



Minnesota Child Care Choices:

Continuity of Care and Participation in the Child Care Assistance Program

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Introduction to the Minnesota Child Care Choices Research Brief Series

The Minnesota Child Care Choices Research Briefs are designed to answer questions of interest to state child care administrators, county agency staff and other early childhood stakeholders. The questions they have include: How do parents make decisions about child care arrangements? What factors affect whether a family uses child care subsidies? How will Minnesota's QRIS affect families with low incomes, particularly those eligible to receive a child care subsidy? What family, community, and child care characteristics affect child care stability and reliability, and parents' employment outcomes?

This brief is based on data from the Child Care Assistance Program (CCAP) analyzed as part of the Minnesota Child Care Choices study. CCAP is Minnesota's child care subsidy

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OVERVIEW

According to the state of Minnesota, “the Child Care Assistance Program (CCAP) provides financial subsidies to help low-income families pay for child care, so that parents may pursue employment or education leading to employment, and that children are well cared for and prepared to enter school ready to learn.”¹ Research on children and families using CCAP can help policymakers design programs to better achieve these goals. By using both state administrative data and a longitudinal parent survey, the Minnesota Child Care Choices study offers a unique opportunity to improve our understanding of parents’ decisions about child care, including parents’ use of CCAP to assist with all or some of their child care expenses. This brief is part of a series from the Minnesota Child Care Choices study, and summarizes findings from the analysis of CCAP administrative data. [See *textbox about Study*]

The key objective of this analysis was to examine the length of time children participate in the CCAP program and the continuity of their care arrangements during that time. The continuity of participation in CCAP may impact parents’ ability to maintain steady employment. In addition, greater stability of care arrangements has been associated with better outcomes for young children.²

The Child Care Assistance Program (CCAP) is Minnesota’s child care subsidy program, funded by a combination of federal, state and local government resources. Details on how CCAP is structured in Minnesota are provided in the sidebar.

DATA USED IN THE STUDY

With the cooperation of the Minnesota Department of Human Services, the research team obtained and analyzed data on all families and children participating in CCAP across the state. The data used in this study were provided by the Minnesota Department of Human Services under a research agreement and the data elements were defined according to federal government

¹ Child Care Assistance: Facts and figures. Minnesota Department of Human Services. <https://edocs.dhs.state.mn.us/lfsrver/Public/DHS-4745-ENG>

² The literature on stability of care arrangements and both child outcomes and employment is briefly summarized in Gina Adams and Monica Rohacek, “Child Care Instability: Definitions, Context, and Policy Implications”, Urban Institute, October 2010. <http://www.urban.org/uploadedpdf/412278-child-care-instability.pdf>



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program funded by a combination of federal, state and local government resources, including the Child Care and Development Fund (CCDF). Counties administer the program. Families are eligible for CCAP if their income is below 175 percent of the federal poverty level, adjusted for family size. Families remain eligible for CCAP until their income reaches 250 percent of the federal poverty level, or when their co-payment for child care has exceeded the cost of care. Three types of child care assistance are available.

1. Minnesota Family Investment Program (MFIP) – Diversionary Work Program (DWP) Child Care. This assistance covers child care expenses associated with approved work activities that are authorized in a family's Employment Services Plan.

2. Transition Year Child Care. This assistance covers child care expenses during work hours (a minimum of 20 hours per week), or time-limited job search, for up to 12 months after the MFIP/DWP case has closed. Transition Year Extension (TYE) was designed to provide continuous child care assistance to families who complete their 12 months of Transition Year (TY), continue to be eligible, but cannot be moved into Basic Sliding Fee child care.

3. Basic Sliding Fee (BSF) Child Care. This assistance may be available to families who meet the income eligibility guidelines, have a parent working at least 20 hours per week or participating in approved education or in time-limited job search, and who are not receiving MFIP/DWP or Transition Year child care. Priority groups for these limited funds include basic education students, families moving off Transition Year Care, families receiving subsidy in one county and moving to another Minnesota county, and families in which at least one parent is a veteran.

During state fiscal year 2009, Minnesota served an average of 17,693 families per month, at a cost of approximately \$200 million federal, state and county dollars.

The entire series of briefs is available online at:

www.mdmnresearchpartnership.com and www.childtrends.org.

reporting requirements. Data covered the period from January 2009 to June 2010,³ aggregated to a monthly basis for the purposes of this study, and included child, family, child care provider, and payment information.

