, Peck, et al., 2002; Swenson, 2014; Weber et al., 2014; Witte & Queralt, 2005). Families also "churn" in and out of the CCDF program by returning for a second subsidy spell, typically within a few months of exit (Grobe et al., 2008; Meyers, Peck, et al., 2002; Pilarz et al., 2016).

This is troubling because when changes in children's child care settings are too abrupt or ineffectively handled, they can be stressful for children and negatively affect their development

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(Adams & Rohacek, 2010; Sandstrom & Huerta, 2013). Numerous correlational studies find that instability in child care, meaning multiple changes in care arrangements, are negatively associated with children's behavioral and social outcomes (Ansari & Winsler, 2013; Bratsch-Hines, Mokrova, & Vernon-Feagans, 2015; Bratsch-Hines, Vernon-Feagans, & The Family Life Project Key, 2013; Howes & Hamilton, 1993; Loeb, Fuller, Kagan, & Carrol, 2004; NICHD ECCRN, 1998; Pilarz & Hill, 2014). Such disruptions in care also compromise parents' employment security and family income, especially for low-income and single-parent families (Adams & Rohacek, 2010; OECD, 2006).

Instability From Administrative Burden

Though instability in care among low-income families stem from a diverse set of factors surrounding families' day-to-day lives (e.g., parent preference, employment changes, concerns about quality), research suggests that features of subsidy policies themselves play an important role. Specifically, CCDF policies with burdensome administrative approaches create barriers to both enrollment and retention in the program (Adams & Compton, 2011).

A common feature of public social programs is that an individual's interaction with the government to access and maintain benefits involves substantial time, hassle and frustration—an onerous experience otherwise known as administrative burden (Burden, Canon, Mayer, & Moynihan, 2012; Heinrich, 2018). Moynihan, Herd, and Harvey (2014) define administrative burdens as the learning, psychological, and compliance costs that citizens face in their interactions with government, either at initial participation or for continued participation.

Learning costs arise when citizens discover a program and its benefits and then must understand whether they are eligible and how they access the program. *Psychological costs* stem from the stigma of participating in a contentious or unpopular program, and the stress and loss of autonomy arising from program processes. *Compliance costs* are the burdens of following administrative rules and requirements, such as the costs of completing applications,

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reenrollments, producing documentation of eligibility, and responding to other discretionary demands. Each of these costs, and compliance costs in particular, increased in social policies from the political framing of welfare programs around fraud, waste, and abuse (Brodkin & Lipsky, 1983).

Such costs are indeed reflected in studies of parent's interactions with the CCDF program. Several qualitative examinations and surveys of parent participants find that the administrative requirements of subsidy policies contribute to unwelcome changes in care arrangements (Chaudry, 2004; Lowe & Weisner, 2004; Sandstrom, Grazi, & Henly, 2015; Scott, London, & Hurst, 2005). The initial application and recertification processes require that parents spend many hours traveling to (sometimes several) offices to understand the subsidy rules and eligibility, to bring the required documentation to verify employment and income, and to obtain the necessary forms and approvals. When parents are required to obtain documents from agencies beyond their personal control (e.g., employers, landlords, schools), the compliance costs of CCDF increase (Moynihan et al., 2015). Taking the time off from work for sometimes multiple required appointments also add to compliance costs, and can jeopardize parents' already tenuous work stability because low-wage jobs often do not have paid leave or workplace flexibility (Adams & Rohacek, 2002). These common experiences with compliance burdens also create substantial psychological costs to already overwhelmed families, causing parents to perceive the hassle as not worth it and leave the program (Adams, Snyder, & Sandfort, 2002; Crosby et al., 2005; Scott et al., 2005; Shlay, Weinraub, Harmon, & Tran, 2004). Moynihan, Herd, and Rigby (2013) characterize this as "Application Compliance Burden", highlighting the costs incorporated into the application and recertification processes, including documentation, testing, and responding to staff discretionary demands.

The most substantial compliance burden for CCDF families come from state required intervals and reporting requirements for families' recertification of eligibility, and lengthening

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these intervals were a core reform component of the 2014 CCDBG reauthorization. Frequent recertification of eligibility makes it difficult to maintain continuous eligibility because of the nature of low-wage work, which often involves variable and non-traditional hours and irregular schedules (Adams, Snyder, & Banghart, 2008). Unanticipated changes in parents' work schedules, along with the requirement that employment be continuous but that income remain below a cut-off may mean that eligibility for child care assistance is sporadic, but time-consuming reporting of these common fluctuations can mean disruptions in child care. Frequent recertification also increases the risk of administrative errors that could lead to premature exits or a temporary loss of the subsidy even when families are still eligible (Adams et al., 2008). Furthermore, even when parents reenroll or reinstate their eligibility, a providers' willingness to resume caring for children who have left their care—often with little notice and unpaid bills—is uncertain, in addition to the economic disincentives to serve such families (Ha, Magnuson, & Ybarra, 2012). As such, burden reductions are particularly relevant for policy reform because each administrative requirement threatens a child's continuous care coverage.

