The State of Infant-Toddler Care and Education in New Jersey

Report to:

New Jersey Council for Young Children (NJCYC)

Department of Education

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Furthermore, we would also like to acknowledge with much appreciation the participation of staff from the 511 classrooms that completed our surveys and allowed us to observe them at work.

Introduction

This report presents the results of two studies of the quality of child care received by infants and toddlers in the Garden State. New Jersey is home to about 320,000 infants and toddlers under age three (Zero to Three, 2013). Half of these very young children have at least one risk factor for poor health or developmental outcomes, and more than one in four live with a single parent. Most mothers of children under three (61 percent) are in the labor force and most of their children receive some non-parental care. We estimate that about 67,000 infants and toddlers are in regular *nonrelative* care. However, only around 10,000 infants and toddlers in New Jersey received child care subsidies each month from the Child Care Development Fund (CCDF) in 2011 (U.S. Department of Labor, 2013; U.S. Administration on Children and Families, 2013). Moreover, the payment subsidy the state provides has been considerably below federal recommendations. Another roughly 2,000 infants and toddlers in New Jersey receive services through the federal Early Head Start program which receives a much higher level of funding per child than does child care (Zero to Three, 2013).

New Jersey's limited support for the early care and education of infants and toddlers contrasts starkly with recent research on brain development that has established the importance of positive early experiences and relationships with caregivers for healthy development. These experiences lay the first foundations for later school achievement, social and emotional development, and even adult physical health (Thompson, 2008). These findings are confirmed by research on the long-term effects of early care quality on academic achievement (Vandell et al., 2010). Other research points to the particular importance of quality early care for disadvantaged children and the potential for high-quality infant/toddler care to buffer children against "toxic stress" and, conversely, for low quality care to harm cognitive and socio-emotional development (Shonkoff, 2011).

Purpose

We conducted two studies to examine the quality of infant and toddler care in New Jersey. One study was of the quality of center-based care statewide, as part of the New Jersey Department of Education's (NJDOE) effort to establish baseline data to inform the State's effort to build the coordinated early childhood data system recommended by the New Jersey Council of Young Children (NJCYC). The second study examined the quality of center-based and family home child care in Essex County with funding from the Nicholson, Schumann and Turrell Foundations. Both studies were informed by advisory groups that helped to develop the methods and questions. The key questions addressed are as follows: What is the quality of infant and toddler center-based care in New Jersey? What is the quality of this infant/toddler care in each of the twenty one counties? What are some common strengths and weaknesses of infant and toddler center-based care? For Essex County, the questions were extended to family home care and to look at specific cities within the county. As will be seen, center-based quality in Essex County is very similar to the statewide average, and this suggests that it may also provide a reasonable indication of family home child care quality in the state as whole.

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STATEWIDE STUDY OF CENTER QUALITY

Methods

At the start of this study in 2011, a total of 1,637 centers offered child care for infants and toddlers in New Jersey. The New Jersey Department of Education sent a letter to center directors explaining the project and encouraging participation. NIEER staff contacted 1,000 randomly selected centers of which 473 agreed to participate. We collected data on those centers from Fall 2011 to Spring 2013 across the 21 counties of New Jersey were observed. The primary focus was a three to four hour observation of quality, as explained later in this report.

Sample of Centers

We observed one classroom from each of the 473 centers sampled that agreed to participate, supplemented with 38 additional classrooms in Essex County that were subsequently observed as part of the Essex Quality Improvement Project (EQUIP). Participating centers were distributed among the 21 counties of the state as shown in Table 1.

Table 1. Number of Classrooms Observed by County (n = 511)

County	n	County	n
Atlantic	12	Middlesex	30
Bergen	31	Monmouth	23
Burlington	26	Morris	39
Camden	35	Ocean	30
Cape May	9	Passaic	26
Cumberland	14	Salem	7
Essex	121	Somerset	13
Gloucester	25	Sussex	5
Hudson	22	Union	11
Hunterdon	8	Warren	5
Mercer	19		

We were able to observe only programs that voluntarily participated. Some providers chose not to participate, and we do not know how the nonparticipants may differ from the participants with respect to quality. However, our sample includes almost a third of the programs in the state. The sample is also fairly proportionately distributed across counties. To adjust for variation in the percentage of centers that participated in each county (and for the addition of a larger sample in Essex County), we estimated statewide averages using the sample as is and weighting for participation rates by county. The weighted Infant-Toddler Environment Rating Scale---Revised (ITERS-R) average scores differed so little from the unweighted averages (for example, 4.22 v. 4.24 total score) that we use the simpler unweighted averages while controlling for county in multivariate analyses.

Infant/Toddler Center Teachers

We observed classroom quality for 511 lead teachers caring for at least 4,875 infants and toddlers; 483 (95 percent) of these lead teachers also completed a survey. This survey provides information on their education, ethnicity, age, language, and salary. These characteristics of teachers in child care centers are reported in Table 2 below. Note that nearly a third of teachers have no education beyond a high school diploma and the majority earned less than $20,000 per year, which is just barely above the federal poverty level for a family of three.

