Study Child Care Subsidy Rate Setting

Session Law 2016-94, Section 12B.2

Report to the

House Appropriations Committee on Health and Human Services

and

Senate Appropriations Committee on Health and Human Services

and

Fiscal Research Division

by

North Carolina Department of Health and Human Services

March 1, 2017

Preface

The Center for Urban Affairs and Community Services (CUACS) at North Carolina State University would like to thank the staff of the Division of Child Development and Early Education (DCDEE), North Carolina Department of Health and Human Services (NCDHHS), the North Carolina Child Care Resource and Referral Council as well as consultants at ICF International and the National Center on Early Childhood Quality Assurance for their input and guidance. CUACS would also like to recognize and thank the survey respondents throughout the state of North Carolina who provided valuable data for this pilot research study.

Reporting Requirements

Study Child Care Subsidy Rate Setting

SECTION 12B.2. The Department of Health and Human Services, Division of Child Development and Early Education, shall study how rates are set for child care subsidy. In conducting the study, the Division shall, at a minimum, review market rate studies and other methodologies for establishing rates, including any cost estimation models, along with the pros and cons of each method reviewed. The Division shall report to the House Appropriations Committee on Health and Human Services, the Senate Appropriations Committee on Health and Human Services, and the Fiscal Research Division by March 1, 2017, on any recommendations, including the suggested methodology to be used for setting rates, as well as time frames for implementing the methodology.

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Executive Summary

North Carolina's child care subsidy program is designed to help families with either situational and/or financial needs purchase child care for children birth to age 12 and children with special needs through a voucher-based program. The subsidy program is funded by the federal Child Care and Development Block Grant (CCDBG), and other federal and State appropriated funds. The CCDBG requires states to set payment rates for families receiving subsidies to allow families receiving subsidies equal access to child care as compared to families who do not receive subsidies. To do this, states are required to study the market price providers charge for child care every three years.

Market studies have been conducted using various survey methods and are generally referred to as market rate surveys or market rate studies. The studies are designed to determine the price of obtaining child care within a child care market by employing survey methodologies to capture the price of care in a child care market and to set the rate ceiling. The most common approaches to surveying prices or rates are by direct surveying providers or the use of administrative databases. States must ensure that market rate studies are statistically valid and reliable and must take into account the geographic area, type of provider, and the age of the child. North Carolina's traditional market rate studies currently employ such methods and take into account geographic area, type of provider, and age of children when calculating market rates. Moreover, North Carolina reviews market rates at different licensed star ratings as a measure of capturing rates at various levels of quality, an approach that is considered to be innovative (Branscome, 2016).

Traditional market rates studies have been disparaged for only capturing rates and prices in the market and not the true cost of providing quality child care. Studies that employ cost modeling, or cost estimation modelling, are designed to capture the cost of providing child care within a given market, not the price charged. The results of these studies can potentially provide greater insight into how the costs associated with providing child care differ within various submarkets and across differing levels of quality, what drives the costs of child care within specific submarkets, and how subsidies, private payments rates, and additional funding sources compare to the cost of providing care.

Along with a review of traditional market rate studies and cost estimation modeling, this report provides information gathered through a pilot study for cost estimation modeling to augment North Carolina's traditional market rate approach. The results of the pilot focused on the methods, procedures, and the development of cost models and how this approach can be employed in North Carolina. The study included 106 child care centers and family child care providers across the state to test a cost estimation model.

This pilot study was conducted based on a data collection process and tools on cost estimation models used in the online Provider Cost of Quality Calculator (PCQC) tool created by the U.S. Department of Health and Human Services, Office of Child Care.

In the pilot study the average cost per slot across all child care centers was $9,732. The cost per slot for 3 star child care centers was $9,092, $9,031 for 4 star centers, and $10,929 for 5 star centers. The largest cost driver, as expected, was salary and staffing expenses: $6,099 per slot for 3 star centers, $6,354 for 4 star centers, and $8,050 for 5 star centers. Operating costs per slot were $2,993, $2,678, and $2,879 for 3 star centers, 4 star centers and 5 star centers respectively.

Using an unweighted state average for subsidy payments, for 3 star child care centers the subsidy rates for children receiving care would cover 81 percent of the cost for infants and toddlers, 75 percent of the cost for two-year olds, and 71 percent of the cost for three, four, and five-year olds not in school. For the 4 star centers in the pilot study, the subsidy rates for children receiving care would cover 87 percent of the cost for infants and toddlers, 80 percent of the cost for two-year olds, and 71 percent of the cost for three, four, and five-year olds not in school. For the 5 star centers in the pilot study, the subsidy rates for children receiving care would cover 81 percent of the cost for infants and toddlers, 74 percent of the cost for two-year olds, and 61 percent of the cost for three, four, and five-year olds not in school.

Family child care homes who participated in the pilot have an average enrollment of 8.72 children. The average number of children who participated in the subsidized child care program in each home was 4.6. There was not much variation in the number of children enrolled or the number of children who participated in the subsidized child care program across star rating. In the pilot study, the average cost per slot across all family child care homes was $6,195. The cost per slot for 3 star family child care homes was $5,651, $6,684 for 4 star family child care homes, and $6,096 for 5 star family child care homes. When discussing cost drivers from family child care homes, it is important to note that most providers are the owner and the lead teacher and they reported that they do not pay themselves a set wage but rather, collect the remainder after all other expenses have been paid to operate the program as their 'salary'. Operating costs per slot were $3,283, $3,726, and $3,558 for 3 star homes, 4 star homes and 5 star homes respectively.

Using an unweighted state average for subsidy payments, for the 3 star family child care homes who participated in the pilot study the percent of the cost covered by subsidy payments for children receiving care ranged from 88 percent for three, four, and five-year olds not in school to 100 percent for infants. For the 4 star homes in the pilot study, the range was 77 percent for three, four, and five-year olds not in school to 88 percent for infants. For the 5 star homes in the pilot study, the subsidy payments for children receiving care would cover 89 percent for three, four, and five-year olds not in school to 100 percent for infants.

Based on the review of traditional and alternative market rate studies and methodologies, as well as the pilot study of the use of cost estimation in North Carolina, DCDEE finds that the cost estimation model holds promise. The next market rate study will need to be completed by Summer 2018 to be included with North Carolina's next Child Care and Development Fund (CCDF) State Plan that describes use of Federal CCDF funds. Planning for the next market rate study will begin later in 2017. DCDEE recommends that North Carolina continues to study market rates every three years using its traditional methodologies. At the time of the next market rate study to begin later in 2017, DCDEE recommends including a cost element to build on data gathered from the cost estimation pilot. In addition, DCDEE recommends study of potential use of geographic clustering by counties and regions and the use of filled slots versus available slots in the analysis. DCDEE also recommends that every six years, concurrent with the traditional market rate study, a study of cost estimation should be conducted.

North Carolina Review of Child Care Market Rate Studies and Study Methodologies: Introduction

Quality early learning and educational experiences have been linked to increased development in cognitive, social, and behavioral outcomes of children. Children in low-income households whose parents may not have the resources to provide exposure to quality early learning and educational experiences often enter school at a disadvantage when compared to their peers. Programs such as the NC Pre-K program, Head Start, and Smart Start provide children who are considered at-risk with access to quality educational opportunities and have been proven to increase cognitive, social, and behavioral outcomes. (Helburn & Howes, 1996; Peisner-Feinburg, Garwood, & Mokrova, 2016).

The federal Child Care and Development Block Grant (CCDBG) Act of 1990 reauthorized in 2014 was established to help low-income families and their children by providing quality, developmentally appropriate, and safe child care access when children are not in parental care and allowing parents to enter and stay in the workforce through the development of state level child care subsidy programs (Sandstrom, Grazi, & Henly, 2015). Families who participate in child care subsidy programs are able to "seek care arrangements that they would not otherwise be able to afford and secure employment and training outside the home" (Sandstrom, Grazi, & Henly, 2015). Families who participate in child care subsidy programs have been shown to be more likely to choose higher quality care than those who do not (Ryan et al., 2011).

In addition to assisting states in increasing the overall quality of child care, CCDBG is designed to assist states in "delivering high-quality, coordinated early childhood care and education services to maximize parents' options and support parents trying to achieve independence from public assistance, …improve child care and the development of participating children, and …increase the percentage of low-income children in high quality child care settings" (Child Care and Development Block Grant Act of 2014) while giving states flexibility in how they develop child care programs and policies to best fit the needs of families and children in their state.

In North Carolina, the child care subsidy program helps families with either situational and/or financial needs purchase child care through a voucher-based program for children birth to age 12 and special needs children. The Subsidized Child Care Program is administered by the Department of Health and Human Services, Division of Child Development and Early Education, but is locally administered at the county level. Funds for the Subsidized Child Care Program come from a mixture of CCDBG funds, other federal funds, and funds appropriated by the North Carolina General Assembly.