In order to measure the continuity of program participation, a “spell” of CCAP participation was defined as a series of months in which the child received subsidized child care (care paid in part or full through CCAP). A spell ended when there was a full month in which the child did not receive any subsidized child care through CCAP. Given the relatively short time period of the study (January 2009 to June 2010), many spells began before or ended after the study period. Spells that began before the start of the study (i.e., before January 2009) were excluded because their full length was unknown (these are called “left-censored spells”).⁴ Spells that were observed in June 2010 may continue after that month; these were included in the study and appropriate statistical methods were used to account for this “right-censoring” of spells.⁵

The dataset without exclusions consisted of 617,084 observations on all children in Minnesota who received child care assistance during the study period, wherein each observation was data on a unique child for a unique month. The full dataset included 64,957 unique children who received CCAP at least once during the January 2009 to June 2010 time period. Excluding those who had only a left-censored spell, the primary data set used for this analysis included 44,582 unique children.

The findings of this study are described below for three topics: 1) Characteristics of the children and families participating in CCAP; 2) Length of continuous spells of CCAP participation for all children and by subgroups; and 3) Continuity of child care arrangements while receiving CCAP. The primary focus of the analysis is on children starting a spell of CCAP participation during the study period. The spells of children who received CCAP in January 2009 at the start of the study (the “left-censored” spells) were excluded from the analysis, and the “new” entrants were used to provide a portrait of the CCAP caseload.⁶ In order not to count children with more months of subsidy receipt more heavily in the percentages, descriptive statistics were based on the characteristics of the child and family in the first month of the first observed non-left-censored spell for the child.

FINDINGS OF THE MINNESOTA CHILD CARE CHOICES STUDY

Part 1. Characteristics of Children Participating in CCAP

Children from a variety of backgrounds and a diverse variety of ethnicities participate in CCAP, as shown in Table 1. At least one race/ethnicity was recorded for each child and Hispanic/Latino identification was noted in addition. Nearly 8% of children were Hispanic/Latino. The majority, 55%, were white children, and a large minority, 43% of children served, were Black. Boys were marginally over-represented in the sample, at slightly more than 51%.

³ In ongoing research, a longer time period will be used to study the continuity of CCAP participation. For this brief, data were available for 18 months.

⁴ Left-censored spells are commonly excluded from studies of spell length (or “survival analysis”) because including these spells is likely to over-represent the experiences of participants with long spells.

⁵ An appendix with details on the statistical methods used and results of estimation of Kaplan-Meier survival functions is available from the authors.

⁶ The children who started a spell of CCAP participation during the study period may have participated in the program prior to January 2009; thus the spell observed in the study may not be the first spell of CCAP participation for the child. The entry cohort approach, in which children who had only left-censored spells of participation are excluded, is standard in duration studies of program participation. The characteristics of program participants in this study may differ slightly from those described in other reports because of the use of the entry cohort approach.

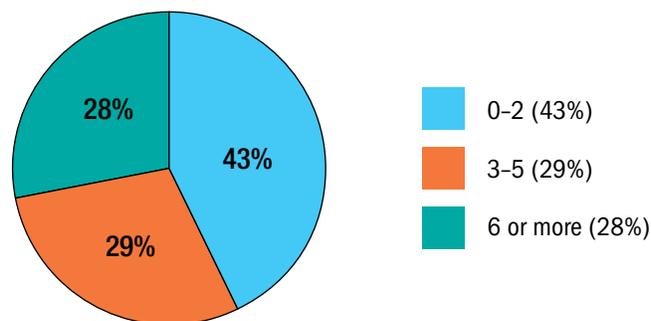
TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF CHILDREN RECEIVING CCAP

	Percent of children
GENDER	
Male	51.3
Female	48.7
RACE/ETHNICITY	
Hispanic/Latino	7.7
American Indian/Alaskan	5.9
Asian	4.2
Black	43.0
Pacific Island	0.2
White	55.0
DISABILITY	
None identified	97.9
Medical condition	1.8
Special needs over age 12	0.1
Special needs 12 and under	0.1
TOTAL	100%
N observations (children)	44,584

NOTE: Characteristics are measured in the first month of the first non-left-censored spell per child.

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

Most children who received CCAP during the study period were quite young; nearly half of the children (43%) were two years or younger in the first month they were observed in the sample (Figure 1).⁷ Almost one-third (29%) were ages three to five. Only about a quarter (28%) of children were ages 6 to 14. In general children are no longer eligible for CCAP above age 12 unless they have special needs, explaining the very small percent of 13- and 14-year olds observed. Only a small percent of children were identified as disabled (about 2%).⁸

FIGURE 1. CHILD'S AGE IN FIRST MONTH OF CCAP SPELL

NOTE: Characteristics are measured in the first month of the first non-left-censored spell per child.