Prior studies find that states' eligibility period length is correlated to subsidy spell length and the timing of subsidy exits. Pilarz et al. (2016) find a correlation between subsidy eligibility period and subsidy spells comparing administrative data from four counties across Illinois and New York. Grobe et al. (2008) find that the redetermination month correlated with the probability of subsidy exit using administrative data from Oregon. Weber et al. (2014) also use Oregon administrative data and look at spell length before and after a sweeping set of changes to the state CCDF policy, but cannot distinguish the unique impacts of each of the different policy changes on families' retention in the subsidy program. The most rigorous study was conducted in Illinois, where families with moderate incomes (i.e., above the normal eligibility thresholds) were randomly assigned to one of three conditions: control, CCDF participation with recertification required every six-months, or CCDF participation with recertification required

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every 12-months (Michalopoulos et al., 2010). Families assigned to the 12-month recertification periods received child care subsidies an average of 2.5 months more than families assigned to 6-month recertification periods at a two-year follow-up.

A related body of work looks at eligibility certification requirements in the Food Stamp program during the 1990s; at the time, the average household was spending five hours applying for food stamps and two to three hours recertifying its eligibility (USDA, 1999). These studies found that increases in certification requirements decreased Food Stamp participation (Currie & Grogger, 2001; Hanratty, 2006; Kabbani & Wilde, 2003; Klerman & Danielson, 2011; Ratcliffe, McKernan, & Finegold, 2008). However, Hanratty (2006) found that reductions in certification requirements for Food Stamps increased participation rates of income-eligible families with children by 1.0 to 1.8 percentage points. In public health insurance programs, studies have found that reducing multiple application burdens and redetermination points increases enrollment and reduces churn (Herd et al., 2013; Wolfe & Scrivner, 2005). It is clear that when burdens undermine an individual's ability to access services, this reduces the likelihood that a policy can achieve its goals.

Stability From CCDF Generosity

CCDF policy bundles can also affect continuity in care through their relative generosity in terms of their expenditures and eligibility criteria. Higher reimbursement rates that more closely match local market values give families better purchasing power to secure a stable, formal care arrangement (Gennetian et al., 2004; National Academies of Sciences, 2018; Rigby et al., 2007). Prior research has shown that parents are more or less likely to bear the costs and hassle of continued participation in the subsidy program depending on the value of the subsidy (Meyers, Peck, et al., 2002; Shlay et al., 2004). In the study by Weber and colleagues (2014) of Oregon's child care policy reforms that included increased reimbursement rates and decreased parent copays, they found increases in CCDF spell length in the post reform period. In turn, less

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generous rates increase the odds of lower-quality and more unstable care, or families not taking up CCDF benefits because they offer limited value added—especially when considering the costs of administrative burdens. Still, in states with generous reimbursement rates, losing subsidies as a result of income changes or burdens may increase the likelihood of a change in providers because parents could not afford such care otherwise (Ha et al., 2012).

In addition, when states' continuing eligibility requirements for income are too low, or very close to the initial income threshold, this tight window of eligibility can hinder or even disincentivize families' income growth if they face the loss of child care benefits. For example, Blau and Tekin (2007) show that subsidies could induce some parents to reduce their work hours in order to qualify for a subsidy. States with policies that “claw back” benefits by capping eligibility from income growth too quickly could disrupt a family's precarious stability before they are financially stable. In turn, CCDF policies with low income ceilings for continuing eligibility may cause interruptions in care and in family employment. By establishing generous income thresholds for initial and continuing eligibility, it is possible that states can help families retain child care assistance over a sustained period, allowing for care stability that is essential for young children's development.

CCDBG Reauthorization

Based on this body of research and more than 20 years since the last reauthorization of the CCDBG, Congress reauthorized the program effective for 2015 to include a new set of requirements, superseding many of the policy areas in which states were previously allowed discretion. The key provisions in the new law included extra protections for the health and safety of children (e.g., appropriate inspector to provider ratios, teacher-child ratios, provider background checks), improvements for quality of care (e.g., mandatory professional development for providers, quality improvement set-asides of funds), and facilitating easy access to, and continuous care in the subsidy program (Office of Child Care, 2016). Central to this last

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goal was to improve stability in subsidy receipt, which included the following provisions: allow for continued assistance as families' income increases (but remains below federal limit), establish a minimum 12-month redetermination eligibility period for all families, offer a minimum three month grace period for families transitioning off of the program, either from non-temporary job loss or ending educational or training programs, restricting states from ending assistance prior to the end of the eligibility period only in limited circumstances (e.g., excessive unexplained absences, change in residency, loss of job), and overall, to reduce undue disruptions for parents' employment to complete redetermination processes. Reducing disruptions was such an important component of the reauthorization that the law stated, "getting and keeping CCDF assistance is overly burdensome for parents, resulting in short durations of assistance and churning on and off CCDF as parents lose assistance and then later return. This instability disrupts parental employment and education, harms children, and runs counter to nearly all of CCDF's purposes." (Office of Child Care, 2016, p. 67440). With respect to generosity, the law required states to take the cost of providing quality child care into account when setting reimbursement rates and to provide affordable co-payments for families. States were to calculate these figures based on market rate surveys (or other "valid and reliable" methods), and no numeric thresholds were specified.

Present Study

By reducing administrative burden on both state agencies and families, prior research suggests that such changes have the potential to positively influence children's care stability and facilitate healthy child development by reducing unnecessary changes in care providers from lapses in coverage (Ha et al., 2012; Johnson & Ryan, 2015; Pilarz et al., 2016). However, the limited existing evidence, from primarily correlational studies, leaves open the possibility that unobserved features of states lead them to implement certain subsidy policies (i.e., longer redetermination periods), or unobserved characteristics of families lead them to select into both

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the subsidy program and their “dosage” in the program (i.e., longer spells). Strong causal evidence that is representative of U.S. CCDF participants is needed to understand how these important policy changes will affect subsidy program outcomes.