A family is eligible for child care assistance if they meet one or more of the following criteria: all parents in the home are working or attempting to find work, the parent(s) is in school or in job training, a child is receiving Child Protective Services, if the family is experiencing a crisis, and/or if a child has developmental needs. A family is eligible if they meet the following financial criteria: for families with children birth to age 5 or with special needs, their maximum gross income must be at or below the 200 percent of the federal poverty level, and for families with children age 6 to 12, with no special needs, their maximum gross income must be at or below the 133 percent federal poverty level.

Once a family is deemed eligible, they are issued a child care voucher for each eligible child to receive child care from an enrolled provider. A provider can be a licensed child care center, family child care home, or religious-sponsored program. The amount of the voucher depends on the maximum payment amount in the county in which the child lives, the type of provider, the quality rating of the provider, as well as the family's income and family-size dependent co-pay.

Review of Market Rate Studies and Alternative Methodologies

The CCDBG requires that states set payment rates for providers receiving subsidies in a way that will allow subsidized families equal access to child care as compared to families who do not receive subsidies. To determine the payment rate, states are required to study the market price providers charge for child care every three years. Traditionally, these studies have been conducted using various survey methods and are generally referred to as market rate surveys or market rate studies. With the 2014 CCDBG reauthorization states have been given increased flexibility in how they may conduct the study, either using traditional study methodologies or an alternate methodology such as a cost estimation modeling. Regardless of methodology, market rate studies are required to be statistically valid and reliable and must take into account the geographic area, type of provider, and the age of the child.

Market rate studies, in and of themselves, do not fully set child care market rates. Rate setting is a process that occurs after a market rate study has been completed. Traditional market rate studies are designed to determine the cost of/price for obtaining child care within a child care market. When conducting the market rate study, the main purpose of this type of study is to determine what payment for child care would allow parents of children receiving subsidies to gain appropriate access within a market. The federal guidance for this is to determine what payment rate would allow parents access to 75 percent of the child care within a given market. The market rate determined then becomes the maximum payment rate available to parents who receive subsidies, and establishes the rate ceiling that can be paid.

Market Rate Studies: Methods and Methodologies

An important aspect of any type of market rate study is the selection of the study methodology and data collection process to be employed when studying and determining current market rates. Traditionally, market rates have been studied using survey methods to collect the data, often employing a survey methodology in which child care providers are directly contacted about their rates. Another approach is to use administrative data gathered from child care resource and referral agencies, child care licensing agencies, or state subsidy databases. Traditional market rates surveys, whether using administrative data or survey data from providers, are designed to measure the payment rate at which parents participating in subsidy programs will have comparable access to child care with parents who do not participate, based on the prices charged for services.

An alternative approach in the study of market rates is the use of cost estimation and cost modeling. The use of cost estimation and cost modeling differs from the traditional approach in that it attempts to model the actual cost of providing child care within a given market, not just the price that parents pay for child care.

Traditional Market Rate Studies

Traditional market rate studies, or market price studies, employ survey methodologies to capture the price of care in a child care market. There are two approaches to gather information on rates: directly survey providers, or use administrative data. With either approach, the process involves: 1) defining the child care market to be studied, 2) developing survey methods, 3) developing a sampling method and selecting a sample of the market, 4) collecting the data, 5) performing data analysis, and then 6) reporting the study's findings. Like the majority of other states, North Carolina has in previous market rate studies employed the approach of directly surveying child care providers, instead of utilizing existing databases. There are advantages and disadvantage to either approach (see Grobe et al, 2008; Karolak, Collins, & Stoney, 2001 for a more detailed review of traditional market rate studies).

When directly surveying providers, a survey instrument must be developed which will produce valid and reliable data from each provider who participates in the study. After an instrument is designed it should be tested, by the intended survey respondents, and then modified and piloted again, if necessary.

Once a survey instrument is designed, the surveying method must also be carefully considered. There are multiple survey methods available: mail-in, telephone, web-based, or a mixed method (combination of the above). Mail-in methods are a relatively inexpensive approach and give respondents adequate time to complete the materials; however, there is an increased chance that respondents will misinterpret the questions or fail to return the survey. Mail-in surveys also require a large time frame for data collection and data entry. Telephone surveys are a more expensive method, as they require trained surveyors, but there are advantages to conducting telephone surveys. Telephone surveys tend to produce more accurate and detailed data, which can be entered at the time of collection. A web-based survey approach requires the use of an assisted survey application, which can add additional time to the data collection process. As with mail-in surveys, there is also the chance that respondents might not accurately understand or fully answer the questions being asked. Moreover, there is the potential that not all respondents will be able to

complete a web-based survey. Another approach would be to combine the various methods and allow survey respondents to choose their preferred method. A disadvantage of this approach is that it requires additional time and is more complex; however, mail-in or web-based respondents can be followed up with telephone surveys, thereby increasing the completeness and accuracy of the results.

As an alternative to directly surveying respondents, market rate surveys can also survey administrative databases to collect and gather data on the rates providers charge for child care. States which employ this approach often use child care resource and referral agency databases in addition to other administrative databases to capture data on the price of child care within a given market. Child care resource and referral (CCR&R) agencies were established to provide consumer information to parents about child care options and availability, as well as about subsidy programs. Another function of CCR&Rs is the collection and maintenance of child care databases. If the data collected by the CCR&Rs, in conjunction with other databases such as licensing and subsidy databases, captures the data needed for the study of market rates, then this approach is relatively inexpensive and the data can be collected in a much shorter time frame than by surveying providers directly.

Possible disadvantages to using the database collection method are the completeness and accuracy of the price data. States which use this approach will need to ensure that the database or databases are complete and that they contain comparable and updated price data for each provider to be sampled. Often this is completed by using more than one database. The databases would need also to reflect the most recent prices, or accurately reflect the price providers charge. Additionally, when using multiple databases, it should be verified that price schedules (hourly, weekly, or monthly) are not entered differently and, if so, that conversions are done consistently.

Critiques of the Traditional Approach to Studying Market Rates

Child care providers criticize traditional market rate studies for only capturing rates and prices in the market and not the true cost of providing quality child care (Karolak, Collins, & Stoney, 2001). In the child care market, what drives the cost of providing child care is largely attributed to economic and demographic characteristics of area or region (Davis et al, 2009). In certain areas and markets, such as low income neighborhoods, providers may have to lower wages or reduce staff in order to continue to provide child care that parents can afford to pay. This creates the additional concern of lessening the quality or access to quality child care in such areas (Karolak, Collins, & Stoney, 2001). Another critique is that subsidy rates themselves may drive the price found within a market, and not the actual cost of providing care. As a result, some states, such as Massachusetts, Rhode Island, Arkansas and the D.C., have begun to explore the use of cost modeling or cost estimation to determine the true cost of providing child care within their areas, and the relationship between subsidy rates and the cost of providing child care.

Cost Modeling and Cost Estimation Models

Cost modeling in and of itself is not designed to set market rates. Studies that use cost modeling are designed to capture the cost of providing child care within a given market. These studies can provide greater insight into how the costs associated with providing child care differ within various submarkets and across differing levels of quality. Once an estimate of base cost is determined,

states can vary inputs to develop a deeper understanding of what drives costs within specific submarkets and how subsidies, private payments rates, and additional sources of income are reflected or compared to the cost of providing care.

In cost estimation studies, annual expenses and revenue are the baseline for the cost model within the market and each submarket (Mitchell, 2009). For cost models, the output of the models for child care centers and family child care homes are annual net revenue; whereas the inputs are revenue (income) and expenses (cost). The cost of providing child care can be broken down into two major categories: salary and staffing expenses and operating costs (Mitchell, 2009). Staffing and salary expenses include the number of staff, their salaries and benefits. This is typically the largest cost when running a child care center or home, at about 70 percent. Operating costs such as rent, food, transportation costs, maintenance, and educational supplies are typically seen to account for about 30 percent of the total cost of providing child care. When conducting a study using cost estimation, it is imperative to ensure these costs are accurately reflected in annual revenue and expense budgets for providers. Additionally, to understand how funding affects the cost, studies need to collect data on enrollment and occupancy as well as income, including private and subsidy payment along with additional funding sources.

Based on Ann Mitchell's work on cost modeling in child care markets, when developing cost models, assumptions about revenue and costs will need to be made prior to the data analysis. Assumptions need to be made on the following, inputs into the model, to accurately affect the outputs (adapted from Washington's Cost Estimation Model; see Mitchell, 2013):

- Program Quality: Can the quality of a child care program be documented using the state's QRIS system?
- Staffing: What is considered to be an adequate staffing structure given adequate compensation and need for child supervision?
- Benefits and Compensation: Are benefits and compensation expected to increase as quality increases?
- Time: Does staff time increase as quality increases, and is time a major driver of cost in a family child care home?
- Tuition and Fees: Does tuition paid by private paying parents (non-subsidized parents) increase as quality increases?
- Other sources of revenues: In addition to tuition, are there other sources of revenue such as funds received from grants, the Child and Adult Care Food Program (CACFP), or other monetary contributions?
- Age Group and Size: Does the age group as well as the number of children served have an effect on the revenue and income of the program?
- Efficiency: Does the number of available child care slots, versus the number of filled slots, have an effect on revenue and income as well as the sustainability of the child care center or family child care home business model?
- Tuition and Revenue Collection: Does timely receipt of full tuition affect the sustainability of the child care center or family child care home business model?