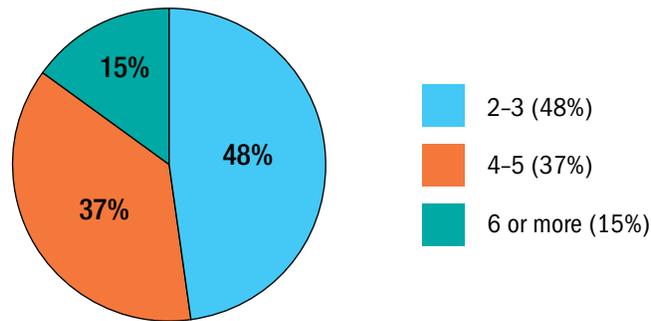
DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

⁷ The age distribution of children reflects the exclusion of left-censored spells from the analysis. If these spells are included, the proportion of very young children is somewhat lower.

⁸ The disability indicator in this dataset reflects only disabilities that impact the child's eligibility for care or if a special needs payment rate was approved.

Children had a variety of different household structures. Around three fourths of children lived in single-parent households. Children’s eligible family size varied widely (Figure 2). Half of children had an eligible family size between two and three (48%), and more than one third (37%) lived in families of four to five people. A relatively small percentage (15%) lived in families with six or more members.

FIGURE 2. ELIGIBLE FAMILY SIZE OF CHILDREN PARTICIPATING IN CCAP



NOTE: Characteristics are measured in the first month of the first non-left-censored spell per child.
DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

Table 2 presents characteristics of the children’s families, and reports these in terms of the percentage of children.⁹ Eligibility for CCAP depends in part on family size and income, so we expect families to have relatively low incomes. Nonetheless, there was a range of incomes represented among the families of children receiving CCAP. Over three-fourths (68%) of children were in families that had earned income, with a median income of \$16,046. Around three quarters (77%) of the children received food stamps, and more than one third (37%) received benefits from the Minnesota Family Investment Program (MFIP, Minnesota’s Temporary Assistance for Needy Families Program) in the first month of CCAP participation.

Table 2 also shows the program under which children participated in CCAP (in the first month of the spell). More than half of children (53%) participated in the MFIP child care program, and about one third (35%) of children participated in the Basic Sliding Fee (BSF) program. About 12% of children were part of the Transition Year program (including the Transition Year Extension program). Only a small percent, around 1%, received CCAP through other programs.

For the purposes of federal reporting, the state identifies the primary reason for receiving child care assistance as one of four categories: employment; education and training; employment combined with education/training; and other. Employment was the primary reason given for receiving childcare assistance, accounting for around 72% of children in CCAP (Table 2). Another 14% of children were in the combined employment and education or training category.

⁹ An alternative approach is to report the family characteristics in terms of the percentage of families receiving CCAP. However, since our focus for this brief is on children’s spells of CCAP participation, we report the percentage of children in each category. If there are two or more children in the family, all are included in this analysis. However, the percentages based on families rather than children are fairly similar to the percentage of children.

TABLE 2. FAMILY CHARACTERISTICS OF CHILDREN RECEIVING CCAP

	Percent of children
CCAP PROGRAM	
Basic Sliding Fee	34.9
MFIP Child Care	53.4
Portability Pool	0.0
Transition Year	11.6
RECEIPT OF OTHER GOVT. ASSISTANCE	
Food Stamps	77.3
MFIP	36.6
Housing Aid	22.8
Social Security/Other	5.1
Employment/Earned Income	67.7
REASON FOR CCAP	
Employment	72.0
Training/Education	7.4
Employment & Training/Education	14.1
Other	6.4
Single parent	74.5
Median Income	\$16,046
Mean Income	\$17,788
Number of observations	44,584

NOTE: Characteristics are measured in the first month of the first non-left-censored spell per child.

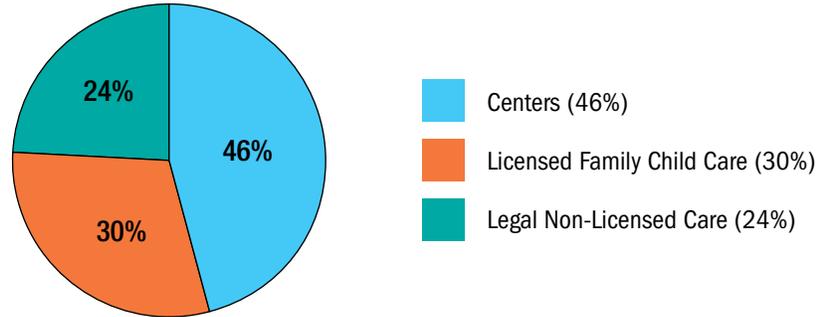
DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

What type of care did children use while receiving CCAP?

