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# Why Do They Leave?

*Child Care Subsidy Use in Oregon*

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# Introduction

## Study Rationale

Previous research on the dynamics of participation in child care subsidy programs found variation in the duration of subsidy use across the five states studied. The median length for receipt of child care subsidy ranged from three months in Oregon to seven in Texas (Meyers, Peck, Davis, Collins, Kreader, Georges, Weber, Schexnayder, Schroeder, & Olson, 2002). While half the families returned for another period of subsidy use, it was typically for another short spell (Meyers et al., 2002). The short spells of subsidy use typical for many families raise concerns that child care arrangements may also be of short duration. Indeed, Weber (2005) finds that children's (subsidized) child care arrangements are shorter, on average, than their subsidy spells. Half of all subsidized arrangements ended within three months for children observed for up to three years, and only 18% of the arrangements were resumed with the same provider (Weber, 2005). Research has shown that multiple changes in arrangements can result in negative impacts on a child's development (Howes, 1988; Huston, Chang, & Gennetian, 2002; Loeb, Fuller, Kagan, & Carol, 2004). Although the direction of the relationship is not clear, stable child care and stable maternal employment are also associated (Blau & Robbins, 1991a, 1991b, 1998; Floge, 1985; Hofferth & Collins, 2000; Miller, 2003).

The possible implications for stability of child care arrangements, child development, and parental employment stability were the primary motivations behind this study to investigate the reasons parents leave the subsidy program after only a few months. Both employment stability and provider stability are likely to contribute to positive outcomes for families and children, thus understanding why parents leave after such short spells is key to improving outcomes for children and families.

A number of studies have examined take-up rates in the child care subsidy program in different states and found that many parents who appear to be eligible for child care subsidies do not use them (e.g., Meyers & Heintze, 1999; Witte & Queralt, 2003). Lee, Goerge, Reidy, and Kreader (2004) estimated that half of the single mothers leaving TANF became eligible for subsidy during a follow-up period, yet the take-up rate for subsidies never exceeded 35%. Collins, Layzer, Kreader, Werner, and Glantz (2002) found that no more than one quarter of eligible children in 16 states received child care subsidies.

Research has shown that a lack of information about subsidy programs is a common barrier to using subsidies (e.g., Meyers & Heintze, 1999). Other studies have shown that even families who know about the subsidy program may incorrectly believe they are not eligible or may believe that using a subsidy requires that they use a particular type of care or particular provider (Shlay, Weinraub, Harmon, & Tran, 2004). While other studies have focused on apparently eligible populations and asked why they did or did

not use the subsidy program, this study focuses on families who used the subsidy program and asks why they leave so soon. To the authors' knowledge, there are no other studies that have investigated this specific question for subsidy users. Although some reasons for not taking up the subsidy may be the same as for exiting, some are not. For example, a lack of information about the program is less likely to be a major problem for parents who are using the subsidy. We investigate the reasons parents leave the subsidy program and compare these findings to the studies that explored why eligible parents did not take up a subsidy.

## Hypotheses

With a primary focus on the question of why parents leave the subsidy program we consider four hypotheses. First, do parents leave the subsidy program due to instability in other aspects of their lives that impact their child care arrangements or eligibility for subsidy? For example, Miller (2003) finds that employment instability can lead to child care instability. Loss of a job, changes in hours of work, moving to a new community, or changing child care providers all have the potential to disrupt receipt of a child care subsidy. These changes may result in loss of eligibility for subsidy, or more commonly, require paperwork or a visit to the caseworker (Adams, Synder, & Sandfort, 2002). Thus we first investigate whether families who have instability in one aspect of their lives (such as employment or residence location) also have instability in other aspects, and whether this instability helps to explain the short spells of subsidy use.

The second hypothesis is that families leave the subsidy program because they are no longer eligible for a subsidy. Eligibility for a child care subsidy in Oregon depends primarily on family income, age of the child, and parental employment or participation in approved job-readiness activities. While we do not have complete data on whether families remain eligible, we use quarterly earnings to assess whether the families appear to be eligible for the subsidy program once they leave. We also investigate whether families continue to participate in other means-tested programs in Oregon, particularly TANF and medical assistance, as indicators of likely eligibility for subsidy.

The third hypothesis is that parents leave the subsidy system due to the hassle of retaining the subsidy over time. Adams et al. (2002) extensively document how the policies and practices within the child care subsidy systems in 12 states impact parents' access to subsidies. They find that "subsidies can be complex to get and retain" (p. 77) because of the various subsidy program requirements associated with changes in TANF participation, employment, and/or child care providers. They also find that recertification practices may lead parents to end their subsidy use. 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 child care subsidy. The third

area we investigate focuses on specific child care policies: eligibility periods, copays, and maximum payment rates. The financial value of a subsidy in each month is the amount the provider charges, up to the maximum payment rate, minus the copay amount for which the parent is responsible. Thus, both maximum payment rate and copay policies work together to shape the value of the subsidy to the family. We explore whether the value of the subsidy is low relative to the effort required to retain the subsidy.

Finally, it is possible that parents do not continue to use child care subsidies because they do not need them. Studies have found that some parents who might be eligible for subsidies do not use child care, find low or no-cost providers (who are frequently relatives), or feel they do not need help paying for child care. Shlay et al. (2004) for example, report that one quarter of those not using child care subsidies said they did not need help paying for care. In this study we cannot determine whether or not parents need help paying for care. Nonetheless, all the parents in the study used a subsidy at least once, so they perceived a need for assistance in paying for care at one time, and they have knowledge of the program. We focus on three main hypotheses to better understand why parents leave the subsidy program:

- (i) Instability in other aspects of their lives, such as employment changes or family mobility, disrupts participation in the subsidy program.
- (ii) Parents are no longer eligible for subsidy (particularly due to increased income).
- (iii) Parents perceive the cost in time and effort of maintaining a subsidy is greater than the benefit of the subsidy.

## Approach

In order to better understand why people leave the child care subsidy system, this study investigates families' transitions from the subsidy program in Oregon in greater depth. The approach for the study is to investigate each of the above hypotheses by:

- Describing whether families who have instability in one sector also have instability in other sectors (e.g., is more stable subsidy use associated with more stable employment?)
- Describing eligibility status after subsidy exit in terms of employment earnings and earnings above the subsidy program eligibility criteria. Do parents appear to remain eligible for subsidies?
- Describing policy levers that may impact the difficulty incurred when maintaining eligibility for subsidy, including the length of eligibility period (or frequency of redetermination of eligibility) and the value of the subsidy.
- Estimating a Cox regression model to identify the demographic, economic, and program levers associated with leaving the child care subsidy program.

# Policy Context

Oregon's child care subsidies are managed through three programs within the Department of Human Services (DHS). The Employment Related Day Care program (ERDC) is the largest and serves low-income families (not participating in TANF) who are eligible for a child care subsidy because of employment. Parents in job readiness activities (occasionally including part-time employment) may receive child care subsidies as part of their TANF participation. The Assessment Program which provides initial assessment, case management and cash assistance to families applying for TANF lasts no longer than 45 days. Child care subsidies are provided to allow families to participate in assessment activities and job search.

States have five major policy levers to use in managing the voucher portion of child care subsidy programs:

- Maximum rates paid to providers,
- Copay amounts that parents must pay,
- Eligibility ceilings that determine who may participate,
- Eligibility periods – the length of time before parents must recertify eligibility, and
- Subsidy management policies including whether to serve all eligible families who apply or to keep a waiting list.

These five policies interact to create the mix of families and providers who participate in the state's voucher program. In addition, states decide whether or not to contract with providers to directly serve low-income families, and if they do contract, they must decide how much subsidized care will be provided through these contracts. Through child care licensing statutes and rules, states also decide what types of care will be regulated. These subsidy and licensing policies provide the context for a study of why parents leave the subsidy program.

## Maximum Rates Paid to Providers

Oregon maximum payment rates were set in 1995 at the 75<sup>th</sup> percentile of the 1992 Market Rate Survey. In 1999, the state created an enhanced rate with a 7% higher payment to providers who have completed approximately 12 hours of specific training with an additional eight hours required every two years. Almost 25% of providers receive the enhanced rate, the vast majority of whom are regulated by the Child Care Division. As of the 2004 Market Rate Study, the enhanced rate is adequate to purchase about 21% of child care slots statewide (Grobe, Pratt, & Weber, 2004). Although differences in methods of measuring the amount of access that the maximum payment rate provides preclude state comparisons, it is likely that Oregon's rates give parents less access to the child care market than do the rates in other

states. In addition, Oregon is the only state that pays family, friend, and neighbor providers the same rate as that paid to family child care providers regulated by the child care licensing agency. Unregulated and regulated centers have a slightly higher maximum rate than family providers. Providers are not allowed to charge a rate for subsidized care higher than they charge non-subsidized families and are paid their rate (up to the maximum) minus the copay, which they must collect directly from the parent. Providers may collect from parents the difference between their usual charge and the maximum rate paid by the state.

## Copay Amounts and Eligibility Ceilings

The amount that a parent must pay for child care increases rapidly after family income exceeds 100% of the Federal Poverty Level (FPL). At that level Oregon has the eighth highest copay among the states and District of Columbia (Schulman & Blank, 2005). At 150% of FPL, Oregon has the highest copay, although families at that level are not eligible for a subsidy in seven other states (ibid.). During the study period, eligibility was set at 185% FPL although it was lowered to 150% FPL in February 2003. Twelve other states set eligibility at less than 150% FPL (ibid.), but some allow a higher limit once the family is on the subsidy program.

## Eligibility Periods

Caseworkers in Oregon are directed to set the period for recertification of subsidy eligibility between three and six months for the ERDC program. Caseworkers can require certification in less than three months if the parent has temporary income or to align with Food Stamp eligibility periods. In other states, six-month eligibility periods appear more common and some states have 12-month eligibility periods. Oregon parents who receive a subsidy in conjunction with a TANF grant have their recertification date set as a part of their broader TANF eligibility determination.

Parents must act in order to maintain a subsidy, balancing the task of completing paperwork with the monetary value of the subsidy. Adams et al. (2002) have documented the procedures needed to certify or recertify eligibility in several states, and note that these requirements may discourage participation in the subsidy program. Studies of the Food Stamp Program find that both recertification and value of the benefit to the family are associated with participation or continued participation in the program (see, for example, Kabbani & Wilde, 2003; Mills, Sundar, Peterson, & Alwang, 2001). In Oregon, parents receive the paperwork needed for recertification approximately 10 days before the last month of the eligibility period. If the caseworker does not receive the paperwork back from the parent by the 15<sup>th</sup> of the last month of the eligibility period, the parent is issued a closure notice. If the parent submits the paperwork by the last day of that month, and continues to be eligible, the case will remain open. If the paperwork is

received within the month following the last month, it is treated as a new application and – if still eligible – eligibility is established back to the beginning of the month.