Like traditional market rate surveys, the collection of cost data can be obtained through a variety of survey data collection methods. Many of the data concerns associated with the traditional market rate surveys can be echoed with the collection of data for studies using a cost estimation

methodology, as the data must be obtained through either the direct surveying of providers or through administrative data sources. Cost estimation studies are at least as time intensive as traditional market rate studies if not more; however, there are also additional concerns with conducting cost estimation studies. The accuracy of the cost data provided by a provider is based on how well they have collected and maintained their own financial and occupancy data, and if they divide their budgets into a similar format that is needed by the study. Additionally, states who have employed cost estimation models find that many child care providers are not willing to actually release financial data, even if they were initially willing to participate in the study (Mitchell, 2015).

Defining the Market and Submarkets

Whether using a traditional market rate study or a cost estimation model, how a state defines the child care market and submarkets greatly affects the validity and reliability of the study's findings. The child care market is diverse. For the most part, the child care market is "primarily a private, fee-for-service system in which parents act as consumers by purchasing care for their children (Stoney, 1994)."

In North Carolina, the definition of the child care market for market rate studies is limited to licensed child care centers and family child care homes. These types are sufficiently different in both licensing requirements, structure, and payment types that they form two different submarkets. Head Start Programs, developmental day certified centers are not included as a submarket due to funding sources that are not dependent on parental fees. Part-time care facilities are not included as a submarket because the primary purpose of the market rate study is to determine the cost for full-time child care.

Without taking geographic regions into account when determining a market rate, the resulting rate might grant some families greater access to child care than others. Assuming that the child care markets in counties such as Macon in the west or Hyde in the east are equivalent to child care markets in Mecklenburg or Guilford will produce invalid market rates. For some states geographic submarkets are determined by zip code clustering, regional clustering, county, or census tract data (Grobe, 2008). North Carolina's market rate studies have grouped child care markets by county. A potential concern for using county is the number of submarkets within a county, or a child care market that encompasses multiple counties.

Age of child is also a submarket. The rate charged for infants and toddlers is often higher than the rate charged for two-year olds and even more so for school age children in summer care. How a market is broken into age group submarkets is influenced by a variety of factors. These factors include such things as teacher to child ratios, and costs associated with providing care to each age group, and whether care is provided in a family child care home or child care center. In North Carolina age group submarkets vary by type of provider. There are four age categories for child care centers: infants and toddler (birth to 24 month), two-year olds, three-year olds to five-year olds not in school, and school-age children. For family child care homes, the age groups are broken into five categories: infants, toddlers, two-year olds, three-year olds to five-year olds not in school, and school-age children.

North Carolina has added an additional component to the study of submarkets within the state, which is its Quality Rating and Improvement System (QRIS). Child care licensing in North Carolina is based on a 1 through 5 star rated license system. Within the QRIS, facilities which meet the minimum requirements are given a star rating of 1. Facilities which receive a star rated license of 4 or 5 have voluntarily exceeded the minimum licensing requirements and are considered to be of higher quality. Rates are studied and established at each star rating.

Sampling and Sampling Design

There are multiple ways of selecting which respondents within the universe of respondents are recruited to participate in a study. The choice of the method is dependent on the purpose of the research. One approach is to simply survey all respondents in the universe. If this method is chosen to collect data from the entire universe, without mandatory or forced participation, there may be respondents who elect not to respond, cannot be contacted, or do not provide complete data. Furthermore, this approach can be time consuming and costly. The majority of states employ this approach in their market rate studies, including North Carolina.

Some states have chosen to sample from their universe of child care providers and employ other sampling methods. As market rate studies are to determine equal access to child care for parents of children who receive subsidies, the actual market and submarkets parents have access to must be included, requiring that the sample be stratified. Stratified sampling divides the universe of child care providers into groups, or strata, and the number of desired respondents are selected from these strata. Typically, after the identification of the strata, the selection of respondents is done randomly or probabilistically to ensure that the data collected is as representative of the universe as possible. Data collected from a sample that is not representative of the universe cannot be used to draw conclusions or generalizations about the universe.

Moreover, the response rate when conducting a study is important. Response rate is defined as the number of respondents within a sample that participated the study in relation to the number of respondents chosen during the sample selection process. Response rates of 80 percent or higher are ideal, 65 percent is acceptable, and anything below that raises concerns over the validity of the results. The response rates in North Carolina's previous traditional market rate studies, even when surveying the universe of licensed child care centers and family child care homes, consistently have been over 80 percent. A concern with cost estimation studies is the low response rate due to providers not being willing to provide detailed data on their financial operations. One state reported a response rate of 23 percent (Hanover Research Council, 2012). Another report on cost studies suggested that three respondents, especially with family child care homes, needed to be approached in each effort before one would agree to provide to participate (Mitchell, 2015).

Data Analysis

As with selecting a study method, sample and sampling design, and defining the market and submarkets, special considerations should be addressed in conducting the data analysis. When a study uses a sample instead of the universe of providers, the analysis must use sample weights to ensure that the analysis accurately represents what would be expected to be found from all providers within the universe.

The analysis should be conducted separately at the submarket level (age group, geographic area, type of provider, and quality level). Moreover, the analysis should be conducted based on the number of slots available, rather than by the number of providers or the number of slots filled. When there are not enough slots available for a given market to produce reliable results, additional analysis will need to be performed. North Carolina has addressed this issue in previous market rate studies by using rate imputation methods by either county, age group, or star rating depending on the submarket (see North Carolina's 2014 Market Rate Study for more detail).

Summary

This portion of the report described different methodological approaches to market rate studies and the advantages and disadvantages of each. To enhance its traditional market rate studies, DCDEE partnered with the Center for Urban Affairs and Community Services (CUACS) at North Carolina State University, consultants at ICF International, and the North Carolina Child Care Resource and Referral (CCR&R) Council to study the potential of using cost estimation modeling to augment its traditional market rate survey to explore the cost of providing child care in North Carolina and not only the fees charged. The research team at CUACS consisted of social science researchers, statistical analysts, and research assistants who conducted the research project. CUACS has extensive experience in survey research and program evaluation and has worked directly with DCDEE on numerous child care projects, including past North Carolina Market Rate Studies. The following sections of the report describe the piloting of cost estimation modeling in North Carolina and how the findings of cost modeling could be used in North Carolina.

Pilot Study on the Use of Cost Estimation Models: Overview of the Methods and Procedures

To provide a better understanding of how cost modeling could be used to augment or enhance market rate studies in North Carolina, a pilot study was conducted. For the pilot study, DCDEE and CUACS consulted with federal consultants specializing in cost estimation modeling and used their corresponding online cost estimation calculation tool based on Ann Mitchell's work. CUACS worked with members of North Carolina Child Care and Referral (CCR&R) Council and child care providers to create data collection worksheets, survey instructions, and training materials for the research project. The CCR&R Council, along with researchers at CUACS, collected data from a sample of 106 child care centers and family child care homes across the state. The data were analyzed using both an online cost estimation tool and independent cost estimation analyses. This section of the report provides an overview of results and findings of the pilot study in relationship to the procedures, methods, and data analysis. Cost estimation models describing data collected from the respondents in the pilot study is also reported. For a detailed and technical description of the pilot study's procedures and instrument development, see Appendix A.

Participation Selection and Sampling Design

In line with the purpose of the pilot study, the research team wanted to be able to draw conclusions about implementing the cost estimation model across the state, so a purposive sampling technique was employed. Prior to participant (respondent) selection, the research team developed a proposed sample based on geographic/regional enrollment, distribution of star ratings across the state, and a target number of respondents of 112. It should be noted that the fourteen CCR&R regions, which comprise the state's CCR&R Council, were used to delineate geographic regions. Child care centers and family child care homes with star ratings of one or two were excluded from the pilot. Using this proposed sample as guidance, CCR&R data collectors purposively chose respondents they felt were likely to participate and to provide accurate data.

Table 1. Proposed Sample of the Cost Estimation Pilot Study

Region	Child Care Centers			Family Child Care Homes			TOTAL
	Three Star	Four Star	Five Star	Three Star	Four Star	Five Star	
Region 1	1	1		1		1	**4**
Region 2		1	1	1	1		**4**
Region 3	2	1	1	1	1		**6**
Region 4	1	1	2	1	1		**6**
Region 5	3	3	3		1	1	**11**
Region 6	4	5	5	1	1		**16**
Region 7	1	1	2	1	1		**6**
Region 8	2	2	1		1	1	**7**
Region 9	2	1	1	1	1		**6**
Region 10	1	2	2	1	1		**7**
Region 11	2	2	3	1		1	**9**
Region 12	5	5	6		1	1	**18**
Region 13	2	1	2	1	1		**7**
Region 14	1	1	1	1	1		**5**
TOTAL	27	27	30	11	12	5	**112**

Development of Materials and Data Collection Tools

The research team reviewed current and best practices in collecting and analyzing the cost of care in child care settings. The research team based their data collection process and tools on cost estimation models used in the online Provider Cost of Quality Calculator (PCQC) tool created by the U.S. Department of Health and Human Services, Office of Child Care. Federal partners at IFC International who worked directly with the model and tool trained the NC research team on the cost estimation model and PCQC data collection and analysis tool. Under the guidance of the federal partners, the research team developed data collection worksheets to be used in the field, instruction manuals, and training materials. Once the worksheets were developed, the research team met with members of the CCR&R Council as well as child care providers to review and finalize the worksheets.