Parents receiving CCAP are able to choose any legal child care provider. The types of child care providers recorded in the administrative data include centers, licensed family child care providers, and other care provided in-home or by a family child care provider operating legally but without regulation.¹⁰ Figure 3 presents the primary type of care provider used by children in the first month of their CCAP spell. If the child was cared for by more than one subsidized provider in that month, the primary provider was the one with the greatest number of hours of care provided in that month. The most common type of care was center-based care (46%). Licensed family child care providers were the next most frequently observed type of care, at 30%. The remaining quarter (24%) of children were in some other type of legal non-licensed or in-home care. The percentages in each type of care did not change very much if all months of the spell are included, rather than just the first month.

¹⁰ The full list of child care provider types identified in the data includes (1) Licensed/regulated in-home child care (2) Licensed/regulated family child care (3) Licensed/regulated group home child care (4) Licensed/regulated center-based care (5) In-home care provided by a non-relative in a setting legally operating without regulation (6) In-home care provided by a relative in a setting legally operating without regulation (7) Family home child care provided by a non-relative in a setting legally operating without regulation (8) Family home child care provided by a relative in a setting legally operating without regulation (9) Group home child care provided by a non-relative in a setting legally operating without regulation (10) Group home child care provided by a relative in a setting legally operating without regulation (11) Child care center legally operating without regulation.

FIGURE 3. CHILDREN'S TYPE OF CARE IN FIRST MONTH OF CCAP SPELL



NOTE: Characteristics are measured in the first month of the first non-left-censored spell per child.
DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

Definitions of Terms Used in This Study

SPELL: A “spell” measures the length of time that a child participated in CCAP without a break. For this study, a spell of CCAP participation was defined as the number of consecutive months in which the child received subsidized child care (care paid in part or full through CCAP). A spell ended when there was a full month in which the child did not receive any subsidized child care through CCAP.

LEFT-CENSORED SPELL: A spell that includes the first month of the study period and therefore may have begun prior to the study period. (These spells were excluded from the study.)

RIGHT-CENSORED SPELL: A spell that includes the last month of the study and therefore may continue past the end of the study period. (These spells were included in the study, and appropriate statistical methods were used to account for the right-censoring.)

FIRST OBSERVED NON-LEFT-CENSORED SPELL: The first spell for a child that begins during the study period, excluding left-censored spells. Most of the analysis was based on the first observed non-left-censored spell for each child (including only one spell per child).

Part 2: Length of continuous spells of CCAP participation

One of the key research goals of the study was to examine the length of continuous spells of CCAP participation. The focus of the analysis was the spells that were not left-censored, including one spell for each child.¹¹ In some cases, however, results from multiple spells are reported to provide further information on the CCAP experiences of these participants. There were 53,901 non-left-censored spells observed in the study. Of these, slightly less than half (48%) were completed during the study period while the other half (52%) extended at least until the last month observed and so were right-censored (Table 3). Because left-censored spells were excluded from the study, most children (83%) have only one spell during the study period (Table 4). Nonetheless, about 17% of the spells were the second or higher (non-left-censored) spell for the child during the study period. There were 44,584 spells used in the analysis (including only the first observed non-left-censored per child).

¹¹ The spell for each child included in the analysis is the first observed non-left-censored spell.

TABLE 3. NUMBER OF SPELLS OF CCAP PARTICIPATION AND CENSORING

	Number of spells	Percent of all spells	Percent of non-left-censored spells
Spells that include January 2009 (left-censored spells)	27,963	34.2	n.a.
Non-left-censored spells	53,901		
■ Spells that include June 2010 (right-censored spells)	28,131	34.4	52.2
■ Spells that are not right-censored	25,770	31.5	47.8

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse. Study time period was January 2009 through June 2010.

TABLE 4. NUMBER OF SPELLS OF CCAP PARTICIPATION PER CHILD OBSERVED DURING THE STUDY

Spell Number	Number of spells	Percent of all spells
First spell	44,584	82.7
Second	7,942	14.7
Third	1,143	2.1
Fourth	189	0.4
Fifth	39	0.1
Sixth	4	0.0
TOTAL	53,901	100%

NOTE: Excludes left-censored spells in progress in January 2009 at the start of the study.

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse. Study time period was January 2009 through June 2010.

How long did children participate in CCAP?