Our study examines the impacts of several key changes to CCDF policy, focusing specifically on those most closely related to child care stability—burdens and generosity—using a 10-year panel of detailed CCDF policies from FY 2004-2013 in 38 states. We combine this with data from the Administration for Children and Families on state-level subsidy spell length and program participants, and state-level covariates derived from several sources. Unlike prior studies examining policy changes in a single state (e.g., OR, Weber et al., 2014; RI, Witte & Queralt, 2005), or comparing policies in two different states (IL and NY, Pilarz et al., 2016) our analyses use policy changes from a majority of states. We control for the endogeneity of state policies using state fixed effects, and for the simultaneous changes of each of the CCDF policy levers, as well as important time-varying state economic, social, and political characteristics. Therefore, our study can provide causal evidence regarding how administrative burdens, policy generosity, and components of the 2014 CCDF reauthorization may affect low-income families participating in the program.

Our research question is as follows: What are the effects of key state CCDF policies on child care spell length? Key state CCDF policies are:

- i. length of eligibility redetermination period
- ii. reporting requirements for income changes
- iii. grace period for care before termination of services
- iv. provider reimbursement rates
- v. parent copay amounts
- vi. difference in initial and continuing income eligibility

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METHODS

State policy research is challenging because policies are not randomly assigned; they stem from both the observed and unobserved characteristics of states. As decisions regarding child policies have been decentralized from the federal to the state-level, states have gained greater discretion to develop a structure of public programs for low-income families with young children. Thus, states' political, economic, and social environments could influence both their policy outcomes (e.g., subsidy spell length) and their decisions to change key dimensions of CCDF policies (Berry & Berry, 1990; Fellowes & Rowe, 2004; Soss et al., 2001). In this study, state policy endogeneity (i.e., bias from selecting into a policy change) results from the fact that states' unobserved characteristics may be correlated with both their CCDF policies as well as their child and family outcomes, confounding the relationship between the policy and the outcome.

Our research design exploits states' changes in six focal CCDF policies (e.g., switching from a 3-month to a 6-month redetermination period) during a 10-year period (2004-2013) using state fixed effects to identify their effect on state median CCDF spell length. This effectively controls for all time-invariant differences—those that are observable and unobservable—across states. We include a set of state-level control variables to account for relevant time-varying differences across states. By robustly controlling for myriad observable and unobservable confounding factors, our analyses substantially reduce the possibility of omitted variables bias and identify a causal impact of CCDF policy changes on an important policy outcome.

Data

Our study integrates multiple sources of longitudinal data that includes state CCDF policies, public-use versions of administrative data on CCDF children and families, and state-level characteristics and covariates. Table 1 presents our focal state CCDF policies and a select

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set of state characteristics aggregated to the state and year levels. We describe each data source and the analysis variables derived from that source in turn.

CCDF State Policies Database

These data were collected by the Urban Institute through funding from the Office of Planning, Research and Evaluation, in the Department of Health and Human Services (Minton, Giannarelli, & Stevens, 2014). They track yearly changes in state-level subsidy policies across more than 500 policy dimensions, including eligibility, reporting, and redetermination requirements. Data were coded based on states' caseworker manuals and child care regulations. The database contains a complete record of policies from fiscal year 2003-2004 (FY 2004) through 2018 for all 50 states and DC, and are updated every fiscal year. From these data, we derived the following variables for our analyses; the first three capture administrative burdens, and the latter three capture policy generosity.

Redetermination period. This is the length of time in months between when a family is considered eligible for a CCDF subsidy and when the family must provide documentation that assesses their continued eligibility in the program.

Reporting of changes. These variables capture whether states required CCDF participants to report either all or only some changes in income while enrolled. We operationalized this for our analyses as a dichotomous indicator that equals 1 if a state required families to report all changes to their income. A few states also had unique policies that were categorized as "other," which included requiring families to report income changes that only resulted in adverse actions (e.g., denial or termination of services, increased fees, or reduction of services) or if changes in reporting procedures were primarily determined at the local level. For descriptive purposes, we also show in Table 1 indicators for states that only require reporting changes in income over a certain amount and for states that require families to report income changes for other reasons.

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Grace period for care before termination of services. This is the length of time in days that a child can remain in care before termination of services after the parent becomes ineligible. For example, this could include parents' employment ending or no longer meeting the income eligibility criteria after completing the redetermination process. States that did not provide a grace period were coded as zero days.

Reimbursement rates. Reimbursement rates were calculated as the minimum monthly dollar amounts the provider receives in each state for the full-time care of a four-year-old child.

Initial and continuing income eligibility thresholds. Initial and continuing income eligibility thresholds are based on family size; we used the eligibility amounts for families of four. Eligibility difference was calculated as the dollar amount difference between a state's continuing eligibility threshold and their initial eligibility threshold.