Table 2. Teacher Characteristics (n = 483)

Characteristic		Number	Percentage
Education Level	High school or Below	167	32.7%
	Some College/No Degree	105	20.5%
	CDA	80	15.7%
	College Degree	159	31.1%
Ethnicity	Black	136	26.6%
	Asian	21	4.1%
	White	232	45.4%
	Hispanic/Latino	101	19.8%
	Other	21	4.1%
Salary	< $10,000	43	10.9%
	$10,001 to $20,000	186	47.0%
	$20,000 to $30,000	133	33.6%
	>$30,001	34	8.6%
Age Group	18~31	150	29.4%
	32~45	162	31.7%
	46~59	149	29.2%
	60+	50	9.8%
Language	English	380	74.4%
	Any Spanish	91	17.8%
	Other Language	40	7.8%

Classroom Quality Measure

To evaluate the quality of care provided in centers, both studies employed a widely used observational measure of quality with demonstrated validity and reliability, the Infant-Toddler Environment Rating Scale---Revised (ITERS-R; Harms, Cryer & Clifford, 2006). High scores on the ITERS-R have been found to predict improvements in child development (Layzer & Goodson, 2006; Mashburn et al., 2008; Peisner-Feinburg et al., 2001). Of particular importance are interactions between teachers and children as these are particularly predictive of child outcomes. Ratings on this instrument range from 1 to 7, categorized as follows: 1=inadequate; 3=minimal; 5=good; 7=excellent. By definition, programs scoring below a 5 are less than good..

Each item on the scale is rated from 1 to 7 by the observer, and the total ITERS-R score is the average of the scores on the 39 items rated.

Observer Training

NIEER hired and trained all observers. All observers had specific expertise and experience in early childhood education or a closely related field. Initial training in conducting the observations consisted of four components.

- Attending mandatory full day training at Rutgers University in New Brunswick where the observers learned about the project, the ITERS-R and teacher survey, the protocol for data collection, and procedures for handling the data collected.
- Successful completion of an online Human Subject course in which the observer acquired 80 percent passing score in order to receive the Human Subject Certificate.
- An onsite and guided data collection training focused on the ITERS-R, lead teacher survey, and practical aspects of data collection. In this initial classroom observation with an experienced and reliable observer by their side, much of the time is spent teaching the trainees about scoring.
- Three separate observations of infant and toddler classrooms alongside a trained observer to establish reliability. The scores of the observer and the reliable observer are then compared, item by item. The true score for each item is determined through discussion but is generally that of the trained observer. A reliability score for the trainee is computed by determining how many exact matches by item she/he has with the true score and how many are only one point above or below the true score. To qualify as a data collector, the trainee must achieve at least 80 percent matching within one point and 65 percent exact agreement on all three observations.

Observation Protocol

The observers introduced themselves to the classroom staff and briefly explained that they would be as unobtrusive as possible, and limit conversations with teachers and children to minimize the impact of their presence. Observations lasted no less than three hours and included teachers greeting children and parents, at least one meal or snack, several diapering sessions and nap time. When scheduling, observers select days likely to be typical by asking the center if there will be field trips, assemblies, planned absences or other unusual circumstances that should be avoided. They do not reveal which classroom will be observed. Observations are conducted only when the regular classroom teacher is present. Only the lead teacher completed the teacher survey form. Note that some programs have co-teachers and no assistant teacher; in those cases, only one teacher completed the teacher survey.

Data Coding and Analysis

All data collected were cleaned, coded, checked, and entered into a statistical software database for analysis. In addition to the teacher survey and ITERS-R data, we included information on: the ages of children served in the classroom, location of the center (by county and city), program funding source (e.g., Early Head Start or private), and whether the center had in the past received funding through a contract with the state. Classroom age served was coded as an infant group (birth to 12 months), a toddler group (13 months and up), or a mixed age group (infant and toddler together).

Results

As discussed earlier, a score of "5"or better indicates *good* quality, and "7" indicates *excellent* quality. Across all 511 classrooms for which the ITERS-R was completed, the average ITERS-R score is 4.24. This is less than good, but better than minimal. Given the distribution of scores in the study, we regrouped the ITERS-R scores for summary as follows: low (below 3), medium (3.00 - 4.99), and high (5.00 or better). Thus, programs that provide less than minimal quality are classified as low and those that are good or better are classified as high. Keep in mind that both low and medium fall below good. This is portrayed in Figure 1.