## Subsidy Program Management and Child Care Regulation

Oregon does not maintain a waiting list for child care subsidy participation; all eligible families who apply for a subsidy receive it. In Federal Fiscal Year 2001 approximately 20% of children eligible for the subsidy under Oregon rules received a subsidy.<sup>1</sup> The majority of child care assistance is managed through the voucher system; less than 5% of subsidized care in Oregon is managed through contracts with providers. Oregon child care licensing rules state that providers who care for three or fewer children or for children from one family are exempt from regulation as are centers that offer care for less than 4 hours per day or that are operated by public entities.

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<sup>1</sup> Estimate based on number of eligible children produced by Urban Institute's TRIM 3 microsimulation model, using three-year averages of data from the Current Population Survey (calendar years 1999-2001) provided by ASPE, 2003.

# Data Sources and Study Population

## Data Sources

The data come from a number of administrative data sources. We obtained 48 months of data from four Oregon data systems for the study period from October 1997 through September 2001: child care subsidy program, Unemployment Insurance wage data, TANF program, and the Client Maintenance System. State agencies removed identifying variables prior to sending the data to Oregon State University.

### **Child Care Subsidy Data**

The primary source of data for the sample of interest is the data from the child care subsidy program, provided by the Oregon Department of Human Services (DHS). The data are provided to Oregon State University in monthly files; each month contains records on each child who received a child care subsidy (and a corresponding family record). These data include information on the family (income, sources of income, copay amount, provider payment, county) and the child (age, race, gender) as well as the type of care provider (center, family, relative, etc.). Researchers merge these monthly child and family files into a longitudinal database in order to track the receipt of subsidy from one month to the next. The data captures over 95% of the Oregon families who receive assistance with child care payments. The remaining families are served through contracts with providers.

### **Unemployment Insurance Wage Data**

The Oregon Employment Department provided quarterly employment and earnings information from the Unemployment Insurance system for the entire study period. These data allow us to track the employment status, earnings, job changes, hours worked, and industry sectors of parents' prior to, while on, and after they have left the subsidy program.

### **TANF Program Data**

TANF data over the 48-month observation period were linked to provide information on TANF participation over time. In addition to the 48 months of data, we have access to data indicating whether the child care subsidy recipient was ever on TANF in the five years prior to the study period.

## Other Assistance Data

Monthly data from the Client Maintenance System (CMS) were linked to provide more detailed data on family characteristics (parent's education level, family structure, zip code), policy variables (eligibility period), and on participation in other programs, primarily medical assistance, over time.

## Study Population

The population of interest includes 27,628 families with at least one child who entered the child care subsidy program between October 1998 and September 2000, were single-parent families, and received a subsidy for at least one month. More than 90% of Oregon subsidy users are single-parent families and for comparability with other studies we include only single-parent families in this study (Schaefer, Kreader, & Collins, 2005). We include all the children (n=48,125) from each family in the study population. The study observes these families for three years, October 1998 – September 2001, allowing us to view parents' behavior at least twelve months after they began their first observed child care subsidy spell. Given Oregon's short spells of subsidy use, the majority of families exited their first observed subsidy spell by the end of the observation period.<sup>2</sup> In addition, program information is available on these families a year prior to the beginning of the observation period (October 1997 – September 1998). Thus, the study period covers four years from October 1997 – September 2001.

## Case Studies

Figure 1 presents a snapshot of four families' participation in assistance programs and their employment patterns during the study period, October 1997 through September 2001. These case studies help visualize the different data sources and the dynamics of families' movement in and out of employment and multiple programs over time. As described above, each of these families had at least one child enter the child care subsidy program between October 1998 and September 2000 (entry cohort). We observe these families for three years (October 1998 – September 2001), and include data a year prior to the beginning of the observation period (October 1997 – September 1998). For example, Families C and D show a full 12 months of employment and assistance program activity in months prior to the observation period that began in October 1998. Families A and B show activity for fewer months prior to the observation period.

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<sup>2</sup> Eleven percent of all families (n=3,337) had less than 12 months of post data after their first observed subsidy spell. Only 4.4% had six or fewer months of post data after their first observed subsidy spell, and less than two percent had three or fewer months of post data.



Subsidy use is shown on the first line of the figure in either yellow (parents in job readiness programs) or gold (parents who are employed). Each square represents receipt of one calendar month of subsidized child care for one or more children in the family. For example, Family B has four subsidy spells during the observation period lasting five, two, six, and two months, respectively. This study defines a subsidy spell as a period of receipt of subsidized child care services (measured in months) which ends when there is a full calendar month in which no child in the family received subsidized care.<sup>3</sup> The data reflect months in which subsidized child care services were actually received, not when payment occurred, so that an interruption of even one month indicates a break in the continuity of subsidized child care.<sup>4</sup>

Quarterly information on whether or not the parent was employed is captured in the first green row. This data were obtained from the UI Wage records. The lighter green color indicates that the parent worked full-time in that quarter. Being employed less than full-time is indicated by the darker olive color. Full time is defined as at least 390 hours per quarter. In addition, each quarter contains the number of hours they worked in that quarter. Different shades of green and gray under the employed row indicates job (employer) changes. Each new shade of green or gray is a different employer. Multiple lines within a quarter represent multiple employers. For example, Family B had five different employers over a two year period, while Family D had three employers over 12 employment quarters. Monthly receipt of TANF (blue) and status as a Department of Human Service (DHS) Client (orange) are also included in these case studies. DHS Client represents monthly receipt of the assistance programs offered by DHS. These include TANF, Oregon Health Plan and Medical Care, and Employment Related Day Care.<sup>5</sup>

## **Demographic Characteristics of the Study Population**

The description of the demographic characteristics of the study population is based on responses in the first month of the family's first observed subsidy spell. Table 1 shows a mean of almost two (1.80) children in the household, with slightly fewer (1.68) children who receive subsidized child care. The mean age of the youngest child in the family at the beginning of the first observed subsidy spell is almost

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<sup>3</sup> We call this a family subsidy spell and define it as continuous receipt of a subsidy for any child in the family. A family spell is distinct from a child spell. A child spell is defined as continuous receipt for an individual child either a randomly selected child or the youngest child in the family and is typically used in studies focused on child outcomes (e.g., child care arrangement stability). Family subsidy spells are used in this study because our question of interest focuses on parent outcomes. Thus, it was important to capture the spells related to the length of time a parent participates in the subsidy program.

<sup>4</sup> The data do not provide information on whether the child care arrangement continued after the end of subsidy receipt, if, for example, the parents began paying the provider.

<sup>5</sup> Participation in the Food Stamp Program is not captured by these data.

**Table 1. Characteristics of the Study Population (based on first month of first observed child care subsidy spell) (n=27,628)**

<b>Variable</b>	<b>N Missing</b>	<b>Mean/ Frequency</b>	<b>Std. Dev</b>	<b>Minimum</b>	<b>Maximum</b>
Number of children in household	108	1.80	0.01	1	8
Number of children with child care subsidy in household	0	1.68	0.01	1	8
Age of youngest child (months)	0	40.1	0.20	0	214
Age of oldest child (months)	0	61.9	0.20	0	214
Parent's age (years)	69	27.53	0.04	14	71
Parent's education level (continuous)	5374	11.20	0.01	0	17
Monthly household income	0	\$595	3.67	0	\$3291
Percent employed	0	55.6	0.01	0	1
Percent on TANF	0	29.9	0.01	0	1
TANF receipt prior to October 1997	14,457	47.67%			
Average number of months		15.8	11.8	1	44
Type of care	1468				
Center care		20.3%			
Home-based facility		59.4%			
In-home provider		5.5%			
Relative care		14.8%			
Percent English is primary language	0	0.98	0.01	0	1
Ethnicity of family <sup>a</sup>	25				
Asian		1.3%			
Black		8.9%			
Hispanic		9.1%			
Native American		1.7%			
Pacific Islander		0.01%			
White		78.1%			
Other/Unknown		0.75%			

<sup>a</sup> Variance in reported race in the family's first observed spell showed 95.5% of families had children with the same race, and 4.5% of families had children representing different races.

three and a half years old (40 months). The oldest child is, on average, five years of age (61.9 months). The vast majority of the single-parent families are headed by women (95%) who are around 28 years of age, and, on average, have less than a high school education. Average monthly household income was \$595. At the first month of their first observed subsidy spell, 56% of parents were employed, and 30% were receiving TANF. Forty-eight percent of the study population had at least one month of TANF receipt in the five years prior to the study period. These families had an average of 16 months of TANF receipt for this five year time period. Over half (59.4%) of the primary child care arrangements are in the home of a nonrelated caregiver, 20% in center care, 15% with relatives and six percent with nonrelated in-home providers. Almost all of the study population speaks English (98%), and the majority (78%) are Caucasian. Hispanic families comprise 9.1% of the sample, and Black families represent 8.9%.

# Results

## Stability Patterns Over Time

The objective of the analysis of stability patterns is to determine whether families who have instability in one aspect of their lives also have instability in other aspects, and whether this instability helps to explain the short spells of subsidy use. One hypothesis about why families leave the subsidy system quickly posits that some families do not retain child care subsidies due to instability of employment or family mobility. If a parent loses a job or moves to a new community, that disruption may cause her to end subsidy receipt while she looks for a new job or a new child care provider. In order to assess the connection between employment or residential instability and subsidy receipt, we analyzed the dynamics of the employment, program participation, and zip code of residence for the families who began a spell of subsidy receipt during the observation period. In particular, we wanted to determine whether more stable subsidy use is associated with more stable employment (and vice versa). The analysis is purely descriptive, yet provides interesting information about spells of employment and program participation for families. We first describe the dynamics of each key outcome variable – subsidy use, TANF, DHS program participation and employment – by looking at the length of the first (observed) spell that began in the observation period, and for the three-year observation period, calculating cumulative months and number of spells. We then look at the patterns of dynamics by defining groups based on their employment status and comparing stability measures for these groups.