Children participate in CCAP for varying lengths of time. The study finds that while some children received subsidies for a year or more, there were others who received CCAP subsidies for only a few months and some who had a short spell and then returned for additional months of CCAP. One quarter of children had a spell of four months or less and the median spell length was estimated to be eight months. Nonetheless, more than 25% of the children's spells of CCAP participation were estimated to last for 16 months or more.

The results show that some children exited CCAP fairly quickly, but after the first five or six months, given that they were still receiving CCAP, children were less likely to leave.¹² Studying the reasons for leaving CCAP was beyond the scope of this component of the study, however, it is likely that exits from CCAP in the first few months are related at least in some cases to short-term training programs that end, unstable employment or housing situations, summer or short-term care, and other factors. As shown below, children whose reason for receiving CCAP fell into the "other" category had the shortest spells of CCAP participation on average (although these were only about 6% of the spells).

¹² An appendix with additional technical details on the survival analysis is available from the authors. The appendix contains plots of the hazard function and of survival functions by key subgroups based on child and family characteristics.

Did the length of CCAP participation vary with child characteristics?

Table 5 presents the differences in length of CCAP spells for different subgroups defined by the background characteristics of the children and their families.¹³ Among all the children, 25% of spells ended by four months, and 50% ended by eight months, but more than 25% still remained in a continuous spell of CCAP participation even after 16 months. In most cases, the results for different subgroups were quite similar to this overall pattern. There was no difference in estimated spell length observed by gender. However, Hispanic/Latino children had somewhat shorter spells, with 25% of children leaving CCAP by three months and a median spell length of seven months. American Indian/Alaskan children also had slightly shorter spells, with a median spell length of six months, 25% leaving by three months, and 15 months for the 75th percentile. Black children's spells were similar to those for non-black children, but white children had slightly shorter spells than non-white children with a median CCAP spell length of eight months.

Other characteristics of children or their families were associated with slightly shorter spells of CCAP participation. Children in families receiving food stamps or MFIP at the start of their CCAP spell had a slightly shorter median spell length of seven months, compared to median spell lengths of ten and nine months for those not on food stamps or MFIP, respectively. The opposite was true of housing assistance. Those on housing assistance had longer spells, nine months versus seven months at the median or 50th percentile. The median spell length was slightly longer (eight months) for single parents than for those with another adult in the household (seven months).

Children who entered under different CCAP programs also showed substantially different patterns of subsidy use. Children in families who started their spells in the Basic Sliding Fee (BSF) program tended to have longer spells than those in other programs. The median spell length was shorter for children who started in MFIP child care, seven months compared to ten months for those receiving BSF. While it appears that children in the Transition Year program experienced shorter spells of CCAP participation on average, with a median spell length of six months, it is important to recall that they may have changed programs during the spell of subsidy participation. The CCAP program was identified based on the first month of the spell, so families may have shifted between sub programs during the months of CCAP participation reported here (and these changes were not reflected in this analysis).

The pattern of CCAP participation duration also varied with the reason for assistance: employment versus education and training. Those who are employed, the most frequent reason for assistance, had a median spell length of eight months. Those in education or training programs tended to exit CCAP more quickly, with 25% leaving by three months and 50% by six months. There were also fewer very long spells among those in training or education programs, with a 75th percentile of 14 months, compared to over 16 months for those employed. Children on CCAP for reasons in the "other" category had by far the shortest spells, with 25% leaving by three months, 50% by four, and 75% by seven months.

Different length of subsidy use patterns were also evident based on children's initial type of care provider. The shortest subsidy spells were at centers, with 25% exiting after three months and 50% after seven months. Half of children at both licensed family child care providers and legal/non-licensed care left CCAP by eight months. However, more than 25% of children remained in CCAP beyond 16 months across all types of care.

¹³ An alternative way to compare spell lengths is to examine the proportion still participating at each point in time (called "survival functions") for different groups. It is possible to test whether the differences in medians between different groups are statistically significant. Such a test indicates differences at a single point in the survival function. It is more statistically sound to test differences in the entire survival function between different groups. In testing the differences in survival functions between different groups, all the groups in Table 5 showed statistically significant differences at the 5% level, EXCEPT females, Asian, and Black as compared respectively to males, non-Asians, and non-Blacks. An appendix, available from the authors, provides figures showing the estimates of the survival functions for different groups.

