

# **2009 Local Child Care Market Rate Study**

## *Final Report*

*for*

*The Delaware Department of Health and Social Services,  
Division of Social Services*

Submitted by Workplace Solutions  
Reading, MA  
(781) 944-3635  
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## ACKNOWLEDGMENT

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*This study would not have been possible without the gracious cooperation of the many Delaware child care providers who took the time to participate in the interviews and help with the study. Thank you all.*

## OVERVIEW

The 2009 Delaware Child Care Market Rate Study was conducted to meet federal requirements of 45 Code of Federal Regulations Parts 98 & 99 to ensure that reimbursement rates allow subsidized low-income children equal access to early education and care. The goal of this Rate Study was to develop statistically credible information on the present market prices charged by licensed and exempt providers in Delaware. "Market prices" are prices providers charge parents for the care of their private-paying children. They are non-discounted prices charged to unrelated and unaffiliated parents.

The Delaware Division of Social Services (the Division) contracted with the consulting firm Workplace Solutions, located in Reading Massachusetts, to undertake this study. The firm has conducted six previous child care market rate studies for the Division and has substantial experience with these surveys. Workplace Solutions' consulting group consisted of a team of researchers including: Marie Sweeney (MBA, M.Ed.), Principal of Workplace Solutions; Peter Schmidt (Ph.D., Economics), University Distinguished Professor of Economics, Michigan State University; William Horrace (Ph.D., Economics, MBA Finance), Professor of Economics, Syracuse University and Ann Witte (Ph.D., Economics), Professor of Economics, Wellesley College. Project Manager Marie Sweeney worked closely with the Division's Project Coordinators Eulinda DiPietro and Barbara McCaffery to plan and implement the study.

Because of the importance of obtaining accurate pricing information, the study was carefully planned and executed. The project began in January 2009. The Division and Workplace Solutions planned the study during January and February. Interviews were conducted over a five-week period, during March and April. The researchers submitted final estimates of the 75<sup>th</sup> percentile of prices to the Division in April 2009.

The following section describes the methodology for the Market Rate Study. This includes descriptions of the sample design, the selection of the sample, the survey, and the interviews in the field. The next section describes the findings of the survey including the range of prices at the 75<sup>th</sup> percentile, the response rates, and the accuracy of the estimates of the price percentiles reported in the study. The section contains estimates of both prices charged by Delaware providers and prices paid by Delaware families. To discern price trends, the section compares 2009 prices with prices charged in 2007 as reported in the 2007 Delaware market rate study.

The final page of the report contains three tables presenting the 2009 75<sup>th</sup> percentile prices for the center and family child care markets. Table A contains the full-time daily prices at the 75<sup>th</sup> percentile for family child care for Kent, Sussex and New Castle counties. It also contains the minimum price reported in the county, the maximum price reported in the county, and the price observations used to determine the 75<sup>th</sup> percentile (n). Table B contains the family child care full-time daily prices at the 75<sup>th</sup> percentile for infant, toddler, and preschool care as well as part-day prices for school-age care. Table C contains the center full-time daily prices at the 75<sup>th</sup> percentile for infant, toddler, and preschool care as well as part-day prices for school-age care.

## **METHODOLOGY**

Workplace Solutions implemented the survey to obtain prices for private-paying children actually in care at the time of the study. The researchers selected a representative sample of providers throughout Delaware and interviewed the sample providers by telephone. Utilizing the prices obtained through the interviews, researchers calculated the 75<sup>th</sup> percentiles of market prices for full-time infant, toddler, and preschool care and for part-day school-age care. Estimates of the accuracy of the 75<sup>th</sup> percentiles of 2009 market prices confirm that the Delaware market rate study achieved a high degree of precision.

### **The Sampling Frame**

The sampling frame for the family child-care sample consisted of Delaware's Office of Child Care Licensing's data of licensed family child care and large family child care providers as of February 2009, merged with Children and Families First (CFF) data of licensed family child care and large family child care providers as of March 2009. The sampling frame for the center/school-age sample consisted of Delaware's Office of Child Care Licensing's data of licensed center/school-age providers as of February 2009, merged with Children and Families First data of licensed and exempt center/school-age providers as of March 2009. This comprehensive sampling frame allowed all providers in the state to have the opportunity to be selected for the rate study interview and reduced the likelihood of a non-representative sample. This also enabled the researchers to design the center sample by age category.

As part of the development of an accurate sampling frame, the Division, Workplace Solutions, and Children and Families First reviewed the center, school-age and family child care data to delete providers in categories that were outside the parameters of the study. These included providers that only served a niche in the child care market (drop-in care), were not open to the general public (employer-supported programs only for employees' children), were significantly subsidized by the federal government (Head Start), or did not provide child-care services for the targeted timeframe (nursery schools). After eliminating these programs from the sampling frame, the consultants then determined that the total number of providers eligible for the study (the sampling frame) was 1704 providers. This sampling frame included 385 licensed and exempt center/school-age providers and 1319 licensed family child care and large family child care providers.

### **The Sampling Plan**

The researchers developed a Sampling Plan to select a stratified random sample of the providers eligible for the study. This was developed in order to determine the child care prices of various market segments in Delaware. The sample design built upon the design and results of the 2007 Delaware Child Care Market Rate Survey. The 2009 sampling plan targeted all licensed and exempt providers in the state that qualified for the study, and called for sampling 45% of the providers. The consultants planned the sample to equalize the accuracy with which the market percentiles are estimated for the center and for the family child care market segments.

The researchers designed the sample for full-time care for centers and family child-care providers and for part-day care for school-age care. The sample was segmented by:

- geographical region
- type of care
- age groupings for center care

*Regions* were the three counties in the state: Kent County, Sussex County, and New Castle County. The *types of care* were (1) center and school-age care and (2) family child care and large family child care. The *age-groupings* were infant, toddler, preschool and school-age.

### **The Selection of Providers**

The economists selected providers at random from the sampling frame for each market segment. That is, they selected a separate random sample for each of the market segments or cells in the sample design, with each sample corresponding

in size to the Sampling Plan. In all, the sample contained 594 family child-care providers and 173 center/school-age providers.

<u>FCC</u>		<u>Center/School Age</u>	
Sussex	221	Sussex	32
Kent	152	Kent	33
New Castle	221	New Castle	108
TOTAL:	594	TOTAL:	173

The researchers selected a wide range of providers throughout the state for the sample. These included: family child care providers, large family child care providers, centers serving all age categories, centers serving only one age category, multi-site child care providers, centers that were part of a large national organization, free-standing school-age programs, school-age programs that were part of a multi-age program, for profit programs and non-profit programs. The researchers also selected providers for the sample that reported scarce types of care in 2007 (i.e., infant care, odd-hour care).

### The Questionnaire

Workplace Solutions designed the questionnaire to collect comprehensive and accurate information about prices charged to private-paying parents. The consultants utilized two surveys for this study: one for the center/school-age market, a second for the family child care and large family child care market. The consultants designed the survey to incorporate changes in the licensing regulations. Thus for this 2009 study, toddlers were defined as 12 months up to 36 months (one and two year olds), and preschoolers started at 3 years of age.

The *center survey* asked providers to quote their prices for:

- Private-paying infants enrolled full time
- Private-paying toddlers enrolled full time
- Private-paying preschool-age children enrolled full time
- Private-paying school-age children enrolled part-day, for less than 4 hours-per-day

The *family child-care survey* asked providers to quote individual prices for private-paying children in their care, since some FCC providers do not have a set rate for their care.

Thus, the FCC survey was designed to collect:

- A price-per-child, for up to eight private-paying children enrolled full time
- A price for a private-paying school-age child or children enrolled for part-day care (< 4 hours per day)

*Odd-hour Care and Special Needs Care:* The Division requested that information also be collected for odd-hour care and for special-needs care. Odd-hour care is evening care, overnight care and weekend care. Thus, the survey was designed to collect prices for odd-hour care for private-paying children as well as enrollment and cost information for children with special-needs.

Both the center and the family child care survey were designed to be easy for the providers yet enable the researchers to address the complex pricing strategies of the Delaware provider community and the nuances of the market.

### **The Marketing Steps to Encourage Provider Participation**

During the planning phase of the project, the Division and Workplace Solutions planned and implemented various strategies to encourage providers to participate in the study:

- All family child care providers and center-sample providers received an announcement letter from Elaine Archangelo, Director of the Division of Social Services. The Director's letter informed them of the forthcoming Market Rate telephone interview and encouraged providers to participate if contacted for the study.
- As part of the announcement letter, providers also received a simple worksheet to help them prepare for the interview.
- Children and Families First mailed a letter to provider advisory groups throughout the state. The letter informed them of the forthcoming market rate study and asked them to encourage their members to participate.
- The Division and Workplace Solutions planned and held Information Sessions for providers in different locations in the state. At these meetings Division Project Coordinator Barbara McCaffery and Workplace Solutions researchers Professor William Horrace and Marie Sweeney explained the purpose and scope of the rate study and answered providers' questions.
- The Division mailed an announcement letter to all licensed providers in the state to inform them of the forthcoming Information Sessions and to explain the child care rate study.

## **The Interviews**

A professional telephone interview group, Opinion Dynamics, was selected to conduct interviews. This group also conducted interviews for previous Delaware Child Care Market Rate Studies. Project Manager Marie Sweeney also assisted with the interviews. Interviews were conducted over a five-week period in March and April. The interviewers attempted to contact and interview all of the providers in the sample including many of the back-up sample providers that were added to the sample (e.g., all FCC back-up providers in Kent and Sussex were ultimately added to the sample). Interviewers made up to ten "call attempts" to reach the sample provider and obtain a completed interview. In all, 1126 providers were called for the rate survey interviews.

## **RESULTS**

The 2009 Delaware Child Care Market Rate Study results include: providers reporting 2,172 prices for private-paying children actually in their care; a very high provider response rate and low refusal rate; a high level of accuracy in the estimation of the 75<sup>th</sup> percentile prices.

### **The Response Rate**

The Delaware response rates show that the providers were overwhelmingly willing to participate in the study. A 95% response rate was obtained for the center/school-age interviews. A 74% response rate was obtained for the family child care interviews. In all, 629 providers reported prices for private-paying children in their care. These very high response rates reflect both the ongoing efforts of the Division of Social Services to encourage provider participation in the rate survey and the gracious cooperation of child care providers. The refusal rates for the study were quite low: 7% of the family child care sample and 3% of the center/school-age sample.

### **The Analysis of the Data**

The researchers converted prices obtained in the interviews into daily rates and then estimated the 75<sup>th</sup> percentiles of the distribution of daily prices for each market segment. The 75<sup>th</sup> percentile price is such that 75% of the prices are at or below the price and 25% are above.

The three tables at the end of this report present summary findings for all 24 market segments in the study. (See Tables A-C of this Executive Summary for the estimated 75<sup>th</sup> percentiles.) In all, the researchers submitted ten tables of findings as part of the full report.

## **Accuracy of the Study**

The goal of the Delaware Child Care Market Rate Study was to develop statistically credible information on the present market prices charged by child care providers in the state. This goal was met since the researchers used a statistically valid methodology, and since the relevant market prices were estimated with a verifiable and high degree of precision.

For the infant, toddler and preschool market segments for both the center and family child care markets, the 95% confidence interval is typically about plus or minus 5% of the estimate. This range was higher for family child care for infants in Kent and Sussex counties. All of the Kent and Sussex family child care providers were ultimately included in the sample and called for the interview. There simply were not very many Kent and Sussex family child care providers who had private-paying infants in their care. Therefore, the researchers combined these two cells into one K&S infant cell. This is justified since both had the same 75<sup>th</sup> percentile price (\$25/day). These cells had also been combined in previous child care market rate studies. This improved the level of accuracy so that this cell is now in line with the other full-time cells.

For school-age care, the 95% confidence interval is typically about plus or minus 10% of the estimate. This is not because the confidence intervals are wider. It occurs because the prices are lower (this is not full-time care). The sampling design attempted to equalize accuracy in absolute terms, not percentage terms, across cells, so there is now a higher uncertainty in percentage terms when the prices are lower, as they are for school-age care.

For all of the market segments in the study, the level of accuracy achieved would be considered a more than acceptable high level of precision.

## **Range of Prices**

Prices can vary widely in the state, by over 100% among different segments of the market. At the 75<sup>th</sup> percentile, results of the study reveal that the daily market prices for full time care range from \$23 to \$47. Part-day school-age prices range from \$10 to \$20.95.

Care is lower in price in family child care homes than in centers. For full-time toddler care in Kent County, at the 75<sup>th</sup> percentile it is \$25 in family child care and \$29 in center care. For full-time preschool care in Sussex County, at the 75<sup>th</sup> percentile it is \$23 in family child care and \$27 in center care.

## **75<sup>th</sup> Percentile Prices by County**

Prices can also vary by geographic region in Delaware. For center and family child care, prices are highest for New Castle County and lower for Kent County and Sussex County. Prices in New Castle County are higher for all types of care

and market segments. Prices at the 75<sup>th</sup> percentile are very similar or the same for Kent and Sussex market segments.

For center care, Sussex has the lowest priced care at the 75<sup>th</sup> percentile and New Castle the highest. However, the Sussex and Kent center prices are very similar. At the 75<sup>th</sup> percentile, New Castle prices are significantly higher: more than 50% higher than the Sussex prices for infant care and for school-age care.

For family child care, Kent and Sussex prices are the same or very similar. As with center care, New Castle prices at the 75<sup>th</sup> percentile are higher for all market segments. However the price disparity between New Castle and Kent/Sussex counties is less for family child care than for center care.