## Data and Methods

The analysis sample consists of all 27,628 single-parent families who began a spell of child care subsidy in Oregon between October 1998 and September 2000. For these families, data were extracted from the various administrative data systems covering three years, October 1998 through September 2001. The median spell length is estimated using an accelerated failure time (AFT) regression model assuming a log-normal distribution and adjusting for those spells that have not been completed by the end of the study period (September 2001).<sup>6</sup> The spell length estimates are based on the first observed spell for each family that entered the program during the observation period. This approach avoids the problem of “left-censored” spells, those underway when the study began.

Over the three years we also calculate cumulative months of subsidy use, TANF use, DHS program participation, and quarters of employment (i.e., non-zero wages). This analysis is based on 36 months (or

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<sup>6</sup> Results using other distributional assumptions and, alternatively, a semiparametric model (Kaplan-Meier) were similar.

12 quarters in the case of the employment data) between October 1998 and September 2001. These data cover the same three years for all families in the sample, regardless of when the subsidy spell began for the family. Although parents have differing periods of observation, most of the study parents have data for wages and/or program participation throughout the three year period (as shown below). Using the 36 months of data (or 12 quarters for employment), we calculate the cumulative months (or quarters) and the number of spells during the three years. We also count the number of job changes over the period (changes of employer identification number), and number of zip code changes as a measure of family mobility.

### Dynamics of Subsidy, TANF and Employment Spells

Most spells of subsidy use were short. One quarter of first observed subsidy spells ended after two months, and half ended by four months (Table 2). The 75<sup>th</sup> percentile of subsidy spells was 8.2 months, indicating that some families did have longer continuous periods of subsidy use. These results are similar to those found in an earlier study, which used only two years worth of subsidy data and found that the median spell length in Oregon was three months (Meyers et al., 2002). Spells were calculated for a random child in each family in the Meyers et al. study, whereas in this study we calculated family spells (defined as continuous receipt of a subsidy for any child in the family) and included more years of data.<sup>7</sup> The mean cumulative months of subsidy was nearly one year (11.8 months), indicating that many families had more than one spell of subsidy use in the three years.

**Table 2. Dynamics of Subsidy, TANF and Employment Spells**

	Duration of first spell			Cumulative months between Oct. 1998 and Sept. 2001		Number of spells between Oct. 1998 and Sept. 2001	
	25 <sup>th</sup>	Median	75 <sup>th</sup>	Mean	Std. Dev.	Mean	Std. Dev.
Child Care Subsidy	2.2	4.2	8.2	11.8	9.0	2.0	1.1
TANF	3.1	6.2	12.2	5.9	8.8	0.8	1.0
Employment *	8.6	18.8	≥36	22.9	11.4	1.5	0.8

*\*Note: Employment quarters were multiplied by three to convert to months.*

For those who received TANF during the observation period, TANF spells were longer on average than subsidy spells. The median TANF spell length was about six months. One quarter of TANF spells

<sup>7</sup> In most cases, all children in a family who were in subsidized care began and ended a subsidy spell at the same time.

were longer than a year. Most families had no more than one TANF spell (during the observation period), and half had no TANF months at all, so the average number of TANF spells was 0.8. The average cumulative number of months of TANF (including those with zero months) was 5.9.

Parents had on average 1.5 employment spells during the three-year observation period, and almost two years (22.9 months) of cumulative months of employment. While some parents experienced steady employment, others moved between employment and nonemployment.<sup>8</sup> Only 5.6% of the parents had no wages reported in the three year period. Among those who had some employment, one fourth of employment ended within nine months. At the other extreme, nearly one quarter of the employment lasted more than three years, that is, the parent was employed in every quarter of the three-year observation period. Parents changed jobs, on average, twice during the three years.

### **Employment Stability Groups**

The data reveal considerable variation in the spells of subsidy, TANF and employment during the three year period. TANF and subsidy spells range in length from one to 36 months, and while a few families have no reported earnings, others have two years or more. Given this heterogeneity, we grouped the families based on their stability of employment and examined differences in the stability of program participation and community of residence for these groups.

Based on patterns observed in the data, we divided the families into four groups indicating their employment stability:

- (1) Little or no employment: Parents who had fewer than five quarters of employment (of a possible 12 quarters);
- (2) Limited employment: Parents who had between five and eight quarters of employment;
- (3) Stable employment with unstable jobs: Parents who had nine or more quarters of employment reported and more than two job (employer) changes in the three years;
- (4) Stable employment with stable jobs: Parents who had nine or more quarters of employment reported and two or fewer job (employer) changes in the three years.

About half (49%) of the parents had wages recorded in nine or more of the quarters. Of these, 13,553 families, 56% had two or fewer job changes in the three years. These parents exhibited the most stability in terms of employment and jobs. The other 44% of families had nine or more quarters of wages, but had more than two job changes in the three years. These parents are considered to have unstable jobs, but stable employment (because they have more than two years of wages). The least stable groups (in terms of employment) are the parents with fewer than nine quarters of earnings reported. These parents are

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<sup>8</sup> Nonemployment is defined as quarters in which no wages were recorded for the parent in the Oregon UI wage records. She may have been unemployed and looking for work, out of the labor force, or working in another state.

divided into those with little or no employment (fewer than five quarters out of 12), and those with between five and eight quarters of earnings (limited employment).

Table 3 provides average characteristics of the children, household, and type of care subsidized in the first month of subsidy receipt for each of the four employment stability groups. The average number of children in the household was similar across groups, about 1.8 children. The parents tend to be somewhat older in the households with more stable employment. The parents with little or no employment had the lowest level of education on average, about 10.9 years compared to 11.4 for those with stable employment and stable jobs. The most stable employment group used less center care (18.9%) and more relative care (16.1%) compared to those with little or no employment (center care 23.8% and relative care 13.5%).

The most noticeable difference among the four groups was in recent TANF participation. Recent TANF use was much more common for those with little or no employment (half had received TANF within the 12 months prior to starting the subsidy spell), compared to only 22.7% of those with stable employment and stable jobs. Despite the difference in recent TANF use, in all four employment groups nearly half of the families had received TANF between 1992 and 1997 (prior to the start of the study period).

### **Family Case Studies of Stability Patterns**

In order to better visualize the stability patterns for the four employment groups, Figure 2 shows the patterns of subsidy use, TANF receipt and employment for six sample families. The situation of Family 1 illustrates the little or no employment category, having received wages in fewer than five quarters during the three year period. Family 1 received a job-readiness child care subsidy for one month in January 1999, and did not have recorded wages until the third quarter of that year. The parent worked only 76 hours in that quarter, and did not receive a child care subsidy. The parent then worked 200 hours in the last quarter of 1999 and received a subsidy for three months. Both subsidy receipt and employment ended early in 2000, though the parent had multiple jobs (but few total hours) in the last two quarters of 2000. The family received TANF during 1999 and early 2000, and remained a DHS client (on medical assistance). This family is representative of the least stable employment category, with few quarters of wages reported, one spell of TANF receipt, and one or two short subsidy spells. The parent was unlikely to remain eligible for an employment-related child care subsidy given her short employment spells and low number of hours worked.

Family 2 is an example of a family with limited employment (between five and eight quarters of employment) during the three-year period. The parent had multiple jobs with periods of no wages in

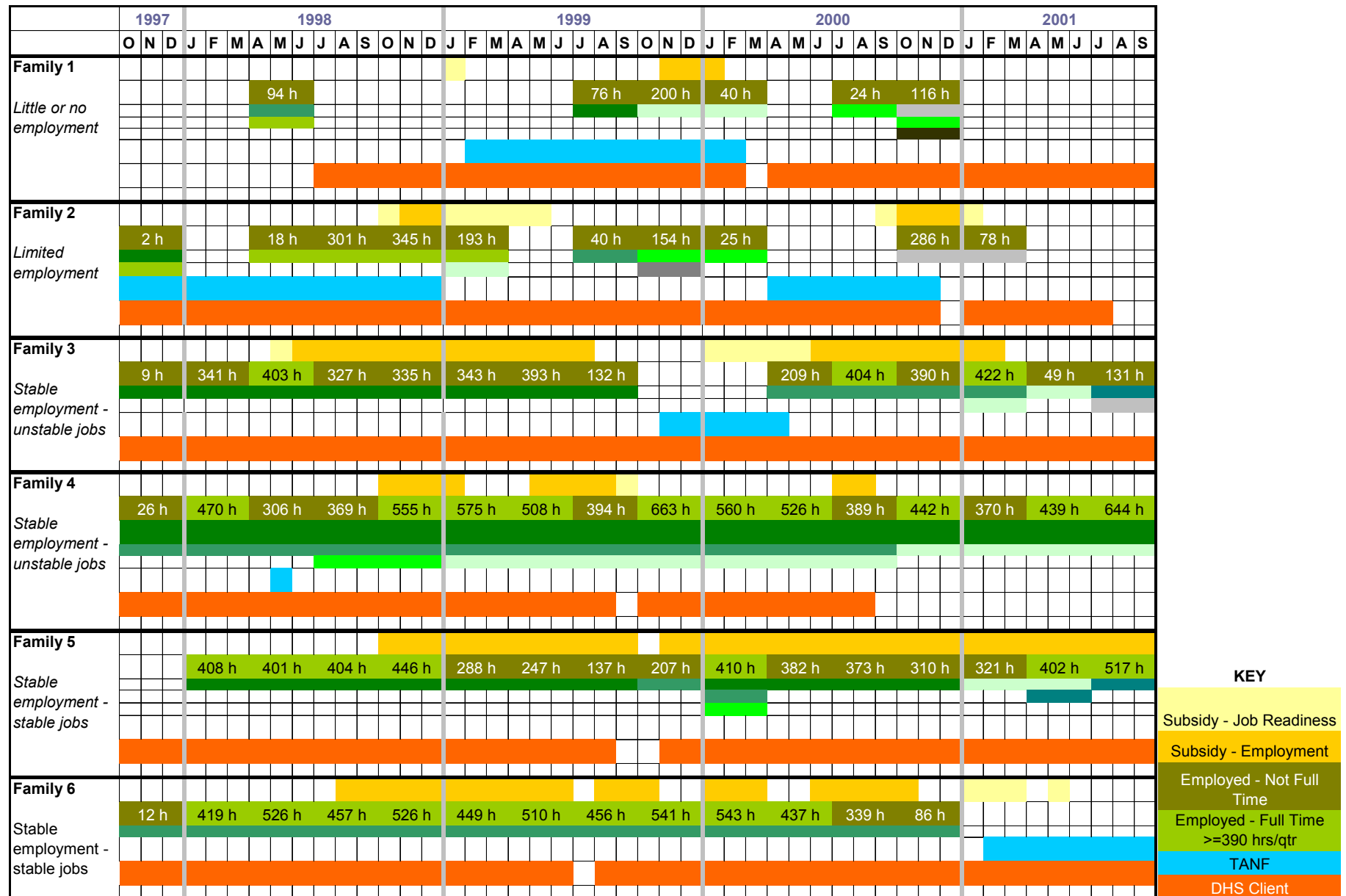
**Table 3. Characteristics of the Employment Groups (based on first month of subsidy receipt during observation period) (n=27,628)**