Public-use CCDF Administrative Data (ACF-801)

These data are a compilation of monthly case-level data that states are required to report to the Child Care Bureau (ACF, 2016) and include all families who received subsidies from CCDF including those funded through the CCDBG and those funded with transfers from the TANF, made available by the Interuniversity Consortium for Political and Social Research at the University of Michigan. From these data, we derive state-by-year level averages of child-, household-, and provider-level information on the parents' copay amount, child race/ethnicity, the type of child care provider used, and the monthly dollar amount the state pays to the provider. We use parent copay amount as a measure of CCDF policy generosity. Child care provider type and child race/ethnicity are used as covariates in our analyses, and the total amount paid to the provider is included for descriptive purposes only. Note that states have the option of submitting data either for the entire population or for a sample of the population under approved sampling guidelines (i.e., at least 200 sample families each month).

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Monthly amount paid to provider. In the ACF-801 public-use data, states must report the total monthly dollar amount paid or to be paid to the provider for each child receiving care. This does not include the family copay amount and only reflects the subsidy reimbursement that is paid to the provider. This amount was then averaged to the state and year level.

Parent copay amount. This is the monthly dollar amount that states reported the family receiving assistance must pay for child care services. These copay amounts were then averaged to the state and year level.

Type of child care. States were required to report one of the following types of child care used by each child: in home, family home, group home, and centers. In home child care refers to care provided in the child's home. Family home refers to care by a single provider in their residence. Group home refers to care by a provider and full-time assistant in the provider's residence. Each state varies in the maximum allowable number of children in family and group home care, with family home providers caring for fewer children than group home providers. Center care refers to child care for larger groups of children in a facility outside of a private home.

Child race/ethnicity. States were also required to report the race/ethnicity of each child receiving care, from the following categories: White, Black or African American, Asian, Native Hawaiian or Other Pacific Islander, Multi-racial, or American Indian or Alaskan Native. From these categories, we collapsed Native Hawaiian or Other Pacific Islander, Multi-racial, and American Indian or Alaskan Native into one group referred to as "Other" because of their small cell sizes.

Swenson & Burgess 2018 Report

Child care subsidy spell. Our dependent variable of interest is the child care spell, defined as the median number of months of child care subsidy receipt without interruption. We obtained state median spell length data from a U.S. Department of Health and Human services report by

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Swenson and Burgess (2018), which includes calculations of the median number of continuous months that families received subsidies before exiting the subsidy system for years 2004 through 2013.¹ The authors of this report used the ACF-801 *restricted-use* data, which contain the unique identifiers needed to construct spell length. Specifically, the authors matched the Social Security Numbers (SSNs) of the family heads of household to identify the start and end date of receipt of CCDF services. The linking of SSNs in the restricted-use dataset is the most accurate method of spell length calculation because many states report to ACF families' subsidy start date as the beginning of their current program enrollment or the start date of the last subsidy spell, which leads to issues of left- and right-censoring; specifically, it is ambiguous whether the date provided represents the start of the current recertification period, or the start date of the prior (original) enrollment. We illustrate the differences in subsidy spell calculations using both the public use data (authors' calculations) compared with that of Swenson & Burgess (2018), in Appendix Figure 1. These differences clearly show that the spell lengths using the SSN-matched restricted data are more stable across the years, compared with the spell lengths in the public-use data that steadily increase over time. The spell lengths from the restricted-use data are also consistent with prior studies finding average spell lengths from three to seven months. In contrast, the average spell length in the public-use dataset ranges from one to almost 15 months.

From the Swenson and Burgess (2018) report, we have data on median spell length for 38 states that comprise our analysis sample. Thirty-two of the 38 states have complete median spell length data for our 10-year period. The remaining six states did not have complete data for some of the years; some states had as few as four years and others as many as nine years of median spell length data. We conduct several descriptive analyses to assess the representativeness of our analysis sample from these dependent variable restrictions.

¹ Although the report states that it has data for years 2004 through 2014, the Child Care Subsidy Duration Data Tool from which we draw from for our data only provides median spell lengths for FY 2004-2013.

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National Welfare Dataset

Our final source of data is the state policy characteristics database obtained from the National Welfare Dataset from the University of Kentucky's Center for Poverty Research (2019). This comprehensive dataset contains rich descriptive longitudinal information on states' political, social, and economic characteristics by year to use as time-varying control variables in our analyses. We derived the following state-by-year variables from this dataset: *total population, unemployment rate, fraction of the state legislature that is Democrat, Gross State Product (GSP) per capita, and proportion of the state receiving TANF.*

Analysis

Analysis Sample

Our analysis sample is restricted to the 38 states who submitted some or all of their ACF-801 reports and therefore are included in Swensen & Burgess's (2018) restricted-data calculations of state-level subsidy spells. We conduct several checks to examine the extent to which this subsample may be selected in key ways that bias our estimates of interest. Appendix Table 1 provides a comparison of state characteristics, including their CCDF policies, for included and excluded states by year. The only consistent difference is that included states provide less generous provider reimbursement rates. In two years out of the ten-year period, included states have less generous continuing and initial income eligibility thresholds, and are less likely to require participants to report all changes for redetermination. They also appear to be slightly less Democratic in terms of elected representatives. This suggests that our results would be downwardly biased, and provide lower-bound estimates than estimates from nationally representative data with all 50 states when more generous or liberal states are included. Importantly, there were no significant differences between included and excluded states in terms of their redetermination period length, grace period for care, parent co-payment amounts, and

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differences in initial and continuing eligibility thresholds, nor in the characteristics of children participating in the program.