Figure 1. NJCYC Score Ranges

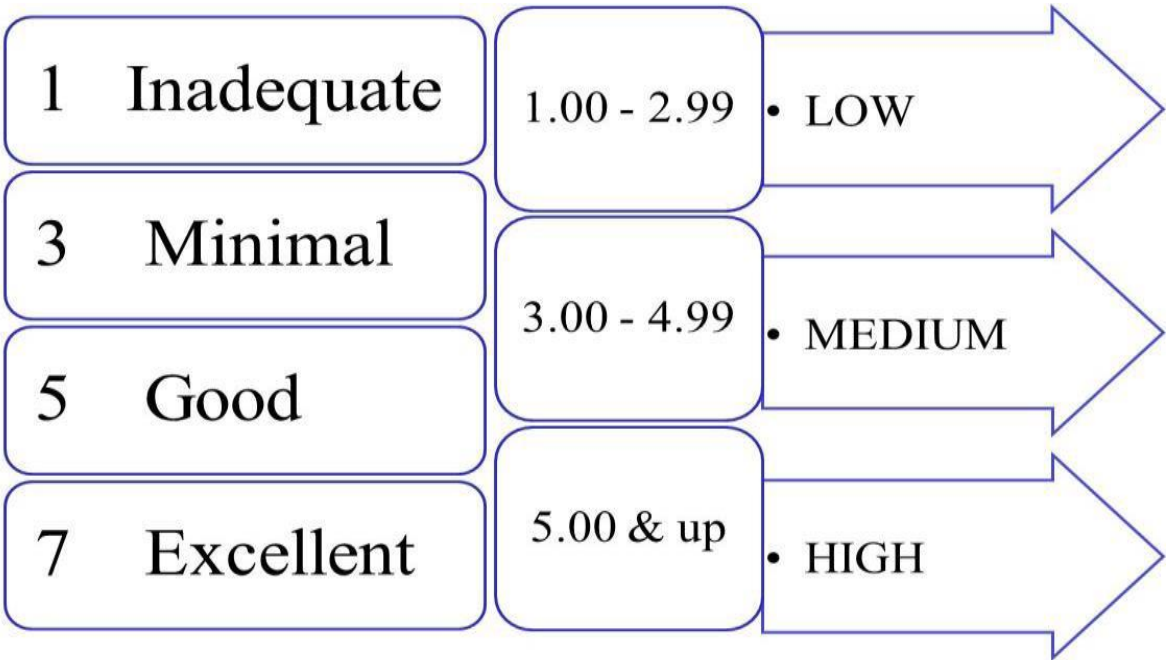


Table 3 summarizes scores on seven subscales into which the ITERS-R groups its items by topic.

Table 3. ITERS-R Subscale Level Scores

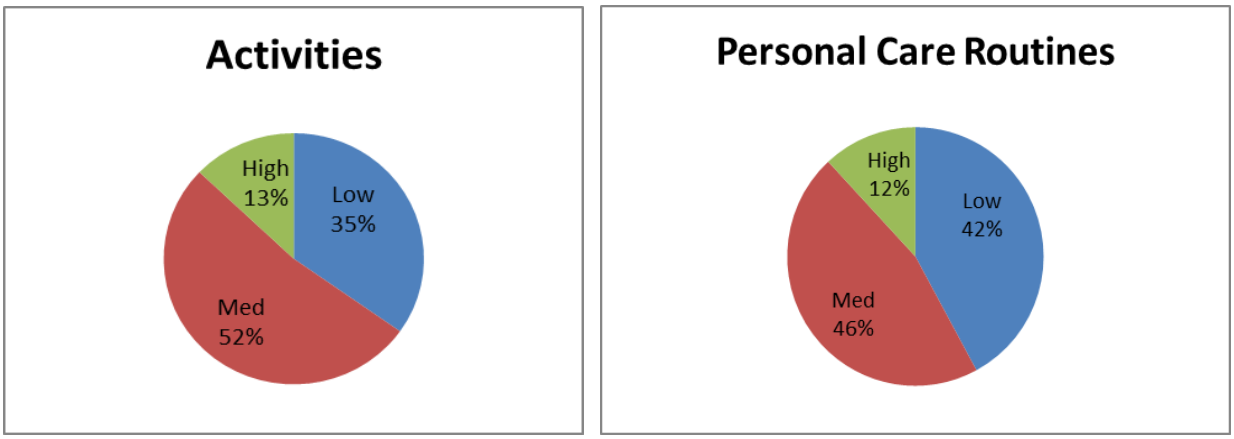
Subscale	n	Mean	SD
Space and Furnishings This subscale addresses the areas of indoor and outdoor space, room arrangement, organization, display, furnishings and equipment.	511	4.17	1.08
Personal Care Routines This subscale addresses practices around daily routines like greeting and departure, meals, naptime, and toileting as well as health and safety practices.	511	3.48	1.18
Listening and Talking This area addresses the classroom's formal and informal communication, language and reasoning opportunities.	511	4.30	1.43
Activities This subscale looks at the learning opportunities in each of the areas of the classroom including fine motor, art, music/movement, blocks, sand/water, dramatic play, nature/science, math/number, use of video/computer, and diversity.	511	3.56	1.15
Interactions This area addresses supervision of children, discipline, staff child interactions, and interactions among children.	511	5.30	1.47
Program Structure This area addresses classroom operations and schedule, including groupings, transitions and flexibility.	511	4.45	1.71
Parents and Staff This area addresses the program's supports for both parents and staff, including opportunities to evaluate and communicate child-related information, family involvement and professional development opportunities.	510	4.95	1.1
Overall Average Score	511	4.24	0.96

As is commonly found in studies of infant/toddler classroom quality, the highest scores were achieved on the Interactions and Parents and Staff subscales. Interactions displayed the highest overall subscale score of 5.30, the only subscale that was scored at a *good* level. The average score on the Parents and Staff subscale was just below good. On the other hand, the average score on Personal Care Routines was lowest at 3.48. No county scored "good" on Personal Care Routines. The Personal Care Routines subscale mainly addresses care-taking to ensure the physical well-being of the children in the programs, including hand washing and diapering. The Activities score was far below the average for the scale. This subscale is

particularly important because it focuses on the quality of learning activities; the average classroom scored only a half point above minimal.

Average scores only tell part of the story about center quality in New Jersey. The extent to which scores vary among centers is important, as well. Statewide, 22 percent of centers scored 5 or better on the ITERS-R, 67 percent medium, and 11 percent low (below a 3). Figure 2 displays the distribution of scores for the subscales with the lowest scores. As can be seen, on these only 12 to 13 percent of classrooms scored high; nearly 9 in 10 classrooms were less than "good." About half of classrooms fell into the middle ground and 35 to 42 percent fell below minimal quality.

Figure 2. Activities & Personal Care Routines Subscales Statewide:



More detail is provided in Table 4, which reports scores for each item. Scores were particularly low for physical and health care, use of books, use of TV, science/nature activities, and promoting acceptance of diversity. At the same time several bright spots were found with higher scores for the interactions between staff (teachers and assistant teachers) and child and families including supervision of play. County level data are reported in Tables 5 and 6.