Variable	Little or No Employment		Limited Employment		Stable Employment – Unstable Jobs		Stable Employment – Stable Jobs	
	Number Missing	Mean (Std. Dev.) / Frequency	Number Missing	Mean (Std. Dev.) / Frequency	Number Missing	Mean (Std. Dev.) / Frequency	Number Missing	Mean (Std. Dev.) / Frequency
Number of children in household	50	1.8 (0.01)	30	1.8 (0.01)	19	1.7 (0.01)	16	1.9 (0.01)
Number of children with child care subsidy in household	0	1.7 (0.01)	0	1.7 (0.01)	0	1.6 (0.01)	0	1.8 (0.01)
Age of youngest child (months)	0	35.9 (0.38)	0	37.2 (0.36)	0	38.6 (0.41)	0	41.8 (0.37)
Age of oldest child (months)	0	57.1 (0.52)	0	58.9 (0.47)	0	59.1 (0.54)	0	67.7 (0.48)
Parent’s age (years)	41	27.2 (0.09)	14	26.9 (0.08)	5	26.5 (0.08)	12	28.7 (0.08)
Parent’s education level (years)	875	10.9 (0.03)	1182	11.2 (0.02)	1174	11.3 (0.03)	2409	11.4 (0.03)
Monthly household income	0	\$325 (6.04)	0	\$517 (6.44)	0	\$701 (7.23)	0	\$886 (6.69)
Type of care								
Center care		23.8%		19.0%		17.5%		18.9%
Home-based facility		58.1%		60.1%		61.3%		58.8%
In-home provider		4.5%		5.7%		5.8%		6.2%
Relative care		13.5%		15.2%		15.5%		16.1%

**Table 3. (continued) Characteristics of the Employment Groups (based on first month of subsidy receipt during observation period)**

<b>Variable</b>	<b>Little or No Employment</b>		<b>Limited Employment</b>		<b>Stable Employment – Unstable Jobs</b>		<b>Stable Employment – Stable Jobs</b>	
	<i>Number Missing</i>	<i>Mean (Std. Dev.) / Frequency</i>	<i>Number Missing</i>	<i>Mean (Std. Dev.) / Frequency</i>	<i>Number Missing</i>	<i>Mean (Std. Dev.) / Frequency</i>	<i>Number Missing</i>	<i>Mean (Std. Dev.) / Frequency</i>
Ethnicity of family								
Asian		1.4%		1.0%		1.0%		1.7%
Black		9.5%		9.1%		9.6%		7.4%
Hispanic		9.6%		9.2%		8.6%		8.7%
Native American		2.1%		1.7%		1.5%		1.8%
Pacific Islander		-		0.1%		-		-
White		76.7%		78.1%		78.7%		79.8%
Other/Unknown		0.7%		0.8%		0.6%		0.7%
Percent on TANF at least one month in the year prior to their first observed subsidy spell		50.7%		40.6%		30.2%		22.7%
Percent on TANF at least one month 5 years prior to study period (Between 1992-1997)		46.0%		46.9%		49.6%		48.2%

**Figure 2. Select Case Study Patterns of Subsidy Use, TANF Receipt and Employment**



between, two separate spells of subsidy receipt, and two spells of TANF during the three years. During the quarters with the most hours of employment, the parent received a child care subsidy, but during other periods of employment had no subsidy. The parent received both job-readiness and employment-related child care subsidies during the two spells. While this parent held multiple jobs, her hours of work fluctuated considerably and averaged only 188 hours in the quarters in which she had wages reported. Again, this family may find it difficult to retain eligibility for a subsidy during short and intermittent employment spells.

Families 3 and 4 are both in the stable employment – unstable jobs category. These two families illustrate situations in which job instability may have led to breaks in subsidy use. Both families had more than eight quarters of employment and more than two job changes during the three year study period. Family 3 had two fairly long spells of subsidy receipt, and a break in both employment and subsidy occurring in the same calendar quarter. During the period without wages, the family received TANF for six months. While this family had over two years of employment, the number of hours in a quarter varied considerably and never exceeded 400 hours per quarter (suggesting that the parent either worked no more than 30 hours per week or fewer than 13 weeks in the quarter). Family 4 had steady employment in each quarter of the three years, though hours of work varied between about 300 and 663 hours in a quarter. The parent had five job changes over the three years. The parent worked full time in most quarters (defined as more than 390 hours in a quarter), but her hours of work did fluctuate. While the parent was continuously employed in every quarter, she had three short spells of subsidy use of four, five and two months each. Most months of employment were not covered by a subsidy for this family.

Families 5 and 6 provide examples of families with stable employment and stable jobs. These two cases both had more than eight quarters of employment and over 20 months of cumulative subsidy use. Family 5 received a subsidy from October 1998 through the end of the study period (September 2001) with only one break of one month. This break may have been related to a change in employer as the parent had a different employer in the next quarter. Family 6 had steady employment from January 1998 until January 2001 and no change of employer, yet had six different spells of subsidy use. Each spell was separated by a one or two month break. Three of these breaks came at the end of an eligibility period, but the other two did not. After the parent's employment spell ended in January 2001, she received job-readiness child care for two more spells of three months and one month respectively, with a one month break in between. The family also received TANF after the employment spell ended. During the period of steady employment, the breaks in subsidy use for this family may be related to program requirements concerning redetermination of eligibility.

## Stability Patterns for the Four Employment Stability Groups

Having seen examples of the employment and program use over time for the sample families, we next describe the average or typical stability patterns for each of the four groups. The employment stability groups were divided primarily based on quarters of earnings, so it is not surprising that their employment trajectories differ considerably in terms of length of wage spells and cumulative quarters of earnings. The group with little or no employment reported on average only one period of employment lasting less than six months (Table 4). These parents on average had more months of subsidy use than of employment and also had longer periods of TANF receipt than the other parents. At the other end of the stability scale, the group with stable employment and stable jobs also typically had only one employment spell, though this spell lasted nearly the entire observation period (the median employment spell exceeded 36 months). This group had only one job change on average over the period, and 31% had no job changes during the study period. These parents were the most stable in terms of their employment, and few in this group (less than 30%) received TANF during the study period. Despite their relatively stable employment and longer subsidy spells, less than half of their months of employment coincided with months of subsidy receipt.

Another group (21%) of parents had at least nine quarters of wages, yet had more than two job changes. This group was characterized by unstable jobs, and had an average of four job changes over the three years. Thus while they had as many quarters of earnings as the group with stable employment and stable jobs, they had more job changes. They also had more and shorter subsidy spells compared to those with stable jobs. Those with more job changes had more than twice the number of zip code changes (mean of 1.4 versus 0.7) than those with stable employment and stable jobs. The stable employment-unstable jobs group also was more likely to receive TANF during the three years than those with fewer job changes (though still less often than those with fewer than nine quarters of employment).

The families with fewer than nine quarters of employment were divided into those with little or no employment (four or fewer quarters), and those with limited employment (between five and eight quarters). Both groups had about two subsidy spells during the three years, but the cumulative months of subsidy use were fewer (7.7 versus 10.6) for those with little or no employment. Those with limited employment were more likely to have job changes (mean = 2.1), compared to those with little or no employment (mean = 0.7). Those with limited employment also tended to have fewer months of TANF than those with little or no employment. About half of all months of employment were covered by subsidy for those with limited employment. In contrast, for the group with little or no employment, the number of subsidy months exceeded the months of employment, indicating subsidy use while in job search or training programs.

**Table 4. Characteristics of Employment Stability Groups over Three-Year Observation Period**

	Employment Stability Group				ALL
	Little or no employment	Limited employment	Stable employment – unstable jobs	Stable employment – stable jobs	
Number of families	6,471	7,604	5,902	7,651	27,628
Percent of families	23.4%	27.5%	21.4%	27.7%	100%
<b>Subsidy Use</b>					
Mean number of subsidy spells	1.8	2.0	2.2	1.9	2.0
Median subsidy spell length (months)	3.0	3.9	4.4	5.9	4.2
Mean cumulative subsidy months	7.7	10.6	13.4	15.2	11.8
Cumulative subsidy months as a percentage of 36 months	21%	29%	37%	42%	33%
<b>Employment</b>					
Mean number of employment spells	1.1	1.9	1.6	1.3	1.5
Median employment spell length (months*)	5.9	11.1	28.9	≥36	18.8
Mean cumulative months* of earnings	6.1	19.7	32.2	33.2	22.9
Percent of employment months covered by subsidy**	116%	54%	42%	46%	61%
Percent with no job changes	47.8%	13.4%	0%	31.2%	22.1%
Mean number of job changes	0.7	2.1	4.3	1.0	2.0
Mean quarterly earnings	\$1,355	\$2,126	\$2,608	\$3,444	\$2,457
Mean quarterly hours worked	175	259	303	378	286
<b>TANF receipt</b>					
Percent with no TANF receipt (in the 3 years)	31.1%	39.9%	56.2%	70.7%	49.9%
Mean number of TANF spells	1.1	1.0	0.7	0.4	0.8
Median TANF spell length (months)	8.3	6.1	4.4	5.1	6.2
Mean cumulative TANF months	11.2	7.2	3.5	2.1	5.9
<b>Family mobility</b>					
Mean number of zip code changes	1.3	1.3	1.4	0.7	1.2
<b>DHS Client</b>					
Mean cumulative months as DHS client	23.4	25.6	26.3	24.7	25.0

Notes: \*Employment quarters converted to months by multiplying by three.

\*\*A percentage >100 indicates subsidy use while not employed and in training or job search programs.

Another potential indicator of instability is change in residence, measured here by changes in zip code.<sup>9</sup> Most families changed zip code of residence only once on average (mean of 1.2) during the three years of the study period. There is a huge difference, however, between those with stable jobs and the other three groups. The parents with stable employment and stable jobs changed zip code 0.7 times on average, compared to about 1.3 times for the other three groups. Those with stable employment and unstable jobs changed zip codes twice as often on average (mean of 1.4) compared to those with stable employment and stable jobs (mean of 0.7). Regardless of whether changes in employment led to residence moves or vice versa, the instability in jobs and zip code have the potential to disrupt child care arrangements and subsidy use.