### **75<sup>th</sup> Percentile Prices by Age of Children**

The 75<sup>th</sup> percentile prices for full-time care in centers decreases as the age of the child increases. This is true for all three counties. For example, for center infant care in Kent the 75<sup>th</sup> percentile price is \$32 per day and the preschool price is \$28 per day. This is also true for family child care in New Castle County (infant care is \$32 per day and preschool care is \$30 per day). However for family child care in Kent County this is not the case. Prices at the 75<sup>th</sup> percentile for Kent County family child care are the same for infant, toddlers and preschool-age children (\$25/day). Thus the age of the child does not seem to be a factor in the pricing of full-time family child care in Kent.

#### *School-age Children*

For this study, school-age providers reported only prices for part-day care for less than four-hours per day. In all, the researchers obtained 282 prices for part-day school-age care from providers who had private-paying school-age children in their care. At the 75<sup>th</sup> percentile, school-age care in centers is higher priced than in family child care homes. For example, Kent part-day school-age care in centers is \$14 compared to \$10 in family child care.

### **Family Child Care**

In all, 464 family child care providers participated in this study and reported 1662 prices for private-paying infant through school-age care. At the 75<sup>th</sup> percentile, full-time FCC daily prices range from \$23 to \$32 depending on the age category and the county. Part-day school-age prices at the 75<sup>th</sup> percentile range from \$10 to \$15 for care for less than four hours per day.

### **Center Child Care**

In all, 165 child-care centers and school-age providers participated in the rate

study interviews and reported 510 prices for private-paying children. These providers reported private prices for full-time care for infants, toddlers, and preschoolers and part-day care for school-age children. Full-time daily prices at the 75<sup>th</sup> percentile range from \$27 to \$47, depending on the age category and the county. Part-day school-age prices at the 75<sup>th</sup> percentile range from \$13 to \$20.95 for care of less than four hours per day.

### **Prices Paid by Delaware's Families**

The price estimates reported to this point are calculated from the prices charged by providers. The Division requested that the researchers also calculate prices that reflect actual child care *purchases* being made by families in Delaware. That is the prices paid by Delaware families. To obtain these prices, the researchers weighted the 75<sup>th</sup> percentile prices by the number of private-paying children reported for each age category. Thus, if a provider reported that they had a private-paying toddler in their care, the price was weighted by the number of private-paying toddlers in the provider's program. These prices are referred to as "weighted" prices and reflect all market transactions by private-paying parents.

For center care, these weighted prices tend to be somewhat higher than the "per provider" prices for full-time care. As an example, the daily price at the 75<sup>th</sup> percentile charged by New Castle center providers for toddler care is \$41; weighted per private-paying children it is \$46. For part-day school-age care in centers, the weighted prices are lower than the provider prices or are the same. For FCC providers, the weighted prices are the same or very similar to the provider prices.

### **Odd-Hour Care**

FCC providers reported 26 prices for odd-hour care they had recently provided for private-paying children. The 75<sup>th</sup> percentile price for odd-hour care for New Castle County is \$9.00/hour; for Kent/Sussex Counties it is \$9.50/hour.

### **Special-Needs Care**

In all, 24% of providers interviewed indicated that they were serving a child or children with special-needs in their program. Of the center providers, 62% reported that they were serving a child or children with special needs. For family child care providers, only 10% reported that they were currently providing services to a child with special needs.

In all, 85% of the providers in the study who were serving a child or children with special needs reported that there were no additional costs incurred to serve these children. Thus, the majority of providers who were serving children with

special needs reported that there were no additional costs for them to serve these children.

The Division requested that the researchers also conduct a differential analysis to determine if providers who were serving children with special needs charged higher prices than providers who had no children enrolled with special needs. This is to determine if providers who have children enrolled with special needs pass along possible higher costs for serving these children to all of the children in their care. To determine this, the economists compared the prices charged by providers who had children enrolled with special needs in relation to the prices charged by providers who had no children enrolled with special needs.

To make these comparisons the researchers defined ten cells: Kent full time, New Castle full time, Sussex full time, Kent and Sussex (combined) school age, and New Castle school age. This was done both for centers and for family child care. When the researchers compared the prices actually charged by providers that do and do not serve children with special needs, they found no clear pattern. In six of the cells providers that served children with special needs charged higher prices, and in four they charged lower prices. These differences were never large and in only one case (Kent centers, full time) was the difference statistically significant. Thus it does not appear to be the case that Delaware providers who serve children with special needs charge higher prices than other providers to offset any higher costs associated with serving children with special needs.

Thus the majority of providers who had children with special needs enrolled reported that there were no additional costs to have these children in their program. In addition, the differential analysis did not seem to support the hypothesis that these providers were passing along possible higher costs to their total enrollment of children.

### **Change in Prices Since the 2007 Market Rate Study**

Note: Percentage changes quoted in this section are for the two-year period between 2007 and 2009. They are not percentage changes on an annual basis.

The 75<sup>th</sup> percentile prices increased between 2007 and 2009 for 19 of the 24 market segments (cells). Overall, there has been a 6% increase in prices since 2007 (averaging the changes in prices of all 24 cells). In those market segments for which the price increased since the 2007 study, the increase ranged from 3% to 17%. In two of the market segments prices remained the same as in 2007; in three prices actually decreased.

The preschool-age category had the greatest average price increase for both centers and family child care (11% for centers and 9% for FCC). It is interesting to note that school-age care also had the greatest average increase in price for centers (11%) but actually had a decrease in the overall average price for family child care.

### *Center Change in Prices*

For center care, overall there has been a 7% average increase in price at the 75<sup>th</sup> percentile since the 2007 study (averaging the change in all 12 center cells). Kent County had an overall 11% average increase for center care, Sussex County had an overall 8% average increase, and New Castle County had an overall 4% average increase.

In all there was an increase in 10 of the 12 market segments. For one market segment the price at the 75<sup>th</sup> percentile remained the same as in 2007 (Sussex school age). For one market segment, the 75<sup>th</sup> percentile price decreased slightly (New Castle toddlers: -2%). At the 75<sup>th</sup> percentile, the 2009 range of price changes for center care is: -2% (NC toddlers) to 17% (Kent school-age and Sussex preschool). Thus these two cells (Kent SA and Sussex PS) had the largest price increases among the 12 center cells. The smallest increase was for New Castle preschool (3%).

School-age and preschool had the largest overall average age-category increase in the center market (11%), toddlers had an overall average increase of 6%, and infants had an overall average increase of 5%.

### *FCC Change in Prices*

For FCC care, overall there was a 5% average increase in prices at the 75<sup>th</sup> percentile since 2007 (averaging the change in all 12 FCC cells). Sussex County had the largest overall increase for family child care among the three counties (7%), averaging the changes in prices at the 75<sup>th</sup> percentile in infant, toddler, preschool and school-age care. New Castle had an overall average increase of 6% and Kent had an overall average increase of 2%.

In all there was an increase in 9 of the 12 FCC market segments. The largest increase in the 75<sup>th</sup> percentile price among the 12 cells was for Sussex preschool (15%). The cells with the smallest increase were Kent preschool (4%) and Kent toddlers (4%).

Preschool had the largest overall average age-category increase in the FCC market (9%); infants and toddlers had a 5% overall average increase. School-age actually had an overall average decrease in price since the 2007 study: the Sussex school-age price change was -6%; Kent school-age was -2%. Only the New Castle school-age price increased since the 2007 study (7%).

*Observation:* It is interesting to note that the average overall price increase between 2007 and 2009 is 6% while the average overall price increase between 2005 and 2007 was 11%.

## GENERAL FINDINGS OF THE 2009 STUDY

- The daily market prices for full time care at the 75<sup>th</sup> percentile range from \$23 to \$47; part-day school-age prices range from \$10 to \$20.95.
- At the 75<sup>th</sup> percentile, the daily market prices for full-time family child care range from \$23 to \$32.
- At the 75<sup>th</sup> percentile, the daily market prices for full-time center care range from \$27 to \$47.
- Prices in center care are higher than prices in FCC in all 12 market segments.
- Full-time prices are generally highest for infant care and lowest for preschool care. (Only part-day school-age prices were reported.)
- At the 75<sup>th</sup> percentile, prices in New Castle County are significantly higher than prices in Sussex County and Kent County.
- The 75<sup>th</sup> percentile price for FCC odd-hour care for New Castle is \$9/hour. For Kent/Sussex it is \$9.50/hour.
- In all, 24% of the providers interviewed were serving a child or children with special-needs. The majority reported that there were no additional costs to their program to serve these children.
- 2009 prices at the 75<sup>th</sup> percentile were higher than 2007 prices at the 75<sup>th</sup> percentile for 19 of the 24 market segments. The overall average increase in price since the 2007 study was 6% (averaging the change in all 24 cells). For center care, Kent County had the largest overall average price increase (11%); Sussex County had the largest overall average price increase (7%) for FCC.

## SYNOPSIS OF RESULTS

- Prices are generally higher for center care, for younger children, and in New Castle County. Prices are generally lower for family child care, for older children, and in Sussex and Kent counties.

**Detailed Findings (Tables A, B, C)**

Tables A, B and C below provide detailed information regarding full-time infant, toddler and preschool daily prices and part-day prices for school-age care. The tables contain, for each cell: 1.) cell definition; 2.) population size N, estimated population of providers of this type of care; 3.) n, number of private-price observations utilized to develop the percentiles; 4.) the maximum price reported for the cell; 5.) the minimum price reported for the cell; 5.) the 75<sup>th</sup> percentile prices (75% ile).

## 2009 Delaware Child Care Market Rate Study

*Table A. Family Child Care - 75<sup>th</sup>ile Prices*

County	N	n	Max	Min	75 <sup>th</sup> ile
Kent, ITP	**	176	37.50	15.00	25.00
NC, ITP	**	386	50.00	11.00	30.00
Sussex, ITP	**	236	32.00	10.00	25.00

*Table B. Family Child Care by Age - 75<sup>th</sup>ile Prices*

County	Type	N	n	Max	Min	75 <sup>th</sup> ile
Kent & Sussex	INF	**	64	37.50	12.00	25.00
Kent	TOD	**	75	33.75	16.00	25.00
Kent	PS	**	72	33.75	15.00	25.00
Kent	SA	**	39	16.00	5.00	10.00
New Castle	INF	**	83	45.00	11.00	32.00
New Castle	TOD	**	161	50.00	18.00	31.38
New Castle	PS	**	142	41.25	16.00	30.00
New Castle	SA	**	77	50.00	2.00	15.00
Kent & Sussex	INF	**	64	37.50	12.00	25.00
Sussex	TOD	**	107	32.00	12.00	25.00
Sussex	PS	**	94	30.00	10.00	23.00
Sussex	SA	**	63	35.00	4.00	11.25

*Table C. Child Care Centers - 75<sup>th</sup>ile Prices*

County	Type	N	n	Max	Min	75 <sup>th</sup> ile
Kent	INF	26	20	49.00	22.00	32.00
Kent	TOD	36	32	49.00	20.00	29.00
Kent	PS	57	32	35.00	19.00	28.00
Kent	SA	46	22	21.00	4.75	14.00
New Castle	INF	117	72	72.22	20.00	47.00
New Castle	TOD	160	84	72.22	24.35	41.00
New Castle	PS	247	96	70.84	15.00	36.11
New Castle	SA	229	61	30.40	7.40	20.95
Sussex	INF	30	21	37.00	19.00	30.00
Sussex	TOD	38	23	32.00	19.00	28.25
Sussex	PS	56	27	30.00	17.00	27.00
Sussex	SA	51	20	20.00	8.00	13.00

Prices are daily, full time private-paying rates except for School Age (SA), which is part day (less than 4 hours per day.) ITP = Infant, Toddler and Preschool Child Care. INF = Infant Child Care, TOD = Toddler Child Care, PS = Preschool Child Care, SA = School-age Child Care. n = number of private-price observations utilized to develop the 75<sup>th</sup> percentiles. N = estimated population of providers of this type of care.

\*\* Population size treated as unknown.

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## OVERVIEW

The goal of the Delaware 2009 Child Care Market Rate Survey was to develop statistically credible information of the present market prices charged by providers in Delaware. “Market prices” are prices providers charge parents for the care of their private-paying children. They are prices charged to unrelated and unaffiliated parents that have not been reduced for special circumstances (e.g., low-income).

The Delaware Division of Social Services planned to utilize the information obtained from the survey to inform state decisions regarding reimbursement rates for child care services purchased by the state. Information from the study would help ensure that reimbursement rates allow subsidized low-income children equal access to early education and care. This survey complies with federal requirements of 45 Code of Federal Regulations for conducting a child care market rate survey (45 Code of Federal Regulations Sections 98 & 99, referring to “Equal Access”).

The Delaware Division of Social Services (the Division) contracted with the consulting firm Workplace Solutions, located in Reading Massachusetts, to undertake this study. Workplace Solutions conducted six previous child care rate studies for the Division (the 2007, 2005, 2003, 2000, 1998 and 1996 market rate studies), and has significant theoretical and field experience with these studies in Delaware and in other states. The research team brought to this project extensive experience in order statistics, research methodology, sampling design, and interview of child care providers. Workplace Solutions' consulting group consisted of a team of researchers including: Marie Sweeney (MBA, M.Ed.), Principal of Workplace Solutions; Peter Schmidt (Ph.D., Economics), University Distinguished Professor of Economics, Michigan State University; William Horrace (Ph.D., Economics, MBA Finance), Professor of Economics, Syracuse University; Ann Witte (Ph.D., Economics), Professor of Economics, Wellesley College. This team has collaborated for 15 years conducting child care studies.