Table 4. ITERS-R Item Level Scores Statewide

ITERS-R Items		NJCYC		
		n	Mean	SD
1	Indoor space	511	4.75	1.93
2	Furniture for routine care and play	511	4.42	1.75
3	Furnishings for relaxation and comfort	511	3.66	1.64
4	Room arrangement	511	4.45	1.76
5	Display for children	511	3.59	1.18
6	Greeting/departing	510	5.75	1.91
7	Meals/snacks	510	2.45	2.06
8	Nap	505	2.63	2.32
9	Diapering/toileting	508	1.92	1.73
10	Health practices	511	2.23	1.63
11	Safety practices	511	4.35	1.91
12	Helping children understand language	511	4.81	1.86
13	Helping children use language	511	5.05	1.84
14	Using books	511	3.05	1.89
15	Fine motor	511	4.51	1.83
16	Active physical play	511	3.88	1.78
17	Art	468	4.15	2.42
18	Music and movement	511	3.54	1.81
19	Blocks	470	3.44	1.94
20	Dramatic play	511	3.65	1.78
21	Sand and water play	355	3.68	2.21
22	Nature/science	511	2.77	1.66
23	Use of TV, video, and/or computer	141	2.52	1.92
24	Promoting acceptance of diversity	510	2.92	1.41
25	Supervision of play and learning	511	5.46	1.94
26	Peer interaction	511	5.00	1.62
27	Staff-child interaction	511	5.75	1.91
28	Discipline	511	5.00	1.67
29	Schedule	511	4.85	1.97
30	Free play	511	4.33	2.11
31	Group play activities	368	3.98	2.36
32	Provisions for children with disabilities	63	4.60	2.25
33	Provisions for parents	510	5.14	1.30
34	Provisions for personal needs of staff	510	3.74	1.49
35	Provisions for professional needs of staff	510	5.00	2.14
36	Staff interaction and cooperation	444	5.81	1.39
37	Staff continuity	510	5.50	1.77
38	Supervision and evaluation of staff	509	5.21	1.71
39	Opportunities for professional growth	510	4.42	1.69

Table 5. ITERS-R Subscale Level Scores by County

County	Number of Classrooms	Space & Furnishings		Personal Care Routines		Listening & Talking		Activities		Interaction		Program Structure		Parents & Staff		**Average ITERS-R**	
	n	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Atlantic	12	4.65	1.23	3.4	1.02	5.28	0.94	4.33	1.17	5.71	1.76	5.6	1.8	5.16	1.47	4.73	1.05
Bergen	31	4.11	0.91	3.12	0.95	4.11	1.18	3.31	0.87	5.35	1.4	4.77	1.57	4.55	1.07	4.07	0.72
Burlington	26	4.62	1.15	3.27	0.86	5.05	1.42	3.69	1.07	5.78	1.39	5.24	1.88	5.14	1.05	4.51	0.83
Camden	35	4.5	1.46	3.63	1.22	4.52	1.65	3.69	1.25	5.53	1.61	4.17	2.02	5.46	0.99	4.47	1.04
Cape May	9	4.53	1.27	4.13	1.15	5.3	1.39	4.27	1.57	6.47	0.73	5.49	1.42	5.53	1.01	4.96	0.97
Cumberland	14	4.91	1.29	3.97	1.75	4.62	1.92	4.07	1.5	5.45	2.1	4.49	2.07	5.59	0.94	4.71	1.33
Essex	121	3.9	0.9	3.43	1.22	4.13	1.25	3.44	1.19	5.25	1.3	4.09	1.41	4.97	1.22	4.12	0.98
Gloucester	25	4.78	1.27	4.16	1.18	5.16	1.11	3.81	1.21	5.72	1.73	4.79	2.01	5.16	0.88	4.65	0.96
Hudson	22	3.67	0.81	3.11	1	3.85	1.63	3.29	1.21	4.91	1.49	3.86	1.56	4.74	0.98	3.87	0.88
Hunterdon	8	3.68	0.65	3.55	0.78	4.42	1.11	3.27	1.01	5.41	0.68	4.4	1.95	4.75	0.81	4.08	0.68
Mercer	19	4.13	1.12	3.37	1.26	4.11	1.7	3.95	0.9	5.11	1.83	4.82	1.79	5.02	0.96	4.31	0.9
Middlesex	30	4.09	1.14	3.45	1.06	4.19	1.45	3.65	1.04	5.17	1.7	4.27	1.85	4.75	1.17	4.16	0.99
Monmouth	23	4.37	1.15	3.3	0.98	4.19	1.69	3.44	1.01	4.66	1.43	4.45	1.68	4.61	0.95	4.07	0.89
Morris	39	4.27	1.07	3.52	1.08	3.91	1.33	3.66	1.01	4.96	1.19	4.54	1.5	4.89	0.95	4.21	0.85
Ocean	30	4	0.95	3.45	1.41	3.98	1.56	3.33	1.11	5.39	1.54	4.52	1.92	4.51	1.09	4.05	1.05
Passaic	26	4.07	0.92	3.75	1.21	4.27	1.35	3.24	1.13	5.22	1.2	4.49	1.77	4.98	1.18	4.17	0.93
Salem	7	3.57	0.88	3.91	1.38	4.52	1.21	3.18	1.56	5.39	1.53	3.46	1.37	4.79	0.57	4.03	1.03
Somerset	13	4.03	0.82	2.49	1.11	4.1	1.35	3.36	1.11	4.77	1.72	3.74	1.72	4.53	1.13	3.82	0.83
Sussex	5	3.68	0.95	2.96	0.95	3.67	1.22	2.93	0.54	5.15	1.96	5.4	1.95	4.43	1.03	3.84	0.92
Union	11	4.62	0.82	4.31	0.98	4.88	1.06	4.53	0.89	6.23	0.59	5.21	1.05	5.55	0.87	5	0.61
Warren	5	3.88	1.14	3.28	0.87	3.53	1.5	2.78	0.8	4.65	1.65	4.35	1.58	5.18	0.67	3.85	0.75
Total	511	4.17	1.08	3.48	1.18	4.3	1.43	3.56	1.15	5.3	1.47	4.45	1.71	4.95	1.1	4.24	0.96