The above results compare averages for the families when grouped by stability of employment and job. These comparisons clearly show the variation across these four groups. Yet there was also variation within each group that was masked by only comparing averages. Indeed, we found that the range of within-group variation appears to be similar for many measures, except, of course, on those measures used to categorize the groups (such as cumulative quarters of wages and number of job changes). For example, across all four groups there was considerable variation in subsidy use (Appendix Table 1). In all four groups there were families with just one spell of subsidy use and families with seven or more spells. Similarly, there were families in each stability group with just one month of subsidy receipt, and families with subsidy use in all 36 months of the observation period. The extent of TANF and medical assistance participation also showed similar variation within groups. However, the percentage of families with no TANF participation in the three years was more than twice as high for the stable employment – stable jobs group (71%) than for the little or no employment group (31%).

### **Employment Stability and Subsidy Use**

The objective of the analysis of stability patterns was to determine whether families leave the subsidy system quickly due to instability of employment or residential mobility, and whether employment stability and subsidy stability were linked. The first surprise, therefore, was that many parents had greater employment stability than expected (half of the parents were employed for at least nine of the 12 quarters). Studies of TANF leavers find on average that about 60% are employed in the first quarter after exiting TANF but only about 30% are employed in all four quarters after exit (Acs & Loprest, 2004, p.42). In contrast, nearly three quarters of parents who exited the Oregon child care subsidy program were employed in the first quarter after exit, and 43% worked each of the four quarters after exit.

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<sup>9</sup> From the database we are unable to measure changes in housing other than changes in zip code. Zip code is only recorded in months the family remains in the DHS client maintenance system (CMS) but is considered very reliable in those months.

While quite a few parents had stable employment, very few had stable subsidy use (that is, continuous spells of subsidy receipt for more than 12 months). Less than 40% of all the parents had more than 12 cumulative months of subsidy use in the three years, and about half of the parents with more than eight quarters of employment received subsidy. Typically those with more than eight quarters of employment had two spells of subsidy receipt, and about half of their quarters of employment were covered by subsidy. As shown in Figure 2, for example, Family 6 had steady employment, numerous interruptions in subsidy use, and continuity as a DHS client (on medical assistance). In contrast, Family 5 had steady employment and stable subsidy use, with only one break corresponding in time to a change in employer.

Despite the relative infrequency of stable subsidy use, those with more employment typically had more months of subsidy receipt than those with fewer quarters of employment. Table 5 shows a frequency distribution for months of subsidy use for each of the four employment-stability groups. More than one-third of those in the stable employment – stable jobs group had more than 18 cumulative months of subsidy over the three years. Nearly as many (28%) of those in the stable employment – unstable jobs had over 18 months of subsidy use. In contrast, nearly 60% of the little or no employment group had six or fewer cumulative subsidy months.

As shown in Table 5, those in the stable employment – stable jobs group on average had more months of subsidy use than those with less stable employment. Of the stable employment – stable jobs group, 35% had more than 19 months of subsidy receipt compared to 28% of those with stable employment and unstable jobs. Those with more quarters of employment had more months of subsidy receipt, yet time on subsidy and employment do not appear to be highly correlated, with a correlation coefficient equal to 0.32 (statistically significant at the 1% level). The correlation between the duration of the first observed subsidy and employment spells was only 0.26.

While parents with more stable employment appear to use the subsidy program somewhat more consistently than others, the analysis cannot determine causality. Stable employment may support subsidy use or stable subsidy use may support steady employment. Despite continuing employment and few job changes, for many parents subsidy use was short and/or intermittent. Even among those with nine or more quarters of employment, subsidy use covered only 40% to 50% of the time employed during the study period. Those with more stable employment tended to use the subsidy program more than those with less employment stability, but even those with stable employment frequently did not use the subsidy program consistently.

**Table 5. Distribution of Cumulative Months of Subsidy, TANF and DHS Client by Employment Stability Group**

	<b>Employment Stability Group</b>			
	<b>Little or no employment</b>	<b>Limited employment</b>	<b>Stable employment – unstable jobs</b>	<b>Stable employment – stable jobs</b>
Number of families	6,471	7,604	5,902	7,651
Percent of families	23.4	27.5	21.4	27.7
<b>Cumulative months of subsidy use</b>				
	<b>Percent of families</b>			
1 to 3 months	36.2	19.6	15.2	13.7
4 to 6 months	21.8	17.6	13.8	12.8
7 to 12 months	22.2	27.3	23.2	19.6
13 to 18 months	10.6	20.5	18.9	17.2
19 to 36 months	9.2	15.0	28.9	36.7
<b>Cumulative months of DHS client</b>				
12 months or fewer	22.6	9.6	8.9	14.7
13 to 24 months	24.9	31.4	27.3	29.2
25 to 36 months	52.5	59.0	63.8	56.1
<b>Cumulative months of TANF</b>				
No TANF during three year observation period	31.1	39.9	56.2	70.8
12 months or fewer	30.4	35.4	35.6	24.6
13 to 24 months	21.2	19.2	7.2	4.0
25 to 36 months	17.3	5.5	1.0	0.6

### Summary of Stability Pattern Findings

Other studies have found low take-up rates for child care subsidies (Collins et al, 2002; Meyers & Heintze, 1999; Witte & Queralt, 2003), and a few have investigated barriers to subsidy use and retention (Adams et al., 2002; Shlay et al., 2004). Lack of information about the subsidy program and incorrect beliefs about the family’s eligibility were found to be key reasons for lack of participation (Meyers & Heintze, 1999; Shlay et al., 2004). In this study we focused on families who had used the program and for whom lack of information or incorrect beliefs were unlikely to be barriers to participation; they had successfully participated in the program at least once during the observation period. We hypothesized that instability in employment or change in residence were likely reasons for early exits from the subsidy program. We found unexpectedly high levels of employment stability (employed for a mean of 23 months of the 36 observed months) and low levels of family mobility (mean of 1.2 moves over the

months observed as a DHS client). Those with more stable employment tended to use the subsidy program more than those with less employment stability, but even those with stable employment frequently did not use the subsidy program consistently. In addition, there was a wide range in variation of subsidy use within all four employment groups, suggesting that subsidy spells were not closely related to employment stability. Most surprisingly, many of the families continued to be served by the agency that administers the subsidy program. Families had a mean of 25 months as a DHS client during the 36 observed months. Clearly, loss of a job, job changes, and family mobility disrupted subsidy use for some families but these reasons do not appear to explain many subsidy exits after such short spells. We next explore eligibility status after an exit to better understand why parents leave so soon.

## Eligibility Status After Exit

The objective of this analysis is to investigate whether short spells of subsidy use are due to changes in eligibility status after exit. While we do not have complete data on whether families remain eligible, we use earnings and program participation information to assess whether the families appear to be eligible for the subsidy program once they leave. For example, have they experienced an increase in earnings, or a loss of a job; for families who are in job training or assessment programs, do they find jobs but choose not to use subsidies, or are they not employed? In addition, we observe interactions between child care subsidy, TANF, and other state-managed financial assistance programs after exit to compare participation in other programs with subsidy use. This analysis provides a descriptive look at earnings, employment status and program participation immediately after exit and at points-in-time 3, 6, and 12 months after the first observed spell of subsidy receipt. Inclusion of UI wage data allows us to analyze employment activity at the same time as participation in financial assistance programs. In addition, we estimate income eligibility for those families employed but not on subsidy at points-in-time 1, 2, and 4 quarters after exit.

## Data and Methods

The sample for this analysis includes 25,124 families. From the initial study population of 27,628 we removed those families whose first observed subsidy spell (a) began before the observation period (left censored) (407 cases deleted), (b) extended beyond the observation period (end or right censored), thus these families did not have a subsidy exit to observe (1,573 cases deleted), or (c) extended into the last quarter of the observation period (524 cases deleted). Given that employment data is quarterly, it was important to observe at least one quarter of employment data after exit from the child care subsidy program. This last group of families did not have a quarter of employment data beyond their first observed spell because they exited in the last quarter of the observation period.

An important part of the analysis was linking the different data sources into a merged data analysis file. Linking these multiple databases provided a dynamic analysis dataset for observing program interactions and relationships between participation and employment. This dataset was used to determine employment and program indicators at different points-in-time after the first observed spell of subsidy.

The indicators include combinations of employment status, TANF receipt, and medical assistance (e.g., Oregon Health Plan). For program participation (subsidy, TANF, medical assistance) monthly records indicate receipt of benefits or months in which subsidized child care was received, while employment status is based on quarterly data. Participation was determined the month or quarter immediately after subsidy exit, and at points-in-time 3, 6, and 12 months (1, 2, 4 quarters) after exit. Receipt of subsidy was added as an indicator in the later follow-up time periods. An additional indicator at all time periods is ‘Disconnected in this month/quarter’. This indicator tracks those families that did not appear to have received any program assistance and were not employed at a particular point-in-time. It does not mean that families have completely disconnected from the study. Of the 25,124 families who had at least one child care spell of subsidy, only 68 (<1%) of those families completely disconnected<sup>10</sup> from all programs for the remainder of the observation period after the completion of their first observed spell. The employment and program indicators were also evaluated by select subgroups. One subgroup included families who were employed in the last month of their first observed spell of subsidy (n=19,293, 77% of sample). Families who were receiving TANF in the last month of their first subsidy spell were also a subgroup (n=6,132, 24% of sample).

Earnings variables were used to describe the estimated income eligibility for those families employed but not on subsidy at points-in-time 1, 2, and 4 quarters after exit. The difference in earnings was calculated between the quarterly earnings corresponding to the points-in-time after subsidy exit and the last month of the first observed subsidy spell. We were interested in how much earnings had increased or decreased between these points-in-time, and whether or not an increase in earnings would be large enough to change eligibility status. We also looked at the percent of families who had quarterly earnings above the poverty level eligibility criteria. We estimated eligibility using 185% of the 1998 federal poverty level for a family of three (\$24,056 per year).

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<sup>10</sup> We describe any family that has no record of wages, CMS, subsidy or TANF in a month (or quarter) as completely ‘disconnected’ (from the data set). Such a family may have moved out of state, or may have no parent employed in Oregon and received no program benefits in that month. The data do not allow us to track these families.

## Findings

Table 6 shows the indicators for all families at the follow-up time periods after exit from the subsidy program. At each point-in-time, between half and three quarters of parents were employed without or in conjunction with participation in state programs. This finding is consistent with the stability pattern findings, and indicates that many families are still working after exiting their first observed subsidy spell. They do not appear to be unemployed or out of the labor force, a possible reason for ending child care assistance.