Specification

We estimate a set of three state fixed effects models, the most comprehensive of which is specified as follows:

$$(1) \textit{Spell}_{sy} = \textit{Admin_Burden}_{sy}\boldsymbol{\delta} + \textit{Generosity}_{st}\boldsymbol{\gamma} + X_{sy}\boldsymbol{\beta} + \theta_s + \mu_y + \varepsilon_{sy}$$

where \textit{Spell}_{sy} denotes the median CCDF spell length, in months, for state s in year y .

$\textit{Admin_Burden}_{st}$ is a vector of our three policy variables that capture administrative burdens of state CCDF policy (redetermination period, reporting of income changes for redetermination, grace period for care before termination of services), and $\textit{Generosity}_{st}$ is a vector of our three policy variables that capture the generosity of state CCDF policy (provider reimbursement rates, monthly parent copay, the difference in initial and continuing income eligibility). Our parameters of interest are $\boldsymbol{\delta}$ and $\boldsymbol{\gamma}$, which capture the effect of each policy on subsidy spell length. X_{sy} represent time-varying state covariates, θ_s are state fixed effects that absorb time-invariant characteristics of states to address the potential for endogeneity of CCDF policy components. μ_y are year fixed effects that account for unobserved factors common to states in a specific year. Standard errors are clustered by state.

Our first model excludes all covariates. We then examine the robustness of $\boldsymbol{\delta}$ and $\boldsymbol{\gamma}$ by stepping in two sets of time-varying state characteristics. Our second model adds state political, social and economic characteristics (population, GSP per-capita, proportion state receiving TANF, unemployment rate, proportion state legislature that is Democrat). Because state fixed effects analyses strictly limit degrees of freedom, a priori, we prefer this model. However, differences in state policies over time could lead to compositional differences in the population of children who enroll in CCDF. To address this possibility, we add time-varying state-level

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aggregates of CCDF participant characteristics (type of child care and child race/ethnicity) to the third model.

Pre-trends and ever and never switchers

To understand the source of our identifying variation, we compare the CCDF policy levers and other characteristics of states who change their policies during the study period. We test for bias from changes in redetermination policy (Appendix Table 2) or income reporting requirements (Appendix Table 3) because they represent the two most onerous policies and those featured in the 2014 CCDBG reauthorization. Emboldened numbers represent statistically significant differences between switching and non-switching states on that variable.

In terms of changes in states' redetermination periods, those who change redetermination periods are less generous as measured by reimbursement rates and in families' monthly co-payment contribution; the latter were higher in switching states in three out of the 10 years. There were no other systematic differences between switching and non-switching states. States that changed their income reporting policy were consistently less likely to be Democratic. Other yearly differences appeared across some of our CCDF policy generosity variables, but were not consistent across years. These analyses indicate that our results are not likely to be biased from selection into the analysis sample or from endogeneity from policy adoption (i.e. switching).

A parsimonious test of bias from switching is presented in Appendix Table 4, which regresses on a dichotomous indicator of whether each policy changed, all variables used in our model specifications in the baseline year (FY 2004) for all states and for our analysis sample. These results very clearly indicate no systematic differences between states who did and did not change features of the administrative components of their CCDF policy during the study period.

We also tested whether the six states who did not have complete spell length data across all study years were different from states who did have complete spell length data across the ten-

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year time period. Analyses that omit these six states and yield nearly identical results (Appendix Table 5).

RESULTS

We present the results from our three fixed effects model specifications in Table 2. These estimates indicate that administrative burdens of CCDF policy are robust and important predictors of child care spell length in the subsidy program. In our most fully controlled specification (3), we find that a one-month increase in states' redetermination period would increase state-level median child care spell length by approximately 0.32 months, or 1.4 weeks ($0.32 * 4.34$ (number of weeks per month)), approximately 6 percent of the national average median spell length in 2004. The magnitude of this finding was remarkably stable across all three models. Reporting all income changes for redetermination is also significant, with a stable coefficient of -0.537, indicating that requiring families to report all changes for redetermination would decrease state median child care spell length by approximately 2.3 weeks ($0.54 * 4.34$) compared with not reporting any changes or only reporting some income changes.

To put these results in context, the 2014 CCDBG reauthorization required that states establish a 12-month redetermination period for all families. We test the impact of this specific policy change in Appendix Table 6, where we replaced our redetermination period length variable to a dichotomous indicator that equals one when if a state switched to a 12-month redetermination period in a given year. We find that this switch would increase child care spell length by 1.64 months, a substantial effect, corresponding to a 30 percent increase from the mean.

Contrary to our hypotheses, CCDF generosity variables were not meaningfully predictive of subsidy spell length. Monthly reimbursement rates have a precisely estimated zero effect. Parents' total monthly copayment had a small and positive effect on spell length (0.008)—the opposite direction of what we predicted. This finding indicates that when parents increase

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monthly co-payments by one dollar, children's spell length increases by 0.03 weeks, or one-fifth of a day—not likely policy significant. Though the effect of the difference in initial and continuing income eligibility thresholds was statistically significant, it is effectively 0 in magnitude. All results are very similar across the three models as we add additional time-varying controls.