For the pilot study, the research team used the 2015 calendar year as the data collection time frame. As the pilot study was designed to provide full-time child care data, only full-time enrollment and tuition data were collected. Children enrolled only in before-school care or after-school care were not included in the study. In addition, teachers who oversaw only part-time care or before-or-after care were also excluded as well as the children of staff who receive free tuition as a benefit of employment.

Two data collection worksheets were developed for this pilot study: one for child care centers and one for family child care homes (see Appendices D and E). Each data collection worksheet is divided into the following sections: 1) site description, 2) enrollment, 3) tuition and funding, 4) staffing and staffing expenses, and 5) additional operating cost.

Site description was designed to collect data on the name of the county where the facility was located, the number of weeks in operation (family child care homes only), the star rating of the facility, and the square footage of the facility. Default values were provided for square footage.

The sections on enrollment and tuition were designed differently for child care centers and family child care homes. For child care centers, enrollment was collected by classroom and asked for the average monthly enrollment for private paying and subsidized children for 2015, while tuition was captured for age groups. For family child care homes, tuition and enrollment was captured by each child enrolled during 2015. In addition to tuition, both child care centers and family child care homes were asked to list any additional sources of funding, if they collected the difference between private tuition rates and subsidy rates, and what percentage or amount of the fees they were unable to collect from parents.

The staffing and staffing expense section was designed to capture the annual salaries and benefits for 2015. Child care centers were asked to report the annual salary for Center Directors, Assistant Directors, and Administrative Assistants along with the average annual salary for Lead Teachers, Teacher Assistants, any additional full-time staff, part-time staff, and any other miscellaneous staff. Family child care homes were asked to provide the average hours worked per week, number of weeks worked, weekly pay for Owners/Lead Teachers, Teacher Assistants, and any other staff not listed. Both worksheets had an identical section to collect either the percentage paid in benefits or to list the annual amount paid for Worker's Compensation, Unemployment, Disability, Social Security, Health Benefits, and other fringe benefits.

For child care centers, non-personnel costs were broken into four categories: 1) annual per-child costs, 2) annual per-square foot costs, 4) annual per-staff costs, and 5) annual per-site costs. Additional operating costs for family child care homes were broken down into three categories: 1) annual expenses-100% business use, 2) shared business use of home, and 3) miscellaneous expenses. Using default values obtained from the U.S. Department of Health and Human Services, Office of Child Care and used in the PCQC, the worksheet calculated annual estimates based on answers given in regards to square footage, enrollment, and staffing. The worksheet asked for respondents to review these estimates and to indicate if they were lower, higher, or similar to what they pay annually. If the cost was readily available, they were asked to provide that instead of the default.

Data Collection Procedures

Prior to the data collection phase of the pilot study, CCR&R members met and received training on the data collection process including a detailed review of how to complete the data collection worksheets. The training was led by the research partners at CUACS. Following the training CUACS established a helpdesk for CCR&Rs to answer any questions they or study participants might have regarding the worksheets or data to be collected.

CCR&R members from thirteen of the fourteen regions collected data within their regions. CCR&R members from one region declined participation and the members of the research team at CUACS collected the data from this region. For the pilot study the data collectors were allowed to choose from a variety of data collection methods: telephone survey, mail-in, face to face, site visits, and a collaborative web-based approach. Prior to participation, respondents were given a letter of study participation authored by DCDEE which gave a brief explanation of the study and indicated that their participation was voluntary and all data collected would be kept confidential (see Appendix C).

Data Analysis and Data Validation

Before the data analysis began, each participating facility's data worksheet was securely provided to CUACS who reviewed it for accuracy and missing data, or if follow-up inquiries were needed either by researchers at CUACS or the CCR&Rs. In cases where follow-up inquiries did not yield additional data, where applicable, default values were used for missing data. All data were entered into the PCQC and a SAS dataset for analysis and were independently checked for accuracy by two researchers. To verify the cost of providing child care, the data from the pilot study were concurrently analyzed using the PCQC and independent cost analyses performed by members of the research team using SAS software. Conducting concurrent and separate analyses was to determine the limitations or advantages of either method of analysis.

Pilot Study Findings and Results

The results of the pilot study were not designed to be representative of the child care market in North Carolina and cannot be used to draw conclusions about the child care market or submarkets with North Carolina or how funding and funding levels relate to overall costs. The results, however, can provide insight into how cost estimation modeling can augment or enhance a traditional market rate study. This section discusses the results and findings regarding the procedures and methods employed in the pilot study and gives examples of how the results of cost estimation modeling can be used in the study of market rates and in developing a deeper understanding of the child care market in North Carolina.

Participant Selection and Sampling Design

Even with purposive sampling there were higher rates of refusal than is typically seen with the traditional market rate study, which usually has a response rate of 80 percent or higher.

Many of the data collectors reported having to contact more than one respondent and sometimes three or four respondents to get the participation of one. In some cases, the data collectors would obtain an initial agreement for participation, but after a description of the study and data to be collected was given the provider would decline participation. Reasons for declined participation were the amount of time required for participation, not having access to the data needed, or not being comfortable providing the data requested, especially salary and benefits. At the end of the data collection period, there were a total of 106 pilot study respondents (see Table 2).

Table 2. Final Sample of the Cost Estimation Pilot Study

CCR&R Region	Child Care Centers			Family Child Care Homes			TOTAL
	Three Star	Four Star	Five Star	Three Star	Four Star	Five Star	
Region 1	1	1		1		1	**4**
Region 2		1	1	1	1		**4**
Region 3	1	1	1	1	1		**5**
Region 4	1	1	1	1	1		**5**
Region 5	3	3	3		1	1	**11**
Region 6	2	4	5	1	1	1	**14**
Region 7	1	1	2		2		**6**
Region 8	2	2	1		1	1	**7**
Region 9		2	2	1	1		**6**
Region 10	1	2	2	1	1		**7**
Region 11	3	3	1	1		1	**9**
Region 12	6	4	6		1	1	**18**
Region 13	1	1	2	1	1		**6**
Region 14	1		2	1			**4**
TOTAL	23	26	29	10	12	6	**106**

Study Materials and Data Collection Tools

Two separate data collection worksheets along with corresponding instructional and training manuals were created for child care centers and family child care homes. Data collectors reported that the worksheets were user friendly and the instructions and training materials provided were easy to follow. Concerns with the data collection worksheets pertained to the data to be collected, not necessarily to the data collection worksheets themselves. However, it was found that the worksheets and instructions should be modified in the future to avoid potential confusion surrounding certain sections and to capture data more accurately.

Data Collection Procedures

The data collectors were allowed to use a variety of methods to collect data using the worksheets and instructions provided: mail-in, telephone, face-to-face, site visits, and electronic data collection. Regardless of the data collection method used, most data collectors found data collection to be a multi-step process and often, latter steps were required to be repeated multiple times. The first step was to contact potential respondents. Data collectors gave a brief introduction to the study and explanations about the data to be collected. The second step included providing respondents with the data collection worksheets and any supporting documents. The third step involved respondents' gathering or collecting the data through their own personal records and entering the data into the worksheets, which may or may not have required the data collectors' assistance. The final step was to review the data for accuracy and completeness, and to follow-up with the respondents if needed.

There were some concerns and reported difficulties during the data collection process pertaining to the data being collected. To assure that the data collected were consistent, or reliable, the respondents were asked to provide data for the calendar year 2015 while the data collection period began in October 2016 and ended in December 2016. Capturing data almost a full calendar year later proved to be somewhat difficult for respondents, and as a result some respondents relied on estimations rather than formal records. The research team did encourage respondents to use their 2015 tax records to provide data. Additionally, data pertaining to salaries and benefits, along with operating costs, were reported to be the most difficult to collect. The primary reason for the difficulty in collecting the data on salaries and benefits was reported to be concerns over confidentiality. For operating costs, the collection of these data depended on how well the respondents kept and archived their own budgets or financial records. Worksheets lacked range and logic checks on the data which would have aided the data collectors and guided the respondents to check the values entered for accuracy.

Cost Estimation Modeling Findings

Cost modeling can provide greater understanding of the costs associated with providing child care in relation to how overall costs and different cost drivers can vary among type of child care, geographic area, star rating, and size of facility. In addition to variation in costs, cost modeling can provide deeper insights into the relationship between funding sources and levels of funding, such as subsidies and private tuition, and the cost of providing child care. The findings presented here give a brief overview of costs associated with child care in the pilot study. Please note that **these results are not representative of the child care market in North Carolina; they are simply reflective of the centers and homes chosen for the pilot study.**

Child Care Centers. Child care centers who participated in the pilot have an average of 4.97 classrooms and the average enrollment was 55.84 children from birth- to- five- year olds not in school. The average number of children who participate in the subsidized child care program at each center was 16.61. There were less children and classrooms in the 3 star child care centers in the sample, 3.82 classrooms with 38.73 children, than 4 star child care centers with 5.38 classrooms, and an average of 63.19 children enrolled, and 5 star programs with 5.52 classrooms and 62.70. Conversely, the average number of children receiving subsidy in the 5 star child care centers was 14.11, whereas the average number of children receiving in the 3 and 4 star centers was 17.32 and 18.62, respectively.