TABLE 5. ESTIMATED LENGTH OF SPELLS OF CCAP PARTICIPATION, BY SUBGROUP

Number of months	25th percentile	Median	75th percentile
All children	4	8	>16 months
GENDER			
Male	4	8	>16 months
Female	4	8	>16 months
RACE/ETHNICITY			
American Indian / Alaskan	3	6	12
Asian/ Pacific Islander	4	7	>16 months
Black	4	8	>16 months
White	4	8	>16 months
Hispanic/Latino, non-white	3	6	>16 months
Hispanic/Latino, white	3	7	>16 months
Multi-racial	4	8	>16 months
SINGLE PARENT			
No	3	7	>16 months
Yes	4	8	>16 months
FOOD STAMPS			
No	4	10	>16 months
Yes	4	7	>16 months
MFIP			
No	4	9	>16 months
Yes	3	7	>16 months
HOUSING ASSISTANCE			
No	4	7	>16 months
Yes	4	9	>16 months
CCAP PROGRAM			
Basic Sliding Fee	4	10	>16 months
MFIP Child Care	4	7	>16 months
Portability Pool	4	7	9
Transition Year	3	6	>16 months
REASON FOR CCAP			
Employment	4	8	>16 months
Training/Education	3	6	14
Employment & Training/Education	4	10	>16 months
Other	3	4	7
TYPE OF CARE (FIRST MONTH)			
Center	3	7	>16 months
Licensed family child care	4	8	>16 months
Legal non-licensed care	4	8	>16 months

NOTE: Characteristics were measured in the first month of the first non-left-censored spell per child. Spell lengths were measured using Kaplan-Meier method and exclude left-censored spells that began in January 2009 or earlier. In testing the differences in survival functions between different groups, all the groups in Table 5 showed statistically significant differences at the 5% level, EXCEPT females, Asian, and Black as compared respectively to males, non-Asians, and non-Blacks. An appendix, available from the authors, provides figures showing the estimates of the survival functions for different groups.

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

Part 3. Child Care Arrangements while Participating in CCAP

The administrative records included all providers paid through CCAP for the child’s care. In any given month there may be multiple child care providers for a child due to the use of multiple providers to cover the parent’s work and/or education schedule, or because the parent has moved the child from one care setting to another. It is difficult to summarize children’s care experiences while receiving CCAP because of these different patterns. A number of different measures of arrangement stability were compared in order to provide a detailed picture of subsidized child care arrangements for children participating in CCAP. However, children also may have been cared for by other providers who were not paid through CCAP. Arrangements not included in the CCAP data could not be counted in these measures.

In cases where the child had more than one provider in a month, the researchers looked to see whether one or both of the providers continued into the next month. Switching between primary and secondary provider (defined by the number of hours of care in that month) was accounted for separately from moves to a new provider (cases in which one provider did not continue into the next month).

How many child care providers did children have while participating in CCAP?

In the initial month of a CCAP spell, the existence of multiple providers for a child was very uncommon. Only 2.1% of children had multiple providers during the first month of the spell. During at least one month of the spell, 13.6% of children had more than one provider. Children usually had multiple providers in a month when they were changing providers. Of the 13.6% of children who experienced multiple providers in a month, nearly two thirds (8.6%) had multiple providers in only one month, suggesting that this was likely a transition between providers (Table 6). The remaining 5% of children were with multiple providers for more than one month, which indicates either ongoing multiple providers or multiple months with a change in provider.

TABLE 6. NUMBER OF MONTHS WITHIN A CCAP SPELL WITH MULTIPLE PROVIDERS

Number of months with multiple providers	Percent of children
0	86.4
1	8.6
2	2.4
3	0.8
4	0.5
5	0.3
6	0.2
7	0.2
8	0.1
9	0.1
10 or more	0.3
Number of observations	44,584

NOTE: Analysis included the first non-left-censored spell per child.

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

How stable were provider-child relationships during spells of CCAP participation?

The stability of provider-child relationships is important to the well-being of children. However, there are a number of different ways to define and measure a stable provider-child relationship.¹⁴ Table 7 provides a number of differ-

¹⁴ Gina Adams and Monica Rohacek, “Child Care Instability: Definitions, Context, and Policy Implications”, Urban Institute, October 2010. <http://www.urban.org/uploadedpdf/412278-child-care-instability.pdf>

ent measures of the stability of care children experienced, defined as changes in care arrangements. (The data do not capture changes in individual caregivers within arrangements.) The table provides these measures both for the first non-left-censored spells and for all months on CCAP in the study period. The measures are also presented for primary providers only (defined by the number of hours in care that month) and for all providers.

The average number of providers observed in a spell was 1.18 when only primary providers were counted, and only slightly higher (1.21) when all providers were counted (because few children had more than one provider in a spell). When the number of providers was measured over all observed months of CCAP participation during the study period, children averaged 1.35 primary providers and 1.40 total providers.