DISCUSSION

Administrative burdens are central to understanding how citizens access services and thus how policies reach their intended participants. Reducing burdens for both state agencies and families can positively influence children's care stability by increasing subsidy spell length, which subsequently benefit children's development by reducing unnecessary changes in their care providers (Ha et al., 2012; Johnson & Ryan, 2015; Pilarz et al., 2016).

Our study examined the impacts of several key changes to CCDF policy, focusing specifically on those most closely related to child care stability (administrative burden and generosity) and central components of the recent 2014 CCDBG Reauthorization Act providing timely evidence on the potential impact of these changes on state-level outcomes. The prior literature on this topic comes from primarily correlational studies that either cannot control for unobserved features of states lead them to implement certain subsidy policies (i.e., longer redetermination periods), or cannot control for families' selection into both the subsidy program and their "dosage" in the program (i.e., longer spells). Therefore, our study represents an important contribution because we provide the first causal evidence of how a state's CCDBG policy levers affect children participating in the program using a 10-year panel from 38 states.

As prior research suggested, we found that reducing the administrative burden families experience as a result of participating in the CCDF program would improve one of the program goals of increasing children's continuous stable care as measured by subsidy spell length. We operationalized administrative burden through three key policies: the length of a state's

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eligibility redetermination period, whether the state required families to report all changes in their income throughout their enrollment in the CCDF program, and whether the state granted families a grace period of enrollment before termination. We find that administrative burdens robustly affect child spell length; increasing states' redetermination period length by one month increased state median subsidy spell length by 1.4 weeks (0.32 months), but requiring all changes in family income to be reported throughout families' enrollment in CCDF *decreased* spell length by 2.3 weeks (0.54 months).

Although the law did not specify the changes families must report for redetermination, a key goal was reducing burdens on families in order to maintain continuous enrollment. If states dropped their requirement that families report all changes—half of all states in 2004 and two-thirds of states in 2013—our findings suggest this is a promising strategy to further increase the stability of children's care in the program. Our additional specification examining the impact of switching to a 12-month redetermination period—that was prescribed by the 2014 reauthorization—would increase state median spell length by 1.6 months, a 30% increase of the median spell length.

However, contrary to our hypotheses, CCDF policy generosity was not meaningfully related to spell length. The 2014 reauthorization required states to allow continued assistance as families' incomes grow (but remained below the limit), which we operationalized as the difference in states' initial versus continuing income eligibility. It also stipulated that states provide "affordable co-payments" that were not a barrier to families' access to quality care, and to consider the cost of quality in setting provider reimbursement rates. Although the latter two policy levers leave much room for discretion, we were surprised that none of these features of CCDF generosity were substantively predictive of spell length. The economic recession occurring in the middle of our study period likely limited our ability to detect effects in policy generosity. Our descriptive analyses show very little change in initial and continuing eligibility

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differences and reimbursement rates over time, with decreases after the start of the recession in 2008, so we may have had very little variation to isolate increases in generosity. Furthermore, our analysis sample was restricted by the available state-level data on median spell length, which indicated that our sample was more likely to be less generous or conservative. As such, the results we report here are likely to be somewhat downwardly biased, especially regarding the effects of generosity.

An important direction for future research on administrative burden and CCDF is examining the heterogeneous effects of burden reductions on key subpopulations. The literature on administrative burden suggests that individuals with lower income, education, and language skills are most negatively affected by burdens (Moynihan et al., 2014). If some groups of citizens are more susceptible or targeted by burdens, this could exacerbate current race, class, and gender inequalities. If state-by-year-by-child ethnicity data on spell length are available (based on the restricted-use data calculations we analyze here), researchers can test for the heterogeneity of changes in state administrative policy variables for key policy subgroups, including racial and ethnic identity, TANF recipient status, and by income (e.g., <100% FPL, 100%-150% FPL), to examine how policy changes may differ across important subsidy policy populations, as prior research has suggested (Hill, Gennetian, & Mendez, 2019; Meyers, Peck, et al., 2002; Witte & Queralt, 2005).

Another direction for future research is examining the specific psychological and learning costs of burdensome CCDF policies. These likely interact to with compliance costs, which we examined only in its reduced-form in our study. There is little available research on how the psychological costs of stresses from burdens impose on individuals, especially those most dependent upon the state for vital resources such as health services, income, and in the case here, child care (Edin & Schaefer, 2015; Moynihan et al., 2014). Uncertainty about the receipt of something as essential as child care for working families, in addition to the frustrations and

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negative interactions with the state in seeking benefits may elevate parents' stresses, which have negative consequences for children's development (Conger et al., 2002; McLoyd, 1990; Shonkoff, 2011).

There are several important limitations to our study. Although our analyses are extremely relevant to the changes imposed by the 2014 CCDBG reauthorization, our study is not a comprehensive examination of these changes. We focus our study on those changes which most closely influence child care stability, and more specifically, those that do this by reducing burden and increasing generosity. More research on the other components of the reauthorization, including provisions for improving quality, workforce professional development, and the health and safety of child care are critical for future CCDF and early childhood policy research.