In the pilot study the average cost per slot across all child care centers was $9,732. The cost per slot for 3 star child care centers was $9,092, $9,031 for 4 star centers, and $10,929 for 5 star centers. The largest cost driver, as expected, was salary and staffing expenses: $6,099 per slot for 3 star centers, $6,354 for 4 star centers, and $8,050 for 5 star centers. Operating costs per slot were $2,993, $2,678, and $2,879 for 3 star centers, 4 star centers and 5 star centers respectively.

Using an unweighted state average for subsidy payments, for 3 star child care centers the subsidy rates for children receiving care would cover 81 percent of the cost for infants and toddlers, 75 percent of the cost for two-year olds, and 71 percent of the cost for three, four, and five-year olds not in school. For the 4 star centers in the pilot study, the subsidy rates for children receiving care would cover 87 percent of the cost for infants and toddlers, 80 percent of the cost for two-year olds, and 71 percent of the cost for three, four, and five-year olds not in school. For the 5 star centers in the pilot study, the subsidy rates for children receiving care would cover 81 percent of the cost for infants and toddlers, 74 percent of the cost for two-year olds, and 61 percent of the cost for three, four, and five-year olds not in school.

Table 3. Cost Associated with Child Care Centers in the Pilot Study

	3 Star Centers	4 Star Centers	5 Star Centers
Overall Cost and Funding			
Average Cost per Slot	$9,092	$9,031	$10,929
Staffing Expenses per Slot	$6,099	$6,354	$8,050
Operating Costs per Slot	$2,993	$2,678	$2,879
Staffing Expenses Cost Drivers			
Average Number of Staff at Site	10	19	17
Average Lead Teacher Salary	$19,880	$20,199	$24,595
Average Assistant Teacher Salary	$16,096	$17,012	$21,647
Operating Cost Drivers			
Per-Child Cost	$1,232	$1,343	$1,244
Per-Square Foot Cost	$17	$19	$14
Per-Staff Cost	$206	$382	$292
Per-Site Cost	$8,056	$7,755	$8,693

Family Child Care Homes. Family child care homes who participated in the pilot have an average enrollment of 8.72 children. The average number of children who participated in the subsidized child care program in each home was 4.6. There was not much variation in the number of children enrolled or the number of children who participated in the subsidized child care program across star rating. In the pilot study, the average cost per slot across all family child care homes was $6,195. The cost per slot for 3 star family child care homes was $5,651, $6,684 for 4 star family child care homes, and $6,096 for 5 star family child care homes. When discussing cost drivers from family child care homes, it is important to note that most providers are the owner and the lead teacher and they reported that they do not pay themselves a set wage but rather, collect the remainder after all other expenses have been paid to operate the program as their 'salary'. Operating costs per slot were $3,283, $3,726, and $3,558 for 3 star homes, 4 star homes and 5 star homes respectively.

Using an unweighted state average for subsidy payments, for the 3 star family child care homes who participated in the pilot study the percent of the cost covered by subsidy payments for children receiving care ranged from 88 percent for three, four, and five-year olds not in school to 100 percent for infants. For the 4 star homes in the pilot study, the range was 77 percent for three, four, and five-year olds not in school to 88 percent for infants. For the 5 star homes in the pilot study, the subsidy payments for children receiving care would cover 89 percent for three, four, and five-year olds not in school to 100 percent for infants.

Summary of Findings and Future Recommendations

North Carolina's child care subsidy program is designed to help families with either situational and/or financial needs purchase child care for children birth to age 12 and children with special needs through a voucher-based program. The subsidy program is funded by the federal Child Care and Development Block Grant (CCDBG), other federal and State appropriated funds. The CCDBG requires states to set payment rates for families receiving subsidies to allow families receiving subsidies equal access to child care as compared to families who do not receive subsidies. To do this, states are required to study the market price providers charge for child care every three years.

These studies have been conducted using various survey methods and are generally referred to as market rate surveys or market rate studies. Market rate studies, in and of themselves, do not set the subsidy rate. The studies are designed to determine the price of obtaining child care within a child care market by employing survey methodologies to capture the price of care in a child care market and to set the rate ceiling. The most common approaches to surveying prices or rates are by direct surveying providers or the use of administrative databases.

As stated in the 2014 CCDBG reauthorization, states must ensure that market rate studies are statistically valid and reliable and must take into account the geographic area, type of provider, and the age of the child. After reviewing methods and methodological approaches that ensure valid and reliable studies, North Carolina's traditional market rate studies currently employ such methods and take into account geographic area, type of provider, and age of children when calculating market rates. Moreover, North Carolina reviews market rates at different licensed star ratings as a measure of capturing rates at various levels of quality, an approach that is considered to be innovative (Branscome, 2016).

The review of traditional market rate studies yielded two recommendations to potentially improve North Carolina's future traditional market rates studies. One recommendation is to study how geographic clustering of counties into regions might simplify rate structures and setting. A second recommendation is to investigate how rates differ by using the total number of slots available in a child care center or family child care homes versus the number of filled slots when calculating the market rate to create a more accurate reflection of access.

Traditional market rates studies have been criticized for only capturing rates and prices in the market and not the true cost of providing quality child care. Studies that employ cost modeling, or cost estimation modelling, are designed to capture the cost of providing child care within a given market, not the price charged. The results of these studies can potentially provide greater insight into how the costs associated with providing child care differ within various submarkets and across differing levels of quality, what drives the costs of child care within specific submarkets, and how subsidies, private payments rates, and additional funding sources compare to the cost of providing care.

Along with a review of traditional market rate studies and cost estimation modeling, this report details the pilot study for cost estimation modeling to augment North Carolina's traditional market

rate approach. Like traditional market rate studies, cost estimation modeling requires surveying either child care providers or administrative databases for data collection. The results of the pilot focused on the methods, procedures, and the development of cost models and how this approach can be employed in North Carolina. The study included 106 child care centers and family child care providers across the state; however, these data were collected to test a cost estimation model only and should not be used to make any generalizations regarding the cost of providing child care in North Carolina.

The results of the pilot study, using a purposive sample (selecting respondents who data collectors knew or who had expressed prior interest), resulted in higher rates of refusal than are typically seen with the traditional market rate study. Reasons stated for declined participation were the amount of time required for participation, not having access to the data needed, or being uncomfortable with providing the data requested, especially salary and benefits.

Along with data pertaining to salaries and benefits, data on operating costs were reported to be the most difficult to collect but for differing reasons. The reluctance to provide data on salaries and benefits was largely due to uncertainty of how the data would be used and for what reason as well concerns over confidentiality. The collection of data regarding operating costs depended on how well the respondents kept and archived their own budgets or financial records. The results of the surveys suggested that cost estimation modeling can provide cost of care estimates, estimates on cost per slot, and the relationship between the cost of care and how much subsidy funds covers the costs. Cost modeling can be done at the provider level, by geographic area/region/cluster, by star rating, and by type of provider. In future studies of cost estimation, the tool developed should be modified slightly to capture more accurate details and to minimize any potential confusion surrounding the data to be gathered.

Based on the review of traditional and alternative market rate studies and methodologies, as well as the pilot study of the use of cost estimation in North Carolina, DCDEE finds that the cost estimation model holds promise. The next market rate study will need to be completed by Summer 2018 to be included with North Carolina's next Child Care and Development Fund (CCDF) State Plan that describes use of Federal CCDF funds. Planning for the next market rate study will begin later in 2017. DCDEE recommends that North Carolina continues to study market rates every three years using its traditional methodologies. At the time of the next market rate study to begin later in 2017, DCDEE recommends including a cost element to build on data gathered from the cost estimation pilot. In addition, DCDEE recommends study of potential use of geographic clustering by counties and regions and the use of filled slots versus available slots in the analysis. DCDEE also recommends that every six years, concurrent with the traditional market rate study, a study of cost estimation should be conducted.

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Appendices

Appendix A: Pilot Study Procedures and Methods

Appendix B: List of Child Care Resource and Referral Regions and Counties Served

Appendix C: Recruitment Letter

Appendix D: Data Collection Worksheet – Child Care Centers

Appendix E: Data Collection Worksheet – Family Child Care Homes

Appendix F: Additional Data Collection Worksheets – Child Care Centers

Appendix G: Additional Data Collection Worksheets – Family Child Care Homes

Appendix A: Pilot Study Methods and Procedures

This section of the report details the methods and procedures used in the pilot study of using cost estimation models in North Carolina. DCDEE and CUACS consulted with federal consultants specializing in cost estimation modeling and a corresponding online cost estimation calculation tool, members of North Carolina Child Care and Referral (CCR&R) Council, and child care providers to create data collection worksheets, survey instructions and training materials. The CCR&R Council along with researchers at CUACS collected data from a sample of 106 child care centers and family child care homes across the state. The data was analyzed using both an online cost estimation tool and independent cost estimation analyses.