Project Manager Marie Sweeney worked closely with the Division’s Project Coordinators Eulinda DiPietro and Barbara McCaffery to plan and implement the study. The need for accurate pricing information for policy purposes meant that the study had to be very carefully planned and executed. The project began in January 2009. The Division and Workplace Solutions planned the study during January and February. Interviews were conducted during March and April. Workplace Solutions submitted the final estimates of the 75<sup>th</sup> percentile prices to the Division in April 2009.

The outline of the report follows. The following section describes the findings of the survey including estimates of the 75<sup>th</sup> percentiles of prices by age group and county; full-time and part-time prices; family child care and center prices; as well as odd-hour care and care for children with special needs. This section contains a discussion of prices paid by Delaware families, change in prices since the 2007 Market Rate Survey, and recommendations for future rate studies. It also includes response rates and participation rates, and the estimates of the accuracy

of the 75<sup>th</sup> percentiles of prices reported in the study. The next section describes the methodology used for the Market Rate Survey. This includes the development of the sample frame. It also includes descriptions of: the sampling plan and the sample selection; the survey; the provider marketing steps; and the interviews conducted in the field. Finally it includes a description of how the data were analyzed. The final section includes the Appendix, which contains: (1) 10 Tables of findings of the study; (2) the Response Rates, Participation Rates, Refusal Rates and Obsolescence Rates; (3) the Sampling Design Report; (4) the marketing materials used in communication to the provider community; (5) the surveys.

The 10 Tables presenting the final 75<sup>th</sup> percentiles of prices present: (1) the 75<sup>th</sup> percentiles of prices, including comparisons of the distribution of prices charged by providers (“provider prices”), (2), the distribution of prices paid by Delaware families (“weighted prices”), and (3) a study of the costs and prices associated with the care of children with special needs.

## **PART 1: RESULTS OF THE STUDY**

The 2009 Delaware Child Care Market Rate Study results reflect: providers reporting 2,172 prices for private-paying children currently in their care; a very high provider participation rate (82%) and a very low refusal rate (6%); the 75<sup>th</sup> percentiles of prices estimated with a high level of accuracy.

### **Prices Throughout the State**

The Appendix contains ten tables presenting the results of the 2009 Child Care Market Rate Study. Table 1, 2, and 3 report the 75<sup>th</sup> percentile prices for the full-time daily rates for infant, toddler and preschool center care and family child care throughout the state. These tables also report the 75<sup>th</sup> percentile prices for part-day school-age care for school-age children throughout the state. Table 4 presents the 75<sup>th</sup> percentiles for the hourly rates for odd-hour care in New Castle County and Sussex/Kent Counties. These tables present a 95% confidence interval for provider prices that allow one to assess the accuracy with which the 75<sup>th</sup> percentiles have been estimated. One can be 95% confident that the 75<sup>th</sup> percentile lies within these confidence intervals.

Tables 5 through 8 present the findings of the special-needs study. Tables 9 and 10 present the prices for the daily rates for center care and for family child care throughout the state, as well as the prices ‘weighted’ by the number of reported private-paying children in each age category. These are prices paid by private-paying families in Delaware and will be referred to as *purchase prices*. They are different from the prices generally discussed in the report, which are the prices *charged* by the providers (‘provider prices’).

Tables 1, 2 and 3 in the Appendix contain, for each cell: 1.) cell definition; 2.) population size N, where known. N was unknown for family child care

providers, and so it was taken to be infinity in equation (1) in the Sampling Design for the sampling variance. This is a conservative approach that yields wider confidence intervals than if N were known; 3.) n = number of price observations utilized to develop the percentiles; 4.) the maximum price reported for the cell; 5.) the minimum price reported for the cell; 6.) the sample 75th percentile price; 7.) the standard error of the sample 75th percentile price, from Sheather-Jones bandwidth choice rule and Epanechnikov kernel; 8.) kernel-based 95% confidence interval; 9.) nonparametric 95% confidence interval, based on the hypergeometric distribution when N is known, and on the binomial distribution when N is not known. The researchers recommend that the parametric (kernel-based) confidence intervals be used when the sample size (n) is greater than or equal to 40 and that the nonparametric intervals be used when the sample size is less than 40.

### **Full-time Care**

"Full time" care in this study refers to a daily price for a full week (30 hours or more per week). Daily prices for full-time care at the 75th percentile are reported for center child care and family child care for infant, toddler and preschool-age children. The study obtained 1,890 full-time prices used to calculate the 75th percentile prices. The range of daily prices reported by the Delaware providers for full-time care is \$10 to \$72.22.

### **Part-Time Care**

Part-time care for this study refers to *part-day* care for school-age children. Part day care is for *less than 4 hours per day* and can be for 'after-school care', or for 'before-school care' or for 'before & after-school care'. Part-day prices at the 75th percentile are reported for center care and for family child care for school-age children. The study obtained 282 part-time prices used to calculate the 75th percentile school-age prices. The range of part-day prices reported by the Delaware school-age providers is \$2.00 to \$50.00.

### **The Range of 75<sup>th</sup> Percentiles of Prices**

Tables for the 75th percentiles of prices, including confidence intervals and standard errors, are reported in the Appendix. At the 75th percentiles, results of the study reveal that the market price\* for full-time care range from \$23 per day to \$47 per day. *Thus, full-time prices can vary widely in the state, by over 100% among different segments of the market.* The 75th percentiles of prices for part-day school-age care range from \$10 to \$20.95. (\*Prices discussed in this section are unweighted provider prices. Weighted prices are discussed later in the report.)

### The 75<sup>th</sup> Percentiles of Prices by Age of Child

The 75<sup>th</sup> percentile of daily market prices of full-time care in centers decreases as the age of the child increases. For example, for center infant care in Kent, the 75<sup>th</sup> percentile price is \$32 per day, the toddler price is \$29 per day and the preschool price is \$28 per day. This is also true for family child care in New Castle County (infant care is \$32 per day, toddler care is \$31.38 per day, and preschool care is \$30 per day). However for family child care in Kent County this is not the case. Prices at the 75<sup>th</sup> percentiles are the same for infant, toddlers and preschool-age children (\$25/day). Thus the age of the child does not seem to be a factor at the 75<sup>th</sup> percentiles in the pricing of full-time family-child care in Kent County.

At the 75<sup>th</sup> percentile, for full-time center-care in all three counties and for full-time family child care in two of the three counties, infant care is the highest priced and preschool care is the lowest priced. (Only part-day prices are reported for school-age children.)

#### 75<sup>th</sup> Percentiles of Prices for full-time center care in Kent

Infant care	\$32.00 / day
Toddler care	\$29.00 / day
Preschool care	\$28.00 / day

#### 75<sup>th</sup> Percentiles of Prices for full-time FCC in New Castle

Infant care	\$32.00 / day
Toddler care	\$31.38 / day
Preschool care	\$30.00 / day

#### *School-age*

For this study, providers reported school-age prices only for part-day care for less than four-hours per day. Since the reported prices for these children are for part-day care and for older children, they are the lowest priced care in the study.

In comparing the school-age prices at the 75<sup>th</sup> percentiles to the preschool-age prices at the 75<sup>th</sup> percentiles, for 4 of the 6 school-age market segments they are approximately half of the preschool-age prices for full-time care.

At the 75<sup>th</sup> percentile, part-day school-age care in centers is higher priced than in family child care homes. For example, Kent center school-age care is \$14 part-day compared to \$10 part-day in family child care.

### Part-day School-age Care at the 75<sup>th</sup> Percentiles

	Family Child Care	Center Care
Kent	\$10.00	\$14.00
Sussex	\$11.25	\$13.00
New Castle	\$15.00	\$20.95

### The 75<sup>th</sup> Percentiles of Prices by County

Prices can also vary by geographic region in Delaware. For center and family child care, prices are highest in New Castle County and lower for Kent County and Sussex County. Prices in New Castle are higher for all types of care and market segments. Prices at the 75<sup>th</sup> percentiles are very similar or the same for Kent and Sussex market segments.

For *center care*, Sussex has the lowest priced care at the 75<sup>th</sup> percentiles and New Castle the highest. However, the Sussex and Kent center prices are very similar. At the 75<sup>th</sup> percentiles, New Castle prices are significantly higher: more than 50% higher than the Sussex prices for infant care and school-age care.

For *family child care*, Kent and Sussex prices are the same or very similar. As with center care, New Castle prices at the 75<sup>th</sup> percentiles are higher for all market segments. However the price disparity between New Castle and Kent/Sussex counties is less for family child care than for center care.

*Selected 75<sup>th</sup> Percentiles of Prices Per County*

	<i>Sussex</i>	<i>Kent</i>	<i>New Castle</i>
<b>Centers</b>			
Infants	30.00	32.00	47.00
Toddlers	28.25	29.00	41.00
	<i>Sussex</i>	<i>Kent</i>	<i>New Castle</i>
<b>FCC</b>			
Toddlers	25.00	25.00	31.38
School-age*	11.25	10.00	15.00

\* part-day

### **Family Child Care Prices**

In all, 464 family child-care providers quoted prices for private-paying children in their care. These providers reported 1662 prices for private-paying children. Generally they reported prices for three\* private-paying children that were attending their program full time. For FCC providers that were serving school age children, they generally had two\* private-paying SA children enrolled part day. (\*Median)

The vast majority of the prices reported were weekly rates. FCC providers also quoted hourly prices, daily prices, and monthly prices. The researchers used the 1662 prices for development of the 75<sup>th</sup> percentiles of prices. In order to obtain these prices, all of the sample providers and many of the back-up replacement sample providers were called by the interviewers. In all, 942 FCC sample and replacement-sample providers were called for the rate study interview. The range of full-time daily prices reported by these providers is \$10 to \$50. The range of part-day school-age prices is \$2 to \$50.

The 75<sup>th</sup> percentile full-time price for Kent County for *combined* infant, toddler and preschool care is \$25/day. For Sussex County it is \$25. For New Castle it is \$30/day. The 75<sup>th</sup> percentiles of prices are also reported for full-time family child care by age groupings for each county. At the 75<sup>th</sup> percentiles, FCC full-time daily prices by age category range from \$23 to \$32. Part-day school-age care range from \$10 to \$15.

For full-time infant care, the 75<sup>th</sup> percentiles of prices range from \$25/day to \$32/day. For full-time toddler care, the 75<sup>th</sup> percentiles of prices range from \$25 to \$31.38. For full-time preschool care, the 75<sup>th</sup> percentiles of prices range from \$23 to \$30. In two out of the three counties, infant care is the highest priced full-time care and preschool care is the lowest priced full-time care. For Kent County, the 75<sup>th</sup> percentiles of prices are the same for infants, toddlers and preschool-age children. New Castle County has the highest priced care for all age categories.

### **Center Child Care Prices**

In all, 165 child-care center and school-age providers participated in the rate study and reported 510 prices for private-paying children. These providers reported prices for full-time care for infants, toddlers, and preschoolers and part-day school-age care. They generally reported prices for 28\* private-paying children enrolled full-time. (\*Median). The vast majority of these prices were quoted as weekly rates. Center providers also quoted hourly prices, daily prices, monthly prices, as well as school-year prices. The range of full-time daily prices reported by these providers is \$15 to \$72.22. The range of reported part-day school-age prices is \$4.75 to \$30.40.

The 75<sup>th</sup> percentiles of prices are reported for center care by age category for each county in Delaware. Full-time daily prices at the 75<sup>th</sup> percentiles range from \$27 to \$47, depending on the age category and the county. Thus the range in price for full-time center care is much greater than the range in price for full-time FCC care.

For full-time center care, the 75<sup>th</sup> percentiles for the daily-market prices for infant care range from \$30 to \$47. For full-time toddler care, the daily prices at the 75<sup>th</sup> percentiles range from \$28.25 to \$41. For full-time preschool care, the daily prices at the 75<sup>th</sup> percentiles range from \$27 to \$36.11. For part-day school age care, the daily prices at the 75<sup>th</sup> percentiles range from \$13 to \$20.95. New Castle County has the highest priced care at the 75<sup>th</sup> percentiles for all age categories.

### **The 75<sup>th</sup> Percentiles of Prices and Types of Care**

At the 75<sup>th</sup> percentiles, the price of care is lower in family child care homes than in centers for all age categories for each county (see below). For some county/age-categories it is a relatively small price difference (Kent preschool-

age: FCC is \$25/day, centers is \$28/day.) For other county/age categories the price difference is significant between family child care and center care (New Castle infants: FCC is \$32/day, centers is \$47/day).

*2009 Daily Full-Time Rates at the 75th Percentiles*

	<i>Centers</i>	<i>FCC</i>
Infant		
Kent	\$32.00	\$25.00
Sussex	\$30.00	\$25.00
New Castle	\$47.00	\$32.00
Toddler		
Kent	\$29.00	\$25.00
Sussex	\$28.25	\$25.00
New Castle	\$41.00	\$31.38
Preschool		
Kent	\$28.00	\$25.00
Sussex	\$27.00	\$23.00
New Castle	\$36.11	\$30.00
School age**		
Kent	\$14.00	\$10.00
Sussex	\$13.00	\$11.25
New Castle	\$20.95	\$15.00

\*\* part-day

Comparing the FCC results with the center results, it is apparent that the prices for family child care are lower and less variable than prices for center care. The greatest overall difference between FCC prices and center prices at the 75<sup>th</sup> percentiles occurs in New Castle. The range in New Castle price differences, between FCC prices and center prices, is 20% to 47% depending upon the age category. In reviewing the price differences for all of the counties, school-age care and infant care have the greatest overall *age-category* price difference between family child care and center care prices.