We further investigate the group of employed parents to determine if they appear to remain income eligible. For those parents employed but not on subsidy, quarterly earnings increased from the first quarter after exit to the fourth (Table 7). However, even at the highest average quarterly earnings (\$3,128), the monthly earnings for a family would only be approximately \$1,043. Similarly, little difference exists between earnings during the last quarter of subsidy receipt and the first quarter of subsidy exit. Table 7 shows these differences in earnings across the points-in-time after exit. Earnings averaged \$100 less in the quarter immediately following exit than at subsidy exit. Earnings increased an average of \$222 the 2<sup>nd</sup> quarter after subsidy exit and \$455 by the 4<sup>th</sup> quarter compared to the quarter of subsidy exit. Thus, quarterly earnings were slightly higher on average after exiting the subsidy program than while receiving the subsidy. Corresponding to this pattern, slightly more parents were outside the 185% eligibility criteria by the 4<sup>th</sup> quarter after exit than immediately after subsidy exit. Almost five percent (4.7%) of families have earnings above 185% of the 1998 poverty level in the 4<sup>th</sup> quarter after exit, compared to 4.2% immediately after subsidy exit.

In light of the Oregon policy to change eligibility criteria from the 185% to 150% of the 1998 federal poverty level<sup>11</sup>, we also calculated the percentage of families with earnings above the 150% level. The results show that approximately 10% of families had earnings above the 150% level across the time periods. Although earnings increased during the follow-up period, the increases do not appear to be substantial enough to change families' eligibility for subsidies. Based on earnings relative to the poverty threshold, many families appear to remain eligible for child care assistance.

If families are working and remain income eligible for subsidies, why are they leaving the subsidy program? Some income eligible families will not be subsidy eligible because the size of the copay exceeds the maximum amount the state will pay. For example, a single parent with a preschool child making \$18,000 per year before March 2000 would have to pay a monthly copay of \$390. Since the maximum value of a subsidy was \$364 the parent was not eligible for a subsidy (DHS website <http://dhsmanuals.hr.state.or.us>).

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<sup>11</sup> This change went into effect in February 2003.

**Table 6. Employment and Program Indicators for All Parents After Exit (n=25,124)**

Employment and Program Indicators	Point-In-Time: <b>Immediately</b> after Exit from First Observed Subsidy Spell			Point-In-Time: <b>3 months</b> after Exit from First Observed Subsidy Spell			Point-In-Time: <b>6 months</b> after Exit from First Observed Subsidy Spell			Point-In-Time: <b>12 months</b> after Exit from First Observed Subsidy Spell		
		Sub Total	Total		Sub Total	Total		Sub Total	Total		Sub Total	Total
<i>On Subsidy</i>			NA			23.5%			24.3%			20.3%
Employed		NA			77.6			80.0			80.9	
Not on TANF or Medical	NA			3.1			2.5			2.8		
On TANF or Medical	NA			96.9			97.5			97.2		
Not Employed		NA			22.4			20.0			19.1	
TANF only	NA			0.1			0			0		
Medical only	NA			5.9			5.9			5.2		
Multiple programs	NA			94.0			94.1			94.8		
<i>Not On Subsidy</i>			100%			76.5%			75.7%			79.7%
Employed		74.2			62.8			55.5			45.8	
Not on TANF or Medical	17.2			30.7			39.5			48.5		
On TANF or Medical	82.8			69.4			60.5			51.5		
Not Employed		22.2			26.5			25.5			20.8	
TANF only	0			0			0			0		
Medical only	16.6			24.7			27.3			19.9		
Multiple programs	83.4			75.3			72.7			80.1		
Disconnected in this month/quarter		3.6			10.7			18.9			33.4	
<b>Total</b>			<b>100%</b>			<b>100%</b>			<b>100%</b>			<b>100%</b>

**Note:** See Appendix Table 2 for further breakdown of employment and program indicators.

**Table 7. Estimated Income Eligibility for Families Employed But Not on Subsidy After Exit**

	<b>Point-In-Time: 1<sup>st</sup> Quarter After Subsidy Exit (N=11,178)</b>	<b>Point in Time: 2<sup>nd</sup> Quarter After Subsidy Exit (N=10,540)</b>	<b>Point-In-Time: 4<sup>th</sup> Quarter After Subsidy Exit (N=9,146)</b>
	<i>Mean (Std. Dev)</i>	<i>Mean (Std. Dev)</i>	<i>Mean (Std. Dev)</i>
Sum of quarterly earnings at point-in-time	\$2751 (\$2058)	\$2985 (\$2093)	\$3128 (\$2175)
Difference in earnings from point-in-time after subsidy exit to last quarter of subsidy spell	\$ -100 (\$914)	\$222 (\$1738)	\$455 (\$1922)
% with earnings <b>185%</b> above poverty in quarter after exit (2001 levels - \$27,065/yr)	4.2%	4.5%	4.7%

For a few other income eligible families the youngest child may age out of eligibility or the family may no longer have a child care need. A situation where parents lose their provider may be another trigger for exiting the subsidy program, although a change in provider would not necessitate an exit from the program. The data are limited in tracking the loss of a provider because we only have provider information when parents are using the subsidy program. Meyers et al. (2002) found that 40% of Oregon families return for a second subsidy spell within 12 months of exiting the program. Amongst those who return, almost all come back with a different provider (Weber, 2005).

An additional hypothesis is that parents are leaving the subsidy program because of the “hassle” factor, that is, because of the time and effort it takes to remain eligible. One might assume that if parents are willing to do the paperwork required of one program, they would be more likely to do so for another – especially since the same state agency administers both programs. This would appear especially true for the child care subsidy application process since it is relatively uncomplicated and does not require asset tests as do TANF and medical assistance programs. Yet, returning to Table 6, we see that a sizeable portion of parents who were employed but not on subsidy, were receiving TANF and/or medical assistance (between 69.4% and 51.5% from 3 to 12 months after exit). This was also true for those parents who were employed at exit month or on TANF at exit month. Table 8 presents the collapsed indicator findings for these two subgroups. At least three-fourths of parents in these subgroups were not receiving a subsidy, but were either employed or were on another DHS program. These results show that many parents remain on other programs after they stop receiving a subsidy, suggesting that the value of the child care subsidy may not be perceived as worth the hassle of remaining eligible.

## Policy Levers

### **Eligibility Periods**

Reasons for exiting the subsidy program may be associated with subsidy policies themselves. The first policy we explore for a relationship to subsidy exit is eligibility redetermination. Parents must submit paperwork to document continued eligibility at the time of redetermination. The subsidy spell will end if a parent fails to submit the paperwork on time. We ask if the end of the eligibility period appears related to subsidy exit. We examine changes in the lengths of eligibility periods and subsidy spells over time and explore a possible relationship between the two. Similarity in lengths, or in changes in lengths over time, indicates a potential relationship between the lengths of eligibility periods and subsidy spells.

**Table 8. Subgroup Employment and Program Indicators**

	Point-In-Time: <b>Immediately</b> after Exit from First Observed Subsidy Spell		Point-In-Time: <b>3 months</b> after Exit from First Observed Subsidy Spell		Point-In-Time: <b>6 months</b> after Exit from First Observed Subsidy Spell		Point-In-Time: <b>12 months</b> after Exit from First Observed Subsidy Spell	
	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total
<b>Employed at Exit Month</b> (n=19,293; 77% of All Families)								
<i>On Subsidy</i>		NA		23.1%		23.8%		19.5%
<i>Not On Subsidy</i>		100%		76.9%		76.2%		80.5%
Employed	94.3		75.5		64.7		51.6	
Not Employed – on other DHS programs	4.5		16.5		18.4		15.6	
Disconnected in this month/quarter	1.2		8.0		16.9		32.8	
		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>

**TANF at Exit Month**  
(n=6,132; 24% of All Families)

<i>On Subsidy</i>		NA		28.6%		28.8%		25.8%
<i>Not On Subsidy</i>		100%		71.4%		71.2%		74.2%
Employed	43.2		37.4		36.4		35.1	
Not Employed – on other DHS programs	52.5		50.8		46.6		37.8	
Disconnected in this month/quarter	4.2		11.8		17.1		27.1	
		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>

## Data and Methods

Throughout this paper our sample has been composed of those single parents who entered the subsidy program in the three years between October 1998 and September 2001. To estimate the length of eligibility periods and subsidy spells we used the entire study period data set because four years of data provide more accurate estimates of both variables. The sample included 48,034 families who entered the subsidy program between November 1997 and September 2001.

In order to compare lengths of eligibility periods and subsidy spells over the four years, we first had to measure both. Different methods were needed to estimate lengths of eligibility periods and lengths of subsidy spells.

As noted in the discussion of the policy context, for parents who received a subsidy for reasons of employment or education, caseworkers set a date for recertification eligibility at the time the parent enrolled or had eligibility redetermined. Of the 48,034 families, 30,363 had a date for recertification set in their first observed subsidy spell. Only these families had a subsidy eligibility period assigned in their first observed spell. For the remaining 17,671 families, caseworkers determined eligibility for a child care subsidy as a part of the broader TANF eligibility redetermination; there was no separate child care subsidy eligibility period.

*Eligibility periods.* The length of subsidy eligibility periods was calculated for the first observed eligibility period within the first observed spell of subsidy participation. The length of the period was determined by the caseworker at the time of eligibility certification or recertification and was not affected by a parent exit; the eligibility period was the same length whether or not the parent remained in the program for the whole time that had been authorized. We calculated mean and median number of months of eligibility periods for each of the four observed years.

*Subsidy spells.* The length of a subsidy spell was determined by parent behavior, that is, the length of a subsidy spell depended on whether a parent stops using the program. That can happen before an eligibility period ends or after several eligibility periods have been completed. The variable used to measure the end of the subsidy spell was the last month of subsidy receipt before a break of one or more months. Simple means and medians would not accurately estimate the length of subsidy spells because for parents participating in the program in the final observed month, their exit was not observed. Cases that were ongoing in September 2001 were right-censored, the end of the spell was not observed. We used an accelerated failure time model assuming a log-normal distribution and adjusting for those spells that had not been completed by the end of the study period (September 2001) in order to estimate median length of subsidy spells. Estimates for the length of subsidy spells were based on the first observed spell for each family that entered during the four-year observation period and for two (2-year) time periods, Federal Fiscal Years 1998 and 1999 and Federal Fiscal Years 2000 and 2001.