TABLE 7. STABILITY OF CARE ARRANGEMENTS WHILE RECEIVING CCAP

	In a CCAP spell	In all observed months on CCAP
AVERAGE NUMBER OF PROVIDERS		
Primary provider only	1.18	1.35
All providers*	1.21	1.40
PERCENT WHO CHANGED PROVIDERS		
Primary provider only	14.9%	27.7%
All providers*	13.4%	16.7%
PRIMARY PROVIDER RATIO		
All children	0.95	0.91
Those who had a provider change	0.68	0.67
DURATION OF ARRANGEMENTS		
Median length of arrangements	6	5
Number of observations	44,584	359,034

*Measures including all providers do not count shifts in hours of care between two providers (from primary to secondary provider for example) as a change in provider.

NOTE: Spell analysis included the first non-left-censored spell per child.

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

The small number of providers used during a spell of CCAP participation is confirmed by looking at the percent of children who experience a change of provider.¹⁵ Only 14.9% of children experienced a change in their primary provider during a spell. Some of these providers were still providing care but switched from a primary to secondary position (i.e., provided fewer hours of care). When these switches were excluded, only 13.4% of children experienced a change in provider during the spell. More children experienced changes when all observed months of CCAP participation were considered. More than a quarter of children (27.7%) experienced a transition in their primary provider, but only 16.7% of children experienced the complete exit of their original providers. Overall these results suggest that care arrangements were stable for most children during the observed period of CCAP participation.

Another measure of stability is the primary provider ratio (PPR), the number of months with the longest provider divided by the total observed months of subsidy receipt.¹⁶ This measure captures another dimension of stability. For instance, a child who had three providers for three months each would have the same average number of providers (three) and the same number of provider changes (two) as a child who first had two providers for one month each, and then seven months with one provider. However, the first child would have spent one third of his or her time with the primary provider, and the second child seven-ninths of his or her time with the primary provider.

¹⁵ Recall that parents may use additional providers who are not paid through CCAP and thus are not counted in these numbers.

¹⁶ Meyers, M.K., Peck, L., Davis, E.E., Collins, A., Kreader, J.L., Georges, A., Weber, R., Schexnayder, D.T., Schroeder, D.G., & Olson, J.A. (2002, July). *The dynamics of child care subsidy use: A collaborative study of five states*. Report. New York: Columbia University, Mailman School of Public Health, National Center for Children in Poverty.

The findings of this analysis show that children spent most of their CCAP months with the same provider, using the primary provider ratio as a measure of time spent in the longest arrangement. Regardless of whether the analysis was based on the inclusion of all months or of one spell, the primary provider ratio was quite high. On average, children spent over 90% of their months of CCAP participation with one primary provider.

The primary provider ratio includes those who never changed providers during the spell of CCAP participation (ratio=1). Even among children who experienced at least one transition in their primary provider, however, the primary provider ratio was quite high. Children with at least one provider change spent over two thirds (68%) of their time with one provider.

A final measure of the stability of provider-child relationships is the median length of a subsidized arrangement, that is, how long a child continues with his or her initial primary provider until the relationship is ended by either the end of a subsidy spell or the end of that relationship. The estimated median length of a subsidized arrangement was six months, two months shorter than the median length of CCAP spells.

In examining the stability of provider-child relationships while participating in CCAP, it is important to recognize that the interpretation of the stability measures depends in part on how long the child receives child care assistance (in part because the data do not measure changes in provider when not on CCAP). Having one provider for a three-month spell is not very informative about the stability of care for the child; whereas having only one provider for 12 or 15 months reflects a highly stable care arrangement. Table 8 shows the key stability measures dividing the children into groups based on the number of observed months of CCAP participation.

Children with very few observed months of CCAP participation rarely experienced a change in providers in those months. For those with four or fewer months on CCAP, 3% experienced a provider transition in their first spell and almost 6% did across all spells. These percentages quickly rise with more months of CCAP participation. For children with five to eight months of subsidy participation, 13% experienced a change in primary provider. Over one quarter of those with CCAP for a year or longer had a change in primary provider in their first spell, and nearly 40% experienced a primary provider change looking across all months of CCAP participation.

Despite the frequency of provider changes for those with more months of CCAP participation, the primary provider ratio was high across all groups. Those with only a few months of CCAP typically had only one provider and a PPR close to one. But even those with 12 or more months of CCAP participation spent about 90% of the months receiving CCAP with the same provider. The results suggest that the arrangements paid for through CCAP were quite stable for most children observed in the study period.