## Prices Paid by Delaware's Families (Weighted Prices)

The Delaware 2009 Local Child Care Market Rate Study provides a snapshot of what providers are *charging* at the 75<sup>th</sup> percentiles and the price at which parents are *purchasing* their child care services. The Division and Workplace Solutions determined that 'weighted' prices would reflect actual child care *purchases* being made by families in Delaware. To obtain these prices, the researchers weighted the 75<sup>th</sup> percentile prices by the number of private-paying children reported for each age category. These prices are referred to as 'weighted' prices and reflect all market transactions by private-paying parents.

Up to this point, the prices generally discussed in this report have been prices charged by the providers for the private-paying children in their care. Weighted prices are reported separately. Throughout this study, Workplace Solutions planned and implemented the research methodology to estimate provider prices and weighted prices. This report concentrates on the standard 75<sup>th</sup> percentiles of provider prices, but also presents the estimates of the 75<sup>th</sup> percentiles of weighted prices. All prices referenced in this report are provider prices unless specified as "weighted prices".

### *Calculation of Provider Prices*

To calculate the 'provider' price, consider an example of full-time toddler care in centers. Each respondent provider who has at least one full-time private-paying toddler enrolled reports their rate for the full-time private-paying toddler. Thus any sample provider who has any number of full-time private-paying toddlers enrolled at their site reports one full-time toddler price. All of the respondent providers who report a price for this toddler care have their price counted once in determining the toddler 75<sup>th</sup> percentile 'provider' price (price *charged*). A provider with two full-time private-paying toddlers is given as much emphasis in the study as a provider with 28 full-time private-paying toddlers enrolled. Each of these providers has their full-time toddler rate counted once in determining the 75<sup>th</sup> percentile (provider) price, since the researchers are analyzing what a provider is charging.

### *Calculation of Weighted Prices*

Another way to look at prices it is to *weight* 'provider price' by the number of private-paying toddlers being cared for at the time of the interviews. So, to determine the weighted prices, a provider with two full-time private-paying toddlers actually has their price for this toddler care counted twice (weighted by their number of full-time private-paying toddlers enrolled) and a provider who has 28 full-time private-paying toddlers has their price counted 28 times (weighted by their number of full-time private-paying toddlers enrolled). Using weighted prices allows one to estimate the prices at which private-paying parents are actually *purchasing* the care.

If the weighted prices are higher, this tells one that the private-paying parents are purchasing more care from the programs charging above the 75<sup>th</sup> percentiles of provider prices (more private-paying children are enrolled in the higher priced programs) and/or that the larger providers are charging above the 75<sup>th</sup> percentiles of provider prices.

*Weighted Prices for the 2009 Study*

The weighted prices for center care are higher than the provider-prices for all nine of the full-time market segments (infant, toddler and preschool care). As an example, the daily price at the 75<sup>th</sup> percentile charged by New Castle center providers for toddler care is \$41; weighted by private-paying children it is \$46. The price differences between provider and weighted prices range from 4% to 18% for full-time center care. Thus for full-time center care it may be that private-paying parents are selecting higher priced care for their children and/or that the larger programs are charging above the 75<sup>th</sup> percentiles of prices for this care.

For part-day school-age care in centers, the weighted prices are slightly lower for two cells and the same as the provider price for one cell. For FCC providers, the weighted prices are the same for nine of the market segments (cells) and are slightly higher for the remaining three cells. (See Appendix: Tables 10 & 11 'Per Provider' and 'Weighted' Prices).

*Selected 75<sup>th</sup> Percentiles of Provider Prices and Weight Prices*

	<i>Provider</i>	<i>Weighted</i>
<b>Centers</b>		
K Preschool	\$28.00	\$30.40
NC Infant	\$47.00	\$51.00
<b>FCC</b>		
S School-age	\$11.25	\$11.75
K Preschool	\$25.00	\$25.00

## Odd-hour Care

The Division requested that the researchers report 75<sup>th</sup> percentiles of prices for odd-hour care. Odd-hour care includes evening care, overnight care and weekend care.

<b>Evening care:</b>	care during any evening hours, for example from 8 P.M. to 11 P.M.
<b>Overnight care:</b>	care for any overnight hours, for example 11 P.M. to 6 A.M.
<b>Weekend care</b>	Saturday care, Sunday care, or Saturday through Sunday care

As part of the survey, providers were asked if they had provided odd-hour care within the past month for any private-paying child and received a payment for that care. FCC providers who participated in the interviews reported 26 prices for various types of odd-hour care. The most frequently reported odd-hour care was evening care (17), then weekend care (7), then overnight care (2). This was not sufficient to allow for development of price percentiles for all three categories of odd-hour care (evening care, overnight care and weekend care). Instead, the researchers developed a 75<sup>th</sup> percentile of prices for one category: "odd-hour" care. Researchers calculated an FCC odd-hour rate for New Castle County and for Sussex/Kent Counties combined. Since only one center provider reported offering odd-hour care, no odd-hour 75<sup>th</sup> percentile prices are reported for center/school-age care.

The 75<sup>th</sup> percentile of prices for FCC odd-hour care for New Castle County is \$9/hour; for Kent/Sussex Counties it is \$9.50/hour. The range of odd-hour prices reported is \$2.00 per hour to \$20.00 per hour.

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### *Odd-Hour Care*

	<i>75<sup>th</sup> percentile</i>	<i>Range</i>
New Castle	\$9.00/hour	\$4.00-\$10.00/ hour
Kent/Sussex	\$9.50/hour	\$2.00-\$20.00/hour

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## Care for Children with Special Needs

As part of the survey, providers were asked: “Are you presently serving ANY child with special needs in your program? For this survey, "special needs" means a child from infancy through 18 years of age who is diagnosed with physical, emotional, or developmental needs requiring special care. [PROBE: "ANY" child with-special-needs can be private paying or state-subsidized child, and can be full time or part time.”]

In all, 24% of providers interviewed indicated that they were serving a child or children with special-needs in their program. Of the center providers, 62% reported that they were serving a child or children diagnosed with special needs. For family child care providers, only 10% reported that they were currently providing services to a child diagnosed with special needs.

### *Additional Costs of Serving Children with Special Needs*

The survey asked the providers about any *additional costs* for serving children that had been diagnosed with special needs. Because of the American’s With Disabilities Act (ADA), providers in general cannot charge higher prices for children with special needs. Although providers could not charge higher prices, the Division wanted to know if it actually cost the providers more to serve these children. Providers who reported that they did have a child or children diagnosed with special needs in their program were asked:

*Are there any additional costs to you for serving this child or children with special needs? [PROBE: Does it cost you any more to have the child or children diagnosed with special needs in your program than to have the other children in your program?]*

In all, 85% of the providers in the study who reported serving a child or children with special needs also reported that there were no additional costs incurred to serve these children. Of providers who answered this question, 91% of the FCC providers and 82% of the center / SA providers reported that there were no additional costs to serve children with special needs. *Thus, the vast majority of providers who were serving children with special needs stated that there were no additional costs for them to serve these children.*

A total of 15% (22) of providers who were serving children with special needs reported that there *were* additional costs to have these children in their program. The average additional cost they reported was 19% (centers 21%, FCC 10%). Table 5 & 6 in the Appendix reports the breakdown of providers responding to these questions.

### *Pricing Differential Analysis*

The Division requested that the researchers also conduct a *differential analysis* to determine if providers who were serving children with special needs charged higher prices overall than providers who had no children enrolled with special needs. Because of the American's With Disabilities Act (ADA), providers in general cannot charge higher prices for children with special needs. They can, however, charge higher prices to all of the children enrolled to off-set any higher costs for serving these children with special needs, or they can absorb the higher costs themselves if they do occur.

To determine this, the economists compared the prices charged by providers who had children with special needs enrolled, in relation to the prices charged by providers who had no children enrolled with special needs. Therefore, the researchers sought to determine whether a *price differential* existed between the following two categories of providers:

Providers serving both children who had been diagnosed with special needs and children who had not been diagnosed with special needs. (SNC)

Providers who had no children enrolled that had been diagnosed with special needs (RC)

To determine if a statistically significant price difference existed between these two categories of providers, the researchers calculated the 75<sup>th</sup> percentile of prices, by cell, of these two groups (SNC, RC). If a significant difference in price did exist, this would support the hypothesis that SNC providers were passing along additional costs for serving children with special needs to all of the children in their program. The researchers utilized the information collected from all of the providers to conduct this analysis.

In determining a pricing differential, the researchers were not only interested in calculating a price differential but also determining whether or not the reported differential was significantly different from zero (was the difference statistically significant). To do this, the researchers needed to derive 75th percentile prices, standard errors and confidence intervals for providers serving children with special needs (SNC) and for providers who had no children enrolled who had been diagnosed with special needs (RC). The prices provided the numerical basis for the differential while the standard errors allowed the consultants to consider if the differentials are meaningful in a statistical sense. (See Appendix: Tables 7 and 8)

For the 2009 study, the researchers developed two sets of differentials: (1) one for full-time care (infant, toddler, and preschool care), and (2) one for part-time care (school-age care). The 75<sup>th</sup> percentiles of prices were reported for the following 20 cells: (1) Kent ITP (SNC) center, (2) Kent ITP (RC) center, (3) New Castle ITP (SNC) center, (4) New Castle ITP (RC) center, (5) Sussex ITP (SNC) center, (6) Sussex ITP (RC) center, (7) Kent & Sussex SA (SNC) center, (8) Kent & Sussex SA

(RC) center, (9) New Castle SA (SNC) center, (10) New Castle SA (RC) center, (11) Kent ITP (SNC) family child care, (12) Kent ITP (RC) family child care, (13) New Castle ITP (SNC) family child care, (14) New Castle ITP (RC) family child care, (15) Sussex ITP (SNC) family child care, (16) Sussex ITP (RC) family child care, (17) Kent & Sussex SA (SNC) family child care, (18) Kent & Sussex SA (RC) family child care, (19) New Castle SA (SNC) family child care, (20) New Castle SA (RC) family child care. (ITP = infant, toddler, and preschool full time care; SA = part-day school-age care. SNC = providers serving a child/ children diagnosed with special needs as well as children who had not been diagnosed with special needs. RC = no children enrolled who had been diagnosed with special needs.)

### *Results of the Differential Analysis*

The results of this analysis are presented in Tables 7 and 8 of the Appendix. There is generally no statistically significant difference in prices between providers who serve children with special needs (SNC) and those who do not (RC). More specifically, the asymptotically normal test statistic indicates that the SNC differential is always statistically insignificant (95% level) except for one case, Kent County center ITP (infant, toddler, preschool).

When the economists compared the prices actually charged by providers that do and do not serve children with special needs, they found no clear pattern. In six of the cells providers that served children with special needs charged higher prices, and in four they charged lower prices. These differences were never large and, as noted above, in only one case (Kent centers, full time care) was the difference statistically significant. Thus it does not appear to be the case that Delaware providers that serve children with special needs charge higher prices than other providers to offset any higher costs associated with serving children with special needs. It is not known whether providers absorb any higher costs themselves, although in the question to these providers about higher costs for serving these children, the vast majority stated that there were no higher costs for serving these children.

*Special needs findings:* Thus it is not the case that providers who serve children with special needs charge higher prices overall than other providers to compensate for possible higher costs. It is also not the case that providers report that it is more costly to serve these children.

### **Change in Prices Since the 2007 Market Rate Study**

To discern price trends, 2009 prices are compared with prices charged in 2007 as reported in the 2007 Delaware market rate study. Note: Percentage changes quoted in this section are for the two-year period between 2007 and 2009. They are not percentage changes on an annual basis.

Prices for child care in Delaware increased for many of the market segments since the last child care market rate study in 2007. The 75<sup>th</sup> percentile-prices increased between 2007 and 2009 for 19 of the 24 market segments (cells).

Overall, there has been a 6% increase in prices since 2007 (averaging the changes in prices of all 24 cells). In those market segments for which the price increased since the 2007 study, the increase ranged from 3% to 17%. In two of the market segments, prices remained the same as in 2007; in three, prices actually decreased.

Preschool-age had the largest overall average age-category price increase for both centers and family child care (11% for centers and 9% for FCC). It is interesting to note that school-age care also had the largest overall average age-category increase in price for centers (11%) but actually had an overall average decrease in price for family child care.

#### *Change in Center Prices*

For center care, overall there has been a 7% average increase in price at the 75<sup>th</sup> percentile since the 2007 study (averaging the change in all 12 center cells). Kent County had the largest overall average increase in prices (11%), averaging the changes in prices at the 75<sup>th</sup> percentiles in infant, toddler, preschool and school-age care. Sussex County had an overall 8% average increase, and New Castle County had an overall 4% average increase.

In all there was an increase in 10 of the 12 center market segments. For one market segment the price at the 75<sup>th</sup> percentile remained the same as in 2007 (Sussex school age). For one market segment, the 75<sup>th</sup> percentile price decreased slightly (New Castle toddlers: -2%). At the 75<sup>th</sup> percentiles, the 2009 range of price changes for center care is: -2% (NC toddlers) to 17% (Kent school-age and Sussex preschool). Thus these two cells (Kent SA and Sussex PS) had the largest price increase among the 12 center cells. The smallest increase was for New Castle preschool (3%).

Preschool age and school age had the largest overall average *age-category* increase in the center market (11%), toddlers had an overall average increase of 6%, and infants had an overall average increase of 5%.

#### *Change in FCC Prices*

For FCC care, overall there was a 5% average increase in prices at the 75<sup>th</sup> percentile since 2007 (averaging the change in all 12 FCC cells). Sussex County had the largest overall average increase for family child care among the three counties (7%), averaging the changes in prices at the 75<sup>th</sup> percentile in infant, toddler, preschool and school-age care. New Castle had an overall average increase of 6% and Kent had an overall average increase of 2%.