Additionally, our study did not examine policy take up as a result of burden (Herd et al., 2013; Moynihan et al., 2013); rather, we examined how burdens influenced remaining in a program as measured by spell lengths. Research on how these conceptualizations of burden influence CCDF application rates would be an important contribution to this literature. This aligns with a closely related concept of administrative *exclusion*, which captures the possibility that *nonparticipation* in public programs is attributable to organizational factors rather than claimant preferences or eligibility status (Brodkin & Majmundar, 2010). Indeed, a recent study by Hill, Gennetian, and Mendez (2019) examines how state-level CCDF policies and administrative practices interact with demographic and community characteristics common among low-income Hispanic families and impose differential learning, psychological, and compliance costs for access. They find that eligibility, documentation requirements, receipt prioritization, and the online user experience vary across states and often impose higher costs of CCDF for Hispanic families. Further empirical work in this direction will also be important.

In addition to state-level policy drivers of care stability, some studies have also found that local-level factors influence families' continuous use of child care subsidies, showing substantial

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intrastate variability in spell lengths as a result of local agency practices and policies (Davis, Krafft, & Forry, 2016; Pilarz et al., 2016; Schexnayder & Schroeder, 2008). Indeed, a robust literature highlights the substantial room for discretion at the public services organizational level that affects cost of claiming program benefits and for additional burdens (Brodkin & Majmundar, 2010). Acting as “street-level bureaucrats”, caseworkers also have substantial discretion when they “apply the law” that can either reduce or exacerbate burdens for families seeking social services (Lipsky, 1980). For example, caseworkers exercise procedural discretion when they require additional meetings beyond those required by regulation, or schedule multiple individuals simultaneously, creating long wait times (Adams et al., 2002). We did not examine local-level policy implementation factors in our study, such as these, and this is an important consideration for future research.

Conclusion

Our study contributes to the literature in identifying the policy dimensions that create barriers to, or opportunities for, subsidy maintenance, and consider how changes to these policies can better meet the needs of low-income families and their children. We find robust evidence that reducing administrative burdens for families during the application and recertification processes of the CCDF program would increase the continuous provision of child care for children enrolled in the program. Specifically, the 2014 reauthorization mandate of increasing recertification periods to 12 months would increase average state median spell length by 30 percent. Thus, our findings show strong promise in the anticipated impact of the reauthorization requirements, and underscore the importance of subsequent CCDF policy changes that reduce administrative burdens to better support low-income working families with young children and improve child development.

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CCDF POLICY AND SPELL LENGTH

Table 1. Descriptive statistics of median spell length, CCDF policies, and covariates across states from FY 2004 to 2013.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Median spell length ¹ | 5.39 | 5.55 | 5.78 | 5.85 | 5.93 | 6.06 | 6.24 | 6.21 | 6.34 | 6.68 |
| CCDF Administrative Burdens | | | | | | | | | | |
| <i>Redetermination Policies</i> ² | | | | | | | | | | |
| Redetermination period in months | 8.61 | 8.40 | 8.41 | 8.53 | 8.56 | 8.90 | 9.49 | 9.75 | 10.24 | 10.76 |
| Families must report all changes in income for redetermination (1=yes) | 0.50 | 0.50 | 0.46 | 0.52 | 0.58 | 0.56 | 0.55 | 0.57 | 0.57 | 0.65 |
| Families only report income changes for redetermination over a certain amount (1=yes) | 0.28 | 0.27 | 0.25 | 0.12 | 0.09 | 0.09 | 0.12 | 0.14 | 0.14 | 0.14 |
| Families report income changes for other reasons (1=yes) | 0.00 | 0.00 | 0.00 | 0.02 | 0.02 | 0.02 | 0.04 | 0.04 | 0.04 | 0.04 |
| Grace period for care before termination of services (days) ² | 8.43 | 8.82 | 9.37 | 9.96 | 10.16 | 10.16 | 10.35 | 10.35 | 10.67 | 11.24 |
| CCDF Generosity | | | | | | | | | | |
| <i>Income Policies</i> ² | | | | | | | | | | |
| Initial income eligibility threshold for a family of 4 | 2933.00 | 3017.67 | 3290.75 | 3236.66 | 3275.81 | 3408.98 | 3469.13 | 3457.73 | 3551.54 | 3587.96 |
| Continuing income eligibility threshold for a family of 4 | 3234.15 | 3365.53 | 3652.45 | 3614.76 | 3597.97 | 3687.99 | 3753.30 | 3797.81 | 3870.31 | 3944.65 |
| Difference in initial and continuing income eligibility amount | 301.15 | 347.86 | 361.70 | 378.10 | 322.16 | 279.01 | 284.17 | 340.08 | 318.77 | 356.69 |
| <i>Payments</i> ³ | | | | | | | | | | |
| Monthly amount paid to provider | 315.16 | 323.98 | 335.20 | 350.40 | 366.49 | 384.57 | 387.23 | 353.76 | 355.55 | 360.04 |
| Total monthly copay amount | 48.22 | 64.24 | 69.23 | 71.40 | 75.64 | 78.67 | 71.62 | 70.74 | 73.60 | 74.89 |
| <i>Reimbursement Rates</i> ² | | | | | | | | | | |
| Monthly reimbursement rate for providers for full-time care | 423.63 | 504.50 | 533.46 | 496.78 | 501.79 | 505.52 | 490.15 | 488.03 | 483.92 | 499.15 |
| Covariates | | | | | | | | | | |
| <i>State Characteristics</i> ⁴ | | | | | | | | | | |
| TANF recipients divided by population | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| GSP divided by population | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Unemployment rate | 5.59 | 5.22 | 4.93 | 4.45 | 4.37 | 5.36 | 8.49 | 8.74 | 8.15 | 7.41 |
| Poverty Rate | 11.85 | 12.08 | 12.27 | 11.85 | 11.80 | 12.50 | 13.59 | 14.19 | 14.31 | 14.30 |
| Governor is Democrat | 0.48 | 0.46 | 0.46 | 0.56 | 0.56 | 0.58 | 0.56 | 0.52 | 0.40 | 0.40 |
| Number in Lower House Democrat | 55.53 | 55.53 | 55.18 | 60.80 | 60.78 | 60.49 | 62.06 | 61.80 | 50.06 | 49.59 |
| Fraction of State House that is Democrat | 0.50 | 0.50 | 0.50 | 0.54 | 0.54 | 0.54 | 0.56 | 0.56 | 0.47 | 0.46 |
| Number in Upper House Democrat | 19.06 | 19.06 | 19.41 | 20.61 | 20.73 | 20.69 | 20.84 | 20.94 | 17.98 | 17.86 |
| Fraction of State Senate that is Democrat | 0.48 | 0.48 | 0.49 | 0.52 | 0.53 | 0.53 | 0.53 | 0.53 | 0.46 | 0.45 |
| <i>Type of Child Care</i> ³ | | | | | | | | | | |
| In home care | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| Family home care | 0.17 | 0.17 | 0.17 | 0.16 | 0.15 | 0.15 | 0.14 | 0.14 | 0.13 | 0.13 |
| Group home care | 0.24 | 0.23 | 0.23 | 0.22 | 0.21 | 0.20 | 0.19 | 0.18 | 0.17 | 0.16 |
| Center care | 0.54 | 0.55 | 0.55 | 0.56 | 0.58 | 0.59 | 0.61 | 0.62 | 0.64 | 0.65 |
| <i>Child Race/Ethnicity</i> ³ | | | | | | | | | | |
| White | 0.39 | 0.40 | 0.40 | 0.41 | 0.41 | 0.40 | 0.39 | 0.39 | 0.39 | 0.41 |
| Black | 0.38 | 0.36 | 0.36 | 0.38 | 0.38 | 0.38 | 0.36 | 0.36 | 0.39 | 0.30 |
| Hispanic | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 | 0.15 | 0.16 | 0.16 | 0.15 | 0.16 |
| Asian | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.04 | 0.08 |
| Other | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.03 | 0.05 | 0.04 | 0.03 | 0.05 |
| Observations (states) | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |

Note. ¹Data source: Swenson & Burgess (2018). ²Data source: CCDF State Policies Database. ³Data source: CCDF Public-Use Administrative Database. ⁴Data source: National Welfare Data, University of Kentucky Center for Poverty Research.

CCDF POLICY AND SPELL LENGTH

Table 2. Child care subsidy policies on median spell length (months)¹

| | Model 1 | Model 2 | Model 3 |
|--|---------------------|-----------------------|-------------------------------------|
| | No Covariates | + State covariates | + CCDF participant covariates |
| CCDF Administrative Burden | | | |
| Redetermination period ² | 0.337*** (0.041) | 0.322*** (0.039) | 0.321*** (0.043) |
| Families must report all changes for redetermination ² | -0.593** (0.198) | -0.544** (0.162) | -0.537** (0.172) |
| Grace period for care before termination of services (days) ² | 0.064 (0.045) | 0.055 (0.034) | 0.062 (0.034) |
| CCDF Generosity | | | |
| Monthly reimbursement rate for providers for full-time care (\$) ² | -0.000 (0.000) | 0.000 (0.000) | -0.000 (0.000) |
| Total monthly copayment (\$) ² | 0.009 (0.005) | 0.007* (0.003) | 0.008* (0.004) |
| Difference in initial and continuing income eligibility amount (\$) ² | 0.001** (0.000) | 0.001** (0.000) | 0.001** (0.000) |
| Covariates | | | |
| <i>State characteristics</i> ⁴ | | | |
| Population per 10,000 people | | -0.008* (0.004) | -0.007 (0.005) |
| GSP divided by population | | 81.425* (37.704) | 73.217* (35.924) |
| TANF recipients divided by population | | 48.159 (29.899) | 50.176 (34.573) |
| Unemployment rate | | 0.109 (0.079) | 0.077 (0.079) |
| Fraction of State Senate that is Democrat | | -0.069 (0.862) | -0.013 (0.906) |
| <i>Type of child care</i> ³ | | | |
| Prop. in home care | | | 10.969 (5.967) |
| Prop. family home care | | | 4.363 (3.123) |
| Prop. group home care | | | 0.839 (1.700) |
| <i>Child race/ethnicity</i> ³ | | | |
| Prop. Black | | | -0.321 (1.447) |
| Prop. Hispanic | | | 0.555 (2.910) |
| Prop. Asian | | | -1.325 (2.107) |
| Prop. Other | | | 1.431 (2.084) |
| State fixed effects | X | X | X |
| Year fixed effects | X | X | X |
| Observations (states) ⁴ | 38 | 38 | 38 |

Note. Standard errors in parentheses. ¹Data source: Swenson & Burgess (2018). ²Data source: CCDF State Policies Database. Reimbursement rates are based on families of 4. ³Data source: CCDF Public-Use Administrative Database. ⁴Data source: National Welfare Data, University of Kentucky Center for Poverty Research. For type of child care, center-based care is the reference group. For child race/ethnicity, White is the reference group.