Development of Materials and Data Collection Tools

As discussed in the introduction section of this report, the research team reviewed current and best practices in collecting and analyzing the cost of quality in child care settings. The research team based their data collection process and tools on the online Provider Cost of Quality Calculator (PCQC) tool created by the US Department of Health and Human Services, Office of Child Care. Federal partners at IFC International, who worked directly with the model and tool, trained the NC research team on the cost estimation model and PCQC data collection and analysis tool. Under the guidance of the federal partners, the research team developed data collection worksheets, instruction manuals, and training materials. Once the worksheets were developed, the research team met with members of the CCR&R Council as well as child care providers to review the and finalize the worksheets.

Two data collection worksheets were developed for this pilot study: one for child care centers and one for family child care homes. While the worksheets were developed to collect the same information on costs, family child care homes and child care centers differ enough in staffing expenses as well as operating costs to warrant two unique worksheets. Additionally, separate instructional and training documents were written to correspond to each data collection tool. During the development process, the research team developed additional secondary worksheets to assist respondents in their data collection efforts as requested. Each data collection worksheet was broken into different sections to collect data on the: 1) site description, 2) enrollment, 3) tuition and funding, 4) staffing and staffing expenses, and 5) additional operating cost (see Appendices C and D).

For the pilot study, the research team used the calendar year of 2015 for the data collection period. Furthermore, as the pilot study was designed to look at providing full-time child care data; only full-time enrollment and tuition was collected and children of staff who receive free tuition were also excluded from the data. Additionally, information on children only enrolled in before care or after care was not collected as was the staff costs for teachers who oversaw only part-time care or before and after care.

Site Description

The data collection worksheet was designed to collect data on overall site characteristics such as star rating, geographic location, and total square footage. In the worksheet for child care centers, study participants were asked to provide the total square footage of their site. For family child

care homes, respondents were asked to provide the designated square footage of their home used to provide child care as well as the total square footage of their homes. However, in preliminary discussions, there was a concern that study participants might not know or have readily available total square footage; therefore, when square footage was not available or unknown, participants could use a provided default value. Child care centers were provided with a default value for square footage based on the average number of children in a center from the 2014 Market Rate Study times the number of square footage required by the state of North Carolina for each child plus an additional 30 feet. Family child care homes were provided with a default value calculated based on the average number of children in a family child care home from the 2014 Market Rate Study, square footage requirements for licensed family child care homes and from discussions with home care providers. Additionally, family child care homes were asked to provide the number of weeks their home operated as a business during the calendar year.

Enrollment and Tuition

To capture enrollment and tuition for the time frame requested, child care centers were asked to list each of their classrooms (birth to prekindergarten and full time summer care classrooms) separately on the worksheet. For each of the classrooms listed, they were asked to provide the age group of children within the classroom, the average number of children enrolled, the number of children in the classroom who participated in the NC Child Care Subsidy program, and the maximum group size of the classroom. Child Care Centers were also asked to provide their private tuition rates for each age group: infants, toddlers, two-year olds, three-year olds, four-year olds, five-year olds not in school, and full-time school-age summer care. A secondary worksheet was developed to help participants determine the average number of children enrolled during the year (see Appendix G).

Given the differences in enrollment structure between child care centers and family child care homes, the worksheet for family child care homes collected data regarding tuition and enrollment not by classroom but for individual children. For each child who received care in the home during 2015, the provider was asked to provide their age group, the number of weeks in care during 2015, the number of hours per week the child received care, if they charged their private rate or received subsidy, and the rate charged/paid. A secondary worksheet was developed to help participants determine the average enrollment per child during the year (see Appendix G).

The worksheets for both child care centers and family child care homes also collected how much of the tuition and fees the provider was unable to collect during the year. If this was not known, respondents could use the default in the PCQC of 3 percent. Furthermore, the provider was asked if they collected the difference in the child care subsidy rate provided by the State and their private tuition rates from parents of children who participate in the NC Subsidy Program. In addition to tuition, the worksheet was designed to collect information on any other additional sources of income such as the amount they received annually if they participated in the Child & Adult Food Care Program, any monetary donation they received, and any grants received for the program.

Staffing and Staffing Expenses

Each worksheet was designed to collect staffing and staffing related expenses. There were slight variations in the two worksheets due to differences in staffing between child care centers and family child care homes. Child care centers were asked to provide the number of staff and the average annual salary for that position in each of the types provided: Center Director, Assistant Director, Administrative Assistant, Classroom Teacher, Teacher Assistant, other full-time staff, part-time staff, and Consultants or Trainers. Family child care homes were asked to provide the number of staff in four categories: Owner/Lead Teacher, Teacher Assistant(s), other staff, and Consultants or Trainers. They were asked to indicate the average hours worked per week for each position and the salary or wage provided in each category. Owners of homes who do not pay themselves a set yearly wage but instead pay themselves the net revenue after all expenses where paid were allowed to indicate their wage as "Net."

The child care center and family child care homes worksheets had an identical section to collect either the percentage paid in benefits or to list the annual amount paid for Worker's Compensation, Unemployment, Disability, Social Security, Health Benefits, and other fringe benefits. An additional secondary worksheet was provided to help respondents collect this information, if needed (see Appendix F and G).

Additional Operating Costs

This section of the worksheet was designed to mimic the original PCQC and to collect estimates of additional operating costs. For child care centers, non-personnel costs were broken into four categories: 1) annual per-child cost, 2) annual per-square foot cost, 3) annual per-staff cost, and 4) annual per-site cost. Additional operating costs for family child care homes were broken down into three categories: 1) annual expenses-100% business use, 2) shared business use of home, and 3) miscellaneous expenses (see Tables A1 and A2).

During the development process, the research team was concerned that child care centers and family child care homes might not have estimates of the costs readily available. Therefore, using default values obtained from the U.S. Department of Health and Human Services, Office of Child Care and used in the PCQC, the worksheet calculated annuals estimates based on answers given in regards to square footage, enrollment, and staffing. The worksheet asked for respondents to review these estimates and to indicate if they were lower, higher, or similar to what they pay annually. If the cost was readily available, they were asked to provide it in a subsequent column.

Table A1. List of Additional Operating Costs for Child Care Centers.

Annual Per-Child Costs
Food & Food Preparation
Kitchen Supplies
Education Supplies
Education Equipment
Office Supplies
Office Equipment
Insurance (Liability, Accidental, etc.)
Postage
Advertising
Miscellaneous Administrative Costs
Annual Per-Square Foot Costs
Rent/Lease/Mortgage
Utilities
Building Insurance
Repairs and Maintenance (includes Cleaning)
Annual Per-Staff Costs
Professional Development Fees
Annual Per-Site Costs
Telephone & Internet
License and Permit Fees
Audit
Miscellaneous Costs (including transportation)

Table A2. List of Additional Operating Costs for Family Child Care Homes.

Annual Expenses – 100% Business Use
Advertising
Travel/Vehicle expenses
Equipment
Insurance
Legal & Professional Fees
Office Supplies
100% business use Repairs and Maintenance
Education Supplies
Food & Kitchen Supplies
Telephone & Internet
Professional Development Fees
Dues and Subscriptions
License and permits Fees
Shared Business Use of Home
Rent/Lease OR Mortgage interest and property taxes
Home Owners/ Renters Insurance
Shared use of Home Repairs and maintenance
Utilities
Cleaning Supplies and Paper Products
Miscellaneous
Miscellaneous Administrative Costs
Miscellaneous Costs
Other not listed

Participation Selection

Prior to the data collection phase of this pilot study, DCDEE and CUACS discussed various methods of participant selection. As this study is to pilot a new methodology for assessing child care costs across the state and given the exploratory nature of the study, the study uses a purposive sampling technique. In line with the purpose of the pilot study, the research team wanted to be able to draw conclusions about implementing the cost estimation model across the state. The sample was purposively chosen to give the researchers a better understanding of the data collection process and future implementations of a cost estimation model in North Carolina. The findings give a brief overview of costs associated with child care in the pilot study. Please note that **these results are not representative of the child care market in North Carolina; they are simply reflective of the centers and homes chosen for the pilot study.** For this pilot study, the target number of participants was set at 112.

The research team developed a proposed sample based on geographic/regional enrollment, distribution of star ratings across the state, and feedback from the CCR&R council. As DCDEE contracted with the CCR&R council to collect much of the data for this pilot study, the council's fourteen regions across the state were used to represent geographic location in the sample selection

(see Appendix B for the list of counties within the different CCR&R regions). The research team analyzed active enrollment data from July 2016 inside a region to determine how many centers and homes should be sampled for the study. Moreover, as this is a pilot study to look at the cost of providing quality child care the research team took into account the distribution of three, four, and five star rated programs when developing the sample. Using enrollment and star rating, the research team development a proposed sample. After discussions with the CCR&R council, the original number of homes was reduced to just two per region while the number of centers sampled in a region varied by child enrollment (see Table A3).