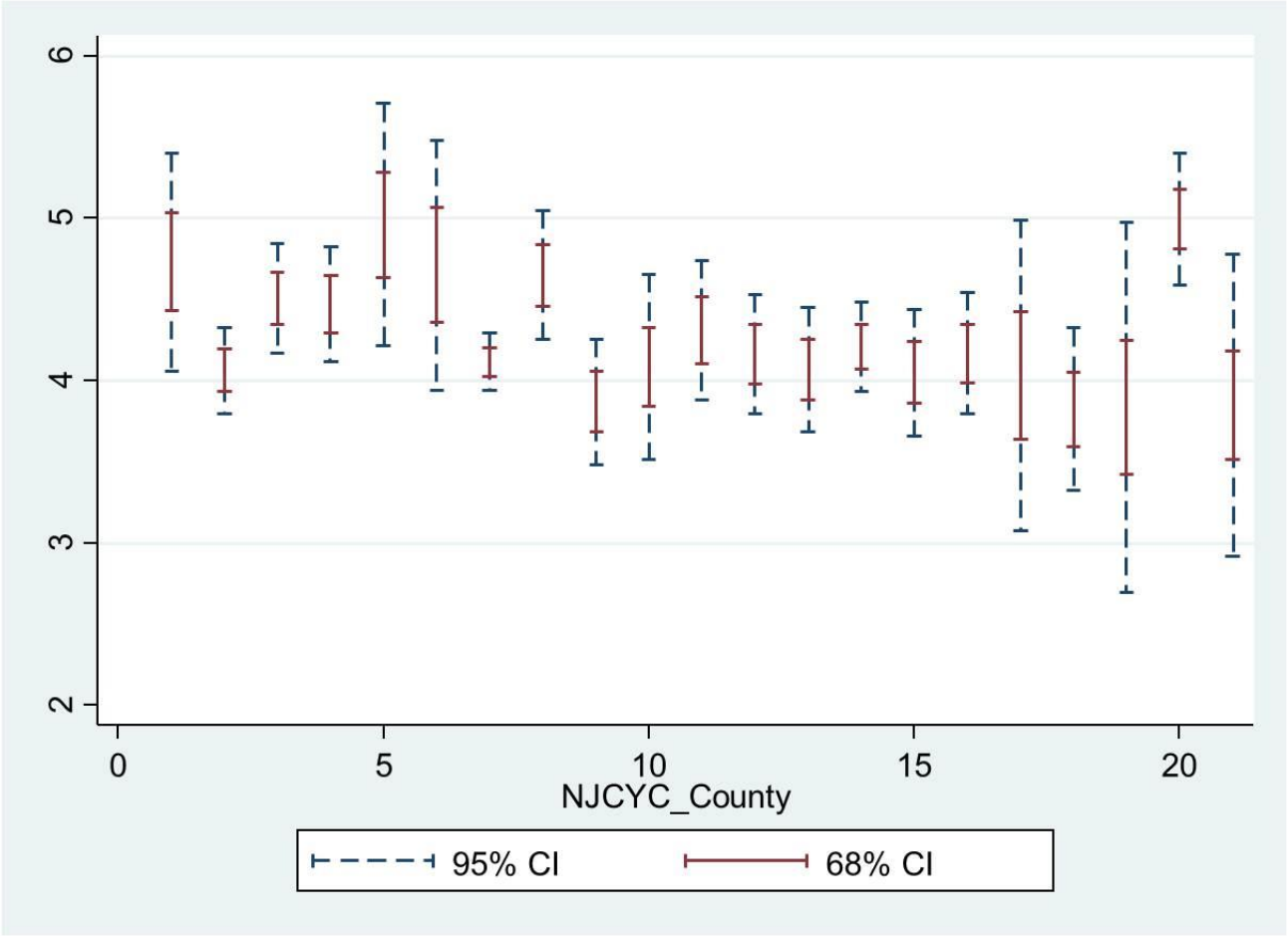
Table 6. Percentage Distribution of ITERS-R Quality Ratings by County