In all there was an increase in 9 of the 12 FCC market segments. The largest increase in the 75<sup>th</sup> percentile price among the 12 cells was for Sussex preschool (15%). The cells with the smallest increase were Kent preschool (4%) and Kent toddlers (4%). Preschool had the largest overall average *age-category* increase in the FCC market (9%); infants and toddlers had a 5% overall average increase. School-age actually had an overall average decrease in price since the 2007 study:

the Sussex school-age price change was – 6%; Kent school-age was –2%. Only the New Castle school-age price increased since the 2007 study (7%).

*Observation:* It is interesting to note that the overall average price increase between 2007 and 2009 is 6% while the overall average price increase between 2005 and 2007 was 11%.

### 75<sup>th</sup> Percentiles of Provider Prices of the 2009 and 2007 Child Care Market Rate Studies

#### Family Child Care Providers

		2009	2007
Region	Type	75 <sup>th</sup> ile	75 <sup>th</sup> ile
K&S	I	25.00	25.00
K	T	25.00	24.00
K	PS	25.00	24.00
K	SA	10.00	10.25
NC	I	32.00	30.29
NC	T	31.38	30.00
NC	PS	30.00	28.00
NC	SA	15.00	14.00
K&S	I	25.00	23.19
S	T	25.00	23.88
S	PS	23.00	20.00
S	SA	11.25	12.00

#### Center/School-age Providers

		2009	2007
Region	Type	75 <sup>th</sup> ile	75 <sup>th</sup> ile
K	I	32.00	30.00
K	T	29.00	26.00
K	PS	28.00	25.00
K	SA	14.00	12.00
NC	I	47.00	44.98
NC	T	41.00	42.00
NC	PS	36.11	35.00
NC	SA	20.95	18.00
S	I	30.00	28.50
S	T	28.25	26.25
S	PS	27.00	23.00
S	SA	13.00	13.00

## The Response Rates and Participation Rates

### *Response Rates*

The Delaware *response rates* show that the providers were overwhelmingly willing to participate in the study. A 95% response rate was obtained for the center/ school-age interviews. The response rate for the family child care survey was 74%. The response rate is the percent of qualified sample providers participating in the survey and reporting prices for private-children in their care. In all, 629 providers reported prices for private-paying children in their care. These very high response rates reflect both the ongoing efforts of the Division of Social Services to encourage provider participation in the rate survey and the gracious cooperation of the child care providers.

### *Participation Rates*

The *participation rate* for the center providers was 96%; for FCC providers it was 79%. The total participation rate for the survey was 82%. This rate represents the number of providers that, when contacted for the interview, agreed to participate in the study. It includes some providers that did not qualify for the study (e.g., provider with all subsidized children, etc). In all, 66% of the providers in the sampling frame were contacted for the interviews (sample and replacement sample). The participation rate was determined by dividing these providers by the total number of providers in the sample. Again this reflects the success of the marketing efforts to encourage providers to participate in the study.

### *Refusal Rates and Obsolescence Rates*

The refusal rate for the study was quite low: 6%. In all, 7% of the family child care sample and 3% of the center/ school-age sample refused to participate in the study. The *refusal rate* is the percent of sample providers that refused to participate in the survey when contacted, divided by the total number of providers in the sample. The obsolescence rate was 6% for the FCC providers and 0% for centers. The obsolescence rate is the percent of providers that, when contacted for the survey, reported that they were no longer providing child care services.

### *Calculation of Response Rates*

The response rate was determined by dividing the number of completed interviews by the total number of providers in the sample that had not been eliminated from the sample. Providers were dropped from the sample for various outcomes including: no private-paying children enrolled; did not provide full-time services for children below school age; were no longer in business, etc. Therefore, to determine the response rate, the number of providers who completed an interview and reported private prices was divided by the total number of providers with the following dispositions: completed interview, mid-interview terminate, refusal, busy, answering machine, no response. Providers with the following dispositions were not included in the denominator when

determining the response rates since these providers were removed from the sample and replaced with back-up sample: no longer in the child care business; no private-paying children enrolled for the required timeframe; all subsidized children; disconnected phone; computer/fax tone; wrong number; duplicate; language problem; and privacy block on phone.

### **Accuracy of the Study**

The goal of the 2009 Delaware Child Care Market Rate Study was to develop statistically credible information on the present market prices charged by child-care providers in the state. This goal was met since the researchers used a statistically valid methodology, and since the relevant market prices were estimated with a verifiable and high degree of precision.

The degree of statistical uncertainty is defined as the range of the 95% confidence interval for the 75<sup>th</sup> percentile of prices. For the infant, toddler and preschool market segments for both the center and family child care markets, the 95% confidence interval is typically plus or minus 5% of the estimate. This range was higher for family child care for infants in Kent and Sussex counties. All of the Kent and Sussex family child care providers were ultimately included in the sample and called for the interview. There simply were not very many Kent and Sussex family child care providers who had full-time private-paying infants enrolled in their program. Therefore, the researchers combined these two cells into one K&S infant cell. This is reasonable since both had the same 75<sup>th</sup> percentile price (\$25/day). These cells had also been combined in previous Delaware child care market rate studies. This improved the level of accuracy so that the accuracy of estimates for this cell is now in line with the other full-time cells.

For school-age care, the 95% confidence interval is typically plus or minus 10% of the estimate. This is not because the confidence intervals are wider. It occurs because the prices are lower (this is not full-time care). The sampling design attempted to equalize accuracy in absolute terms, not percentage terms, across cells, so there is now a higher uncertainty in percentage terms when the prices are lower, as they are for school-age care.

*For all of the market segments in the study, the level of accuracy achieved would be considered a more than statistically acceptable high level of precision.* The economists stress that it is important not just that a high degree of precision was attained, but also that the study quantified how high a degree of precision was attained.

A second goal of the study set by Workplace Solutions was to equalize the standard errors of estimation across counties and age groups for full-time infant, toddler, preschool/part-day school-age care for centers, and to equalize the standard errors of estimation across counties for full-time infant family child-care (see Sample Plan discussion later in this report). The standard errors actually achieved differed from those planned because price variability and response rates (expected yield rates) could not be predicted perfectly in advance.

However, the standard errors actually achieved were generally quite close to those planned. The standard errors for both center care and for family child care reflect a high degree of accuracy in the estimation of price percentiles (see Appendix, Tables 1-3).

### **Recommendations for Future Child Care Market Rate Studies**

The 2009 Child Care Market Rate Study was successful in obtaining accurate prices from the child care providers in Delaware. The surveys and the sample size were effective in obtaining the needed provider data. The estimates of the accuracy of the percentiles confirm that the study achieved a high degree of precision. The Director's announcement letter to the providers, as always, had an impact on the providers resulting in a very high participation rate and very low refusal rate.

The only change in the methodology that the Division might consider is in the outreach efforts to the provider community to encourage their participation in the study. The Division's communication to the providers about the forthcoming study allowed the interviewers to reach informed and willing provider respondents. However, the Information Sessions for the providers were not will attended and thus may not be worth the Division's efforts in future market rate studies. There are no other changes that we would recommend for future market rate studies based on the outcome of this study.

### **GENERAL FINDINGS OF THE 2009 STUDY**

- The vast majority of providers contacted for the study agreed to participate in the interview (82%). Few refused to participate in the study (6%).
- The daily market prices for full time care at the 75<sup>th</sup> percentile range from \$23 to \$47; part-day school-age prices range from \$10 to \$20.95.
- At the 75<sup>th</sup> percentile, the daily market prices for full-time family child care range from \$23 to \$32.
- At the 75<sup>th</sup> percentile, the daily market prices for full-time center care range from \$27 to \$47.
- Prices in center care are higher than prices in FCC in all 12 market segments.

- Full-time prices are generally highest for infant care and lowest for preschool care. (Only part-day school-age prices were reported.)
- At the 75<sup>th</sup> percentile, prices in New Castle County are significantly higher than prices in Sussex County and Kent County.
- The 75<sup>th</sup> percentile price for FCC odd-hour care for New Castle is \$9/hour. For Kent/Sussex it is \$9.50/hour. Evening care was the most frequently reported type of odd-hour care.
- In all, 24% of the providers interviewed had a child or children diagnosed with special-needs enrolled in their program. The vast majority reported that there were no additional costs to their program to serve these children.
- 2009 prices at the 75<sup>th</sup> percentiles were higher than 2007 prices at the 75<sup>th</sup> percentiles for 19 of the 24 market segments.
- Overall there has been a 6% increase in prices since the 2007 market rate study.
- Kent County had the largest price increase overall for center care, averaging the price increases for infant, toddler, preschool and school-age care.
- Sussex County had the largest price increase overall for family child care, averaging the price increases for infant, toddler, preschool and school-age care.
- The study attained a high degree of precision of the estimates, as well as a quantification of the precision of estimates that are in accord with standard statistical practice.

## **SYNOPSIS OF RESULTS**

Prices are generally higher for New Castle County, care for younger children, and center care. Prices are generally lower for Sussex County and Kent County, care for older children, and family child care.

## **PART 2: HOW THE STUDY WAS CONDUCTED**

### **Methodology**

The goal of the Market Rate Study was to develop statistically credible information of prices charged by Delaware providers. To meet the goal, the Division and Workplace Solutions carefully planned the study. Both groups collaborated to define the parameters of the study. They addressed many issues about the study that would allow providers to participate in the interviews and enable the Division to utilize the rate-study information. Some of these issues included: types of programs to exclude from the study (e.g. relative exempt care, drop-in care, Head Start); prices to collect for part-day school-age care (e.g., 'after-school' care, 'before-school' care, 'before and after school' care); and selection of the methodology for weighting of prices (by the number of private-paying children rather than by slot).

Workplace Solutions implemented the survey to obtain prices for private-paying children in care during the time of the study. The consultants selected a representative sample of providers throughout Delaware. The sample providers were interviewed by telephone and reported the prices for private-paying children currently in care. Utilizing prices obtained from these providers, researchers estimated the 75<sup>th</sup> percentiles of market prices for full-time infant, toddler, and preschool care and the 75<sup>th</sup> percentiles of market prices for part-day school-age care. The researchers also provided confidence intervals that indicate the accuracy of the estimated percentiles. These estimates of the accuracy of the 75<sup>th</sup> percentiles of market prices confirm that the 2009 Delaware market rate study achieved a high degree of precision.

### **The Sampling Frame**

Planning of the study included development of an accurate and comprehensive provider list for the design and selection of the sample (sampling frame). It was necessary to develop this comprehensive list of center/school-age and family child care providers to allow all of the providers in the state the opportunity to be selected for the study. This reduced the likelihood of a non-representative sample (sample bias). This also enabled the researchers to design the sample by age category.

The sampling frame consisted of:

- The Delaware Office of Child Care Licensing (OCCL) data of licensed family child care and large family child care providers as of February 2009, merged with the March 2009 data of licensed family child care providers and large family child care providers from Children and Families First (CFF).

- The Delaware Office of Child Care Licensing center and school-age data of licensed providers as of February 2009, merged with the March 2009 data of licensed and exempt center and school-age providers from Children and Families First.

Both databases were combined using Microsoft Access. Merging this data enabled the researchers to design the center sample by age category since Children and Families First maintained age-category information in their provider data. The researchers developed the sampling frame by provider site, that is, each licensed or exempt site represented a provider. Therefore if a provider had multiple locations, each site was considered to be a separate provider.

### *Cleaning of the Data*

The consultants reviewed both databases to develop a complete and accurate sampling frame. Both of the databases were reviewed to identify and delete duplicates and to identify missing information from any of the data elements (e.g., missing phone number). CFF and OCCL each reviewed their provider data to identify any possible duplicates or missing data elements in their own database. Workplace Solutions subsequently merged both databases and reviewed the merged data to identify duplicates. In merging databases, it is possible to encounter duplicates that are not obvious. Workplace Solutions' data manager sorted all of the data fields in the merged database to identify possible duplicates. Each possible duplicate was then visually reviewed by the consultants to determine if the 'duplicate' represented two separate providers or was in fact a single provider. In instances where a duplicate occurred, one of the listings was deleted. If the consultants could not determine if the two listings actually were a duplicate, a consultant would call the sites to clarify the issue.

Conflicting provider data were reviewed by Workplace Solutions, OCCL and CFF to resolve the data discrepancies. In instances where conflicting information occurred, the consultants reviewed the provider data from past Delaware market rate studies to try to resolve the discrepancy. A small number of providers appeared in only the CFF database. In that instance, the consultants worked with CFF and OCCL to resolve this and also contacted some of those providers to determine if they were actually still in business. When a small number of center providers appeared only in the OCCL data, the consultants needed to identify which age categories they served since OCCL does not maintain that information. To determine this, the provider was either contacted directly to determine the age categories they served or the data from the 2007 market rate study was examined to determine possible age categories reported by those providers.

### *Excluded Programs*

The Division and Workplace Solutions agreed upon a list of categories of providers that should be deleted from the sampling frame because they were outside the parameters of the study. The Division and Children & Families First

reviewed their data, and Workplace Solutions reviewed the merged provider database to identify providers that should be excluded. These providers were then deleted from the sampling frame. If the consultants were unsure of deleting a specific provider, they contacted the provider directly to resolve the issue. Deleted categories included: providers who were closed to the general public (e.g., employer-supported center operated only for their own employees' children); programs providing services only to a niche in the market (e.g., drop-in care, ECAP programs); programs receiving significant federal funding (Head Start); and programs that did not provide services for the required timeframe (nursery schools).

Excluded categories of providers included:

Head Start programs

Emergency back-up care, drop-in care, ad-hoc care

Holiday care

Sick child care

Programs that only serve children with special needs

Programs that only provide odd-hour care

Camps

Recreation programs

Early intervention programs

Programs that only provide care for children younger than SA children and only provide care for these children for less than 6 hours per day (less than 30 hours per week).