Table A3. Proposed Sample of the Cost Estimation Pilot Study

Region	Child Care Centers			Family Child Care Homes			TOTAL
	Three Star	Four Star	Five Star	Three Star	Four Star	Five Star	
Region 1	1	1		1		1	**4**
Region 2		1	1	1	1		**4**
Region 3	2	1	1	1	1		**6**
Region 4	1	1	2	1	1		**6**
Region 5	3	3	3		1	1	**11**
Region 6	4	5	5	1	1		**16**
Region 7	1	1	2	1	1		**6**
Region 8	2	2	1		1	1	**7**
Region 9	2	1	1	1	1		**6**
Region 10	1	2	2	1	1		**7**
Region 11	2	2	3	1		1	**9**
Region 12	5	5	6		1	1	**18**
Region 13	2	1	2	1	1		**7**
Region 14	1	1	1	1	1		**5**
TOTAL	27	27	30	11	12	5	**112**

CCR&R members were allowed to choose sites they felt would be likely to agree to participate or who had expressed interest in the use of different market rate methodologies in the past. The CCR&R selected sites that were a mixture of for-profit and not-for-profit facilities, a mixture of small, medium, and large centers and homes as well as those at differing level of technological sophistication. CCR&Rs were also asked not to just select centers and homes from one county or city within their region. The final sample consisted of 106 participants across the state (see Table A4).

Table A4. Final Sample of the Cost Estimation Pilot Study

Region	Child Care Centers			Family Child Care Homes			TOTAL
	Three Star	Four Star	Five Star	Three Star	Four Star	Five Star	
Region 1	1	1		1		1	**4**
Region 2		1	1	1	1		**4**
Region 3	1	1	1	1	1		**5**
Region 4	1	1	1	1	1		**5**
Region 5	3	3	3		1	1	**11**
Region 6	2	4	5	1	1	1	**14**
Region 7	1	1	2		2		**6**
Region 8	2	2	1		1	1	**7**
Region 9		2	2	1	1		**6**
Region 10	1	2	2	1	1		**7**
Region 11	3	3	1	1		1	**9**
Region 12	6	4	6		1	1	**18**
Region 13	1	1	2	1	1		**6**
Region 14	1		2	1			**4**
TOTAL	23	26	29	10	12	6	**106**

Data Collection Procedures

Prior to the data collection phase of the pilot study, CCR&R members met and received training on the data collection process including a detail review of how to complete the data collection worksheets. The training was led by the research partners at CUACS. Following the training, CUACS set up a helpdesk for CCR&Rs to answer any questions they or study participants might have regarding the worksheets or data to be collected.

CCR&R members from thirteen of the fourteen regions collected data within their regions. CCR&R members from one region declined involvement in the data collection process; data from within this region was collected by member of the research team at CUACS. The method of data collection for this study varied depending on the preferences of the study participant. Participants were given a letter of study participation authored by DCDEE which gave a brief explanation of the study and indicated that their participation was voluntary and confidential (see Appendix C). Participants could choose to receive a brief introductory phone call and receive the worksheet electronically, along with the instructional manual or to complete the worksheet over the phone with a person responsible for data collection. Participants could also choose to have the data collector come to their site for an onsite interview. Participants could also choose to come into the CCR&R offices to receive an informal training and complete the worksheet on site or they could return to their center or home to complete the worksheet.

After the completion of the data collection for a participant, CCR&Rs securely uploaded the worksheets to the research team at CUACS. The research team at CUACS reviewed the data for completion and followed up with the participant or the CCR&R if there were additional questions.

Data Analysis and Data Validation

Before the data analysis began, each data worksheet was reviewed for accuracy and missing data, follow-up inquiries were made either by researchers at CUACS or by the CCR&Rs. In cases where follow-up inquiries did not yield additional data, default values provided were used for missing data. When default values were not available, the sample mean or average for that variable was used. The data were subsequently entered into either the PCQC or a SAS dataset for analysis and were independently checked for accuracy by two researchers.

To determine the cost of providing quality child care, the data from the pilot study were concurrently analyzed using the PCQC and independent cost analyses performed by members of the research team using SAS software. These concurrent and separate analyses were to determine the limitations or advantages of either method of analysis.

Appendix B:

List of Child Care Resource and Referral Regions and the Counties Served

CCR&R Region 1
Bertie County
Camden County
Chowan County
Currituck County
Dare County
Gates County
Hertford County
Northampton County
Pasquotank County
Perquimans County

CCR&R Region 2
Beaufort County
Craven County
Hyde County
Pamlico County
Tyrrell County
Washington County

CCR&R Region 3
Carteret County
Greene County
Jones County
Lenoir County

Martin County
Onslow County
Pitt County

CCR&R Region 4
Bladen County
Brunswick County
Columbus County
Duplin County
New Hanover County
Pender County
Sampson County

CCR&R Region 5
Anson County
Cumberland County
Hoke County
Montgomery County
Moore County
Richmond County
Robeson County
Scotland County

CCR&R Region 6
Cabarrus County
Mecklenburg County
Rowan County
Stanly County
Union County

CCR&R Region 7
Catawba County
Cleveland County
Gaston County
Lincoln County

CCR&R Region 8
Buncombe County

Cherokee County
Clay County
Graham County
Haywood County
Henderson County
Jackson County
Macon County
Madison County
Polk County
Rutherford County
Swain County
Transylvania County

CCR&R Region 9
Alexander County
Avery County
Burke County
Caldwell County
Iredell County
McDowell County
Mitchell County
Watauga County
Yancey County

CCR&R Region 10
Alleghany County
Ashe County
Davidson County
Davie County
Forsyth County
Stokes County
Surry County
Wilkes County
Yadkin County

CCR&R Region 11
Guilford County
Randolph County
Rockingham County

CCR&R Region 12
Alamance County
Caswell County
Durham County
Franklin County
Granville County
Orange County
Person County
Vance County
Wake County

CCR&R Region 13
Chatham County
Harnett County
Johnston County
Lee County
Wayne County

CCR&R Region 14
Edgecombe County
Halifax County
Nash County
Warren County
Wilson County

Appendix C:

Recruitment Letter

Child Development
and Early Education
HEALTH AND HUMAN SERVICES

Pat McCrory
Governor

Richard O. Brajer
Secretary

Pamela L. Shue
Director

Memo

To: Child Care Centers and Family Child Care Homes Participating in the NC Cost of Quality Survey

From: Pamela L. Shue, Ed.D.

Date: October 10, 2016

Re: Study Child Care Subsidy Rate Setting

Dear Child Care Provider:

The NC General Assembly has required that the Department of Health and Human Services, Division of Child Development and Early Education (DCDEE), "study how rates are set for child care subsidy... including other methodologies for establishing rates, including any cost estimation models, along with the pros and cons of each method reviewed" (House Bill 1030 / S.L. 2016-94, Section 12B.3). The Division is utilizing its own staff resources and has also partnered with the Center for Urban Affairs and Community Services (CUACS) at North Carolina State University and Child Care Resource and Referral agencies to conduct this study. Findings related to this study and its results will be presented to the General Assembly in a report due March 1, 2017.

The purpose of the study is to capture data on the cost of providing quality child care. "Cost of quality" estimates extend beyond a traditional market rate study as they take into account revenue as well as costs associated with providing quality child care. The findings will help inform DCDEE about the potential of using such estimates to enhance the traditional market rate analysis methodology in North Carolina.

Your site has been selected to participate in this effort. If you choose to participate, you will be asked to **confidentially** provide data about your site characteristics such as classroom enrollment and staffing, rates charged for care, personnel salaries and benefits as well as non-personnel costs.

Appendix D:

Data Collection Worksheet – Child Care Centers

North Carolina Data Collection Worksheet (Child Care Centers)

Consider the following when answering the questions in this survey.

- Provide data on the cost of full time child care using annual estimates for the calendar year 2015.
- For questions about infants to five year olds not in school who were enrolled full time, base your answers on the average, or typical, enrollment in your classrooms from January to December of 2015.
- For school age children, base your answers on the average, or typical, enrollment in your classrooms during the summer of 2015.
- For personnel and non-personnel costs associated with providing quality childcare, you might find your 2015 tax return to be a good resource. Estimates of non-personnel costs have been provided for you to review and evaluate on how well they match your center's annual expenses in 2015.
- Detailed instructions, definitions, and hints can be found in COQ_SurveyInstructions_Centers.docx

Section 1: Site Description

Site ID	
Center Contact Name	
Center Phone Number	
CCR&R Name	
CCR&R Phone Number	
2015 Star Rating	
Residing County	
Total Square Footage of Center	2000

Section 2: Classrooms and Enrollment

Classrooms	Age Group	Average Total Number of Children Enrolled	Number of Subsidized Children	Number of Teachers	Additional Staff	Additional Staff Time in Classroom per Week	Maximum Group Size	Notes/ Comments
Preschool Classrooms								
School Age Classrooms: Summer Care								

Section 3: Tuition and Additional Income

Tuition by Age Group	Private Tuition Rate	Rate Schedule: Weekly or Monthly	Notes/ Comments
Infants			
One year olds			
Two year olds			
Three year olds			
Four year olds			
Five year olds not in school			
School Age Summer Care			

How much of your tuition and fees were you unable to collect?	
Did you collect the difference between Private Rates and Subsidy Rates?	