## Findings

*Eligibility periods.* Eligibility periods were short and did increase slightly over time. As can be seen in Table 9, half of eligibility periods were set for three months or less over the four-year observation period (Federal Fiscal Years (FFY) 1998-2001). The median length steadily increased from 3 months in FFY 1998 to 4 months in FFY 2001. The length of eligibility periods varied little by subsidy spell number; that is, eligibility periods did not increase in length for those who returned for a second or third subsidy spell although they did slightly for the few families who had four spells.

**Table 9. Median and Mean Length of First Observed Eligibility Periods in Months by Federal Fiscal Year (FFY)**

Year	N	Minimum	Maximum	Median	Mean	Std Dev
All 4 years	30,249	1	13	3.00	3.51	1.37
FFY 1998	9,145	1	12	3.00	3.16	1.12
FFY 1999	7,840	1	11	3.00	3.28	1.26
FFY 2000	6,808	1	13	3.00	3.69	1.41
FFY 2001	6,456	1	8	4.00	4.09	1.53

Note: 114 of the 30,363 families with eligibility periods in their first observed subsidy spell had invalid data for the eligibility redetermination date and were thus excluded from the analysis.

*Subsidy spells.* Similarly to increased lengths of eligibility periods, subsidy spells increased over the four years. Half of subsidy spells ended by 3.27 months for Federal Fiscal Years (FFYs) 1998 and 1999, and the median increased to 3.57 months for FFYs 2000 and 2001. The increase in lengths of both eligibility periods and subsidy spells over the same time period indicates that the two may be related. This relationship will be explored further in the probability of exit model described in the next section.

Exits from subsidy happened for a variety of reasons, but over half coincided with the end of an eligibility period. Almost a quarter of families (23%) did not complete the one eligibility period they had. Another fifth (19%) started multiple periods and did not complete them. About half of families (48%) completed multiple periods of subsidy use. The remaining tenth of families (9%) completed the one eligibility period they started.

## Family Subsidy Value

The value of the subsidy for a child results from the interaction of two policy levers, the maximum amount paid to the providers and the copay, the portion of the child care bill that the parent must pay. The provider fee (up to the maximum rate) minus the copay is the amount paid to the child's care provider by

the state. The family subsidy value is the actual amount paid by the state to the primary and secondary providers for all children in a family in a given month. It represents the monetary value associated with participation in the subsidy program.

**Data and Methods**

The sample for the analysis of family subsidy value was the same as that used in most of the analyses in this paper, those 27,628 single parent families who entered the subsidy program between October 1998 and September 2001. Since over 99% of children had two or fewer providers in a month, we only captured the payments made to the first and second providers in each month. The value of the subsidy to the family was therefore the sum of payments made to both the primary and secondary provider for all children in the family.

**Findings**

In the last month of the first observed spell, the value of the subsidy ranged from less than a dollar to \$2,586 with a mean value of \$289. For half of the families the value was greater than \$223. These amounts suggest that families in the subsidy program received substantial value in terms of payments to the provider. As the value of the subsidy increased, the length of time on subsidy also increased. A descriptive analysis of median length of spell by quartiles of subsidy value shows a clear pattern of longer spells associated with higher values (Table 10). In the next section we estimate a model of the probability of exit from subsidy to investigate the role of these different policies on subsidy exits as well as family and community characteristics.

**Table 10. Median Subsidy Spell Length (First Observed Spell) by Quartile of Subsidy Value**

Quartiles of Subsidy Value	Subsidy Spell Length (median)
≤ \$113	2.9
\$114 - \$223	3.5
\$223 - \$393	3.8
> \$393	4.5

## Probability of Exit from the Subsidy Program

Using a variety of descriptive analyses, we have explored three hypotheses of why parents leave the subsidy program. Over half of parents have relatively stable employment and continue to reside in the same community, so instability in other parts of their lives does not explain a substantial portion of exits. Many families appear to remain eligible after exit based on earnings and participation in other means-tested assistance program. It appears that subsidy policies may be associated with exits because over half of exits coincide with the end of an eligibility period. Findings also indicate that lengths of eligibility periods and subsidy spells may be related as the direction of change in lengths was the same, both increased over the same time period. Even with subsidies being worth over \$200 a month on average, parents may perceive the effort required to maintain a subsidy as greater than the value of the subsidy itself. In a final analysis we estimate a Cox regression model to understand the factors influencing probability of exit from the subsidy program. This model examines the extent to which exiting from the subsidy program was related to differences in demographic characteristics of the caseload, economic factors, and subsidy policies.

### Data and Methods

The probability of exit model estimated the relationship between various factors and the likelihood that the parent left the subsidy program in a particular month, given that she had received a subsidy in the prior month. The dependent variable was a binary indicator which equals one if the family exited the subsidy program that month (that is, there was no subsidy receipt in the next month). The model was estimated using a Cox regression model (which is an appropriate method for continuous time data) with time-varying covariates.<sup>12</sup> We estimated the model using the first observed spell for the sample of 25,124 families described in the Eligibility Status After Exit section. The model was also estimated for the subset of families who received a subsidy from the Employment Related Day Care (ERDC) program in their last month of their first observed subsidy spell (14,705 families).

The probability of exit from the subsidy program was expected to be related to demographic characteristics of the family, characteristics of the care, local economic conditions, employment changes, and policy and program characteristics. Specifically, the model controlled for the demographic characteristics of the family by including race and parent's education level. Previous studies have mixed findings on the relationship of education and subsidy use (Blau & Tekin, 2001; Burstein, Layzer, Cahill, Werner, & McGarry, forthcoming). We also included factors that influence child care choices such as age

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<sup>12</sup> The probability of exit models were estimated using the PHREG procedure in the SAS statistical software program.

of youngest and oldest child and the regulated status of the facility.<sup>13</sup> As age of children increases, the child care needs of the child change. We expected more families to exit the subsidy program as the youngest child got older, or if they had older children in the household who may have been perceived as being able to care for younger children. Although studies have found families that take up a subsidy were more likely to use center care (Burstein et al., forthcoming; Shlay et al., 2004), in Oregon spell length did not vary by type of care (Meyers et al., 2002). We used the regulatory status of child care facilities rather than type of care in the model.<sup>14</sup>

The dataset was linked with data on community characteristics to control for other changes occurring during this time period. For example, data on child care availability (slots per 100 children) were obtained from the Oregon Child Care Resource and Referral Network. Data from the Census and the Bureau of Labor Statistics provided information on local economic conditions such as employment growth rate. These data were matched with the county of residence of the family by month. Dummy variables for the type of county were included to control for time-invariant differences in economic and community characteristics. County types were based on Census definitions of major metropolitan area (the omitted category), core counties in a small metropolitan area, micropolitan counties, and rural counties.

Employment changes<sup>15</sup> may also influence parents' decisions to leave the subsidy program. An increase or decrease in quarterly hours worked may have affected eligibility status, thus influencing the probability of exiting the subsidy program.<sup>16</sup>

The model also included policy and program characteristics such as eligibility group (being in employment-related subsidized care versus job readiness or assessment), redetermination month (an indicator of whether or not a particular subsidy spell month coincided with the end of the eligibility period), family co-payment amounts, and family subsidy value (amount of child care payment paid by state to providers). We expected that the end of an eligibility period and an increase in the parents' portion of the child care payment would lead families to exit the subsidy program. Conversely, those who were receiving a subsidy and were employed would be less likely to exit than those in job assessment, and those receiving a higher subsidy value would also be less likely to exit, all else equal.

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<sup>13</sup> Number of children in the household and number of subsidized children in the household were not included in the model because they were highly correlated with the policy variable subsidy value.

<sup>14</sup> Type of care was highly correlated with the regulatory status of child care facilities, thus was not included in the model.

<sup>15</sup> Although higher earnings could influence eligibility status, quarterly earnings were not included in the model given a high correlation with co-payment amount.

<sup>16</sup> We assume a sequential family decision-making process, whereby employment decisions precede the decision to exit subsidy. Mills et al. (2001) provide an example of a sequential participation model for the Food Stamp Program.

## Findings

Table 11 provides the results of the Cox regression models for the probability of exit including family and program characteristics, employment outcomes and county economic variables. The first column provides estimates of the hazard ratios for each covariate for the model using all parents, and the second includes only those parents receiving employment-related subsidies (ERDC). A hazard ratio greater than one indicates that increases in the covariate are associated with a higher probability of exit (controlling for other covariates). Conversely, a hazard ratio less than one indicates a lower probability of exit (and a corresponding longer length of subsidy spell, all else equal).<sup>17</sup>

Quite a few family, economic and program characteristics were associated with higher rates of exit from the subsidy program, but the largest estimated hazard ratio by far was the end of the eligibility period. For all parents, those who were in the last month of their eligibility period (i.e., the redetermination month) were 2.6 times more likely to exit the subsidy program than those not in the redetermination month (controlling for other covariates). Because parents receiving subsidies through job-readiness programs were not assigned a redetermination month, we also estimated the model for only those families who were assigned a redetermination month (parents receiving ERDC). These participants were 3.3 times more likely to exit when they were in the last month of their eligibility period. These effects were large, and confirmed earlier findings that length of a subsidy spell was highly related to eligibility period.

Other policy factors of significance included subsidy value, copay amounts, and being in employment-related subsidized care versus job readiness or assessment. As expected, increases in subsidy value and being in employment-related subsidized care reduced the likelihood of exiting the program. The higher the subsidy value, the harder parents were likely to try to maintain eligibility and/or recertify their eligibility. The results suggested that if the amount of a family's subsidy value increased by \$100 the probability of exiting the subsidy program decreased by 10%.<sup>18</sup> An increase in the copay amount<sup>19</sup> to be paid by parents was associated with an increased likelihood of exit in both models. Increasing copay by \$100 increased the likelihood of exit by an estimated 10%.

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<sup>17</sup> While the proportional hazard models provide information on factors associated with exiting the subsidy program, these models are conditional on participating in the program. Unlike studies that focus on eligible populations and ask what is associated with entry, this study focuses on a universe of subsidy participants and asks what factors are associated with exit from the program.

<sup>18</sup> The estimated change in hazard for each one unit increase in the covariate can be calculated as  $100 * (\text{hazard ratio} - 1)$ . For indicator (dummy) variables, the hazard ratio represents the ratio of the estimated hazard for those with a value of one to that for those with a value of zero (Allison, 1995, p.117).

<sup>19</sup> TANF families do not have a copay.