School-age programs that only provide care for 4 hours or more per day.

Employer-supported programs that only serve their own employees' children

Church or temple-supported programs that only serve their own members

Programs that serve unique populations (teen-age parents, children with AIDS, migrant workers' children, etc)

Informal care programs (babysitting)

Programs that serve children for free

Relative care

Non-relative exempt care

Summer care

### *Age Category Information*

To design the sample, the researchers required information about the age categories that each provider served at their site. From this information, they would develop a 'universe' for each provider group (i.e., cell), that is a total number of providers per county serving each age category. For the center sample, the researchers identified the age categories served by each provider from the data provided by Children and Families First and from age-category information obtained from the 2007 Delaware Market Rate Study. For the FCC sample, the researchers made estimates of the number of FCC providers who served the various age categories based on the outcome of the 2007 market rate survey. (See Appendix *Sample Design* for a further explanation.)

### *Development of the Provider Universe*

Subsequent to these steps, providers remaining in the sampling frame were sorted by county, by type of care and by age-categories (centers) to create a list of providers for each cell. From the development of the comprehensive list of providers eligible for the survey, Workplace Solutions determined that the total size of the sampling frame for the rate survey was 1704 providers. This included 385 licensed and exempt center/school-age providers and 1319 licensed family child care and large family child care providers.

### **The Sampling Plan**

The researchers developed a Sampling Plan to select a stratified random sample of the provider population in Delaware. The researchers and the Division agreed upon the sampling plan for the study. This sample design was based on the previous design developed for the 2007 Delaware Child Care Market Rate Survey. The 2009 plan called for a sample of 45% of the providers in the state and was designed for full-time care for centers and family child-care programs and for part-day care for school-age programs. It targeted all licensed providers (FCC) and licensed and exempt providers (centers) in the state that met the parameters of the study. This means that the provider needed to: (1) offer full-time care for children up to school-age and/or part-day school-age care; (2) provide services for the general public; (3) not be in the category of 'excluded providers'.

The sample was segmented by:

- geographic region
- type of care
- age groupings

*Geographic regions* were the three counties in Delaware: Kent County, Sussex County and New Castle County. The *types of care* were: (1) center and school-age care and (2) family child care and large family child care. The *age-groupings* were: infant, toddler, preschool and school-age.

This sample segmentation resulted in 24 cells or market segments. These included 1.) Kent, FCC Infants. 2.) New Castle, FCC Infants. 3.) Sussex, FCC Infants. 4.) Kent, FCC Toddlers. 5.) New Castle, FCC Toddlers. 6.) Sussex, FCC Toddlers. 7.) Kent, FCC Preschool. 8.) New Castle, FCC Preschool. 9.) Sussex, FCC Preschool. 10.) Kent, FCC School Age. 11.) New Castle, FCC School Age. 12.) Sussex, FCC School Age. 13.) Kent, CCC Infants. 14.) New Castle, CCC Infants. 15.) Sussex, CCC Infants. 16.) Kent, CCC Toddlers. 17.) New Castle, CCC Toddlers. 18.) Sussex, CCC Toddlers. 19.) Kent, CCC Preschool. 20.) New Castle, CCC Preschool. 21.) Sussex, CCC Preschool. 22.) Kent, CCC School Age. 23.) New Castle, CCC School Age. 24.) Sussex, CCC School Age. (CCC=child care centers; FCC = family child care.) These 24 cells are the market segments that would be reported in the final analysis.

Thus, the sampling plan was designed to take into account these 24 distinct sample "cells". These cells were based on three geographical regions, two types of care, and four age groupings. The economists planned to allocate the sample providers among the cells in such a way as to approximately equalize the accuracy of the estimated prices for each cell. They based this on the expected variance in the price within each cell, the expected response rate, and on the total number of providers in the cell. Estimates of the expected response rates and price variance were based on the 2007 Delaware Child Care Market Rate Study findings.

The researchers planned the sample to equalize the accuracy with which the market price is estimated for each type of care. However, this was done somewhat differently for the center sample than for the FCC sample. This is because the researchers knew in advance what age categories each center provider served, whereas for family child care providers this was not known. To meet this goal, a different fraction of providers was selected for each market segment (county, type of care and age category). Sample sizes were smaller for types of care and for regions for which the variability of price was low and expected response rate high. Sampling proportions were larger, (though sample sizes were smaller), for types of care and regions for which the population of providers is small.

For the family child care sample, because the consultants did not know which providers cared for which specific age groups, all that they could do was to choose numbers of observations per county for a total of 45% of the FCC provider sampling frame. They could not equalize sampling variances across all age groups within a county, but they could equalize any single variance across counties. Based on the consultants' knowledge that infant price observations are the most difficult to obtain and that sampling variances for infant prices tend to be higher than for other age category prices, it was decided to select the countywide sample in such a way as to equalize the sampling variance for infant care. Thus for the FCC sample, even though the analysis would include 12 cells (3 counties x 4 age categories), the sample design was done at the level of the three counties, in such a way as to equalize the anticipated sampling variance for the infant cells in the final analysis.

The final sample design for the 2009 Rate Study included the number of sample observations allocated to each of the 12 center cells and to 3 county-wide cells for family child care. These included, per county: (1) infants in centers, (2) toddlers in centers, (3) preschool-age children in centers, (4) school-age children in centers and in free-standing school-age programs and (5) FCC providers. Thus the final Sampling Plan included 15 cells. However, the number of sample observations selected for the three county-wide FCC design cells did take into account the fact that there would be 24 cells at the stage of analysis of the data, because the consultants could forecast (based on the 2007 data) the number of observations for each age level that would be yielded by an FCC interview in each of the three counties. For each market segment (cell) selected for this study, Workplace Solutions set a goal of at least a 70% response rate of providers for the cell.

Researchers determined that the *minimum* number of observations in a cell should be 13 providers, in order to estimate confidence intervals for each cell. For this study, the smallest size cell in the sample was 24 providers (Kent center infants). The largest size cells were Family Child Care in New Castle and Sussex (221 providers). For smaller cells, the researchers included most of the providers in the sample, to ensure a sufficient number of observations and data for analysis of the price percentiles.

### **The Selection of Providers for the Sample**

Once the researchers developed the sampling frame and designed the sample, they assigned each provider a unique identifying number. The economists then randomly selected providers from the sampling frame, using random sampling procedures (see *Sample Design Report* in the Appendix). A separate random sample was selected for each of the 15 cells in the Sample Plan, with each sample corresponding in size to the Plan. Consultants selected a separate random sample for each of the 12 center cells in the sample design. As stated above, the selection of the FCC sample was only for three cells (per county).

Based on the timeframe for the project, it was imperative to start the family child care interviews as quickly as possible due to the larger size of the FCC sample. Therefore the FCC sample was designed and selected so as to equalize the

variance of the FCC infant cells, with oversampling of scarce types of FCC care. The researchers selected providers who had reported scarce types of care in the 2007 interviews for oversampling of these types of care in the 2009 sample. They oversampled providers of infant care, odd-hour care and special-needs care for the family child-care sample.

In the second stage, the child care/school-age sample was designed and sample selected to equalize the variances of the center cells, with oversampling of scarce types of center care. In all, the sample contained 594 family child care programs and 173 center/school age programs.

*Total Number of Providers Selected for the Sample*

	<u>FCC</u>		<u>Centers</u>
Sussex	221	Sussex	32
Kent	152	Kent	33
New Castle	221	New Castle	108
<b>TOTAL:</b>	<b>594</b>	<b>TOTAL:</b>	<b>173</b>

*Providers in the Sampling Frame and in the Selected Sample*

	<u>Number in Universe</u> ( <i>Number in sampling frame</i> )	<u>Sample</u>
Sussex	298	221
Kent	248	152
New Castle	773	221
<b>TOTAL:</b>	<b>1319</b>	<b>594</b>

**CENTERS**

	<u>Number in Universe</u> <i>(Number in sampling frame)</i>	<u>Sample</u>
Sussex:		
Infant	30	28
Toddler	38	28
Preschool	56	30
School age	51	27
Kent:		
Infant	26	24
Toddler	36	29
Preschool	57	31
School age	46	25
New Castle:		
Infant	117	103
Toddler	160	105
Preschool	247	106
School age	229	102

The researchers selected providers at random from the sampling frame for each market segment. They selected a wide range of providers throughout the state. These included: family child care providers, large family child care providers, centers serving all age categories, centers serving only one age category, multi-site child care providers, centers that were part of a large national provider, free-standing school-age programs, school-age providers that were part of a larger multi-age program, for profit programs and non-profit programs.

After selecting providers for the sample, the remaining providers were then available as "back up" sample to allow for obsolescence and other outcomes requiring sample replacement. ("Obsolescence" refers to providers who are no longer providing child care services.) The obsolescence in the family child care market was expected to be higher than in the center market due to the relative ease of entering and exiting the FCC market. All of the providers that were not selected as part of the regular sample were listed in random order and served as a "back-up" for cells needing replacements or as providers for the pilot-test.

The "back-up" providers were used as replacements for providers who were selected for the study but were found, during the interviews, to have certain outcomes that required that they be replaced. These included: providers who were no longer providing services but had not notified DSS of that status;

providers that had disconnected or incorrect phone numbers; providers that had private-paying children that did not qualify for the study (e.g., only younger children attending part-time); providers with all subsidized children; providers who had a language problem; and providers with a “privacy block” on their phone.

## The Questionnaire

Workplace Solutions designed the questionnaire to collect accurate and comprehensive price information. The researchers would then utilize the collected pricing data to convert into daily prices and to estimate the 75th percentile price for each cell.

The 2009 Child Care Market Rate survey included questions about enrollment and rates (see Appendix: Survey). Workplace Solutions utilized two surveys for this study: one survey for the center/school-age market, a second survey for the family child care market. Each was designed to be easy for the providers yet still enable the researchers to address the complex pricing strategies of the provider community and the nuances of the market. Both instruments were designed to be telephone interview surveys and were very similar to the 2007 market rate survey. Thus they had already been field-tested.

Each survey was carefully reviewed by the Division and Workplace Solutions to determine if adjustments needed to be made due to possible changes in the marketplace. The researchers also carefully reviewed the new licensing regulations to identify all possible adjustments that might be made to the survey based on changes in the licensing regulations since the 2007 study. This might necessitate changes to the survey terminology, definitions or content. A consultant reviewed possible survey changes with the Division’s project coordinator. These included definition changes for night care, special-needs care, and age categories. Subsequently, the definitions for toddlers and preschool-age children were changed to reflect the licensing regulation changes. (The definitions of infants and school-age children did not change in the licensing regulations.) For the 2009 study, toddlers would be 12 months up to 36 months; the preschool age would start at 3 years. In addition, the definition for part-day school-age care was expanded to include ‘before-school care’. The part-day school-age price requested from the sample providers was for care of less than four hours-per-day. This now could be for ‘after-school’ care, or for ‘before-school’ care, or for ‘before and after-school’ care.

The two surveys collected information about prices and enrollment, but gathered information differently from each of the two groups because of the nature of these two markets. Both surveys gathered age-category information that would enable the researchers to report prices by age category. Center providers were asked for their rates by age categories (infants, toddlers, preschool age, school age). Family child care providers were asked for information for each private-paying child in their care. This information included the child’s age and price of their care. This is because some of the FCC providers do not have a set rate by

age category. The researchers would then analyze the reported data to determine the prices charged by each of the providers for the following age categories:

<b>AGE CATEGORIES</b>	
<b>Infant</b>	under 12 months of age
<b>Toddler</b>	from 12 months up to 36 months of age
<b>Preschool</b>	ages 3 years through 5 years, including the kindergarten year
<b>School age</b>	from first grade through 12 years of age

#### *The Center Survey*

The center survey asked the providers to report up-to-date information about their enrollment and prices for private-paying children enrolled in their program. Center providers were asked to quote full-time prices for private-paying infants, toddlers, and preschoolers and part-day prices for school-age children enrolled at their site. In addition, in order to be able to weight the 75<sup>th</sup> percentile prices for each cell, the consultants included questions in the survey to obtain the number of private-paying children for each quoted price. Thus if a provider reported that they had infants enrolled, and quoted their price for these children, they also would report the number of private-paying enrolled infants. Finally the center survey also included questions about odd-hour care and care for children with special needs.

#### *The Family Child Care Survey*

The FCC survey asked providers to quote individual prices for children in their care. The FCC survey was designed to collect a price-by-child, for up to eight private-paying children attending the provider's program full time. In addition, the survey also collected a price for part-day school-age care, if the provider had a private-paying school-age child or children enrolled. Finally, the survey included questions about odd-hour care and care for children with special needs.

### *School-age Care*

The center and the family child care surveys included questions about school-age care. These questions asked providers if they had any private-paying school-age child enrolled. School-age for this study is from first grade through 12 years of age. For providers that reported that they did have a private-paying school-age child enrolled, the provider was asked if any private-paying school-age child attended their program part-day. This could be for 'after-school care', for 'before-school care' or for 'before & after-school care'.

Thus, the 2009 Market Rate Survey collected prices for part-day school-age care, which the Division defined as *less than 4 hours per day*. School-age providers included center programs that offered care for multiple-age categories, free-standing school-age programs, as well as family child care providers that offered care to school-age children.

### *Screening Questions*

In order to collect *market prices* the surveys included screening questions and directions for the interviewers to identify both providers and prices that would meet the criteria of the study. Both surveys began with screening questions to determine which providers should be interviewed and what price information should be collected.