	Space & Furnishings			Personal Care Routines			Listening & Talking			Activities			Interaction			Program Structure			Parents & Staff			**Average ITERS-R**		
	Low %	Med %	High %	Low %	Med %	High %	Low %	Med %	High %	Low %	Med %	High %	Low %	Med %	High %	Low %	Med %	High %	Low %	Med %	High %	**Low %**	**Med %**	**High %**
Atlantic	8.3	50.0	41.7	33.3	66.7	0	0	33.3	66.7	16.7	58.3	25.0	8.3	16.7	75.0	8.3	16.7	75.0	8.3	25.0	66.7	**8.3**	**50.0**	**41.7**
Bergen	9.7	67.7	22.6	61.3	32.3	6.5	16.1	54.8	29.0	45.2	51.6	3.2	6.5	25.8	67.7	29.0	19.4	51.6	12.9	35.5	51.6	**6.5**	**83.9**	**9.7**
Burlington	11.5	38.5	50.0	42.3	53.8	3.8	11.5	23.1	65.4	30.8	57.7	11.5	3.8	19.2	76.9	11.5	30.8	57.7	3.8	34.6	61.5	**3.8**	**61.5**	**34.6**
Camden	17.1	40.0	42.9	31.4	54.3	14.3	22.9	20.0	57.1	42.9	40.0	17.1	8.6	17.1	74.3	37.1	25.7	37.1	2.9	20.0	77.1	**8.6**	**62.9**	**28.6**
Cape May	11.1	33.3	55.6	22.2	44.4	33.3	11.1	11.1	77.8	22.2	22.2	55.6	0	0	100.0	11.1	22.2	66.7	0	22.2	77.8	**0**	**44.4**	**55.6**
Cumberland	7.1	42.9	50.0	35.7	35.7	28.6	28.6	14.3	57.1	21.4	50.0	28.6	14.3	21.4	64.3	28.6	28.6	42.9	0	28.6	71.4	**7.1**	**50.0**	**42.9**
Essex	15.7	72.7	11.6	44.6	40.5	14.9	21.5	47.1	31.4	33.9	54.5	11.6	8.3	15.7	76.0	28.1	39.7	32.2	9.9	35.5	54.5	**14.0**	**67.8**	**18.2**
Gloucester	12.0	44.0	44.0	24.0	52.0	24.0	8.0	24.0	68.0	24.0	60.0	16.0	8.0	20.0	72.0	24.0	32.0	44.0	4.0	28.0	68.0	**4.0**	**28.0**	**68.0**
Hudson	22.7	77.3	0	59.1	31.8	9.1	27.3	45.5	27.3	45.5	40.9	13.6	9.1	27.3	63.6	27.3	50.0	22.7	4.5	54.5	40.9	**22.7**	**68.2**	**9.1**
Hunterdon	25.0	75.0	0	37.5	62.5	0	12.5	75.0	12.5	37.5	50.0	12.5	0	25.0	75.0	50.0	0	50.0	0	50.0	50.0	**0**	**87.5**	**12.5**
Mercer	15.8	63.2	21.1	36.8	57.9	5.3	31.6	21.1	47.4	21.1	63.2	15.8	15.8	21.1	63.2	21.1	26.3	52.6	0	31.6	68.4	**5.3**	**68.4**	**26.3**
Middlesex	20.0	53.3	26.7	30.0	66.7	3.3	16.7	43.3	40.0	23.3	70.0	6.7	16.7	10.0	73.3	33.3	23.3	43.3	16.7	30.0	53.3	**13.3**	**70.0**	**16.7**
Monmouth	13.0	56.5	30.4	43.5	47.8	8.7	39.1	21.7	39.1	30.4	60.9	8.7	17.4	30.4	52.2	26.1	30.4	43.5	8.7	52.2	39.1	**13.0**	**69.6**	**17.4**
Morris	17.9	51.3	30.8	46.2	38.5	15.4	33.3	38.5	28.2	33.3	53.8	12.8	5.1	46.2	48.7	25.6	33.3	41.0	5.1	46.2	48.7	**7.7**	**69.2**	**23.1**
Ocean	30.0	50.0	20.0	50.0	40.0	10.0	30.0	30.0	40.0	43.3	43.3	13.3	6.7	23.3	70.0	23.3	33.3	43.3	6.7	63.3	30.0	**20.0**	**60.0**	**20.0**
Passaic	11.5	69.2	19.2	38.5	46.2	15.4	26.9	26.9	46.2	50.0	42.3	7.7	7.7	23.1	69.2	30.8	19.2	50.0	7.7	34.6	57.7	**15.4**	**65.4**	**19.2**
Salem	28.6	57.1	14.3	28.6	57.1	14.3	14.3	28.6	57.1	57.1	28.6	14.3	14.3	0	85.7	42.9	28.6	28.6	0	71.4	28.6	**14.3**	**71.4**	**14.3**
Somerset	15.4	69.2	15.4	76.9	23.1	0	23.1	38.5	38.5	53.8	38.5	7.7	23.1	15.4	61.5	30.8	38.5	30.8	15.4	46.2	38.5	**23.1**	**69.2**	**7.7**
Sussex	40.0	40.0	20.0	60.0	40.0	0	40.0	40.0	20.0	60.0	40.0	0	20.0	20.0	60.0	20.0	0	80.0	20.0	60.0	20.0	**20.0**	**80.0**	**0**
Union	0	63.6	36.4	0	81.8	18.2	0	54.5	45.5	0	81.8	18.2	0	9.1	90.9	0	27.3	72.7	0	27.3	72.7	**0**	**63.6**	**36.4**
Warren	20.0	60.0	20.0	60.0	40.0	0	40.0	40.0	20.0	60.0	40.0	0	20.0	20.0	60.0	40.0	20.0	40.0	0	20.0	80.0	**0**	**100.0**	**0**
Total	**16.0**	**58.9**	**25.0**	**42.1**	**46.0**	**11.9**	**22.1**	**36.4**	**41.5**	**34.8**	**52.3**	**12.9**	**9.2**	**20.7**	**70.1**	**26.6**	**30.5**	**42.9**	**7.2**	**37.8**	**55.0**	**11.2**	**66.5**	**22.3**

When reviewing the county level data in Tables 5 and 6, it should be recognized that the numbers of classrooms with data in a county can be quite small, as few as five. Only Union county had an average ITERS-R score of 5.00, the highest score among all the counties, though several others were close. The county with the lowest ITERS-R score was Somerset, though Hudson, Sussex, and Warren counties had virtually identical average scores.

Modest differences between counties should not be over-interpreted, as they could simply reflect sampling variation. Overall, on the total ITERS-R, there is no statistically significant difference among counties at the 95 percent confidence level, as shown in Figure 3.