TABLE 8. STABILITY OF PROVIDER-CHILD RELATIONSHIPS, BY NUMBER OF MONTHS RECEIVING CCAP

	Cumulative duration of CCAP participation during study time period				
	4 months or fewer	5 to 8 months	9 to 12 months	More than 12 months	
AVERAGE NUMBER OF PROVIDERS					
First non-left-censored spell					
Primary provider	1.03	1.14	1.24	1.35	
All providers*	1.05	1.17	1.28	1.42	
All observed months					
Primary providers	1.06	1.28	1.46	1.53	
All providers*	1.10	1.35	1.54	1.67	
PERCENT WHO CHANGED PROVIDERS					
First non-left-censored spell					
Primary provider	3.36	13.02	20.40	27.66	
All providers*	2.46	11.58	18.88	25.06	
All observed months					
Primary providers	5.92	24.80	36.33	39.16	
All providers*	2.33	12.73	23.11	31.95	
PRIMARY PROVIDER RATIO					
All observed months	0.99	0.96	0.93	0.90	
PERCENT OF SAMPLE					
Children with a first non-left-censored spell	32.0%	23.9%	20.0%	24.1%	
All children	27.1%	21.1%	16.9%	34.9%	
N (OBSERVATIONS)					TOTAL
Children with a first non-left-censored spell	14,282	10,650	8,925	10,727	44,584
All children	17,612	13,723	10,955	22,667	64,957

*NOTE: Measures including all providers do not count shifts in hours of care between two providers (from primary to secondary provider for example) as a change in provider.

DATA SOURCE: Minnesota Dept. of Human Services Data Warehouse.

IMPLICATIONS AND NEXT STEPS

Despite the relatively short time period studied (18 months), the analysis of CCAP participation spells found that the typical child received CCAP for eight months without a break, and that arrangements were reasonably persistent while receiving CCAP. Some children had quite short spells of CCAP participation, with 25% of spells ending by the fourth month. On the other hand, the longest 25% of spells exceeded 16 months. Participation in CCAP for a year or more is likely to help support stable employment for parents and consistent care-giving arrangements for children. While participating in CCAP, most children in the study had only one provider. Even though one-quarter of children who received CCAP for 12 months or more had at least one change in primary provider, 90% of the time was spent with a single provider.

Only a few studies have examined length of participation in the child care subsidy program in different states, and most have concluded that spells of subsidized child care tend to be short. One study found that the median spell length ranged from three to seven months across five states.¹⁷ A more recent study in Wisconsin estimated

¹⁷ Meyers, M.K., Peck, L., Davis, E.E., Collins, A., Kreader, J.L., Georges, A., Weber, R., Schexnayder, D.T., Schroeder, D.G., & Olson, J.A. (2002, July). *The dynamics of child care subsidy use: A collaborative study of five states*. Report. New York: Columbia University, Mailman School of Public Health, National Center for Children in Poverty.

median child care subsidy spell length at six months, though the sample included only TANF recipients.¹⁸ These studies found similar patterns of association between child care subsidy spell length and characteristics as shown in this study, including longer median spells for those employed (rather than in education or training programs) and shorter median spells for those on TANF. While these patterns were consistent across states, further research is needed in Minnesota to analyze the characteristics of children, families and care arrangements associated with participation in CCAP using multivariate analysis techniques.

While CCAP participation in Minnesota was found to be more stable than in some other studies, questions remain about why children and families leave CCAP. Studies in other states have found that many of those who leave the subsidy program appear to remain eligible.¹⁹ In some states, policies related to recertification of eligibility, copayment amounts, provider payment rates, and eligibility rules have been linked to participation in the child care subsidy program.²⁰ Analyzing why families choose to participate in CCAP and why they leave can provide policymakers with key information in developing policies to support families' ability to ensure children are well cared for while parents work. These questions will be addressed in future work of the Minnesota Child Care Choices study.

¹⁸ Ha, Y. (2009). Stability of child care subsidy use and earnings of low-income families. *Social Service Review*, 83 (4), 495-523.

¹⁹ Grobe, D., Weber, R.B., and Davis, E.E. (2008). Why do they leave? Child care subsidy use in Oregon, *Journal of Family and Economic Issues* 29 (1, March): 110-127.

²⁰ Grobe, D., Weber, R.B., and Davis, E.E. (2008). Why do they leave? Child care subsidy use in Oregon, *Journal of Family and Economic Issues* 29 (1, March): 110-127; Schexnayder, D., and Schroeder, D. (2008). Child Care Devolution in Texas: The Relationship of Child Care Policies to Subsidy, Employment and Market Durations. Final Technical Report. Ray Marshall Center, University of Texas at Austin. March.