These screening questions determined:

- (a) If the provider was in business: Did they have any children actually enrolled? Were they paid for the children they had enrolled in their care?
- (b) If the provider had any *private-paying* children enrolled at the time of the interview.
- (c) If any of the private-paying children qualified for the survey. (i.e., were any infant through preschool-age children enrolled full time, or were any school-age children enrolled part-day).

*Provider no longer in business:* Both the center and the FCC questionnaire began with screening questions to screen out providers who were no longer providing services at the time of the interview. A provider was initially asked if they were providing child care services. If a provider answered "no" they were next asked if they had provided child care services within the past month or was any child enrolled for the coming month. A provider was considered to be 'out of the market' that was not currently providing care, or did not provide care within the past month or the coming month. If a provider did not offer care during that time frame, the survey would end. Thus the survey only collected information from providers who were presently providing child care services. If a provider was

dropped from the sample because they were no longer providing services, another provider was added to the sample from the "back-up" provider list for that cell.

*Provider with all subsidized children:* Providers were next asked questions to determine if they had any state-subsidized children enrolled in their program (Purchase of Care and Purchase of Care Plus). The researchers included these questions to help providers and interviewers identify the private-paying children and private-paying prices that should be reported in the survey. If a provider only had subsidized children enrolled in their program, the provider was determined to be ineligible for the study and would be removed from the sample. A provider with no private-paying child enrolled was considered to be out of the marketplace. The researchers designed the study to collect market prices for private-paying children actually receiving care. Only those prices would be used in developing the 75<sup>th</sup> percentile price for each market segment.

*Provider with published rates:* As part of the protocol for the study, the researchers determined that "published rates" would not be collected. Thus, if a provider only had state-subsidized children enrolled, but had a private rate if a private-paying child enrolled at some point, these published rates would not be collected. The researchers only used prices for private-paying children currently receiving child care services to estimate the 75<sup>th</sup> percentiles of prices for each market segment.

The researchers included these screening questions since this is a market rate study to determine child care market prices, which are prices charged in a market transaction between unrelated and unaffiliated parties (called "arms-length prices" by economists). By including these screening questions the researchers ensured that the collected price reflected an actual private transaction in the marketplace.

### *Pricing Units*

The surveys were designed to collect information for pricing time-periods actually used by providers (e.g., hourly, daily, weekly, monthly, etc.). At the request of the Division, the researchers then converted all collected price information to daily rates. The researchers used the private-paying prices to estimate both the 75<sup>th</sup> percentiles of the market prices and the accuracy with which the 75<sup>th</sup> percentile of prices was estimated.

The center and family child care questionnaires enabled providers to quote their rates as they actually quote them to parents. To accomplish that, the consultants designed the price questions to be 'open-ended'. Center providers could quote their prices as hourly, 1/2 day, daily, weekly, monthly, semester, school-year, yearly, or an "other" unit. Family child-care providers could quote their rates as hourly, 1/2 day, daily, weekly, monthly, or an "other" unit. The "other" pricing unit enabled the provider to quote their price in *any* unit of time other than those already listed. This enabled providers to quote their prices in any unit of time they actually used for the pricing of their private-paying care. This lowered

response bias in the study since providers were not asked to calculate a rate they did not actually use. (Response bias is inaccurate responses to questions.) Providers were not asked to estimate a "daily rate" when they did not offer such a rate or did not typically use that rate.

### *Price Questions*

The researchers carefully planned the study to collect non-discounted unsubsidized prices that were charged in an actual market transaction. The pricing question included directions for the providers to enable them to quote market prices. As an example, center providers serving private-paying infants were asked:

*Using our definition of full-time as 30 hours or more per week, what rate do you charge for your basic full-time rate for private paying infants?*

*In quoting your rate, please do not "add-on" any fees above your regular rate, and please do not deduct for any discounts or subsidies such as a "sibling discount" or a "sliding-fee scale".*

The second part of the pricing question directs providers to quote their price without adding on any additional fee or without deducting for any discounts. Finally, both surveys only collected information for paid child care. That is, care for which a financial payment was received. Information about children served for free was not collected.

### *Additional Questions*

The Division's RFP also required that information be collected for: odd-hour care; care of children with special needs; and weighted prices. Thus, the survey included additional questions to: (1) determine prices for odd-hour care, (2) address price and cost issues that might be associated with serving children with special needs, and (3) 'weight' the 75<sup>th</sup> percentile prices (see below).

### *Odd-hour Care*

The consultants included questions about odd-hour care in both surveys. The Division determined that "odd-hour" care would be evening care, overnight care and week-end care. Providers were asked questions about their services and private-prices for each of the three types of odd-hour care:

<b>Evening care:</b>	care during any evening hours, for example from 8 P.M. to 11 P.M.
<b>Overnight care:</b>	care for any overnight hours, for example 11 P.M. to 6 A.M.
<b>Weekend care:</b>	Saturday care, Sunday care, or Saturday through Sunday care

Because it was possible for some of these types of odd-hour care to overlap, these definitions were used as guidelines. This study would attempt to develop price percentiles for all three types of odd-hour care if providers reported a sufficient number of prices for each of these.

The researchers planned to obtain prices for odd-hour care that had recently been provided to private-paying children. Therefore, in the survey, providers were asked if they had provided odd-hour care within the past month to any private-paying child. If a provider answered *yes*, he was asked if he had received a payment for the odd-hour care. These screening questions were included because the Division wanted odd-hour prices only for private-paying children and for care that had actually been provided (not just a published rate). Also, it was known that some providers offer this type of care but do not charge for it since some offer it occasionally as an amenity for children in their regular program. Thus, the consultants added these questions to identify the providers who had recently provided odd-hour care for private-paying children and had received a payment specifically for the odd-hour care. Once these providers were identified, they were asked to quote the price that they charged for the type of odd-hour care provided (evening, overnight or weekend care).

This odd-hour survey section was planned so that the researchers would have the information to convert the prices obtained to one pricing unit. For the regular study, all prices would be converted to a daily unit. This was not possible with odd-hour care since this care could vary widely. As an example, a parent might have their child attend a family child care program one night per week from 8 P.M. to 11 P.M. A second parent might have their child stay at a provider's home from Saturday morning to Sunday evening. Therefore the prices would be reported to the state on a *per hour* basis. Providers were asked open-ended questions about their pricing of odd-hour care and could quote these prices in units they actually charge the parents: hourly, 1/2 day, day, evening, day & evening, overnight, weekend, week, or "other". These prices would then be converted to an hourly rate by the economists.

### *Care of Children with Special Needs*

The Division wanted to understand the pricing of child care for children with special-needs. However the consultants did not include a survey question asking what price providers charged for care of a child with special needs. This is

because the ADA Act, in general, prohibited providers from charging higher prices for care of these children in child care programs. From the ADA Act, it appears that providers could either pass along extra costs for care of children with special needs to *all* of the children in their care, or providers could absorb extra costs for serving these children if extra costs were incurred.

Therefore, for this study, the Division wanted to know: (1) if the provider was serving a child / children diagnosed with special needs; (2) if serving children with special needs incurred extra costs for these providers; and (3) if providers with an enrollment that included children with special needs charged higher prices overall than other providers. This might then support the hypothesis that providers were passing along higher costs for serving these children to their total enrollment. The researchers planned to collect information that would allow them to address these issues.

The consultants included the special-needs questions in the surveys in order to:

- 1.) Identify which providers had a child or children diagnosed with special needs enrolled in their program.
- 2.) Determine if there were *additional costs* to the providers to have children with special needs enrolled in their programs.
- 3.) Identify the estimated additional costs for serving children with special needs, if any
- 4.) Determine if there is a *differential* in price between providers who were serving children with special needs in their program, and providers who had no children diagnosed with special needs in their program.

Therefore, as part of the survey, providers were asked:

*Are you presently serving any child with special needs in your program, private-paying or state-subsidized? For this survey, "special needs" means a child from infancy through 18 years of age who is diagnosed with physical, emotional, or developmental needs requiring special care.*

If a provider did not know if a child had special needs ("Is an ADHD child a child-with-special-needs?"), the consultants included a 'direction' in the survey for the interviewers to respond to this. The interviewers were directed to re-read the definition for "special needs" to the provider. The interviewers then informed the provider that the provider would need to decide if any child had special needs.

*Additional Costs:* Providers who reported serving a child or children with special needs were then asked a survey question: 'are there any additional costs to serve

these children'. Providers who responded *yes* were asked to estimate how much of an additional cost was incurred to provide these services. They could estimate that the additional cost was: "5% more", "10% more", "15% more", "20% more", or "another amount". If they selected 'another amount', they then would estimate the percentage representing the additional amount.

*Differential Analysis:* The researchers planned to undertake a differential analysis to evaluate the hypothesis that providers who had children with special needs enrolled in their program charged higher prices to their general population of children to pay for higher costs incurred in serving these children. The questions that the researchers included in the survey would allow them to determine if there was a statistically significant difference in price between providers who were serving children with special needs and providers who had no such children enrolled in their program. If a significant difference did exist, as evidenced by the differential analysis, this could support the hypothesis that providers were in fact passing along additional costs for serving children with special needs to all of the children in their program.

### *Weighting Questions*

The prices discussed to this point are the prices charged by providers (per provider prices). The Division also requested that 75<sup>th</sup> percentile prices be weighted. The Division and Workplace Solutions determined that weighted prices would reflect actual child care *purchases* being made by families in Delaware. These are the prices paid by Delaware families. To obtain these prices, the consultants included questions in the surveys that allowed them to weight the 75<sup>th</sup> percentiles of prices by the number of private-paying children reported for each age category. Thus, when a provider reported the price a full-time private-paying toddler in their care, the provider was then asked to report the number of full-time private-paying toddlers enrolled at that time. This provided the consultants with information for weighting the prices. These prices are referred to as "weighted" prices and reflect all market transactions by private-paying parents.

### **The Pilot-test**

The 2009 survey was very similar to the survey previously used for the 2007 rate study and therefore had already been field-tested. Therefore Workplace Solutions only conducted a small pilot test to determine if any problems with the survey would emerge due to changes in the definitions of toddler, preschool-age, and school-age care.

In all, 10 center providers in New Castle County were included as part of a pilot-test of the center survey. Only providers from New Castle County were included in the pilot test since all providers in Kent and Sussex might ultimately be needed for the actual interviews. It was determined that an FCC pilot test was not required since there were very few changes to that survey.

Based on the outcome of the pilot test, the consultants made a few small changes to the center survey, most just editing changes to make the spoken questions clearer. Workplace Solutions and the Division did make one content change: rather than identify toddlers as 12 months up to 36 months, the definition was changed to “a one year old and a two year old”. This is because in the pilot-test the providers understood “12 months up to 36 months” as including a three year old. In most of the interviews the center providers were including prices for three year olds in their answer for the price they charge for toddler care.

In general the center survey worked well in the pilot test to obtain enrollment and price information and eliminate providers that did not meet the criteria of the study.

### **The Marketing Steps to Encourage Provider Participation**

During the planning phase of the project, the Division and Workplace Solutions planned and implemented various strategies to encourage providers to participate in the survey interviews:

- All family child-care providers and center-sample providers received an announcement letter from Elaine Archangelo, Director of the Division of Social Services. The Director’s letter informed them of the forthcoming Market Rate Study telephone interview and encouraged providers to participate in the interview if contacted for the study. The letter included telephone numbers for the Division’s project coordinator and for Workplace Solutions’ project manager. The providers were encouraged to call either of these individuals if they had any questions about the survey.
- As part of the announcement letter, providers also received a simple worksheet to help them prepare for the interview. One worksheet was developed for center providers and another for family child care providers. (See Appendix: Marketing Materials).
- Children and Families First mailed a letter to provider groups throughout the state. The letter informed them of the forthcoming market rate study and asked for their encouragement with their members. CFF also was supportive of the study in its ongoing communication with providers.
- The Division and Workplace Solutions planned and held Information Sessions for providers in different locations in the state. At these meetings Division Project Manager Barbara McCaffery and Workplace Solutions researchers Professor William Horrace and Project Manager Marie Sweeney explained the purpose and scope of the rate study and answered providers’ questions about the project.
- The Division mailed an announcement letter to all providers in the state informing them of the Information Sessions and briefly explaining the rate study.

- In its meetings with providers during the past year, the Division discussed the market rate survey that would be forthcoming and encouraged the providers to participate in the survey.

When contacted for the interview, many providers knew about the study from the provider outreach efforts, especially the Director's announcement letter they had received. Thus they were quite willing to participate.

### **Response and Non-response Bias**

The Division of Social Services and Workplace Solutions undertook many steps to minimize both response and non-response bias in this study. Response bias arises because of inaccurate responses to questions; non-response bias is errors due to an unrepresentative sample of providers actually being interviewed because of such occurrences as refusal to participate.

To limit response bias, the researchers utilized questionnaires that were appropriate for the diverse types of providers included in the study. Both surveys had been field-tested and one had recently been pilot-tested. Survey price questions were open-ended allowing the providers to quote their rates in any unit of time they used. In addition, interviewers were trained in the surveys, in the terms and definitions used in the surveys, and in the purpose and goals of the study. All the interviewers used the same survey instruments and had written references for questions the providers might have in the course of the interview. Workplace Solutions worked daily with the interview group to address any questions or issues the providers or interviewers had and also monitored many of the interviews. After the conclusion of the interviews, a consultant and the interview group called a small number of providers to clarify some of their reported price data, thereby allowing this data to be corrected and used in the final analysis.

To limit non-response bias, the Division and the firm planned and implemented many communication steps to inform the providers of the forthcoming study and to encourage their participation in the study. In addition, interview procedures included: up to ten "call attempts" to reach a provider for the interview; calling at varying times, days and weeks; setting an appointment with providers who requested this; and calling over a five-week interval. For a small number of providers that reported to the interviewer that they did not receive the Director's announcement letter and would not do the survey without the letter, Workplace Solutions resent these letters via express mail to encourage these providers to participate.