**Table 11. Probability of Exit Proportional Hazard Model Results**

Variable	Hazard Ratio	
	All Families Sample (n=25,124)	Employment Related Day Care (ERDC) Sample (n=14,705)
Youngest child, months	1.002**	1.002**
Oldest child, months	1.001**	1.001**
▪ Family Black	0.974	0.979
▪ Family Hispanic	1.075*	1.040
Parent's education level (continuous)	0.993	0.993
Eligibility group: Employment-related care	0.750**	
Redetermination month	2.622**	3.278**
County employment growth rate, percent	1.008**	1.011**
▪ County is core of small metro area	0.887**	0.951
▪ County is micropolitan	0.914**	0.990
▪ County is rural	1.026	1.135*
Child care supply (slots per 100 children under 13)	0.992**	0.990**
Family copay amount	1.001**	1.001**
Subsidy value	0.999**	0.999**
Quarterly hours worked	0.999**	0.999**
Primary provider is regulated	0.921**	0.891**

▪ These variables are not time varying, but represent values in the first month of the first observed subsidy spell.  
 \*Significant at the 5% level  
 \*\*Significant at the 1% level

Participating in the subsidy program was also significantly influenced by the age of the youngest and oldest child, Hispanic families, quarterly hours worked and using a regulated provider. Families were more likely to exit the subsidy program as their youngest and oldest children get older. In the All Families model, being in a Hispanic family was associated with a higher probability of exit from subsidy. As expected, an increase in quarterly hours worked led to a lower probability of exit in both models. Results from both exit models in this study also suggested that using a regulated provider was associated with a lower probability of exit from subsidy. Parent's education level was not a significant factor in predicting exit from the subsidy program.

The probability of exiting the subsidy program also depended on characteristics of the county in which the family lived. Families in small metro and micropolitan counties were less likely to exit than families living in a major metropolitan area; while families in rural counties were more likely to exit, but only in the ERDC model. Exits were also related to county employment growth. If employment was growing in the county, families were more likely to exit, perhaps because of improved economic circumstances. An increase in supply of child care (as measured by number of slots per 100 children under age 13) was also associated with a lower probability of exit from subsidy. This result suggested that availability of child care impacts parents' ability to use the subsidy program.

Although many factors influence whether families leave the child care subsidy program, these results suggested that a key factor driving exits was the end of an eligibility period. As shown earlier, while many exits from the subsidy program did not occur in a redetermination month, the effect of redetermination on exits was large. For parents who continued to be employed and were likely to remain eligible, the effort of having to reestablish their eligibility at three or four month intervals frequently led to disruption of subsidy participation.

# Significance of the Study and Policy Implications

Previous research on the dynamics of participation in child care subsidy programs found that in five states the duration of use was quite short. In Oregon half of all subsidy spells ended by three months for all programs combined, and four months when ERDC is looked at separately. While half the families returned for another period of subsidy use, it was typically for another short spell (Meyers et al., 2002). The short spells of subsidy use raise concerns about the impact on the stability of child care arrangements, children's social and emotional development, and parents' employment stability. Both employment stability and arrangement stability are likely to contribute to positive outcomes for families and children.

The primary focus of this study was to explore three main hypotheses on why parents leave the subsidy program:

- (i) Instability in other aspects of their lives, such as employment changes or family mobility, disrupts participation in the subsidy program.
- (ii) Parents are no longer eligible for subsidy (particularly due to increased income).
- (iii) Parents perceive the cost in time and effort of maintaining a subsidy is greater than the benefit of the subsidy.

While some of the families who exited the subsidy program in Oregon had unstable employment or frequent moves to new zip codes, overall, the families using the subsidy program were far more stable than expected. Some families probably did not need child care or a child care subsidy because the parent left her employment. On the other hand, over half of the families were employed for at least two out of the three years. These families had received subsidies and so had knowledge of the program and had needed help paying for the care at least once in the past. Less than 5% of families earned more than 185% of the federal poverty threshold (the level for subsidy eligibility during the observation period) after exiting the subsidy program, and so most were likely to have remained income-eligible for a subsidy. In addition, many of these families continued to participate in other DHS assistance programs, particularly medical assistance. Continued participation in other programs suggests both that the family continued to be income-eligible for subsidy, and that they were willing to participate in some programs.

For families with unstable employment or frequent moves, there may not be program changes that would increase retention of child care subsidies – in these cases, instability in other areas may be leading to short subsidy spells. But for the large number of families who are relatively stable in terms of employment and other program participation, the short spells of subsidy use are of more concern. Other studies have shown that parents report that retaining subsidies is more hassle than it is worth (Adams et al., 2002; Shlay et al., 2004), and this study finds that being in the last month of an eligibility period increases the likelihood of exiting the subsidy program by two to three times. Some families return after a

short break by reestablishing their eligibility, but many do not. Weber (2005) found that children seldom returned to the same provider after the end of a subsidized arrangement. Disruptions in subsidy use may be related to disruptions in the child-caregiver relationship that is so central to child development. Evidence that child care stability supports both children's developmental outcomes and parental employment would argue for improving subsidy stability for those participants who remain eligible. The connection between length of eligibility period and length of subsidy receipt suggests that lengthening eligibility period could impact length of subsidy use.

## Study Limitations and Future Research Directions

The findings of this study are descriptive, establishing associations between subsidy use and factors such as employment stability and end of eligibility period. An experimental research design would allow stronger conclusions to be drawn about causality. In addition, the study sample includes only families who chose to participate in the subsidy program in Oregon at least once, by definition it excludes those who did not. Therefore, the findings must be interpreted as conditional on participating in the subsidy program. Given that families chose to participate, the study identifies the factors associated with exiting the subsidy program. Under different program parameters and economic conditions, different families might choose to participate, though they may respond in similar ways if they do.

A key question is whether the stability patterns and importance of eligibility period found in this study are similar in other states. State policies on length of eligibility periods differ, and states may give caseworkers more or less discretion in setting eligibility periods for families receiving child care subsidies. In addition, state policies regarding maximum payment rates to providers and parent copays will affect the value of the subsidy to families in different states. Differences in policies across states suggest that similar research is needed elsewhere to explore the relationship between subsidy use and employment and policy factors.

Another potentially interesting research direction is to delve deeper into the participation of families in multiple work support programs along with child care subsidies, particularly food stamps. The current study does not include food stamp data, yet nearly all families (93%) receiving child care subsidies in Oregon also receive food stamps. Food stamp eligibility periods typically are longer than those for subsidy. Studying the relationship between food stamp exits and subsidy exits may help shed light on the tradeoff between the value of the benefit to the family and the cost, hassle or stigma of participating.

Surveys of parents who are not using subsidies have suggested that parents' lack of knowledge of the program or of their eligibility prevents some from participating. In addition, studies have shown that the process of applying or recertifying eligibility is considered burdensome by some parents. Surveys generally have not focused on parents who have left the subsidy program, therefore they did not ask about

reasons for no longer using a subsidy. This study found many parents who appear to be income-eligible and steadily employed, who used a subsidy at least once, no longer do so. Observing parents' actions (using administrative data) provides important information on parents' response to policy and economic conditions, however, surveys of parents would provide a more complete picture of the factors determining why parents who are eligible do not continue to use a subsidy. This information may be important for policymakers designing policies that support employment and child development.

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# Appendices

Appendix Table 1. Characteristics of Stability Groups: Minimums and Maximums

	Employment Stability Group							
	Little or no employment		Limited employment		Stable employment & unstable jobs		Stable employment & stable jobs	
	<i>Min</i>	<i>Max</i>	<i>Min</i>	<i>Max</i>	<i>Min</i>	<i>Max</i>	<i>Min</i>	<i>Max</i>
<b>Subsidy Use</b>								
Number of subsidy spells	1	8	1	8	1	8	1	7
Cumulative months of subsidy use	1	36	1	36	1	36	1	36
<b>Employment</b>								
Number of wage spells	0	4	1	6	1	4	1	4
Cumulative quarters of wages	0	4	5	8	9	12	9	12
Number of job changes	0	3	0	7	3	11	0	2
% of employment months covered by subsidy	8%	120%	3%	100%	3%	133%	3%	133%
<b>TANF</b>								
Number of TANF spells	0	7	0	6	0	6	0	5
Cumulative months on TANF	0	36	0	36	0	36	0	36
<b>DHS Client</b>								
Cumulative months as DHS client	1	36	1	36	1	36	1	36
<b>Number of zip code changes</b>	0	10	0	14	0	10	0	8

Appendix Table 2. Employment and Program Indicators for All Parents After Exit (n=25, 124)

	Point-In-Time: <b>Immediately</b> after Exit from First Observed Subsidy Spell		Point-In-Time: <b>3 months</b> after Exit from First Observed Subsidy Spell		Point-In-Time: <b>6 months</b> after Exit from First Observed Subsidy Spell		Point-In-Time: <b>12 months</b> after Exit from First Observed Subsidy Spell	
	<i># of Parents</i>	<i>%</i>	<i># of Parents</i>	<i>%</i>	<i># of Parents</i>	<i>%</i>	<i># of Parents</i>	<i>%</i>
<b>Employment and Program Indicators</b>								
Employed only	3212	12.8	3705	14.75	4175	16.62	4449	17.71
TANF only	12	0.05	18	0.07	20	0.08	5	0.02
Other assistance only	2151	8.6	2645	10.53	2726	10.85	2567	10.22
Subsidy only	NA	NA	28	0.11	24	0.10	11	0.04
Employed + TANF	12	0.05	7	0.03	6	0.02	2	0.01
Employed + Other assistance	13,046	51.9	7159	28.49	5582	22.22	4132	16.45
Employed + Subsidy	NA	NA	142	0.57	124	0.49	115	0.46
TANF + Other assistance	3412	13.6	2434	9.69	2108	8.39	1595	6.35
TANF + Subsidy	NA	NA	1	0	-	-	-	-
Other Assistance + Subsidy	NA	NA	377	1.50	418	1.66	354	1.41
Employed + TANF + Other assistance	2384	9.5	1197	4.76	804	3.20	586	2.33
Employed + Other assistance + Subsidy	NA	NA	3540	14.09	3983	15.85	3486	13.88
Employed + TANF + subsidy	NA	NA	1	0	2	0.01	-	-
TANF + Other assistance + subsidy	NA	NA	920	3.66	782	3.11	606	2.41
Employed + TANF + subsidy + other assistance	NA	NA	892	3.55	769	3.06	519	2.07
Disconnected in this month/quarter	895	3.6	2058	8.19	3601	14.33	6697	26.66

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