Additional income sources:	Amount
CACFP	
Grants	
Monetary Contributions	
Other	

Section 4: Staffing Expenses

Staff Salaries (Use Staffing Worksheet if needed)	Number of Staff in Position	Average Annual Salary	Notes/ Comments
Director			
Assistant Director			
Admin Assistant			
Classroom Teachers (Full Time)			
Teacher Assistants (Full Time)			
Other Full Time Staff _____			
Parttime Staff			
Consultants/Trainers			

Fringe and Benefits

What is the percentage you pay in Benefits? If not known, use the Benefits Worksheet provided to help you fill out the section below.

%

Fringe and Benefits	Annual	Notes/ Comments
Worker's Comp		
Unemployment		
Disability		
Social Security		
Health benefits (Dental, Vision included)		
Other (Life, Retirement, Other Fringe)		

Section 5: Operating Costs

Annual Per-Child Costs	Annual Estimates per Child	Annual Estimates based on your Enrollment	Is this Annual Estimate Lower, About right, Higher?	If available, Your Annual Costs	Notes/ Comments
Food & Food Preparation	$1,000.00	$0.00			
Kitchen Supplies	$50.00	$0.00			
Education Supplies	$50.00	$0.00			
Education Equipment	$100.00	$0.00			
Office Supplies	$30.00	$0.00			
Office Equipment	$22.00	$0.00			
Insurance (Liability, Accidental, etc)	$75.00	$0.00			
Postage	$24.00	$0.00			
Advertising	$25.00	$0.00			
Miscellanous Administrative Costs	$15.00	$0.00			

Annual Per-Square Foot Costs	Annual costs Per Square Foot	Annual Estimates based on Square Footage	Is this Annual Estimate Lower, About right, Higher?	If available, Your Annual Costs	Notes/ Comments
Rent/Lease/Mortgage	$13.65	$27,300.00			
Utilities	$2.19	$4,380.00			
Building Insurance	$1.34	$2,680.00			
Repairs and Maintenance (includes Cleaning)	$2.85	$5,700.00			

Annual Per-Staff Costs	Annual costs Per Staff	Annual estimate based your staff	Is this Annual Estimate Lower, About right, Higher?	If available, Your Annual Costs	Notes/ Comments
Professional Development Fees	$200.00	$0.00			

Annual Per-Site Costs	Annual Estimates	Is this Annual Estimate Lower, About right, Higher?	If available, Your Annual Costs	Notes/ Comments
Telephone & Internet	$1,440.00			
License and permits Fees	$500.00			
Audit	$3,000.00			
Miscellanous Costs (including transportation)	$0.00			

Appendix E:

Data Collection Worksheet – Family Child Care Homes

North Carolina Data Collection Worksheet (Family Child Care Homes)

Consider the following when answering the questions in this survey.

- Provide data on the cost of full time child care using annual estimates for the calendar year 2015.
- For questions about infants to five year olds not in school who were enrolled full time, base your answers on the average, or typical, enrollment in your home from January to December of 2015.
- For school age children, base your answers on the average, or typical, enrollment in your home during the summer of 2015.
- For personnel and non-personnel costs associated with providing quality childcare, you might find your 2015 tax return to be a good resource. Estimates of non-personnel costs have been provided for you to review and evaluate on how well they match your home's annual expenses in 2015.
- Detailed instrustions, definitions, and hints can be found in COQ_SurveyInstructions_Homes.docx

Section 1: Site Description

Site ID	
Home Contact Name	
Home Phone Number	
CCR&R Name	
CCR&R Phone Number	
2015 Star Rating	
Residing County	
Total sq footage of the Home	1500
Total sq footage used for childcare	1200
How many weeks in 2015 was your home open?	

Section 2: Enrollment and Tuition

Children Enrolled	Age Group	Number of Hours of Care per Week	Number of Weeks in Care for 2015	Private Pay or Subsidized	Rate Charged	Rate Schedule: Daily, Hourly, Weekly, or Monthly	Notes/ Comments

How much of your tuition and fees were you unable to collect?	
Did you collect the difference between Private Rates and Subsidy Rates?	

Additional income sources:	Amount
CACFP	
Grants	
Monetary Contributions	
Other	

Section 3: Staffing Expenses

Staff Salaries (Use Staffing Worksheet if needed)	Number of Staff in position	Average Hours Worked per Week	Salary/Wage	Pay Type: Hourly, Weekly, Monthly, Yearly	Notes/ Comments
Owner/Lead Teacher					
Teacher Assistants					
Other _____					
Consultants/Trainers					

Fringe and Benefits

What is the percentage you pay in Benefits? If not known, use the Benefits Worksheet provided to help you fill out the section below.

%

Fringe and Benefits	Annual	Notes/ Comments
Worker's Comp		
Unemployment		
Disability		
Social Security		
Health benefits (Dental, Vision included)		
Other (Life, Retirement, Other Fringe)		

Section 4: Operating Costs

	Annual Estimates	Is this Annual Estimate Lower, About right, Higher?	If available, Your Annual Costs	Notes: Comments
Annual Expenses – 100% Business Use				
Advertising	$150.00			
Travel/Vehicle expenses	$250.00			
Equipment	$300.00			
Insurance	$450.00			
Legal & Professional Fees	$600.00			
Office Supplies	$180.00			
100% business use Repairs and Maintenance	$240.00			
Education Supplies	$450.00			
Food & Kitchen Supplies	$4,800.00			
Telephone & Internet	$900.00			
Professional Development Fees	$250.00			
Dues and Subscriptions	$100.00			
License and permits Fees	$100.00			
Shared Business Use of Home				
Rent/Lease OR Mortgage interest and property taxes	$12,000.00			
Home Owners/ Renters Insurance	$675.00			
Shared use of Home Repairs and maintenance	$500.00			
Utilities	$1,800.00			
Cleaning Supplies and Paper Products	$240.00			
Miscellanous				
Miscellanous Administrative Costs	$0.00			
Miscellanous Costs	$0.00			
Other not listed	$0.00			

Help Desk and Contact Information

Appendix F:

Additional Data Collection Worksheets – Child Care Centers

	Month												
Classroom	January	February	March	April	May	June	July	August	September	October	November	December	Average Enrollment
Example	10	10	11	11	11	9	9	9	10	11	11	11	10

Staff Name	Position	Salary/Pay	Indicate if Yearly or Hourly	If Hourly, Average hours a week	If Hourly, Number of Weeks Worked	Annual Salary
Office/Administrative Staff						
APM	Example	32000	Yearly			32000
KE	Example2	12	hourly	40	32	24000
Full time Classroom Teachers						
Full time Teachers Assistant						
Other Full time						
Part time Staff						
Trainers and Consultants						

Staff Name	Position	Dental	Vision	Health, Medical	Disability	Social Security	Unemployment Insurance	Worker's Comp Insurance	Life Insurance	Retirement, 401K, Etc.	Other Fringe Benefits	Total Annual Fringe Benefits
Example1	Director	50		250	50	50	50	50				500
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
		50	0	250	50	50	50	50	0	0	0	

Totals to be entered on Data Collection Sheet

Worker's Comp	50
Unemployment	50
Disability	50
Social Security	50
Health benefits (Dental, Vision included)	300
Other (Life Ins, Retirement, Other Fringe)	0

Appendix G:

Additional Data Collection Worksheets – Family Child Care Centers

Slot	January					February					March				
	Age Group	Hours/ Week	How many weeks?	Pay	Subsidy?	Age Group	Hours/ Week	How many	Pay	Subsidy?	Age Group	Hours/ Week	How many weeks?	Pay	Subsidy?
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Slot	July					August					September				
	Age Group	Hours/ Week	How many weeks?	Pay	Subsidy?	Age Group	Hours/ Week	How many	Pay	Subsidy?	Age Group	Hours/ Week	How many weeks?	Pay	Subsidy?
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Staff Name	Position	Salary/Pay	Indicate if Yearly or Hourly	If Hourly, Average hours a week	If Hourly, Number of Weeks Worked	Annual Salary
Office/Administrative Staff						
APM	Example	32000	Yearly			32000
KE	Example2	12	hourly	40	32	24000
Full time Classroom Teachers						
Full time Teachers Assistant						
Other Full time						
Part time Staff						
Trainers and Consultants						

Staff Name	Position	Dental	Vision	Health, Medical	Disability	Social Security	Unemployment Insurance	Worker's Comp Insurance	Life Insurance	Retirement, 401K, Etc.	Other Fringe Benefits	Total Annual Fringe Benefits
Example1	Director	50		250	50	50	50	50				500
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
		50	0	250	50	50	50	50	0	0	0	

Totals to be entered on Data Collection Sheet

Worker's Comp	50
Unemployment	50
Disability	50
Social Security	50
Health benefits (Dental, Vision included)	300
Other (Life Ins, Retirement, Other Fringe)	0