Figure 3. ITERS-R 95 percent and 68 percent confidence Interval



Even if we apply a much more lenient criterion (68 percent confidence interval) the vast majority of the counties' cannot be said to differ from each other on average ITERS-R score. In addition, we can say with confidence that all but two counties score significantly above 3 and that all but a few clearly fall below 5.

Individual Item Results by Subscale

Space and Furnishings. This subscale takes into account the size and the arrangement of the physical space (Table 7). The lowest scores were obtained for *Display for children*, which relates to displaying things that will provide opportunities to enhance children's language, and *Provision for relaxation and comfort*, which includes, for example, the number of soft toys.

Table 7. ITERS-R Scores for Space and Furnishings

ITERS-R	n	Mean	SD
1. Indoor space	511	4.75	1.93
2. Furniture for routine care & play	511	4.42	1.75
3. Provision for relaxation & comfort	511	3.66	1.64
4. Room arrangement	511	4.45	1.76
5. Display for children	511	3.59	1.18
Space & Furnishings	**511**	**4.17**	**1.08**

Personal Care Routines. These routines include hygiene practices by both the children and the staff. Hand washing is an important contributor to this subscale as three items in this subscale can be scored a "1" if proper hand washing of both caregiver and child is not observed. Also contributing to low scores on the items show in Table 8 are poor practices with respect to sanitizing eating surfaces, infection control and some safety practices such as during nap and meals.

Table 8. ITERS-R Scores for Personal Care Routines

ITERS Item	n	Mean	SD
6. Greetings/departing	510	5.75	1.91
7. Meals/snacks	510	2.45	2.06
8. Nap	505	2.63	2.32
9. Diapering/toileting	508	1.92	1.73
10. Health practices	511	2.23	1.63
11. Safety practices	511	4.35	1.91
Personal Care Routines	**511**	**3.48**	**1.18**

Listening and Talking. This subscale score suffered most from a lack of appropriate children's books which resulted in a low score on "using books" (Table 9). Children's reading materials were either not accessible, not appropriate or varied, or simply missing.

Table 9. ITERS-R Scores for Listening and Talking

ITERS Item	n	Mean	SD
12. Helping children understand language	511	4.81	1.86
13. Helping children use language	511	5.05	1.84
14. Using books	511	3.05	1.89
Listening and Talking	**511**	**4.30**	**1.43**

Activities. More than a few items contributed to a low Activities score. As shown in Table 10 these include: including the lack of sensorimotor materials, too little opportunity for active play and for sand and water play, a lack of attention to nature and science, use of television (27.6 percent of the classrooms observed use TV and/or video), and limited cultural awareness. Some programs had no space for outdoor play, but some with such space often did not use it. With respect to music and movement, frequently music was too loud and interfered with language or other class activities, or it was not meaningfully used as a teaching tool.

Table 10. ITERS-R Scores for Activities

ITERS Item	n	Mean	SD
15. Fine motor	511	4.51	1.83
16. Active physical play	511	3.88	1.78
17. Art	468	4.15	2.42
18. Music/movement	511	3.54	1.81
19. Blocks	470	3.44	1.94
20. Dramatic play	511	3.65	1.78
21. Sand and water play	355	3.68	2.21
22. Nature/science	511	2.77	1.66
23. Use of TV, video, and/or computer	141	2.52	1.92
24. Promoting acceptance of diversity	510	2.92	1.41
Activities	**511**	**3.56**	**1.15**

Interactions. Only five of the 21 counties scored below 5, and average scores in New Jersey were relatively high on all of the items on the Interactions subscale. As these items focus on the activities of the staff with children as well as peer interactions, they contribute to positive relationships that are important for the well-being and development of infants and toddlers.

Table 11. ITERS-R Scores for Interactions

ITERS Item	n	Mean	SD
25. Supervision of play and learning	511	5.46	1.94
26. Peer interaction	511	5.00	1.62
27. Staff-child interaction	511	5.75	1.91
28. Discipline	511	5.00	1.67
Interactions	**511**	**5.30**	**1.47**

Program Structure. The most significant problems observed in this section of the instrument were a lack of individual care, lengthy wait times between routines (such as toddlers waiting too long for lunch or snack), and sleepy children being over stimulated so everyone can

take their nap together. Lack of individualization of care occurs when everyone is changed at the same time or everyone has to participate in group activities together contributing to the low score on Group Activities (Table 12).

Table 12. ITERS-R Scores for Program Structure

ITERS Item	n	Mean	SD
29. Schedule	511	4.85	1.97
30. Free play	511	4.33	2.11
31. Group activities	368	3.98	2.36
32. Provisions for children with disabilities	63	4.60	2.25
Program Structure	**511**	**4.45**	**1.71**

Parents and Staff. Scores on this subscale were relatively high with good scores on all but two items, though we note that this item mostly relies on teacher report rather than observation. A closer look at the score speaks volumes about the teachers' satisfaction in the field. The lowest scores on this subscale (below 5) were for personal needs of the staff and opportunities for processional development (Table 13).

Table 13. ITERS-R Scores for Parents and Staff

ITERS Item	n	Mean	SD
33. Provisions for parents	510	5.14	1.30
34. Provisions for personal needs of staff	510	3.74	1.49
35. Provisions of professional needs of staff	510	5.00	2.14
36. Staff interaction and cooperation	444	5.81	1.39
37. Staff continuity	510	5.50	1.77
38. Supervision and evaluation of staff	509	5.21	1.71
39. Opportunities for professional growth	510	4.42	1.69
Parents and Staff	**511**	**4.95**	**1.10**

How Does Quality Vary with Center and Teacher Characteristics?