### **The Training of the Interviewers**

A professional telephone interview group, Opinion Dynamics, was selected to conduct interviews in the field. This group also conducted interviews for the 2007, 2005, 2003 and 2000 Delaware Child Care Market Rate Studies. Project

Manager Sweeney also assisted with the interviews. Both Workplace Solutions and Opinion Dynamics trained the interviewers. All of the interviewers received reference materials and training in the survey, as well as training in handling of complex situations or technical questions posed by the providers. As part of the training, the purpose and importance of the study were stressed. Terms and definitions were explained. Possible difficulties that might arise were described and methods of dealing with these difficulties were indicated. The trainers discussed the protocol for conducting the interviews and for recording the outcome of each 'call-attempt'. Interviewers were directed to refer unusual circumstances or questions to supervisory personnel at the interview group, who then reviewed the situation with Workplace Solutions.

During the training sessions, the interviewers reviewed the survey in detail. "Probes" to questions were reviewed and discussed. The interviewers participated in "role playing" with Marie Sweeney. As the role-playing progressed, the mock interviews became increasingly difficult to enable the interviewers to practice complex interviews. The interviewers also practiced conducting interviews using the CATI on-line survey. This allowed them to practice entering the providers' responses on-line, and to become familiar with the survey skip patterns.

Workplace Solutions and Opinion Dynamics recommended effective methods of encouraging respondents to participate and of eliciting accurate responses. Consultants developed the interview protocol to enable the interviewers to be sensitive to the work of the child care providers, which is the education and care of the children. Interviewers were told of preferred times to reach providers. Family child-care providers were contacted during the day, in the evening, and on weekends. Center providers were contacted during the day, Monday through Friday.

### **The Interviews in the Field**

The interviewers used a CATI system (Computer-Assisted Telephone Interviewing) for conducting the interviews and recording the results. As the interviewers asked the survey questions, they entered the providers' responses directly into the computerized database. The CATI system was utilized because of the complexity of the surveys, with numerous screening grids and skip patterns throughout the surveys. This system leads to more accurate data entry and thus more accurate data.

The interviewers attempted to contact and interview all sample providers including many of the back-up replacement sample (e.g., all FCC back-up providers in Kent and Sussex were added to the sample). Interviewers made up to ten "call attempts" to a provider to obtain a completed interview. The CATI system distributed the provider calls throughout the days and times to ensure that provider 'call attempts' were made to providers at varying times. This increased the probability of a completed interview. If a provider was reached and it was an inconvenient time, the interviewer would set up an appointment

and then call back at the agreed-upon time. At the fourth call attempt, the interviewers left a message on the provider's answering machine or voice mail explaining the purpose of the call and of the study.

Project Manager Sweeney was closely involved with the interview process. This included training of the interviewers, monitoring of the interviews, outreach to sample providers, calls to hard-to-reach providers, and sample management. She monitored many of the interviews with the providers throughout the five week interval. If she had a question about the data collected in an interview she had just monitored, she directed the interviewer to call the provider back to clarify the answer. If a provider requested an appointment for an interview outside the normal operating hours of the interview group, she would conduct the interview. For certain FCC cells with low response rates it became clear that the only way to reach these providers was by calling very early in the morning. She conducted these interview calls, to reach and interview these hard-to-reach providers. She conferred on a daily basis with the supervisors and interviewers about issues of individual providers, sample management and methods for obtaining completed interviews.

In situations where a provider reported that they were no longer in business, the provider had only subsidized children enrolled, the phone had been disconnected, or the provider had no children enrolled for the required timeframes, the provider was replaced with a "back-up" provider for that cell. If during the interviews it was determined that the provider's phone number was incorrect, Workplace Solutions attempted to locate the correct telephone number through an on-line search. If the correct number could not be located, the provider was replaced with a back-up provider for the same cell. These steps enabled the interviewers to reach and interview many of the providers in the sample. In total 1126 providers were called for the rate survey interviews. The final respondents included 464 FCC providers and 165 center providers. These respondents reported 2172 prices charged for private-paying children in their care.

The questionnaire worked well in obtaining price information. The interviews took from 6 to 14 minutes to complete, depending upon the number of age categories a provider served (centers) or upon the number of children served by the provider (FCC). Interviews were conducted with providers during March and April, over a five-week period.

### *Complicating Situations*

Since Workplace Solutions had conducted previous market rate surveys of Delaware child care providers and providers in other states, many complicating situations had already been identified and addressed. However some complications did occur. As an example, a small number of school-age providers reported prices for part-day school-age care that did not meet the definition of part-day (less than 4 hours per day). They had private-paying SA children attending part-day but for four hours or more per day, not for less than four

hours per day. The interviewers were directed not collect these school-age prices since they did not meet the required time frame of less than 4 hours-per-day.

Additional complications included the use of a privacy block on some providers' phones and the increased use of answering machines to block in-coming calls. Because the interview group and Workplace Solutions had experience with privacy blocks, most of those providers were eventually contacted. The constant use of an answering machine was a different matter. Although these providers were called many times about the survey (many call-attempts), it became a challenge to actually reach them. The majority of those providers were ultimately reached by calling at unusual times (Saturday evening, very early in the morning, later in the evening).

### **The Analysis of the Data**

The researchers were provided the interview data in an Excel file containing the interview results. They then reviewed the data, conducted data checks and deleted observations that were outliers. At that point, they proceeded to analyze the data for each county, type of care and age grouping.

#### *Data Checks and Outliers*

The researchers performed the following data checks to ensure that inaccurate or inappropriate data were excluded from the study:

1. If a provider quoted a price for care for less than 30 hours per week for infant, toddler, or preschool care, the price was removed from the data.
2. If a provider quoted a school-age price for care for 4 hours or more per day, the price was removed.
3. If a price was excessively large or small, the price was removed. (See discussion below for the criteria used.)
4. If data needed to perform conversions to daily prices were missing, prices were disregarded.

After data checks were performed and problematic observations removed, the data were then converted to daily rates and the outliers removed. In general, the removal of outliers *does not affect price percentiles* in the study. The reason is that the study is providing percentiles, not averages, and there are generally enough observations with the same values (ties) that deleting a few observations at either end of the price distribution does not change the value of the various percentiles. They are removed solely for the purpose of improving the accuracy of the reported prices. Outliers would increase the standard errors of the estimated percentiles.

The rules the researchers used to identify outliers follows:

1. Remove daily prices below \$10 per day for full-time center and family child care prices for infants, toddlers, and preschoolers.
2. Remove prices below \$1.00 for part-day school-age care.
3. Remove prices in excess of 10 times the median deviation from the median price.

The low outlier rule is a "rule of thumb" used by the researchers in previous pricing studies. Daily prices were generally \$10 per day or greater, so there were very few prices removed based on this rule. For FCC providers, only four full-time prices were below \$10 per day. There were no full-time center prices below \$10 per day.

For school-age center care, where the unit is part-day, the low outlier rule was modified to exclude prices that were below \$1.00 per afternoon. This resulted in no prices being removed from center school-age data or from FCC SA data.

The high outlier rule is a common method for determining outliers. For FCC providers, the high outlier rule generally resulted in the removal of prices in excess of \$100 per day. This occurred three times in 1,472 FCC full-time prices. There were no full-time center prices above \$100 per day.

For center part-day school-age care, there were no high outliers in the data, but for FCC part-day school-age care, for 13 prices out of 179, the providers were actually called by the project manager and the interview group to clarify the pricing unit reported. After speaking with the providers and clarify the pricing data, the price unit was changed from a daily to a weekly unit. It was determined that all of those prices were then in line with the other reported school-age prices and were not removed as high outliers. Total numbers of outliers for each region/type of care are summarized below:

#### 2009 Outliers

Type	Prices	Usable	Kent	New Castle	Sussex	Total	n
FCC: ITP	1,483	1,472	1	4	2	7	1,465
FCC: SA	179	179	0	0	0	0	179
CTR: ITP	407	407	0	0	0	0	407
CTR: SA	103	103	0	0	0	0	103
Total	2,172	2,161	1	4	3	7	2,154

n = prices used to determine the 75<sup>th</sup> percentile prices per cell.

Note: Price counts are "per provider" prices except for FCC ITP (Infant, Toddler, Preschool) where providers can report up to 8 prices for full-time care.

For full-time center care, full-time FCC, and part-day school-age care, there were 7 outliers out of 2,161 usable prices, leading to .3% of the data being outliers and excluded from the study. In all, 2,154 prices were used to determine the 75<sup>th</sup> percentiles of prices for the 24 cells.

### *Conversion of Prices to Daily Prices*

The researchers used the 2,154 prices reported by the respondents to analyze this data and report 75<sup>th</sup> percentile prices as daily rates. They therefore needed to convert prices reported in other pricing units into daily rates. The conversions were made in the following way:

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### *Conversion into daily rates*

- |                 |                                                          |
|-----------------|----------------------------------------------------------|
| 1.) hourly:     | hourly price X # of hours-per-day                        |
| 2.) 1/2 day:    | price per 1/2 day / hours per 1/2 day<br>X hours-per-day |
| 3.) weekly:     | weekly price / days-per-week                             |
| 4.) monthly:    | monthly price / 4.33 weeks-per-month / days-per-week     |
| 5.) semester:   | price-per-semester / weeks-per-semester / days-per-week  |
| 6.) school year | price per-school-year / days per-school-year             |
| 7.) year:       | price per-year / days-per-year                           |
| 8.) other:      | price per-other / days-per-other                         |
- 

After completing the conversions, the economists then estimated the 75<sup>th</sup> percentiles of the distribution of daily rates for each market segment. (The 75<sup>th</sup> percentile of price divides price in such a way that 75% of the prices are at or below the 75<sup>th</sup> percentile and 25% are above the 75<sup>th</sup> percentile.) Researchers estimated the 75<sup>th</sup> percentile of each type of care by county and by age group. For center care, they developed a separate percentile by county for each of the four age categories (infant, toddler, preschool, and school age). For family child care, they developed percentile prices for each of the three counties. In addition, researchers estimated a separate FCC percentile by county for the four age categories: infant, toddler, preschool and school age.

The methodology for this study maximizes the amount of pricing information obtained in order to lower sampling errors. (Sampling error is a measure of the imprecision with which percentiles are estimated using the sample data.) This is done for centers by collecting prices from providers for the various age categories served by each provider (infant through school-age). To explain this further, a center facility might be randomly chosen as part of the infant sample because Children and Families First provider data listed that provider as serving various age children, including infants. During the sample selection procedure, this center may have been selected as an infant provider for one of the center infant cells. When this provider was contacted, the interviewer obtained prices of private-paying children currently in the program (infant through school-age). In addition, from each family child care provider, researchers obtained prices for up to eight private-paying children attending full time, as well as a price for part-day school-age care if the provider had a private-paying school-age child enrolled. Thus, researchers extracted all pricing information available from each provider, for each county and type of care.

### *The Statistical Analysis*

The data from the interviews were sorted using Excel; analyzed using a FORTRAN program previously developed by the researchers; compiled using a Lahey compiler.

### **Calculations of the 75th Percentile**

The 75th percentile of daily prices was calculated for the following:

#### **FAMILY CHILD CARE**

#### **full time**

*[30 hours or more per week]*

KENT COUNTY (ITP)	daily rate
SUSSEX COUNTY (ITP)	daily rate
NEW CASTLE COUNTY (ITP)	daily rate

ITP = infant, toddler and preschool prices  
 full time = daily rate for a full week  
 daily rate = 6 hours or more per day  
 full week = 30 hours or more per week

#### **CENTERS & FAMILY CHILD CARE**

#### **full time**

*[30 hours or more per week]*

KENT COUNTY	
infants	daily rate
toddlers	daily rate
preschoolers	daily rate

## SUSSEX COUNTY

infants	daily rate
toddlers	daily rate
preschoolers	daily rate

## NEW CASTLE COUNTY

infants	daily rate
toddlers	daily rate
preschoolers	daily rate

full time = daily rate for a full week  
 daily rate = 6 hours or more per day  
 full week = 30 hours or more per week

**CENTERS & FAMILY CHILD CARE**

**part time**  
*[less than 4 hours per day]*

## KENT COUNTY

school age	part-day rate
------------	---------------

## SUSSEX COUNTY

school age	part-day rate
------------	---------------

## NEW CASTLE COUNTY

school age	part-day rate
------------	---------------

part-day = less than 4 hours per day

**ODD-HOUR CARE**

NEW CASTLE COUNTY	hourly rate
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KENT/SUSSEX COUNTIES	hourly rate
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**SPECIAL NEEDS CARE****full time***[30 hours or more hours per week]*

## NEW CASTLE COUNTY (ITP)

regular care (RC) *	daily rate
special needs/regular care (SNC)**	daily rate

## KENT/SUSSEX COUNTIES (ITP)

regular care (RC)*	daily rate
special needs/regular care (SNC)**	daily rate

**SPECIAL NEEDS CARE****part time***[less than 4 hours per day]*

## NEW CASTLE COUNTY: (SA)

regular care (RC) *	part-day rate
special needs/regular care (SNC)**	part-day rate

## KENT/SUSSEX COUNTIES: (SA)

regular care (RC)*	part-day rate
special needs/regular care (SNC)**	part-day rate

\*RC: the provider is providing care only for children who are not diagnosed as having 'special-needs'

\*\*SNC: the provider is providing care for children who are diagnosed as having 'special-needs' and for children who do not have 'special-needs'

ITP = infant, toddler and preschool

SA = school age care, less than 4 hours / day