To investigate the determinants of classroom quality we examined variation in quality with classroom characteristics including funding source, children's age configuration, teacher salary and with teacher characteristics including: education level, ethnicity, language, and age. Teacher salary can be considered a characteristic of a classroom or center, as well as an individual characteristic.

Funding Source. Early Head Start programs had the highest quality. Private centers that had not received state contracts or other direct public funding had the lowest quality.

Table 14. ITERS-R Subscale Scores by Center Funding Source

ITERS-R Subscales	Current (or Past) Funding								
	Early Head Start			Local & State Funding			Private Only		
	n	**Mean**	SD	n	**Mean**	SD	n	**Mean**	SD
Space & Furnishings	39	4.93***[a]	.77	51	4.42	1.17	421	4.07	1.07
Personal Care Routines	39	4.43***[a]	1.30	51	3.31	1.07	421	3.10	1.09
Listening & Talking	39	5.10***[a]	1.02	51	4.61	1.33	421	4.19	1.45
Activities	39	4.41	.94	51	4.06	1.22	421	3.42***[b]	1.11
Interaction	39	5.82	1.22	51	5.73	.96	421	5.20**[b]	1.53
Program Structure	39	5.09*[a]	1.48	51	4.78	1.47	421	4.35	1.75
Parents & Staff	39	5.79	.92	51	5.49	.94	421	4.80***[b]	1.08
Average ITERS-R	39	5.05	.76	51	4.62	.84	421	4.11***[b]	.95

[a] "Early Head Start" is different from "Private"
[b] "Private" is different from "Early Head Start" and "State Funding including Abbott Funds"

Age Configuration. Among the classrooms sampled 10 percent served only infants, 58 percent served only toddlers, and the remaining 32 percent served a mixed group of infants and toddlers together. There is some suggestion in the data that classrooms serving mixed age groups had lower quality.

Table 15. ITERS-R Scores by Classroom Age Configuration

ITERS-R Subscales	Age Configuration								
	Infant			Toddler			Mixed		
	n	**Mean**	SD	n	**Mean**	SD	n	**Mean**	SD
Space & Furnishings	51	**4.36**	1.09	298	**4.22**	1.01	162	**4.03**	1.19
Personal Care Routines	51	**3.55**	1.11	298	**3.61**	1.18	162	**3.22**	1.17
Listening & Talking	51	**4.42**	1.27	298	**4.39**	1.42	162	**4.10**	1.49
Activities	51	**3.34**	1.06	298	**3.85**	1.15	162	**3.11**	1.02
Interaction	51	**5.63**	1.10	298	**5.27**	1.54	162	**5.26**	1.43
Program Structure	51	**4.73**	1.56	298	**4.59**	1.70	162	**4.11**	1.75
Parents & Staff	51	**5.00**	.99	298	**5.00**	1.08	162	**4.84**	1.16
Average ITERS-R	51	**4.33**	.86	298	**4.35**	.95	162	**4.01**	.99

Table 16. ITERS-R Scores by Teachers' Education/Training

Subscale	Teachers' Education/Training											
	High School or Below			Some College/No Degree			CDA			College Degree		
	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Space Furnishings	167	3.91	1.06	105	4.12	1.16	80	4.44	1.07	159	4.35	1.00
Personal Care Routines	167	3.28	1.12	105	3.38	1.33	80	3.46	1.18	159	3.77	1.09
Listening Talking	167	3.97	1.30	105	4.34	1.65	80	4.40	1.42	159	4.58	1.35
Activities	167	3.15	1.01	105	3.62	1.26	80	3.79	1.02	159	3.85	1.17
Interaction	167	5.10	1.48	105	5.20	1.60	80	5.32	1.46	159	5.58	1.34
Program Structure	167	4.00	1.69	105	4.41	1.75	80	4.90	1.48	159	4.73	1.73
Parents Staff	167	4.69	1.05	105	4.83	1.24	80	5.10	1.05	159	5.22	1.00
Average ITERS-R	167	3.93	.86	105	4.19	1.10	80	4.40	.92	159	4.50	.89

Teacher Education. The data also suggest that quality increases with teacher education. Classrooms with teachers who had no more than a high school diploma (33 percent) scored the lowest for quality as shown in Table 16. Levels of teacher education varied by ethnicity, with African-American teachers being the least likely to have a college degree (Table 17).

Table 17. Teachers' Education Levels by Ethnicity

	Teachers' Education Levels							
	High School or Below		Some College/No Degree		CDA		College Degree	
	n	Row %	n	Row %	n	Row %	n	Row %
Black	49	36.0%	40	29.4%	25	18.4%	22	16.2%
Asian	1	4.8%	7	33.3%	4	19.0%	9	42.9%
White	83	35.8%	36	15.5%	22	9.5%	91	39.2%
Hispanic/Latino	27	26.7%	18	17.8%	26	25.7%	30	29.7%
Other	7	33.3%	4	19.0%	3	14.3%	7	33.3%

Association between Observed Quality and Teacher Characteristics

Table 18 displays the percentage of classrooms at each level of quality by classroom age composition and teacher characteristics. These simple comparisons display the observed variations, but should be interpreted cautiously as there are many relationships within the data. These are explored through the multivariate regression analysis reported in Table 19. The multivariate analysis looks at variations in quality simultaneously controlling for all of the teacher and program characteristics. The strongest associations found are that quality is higher when teachers are better educated as well as in Early Head Start programs. Infant-only and toddler-only classrooms were of higher quality than mixed-age classrooms. Lead teachers who were African-American were in lower quality classrooms, but this should not be interpreted as a

causal relationship as other unmeasured characteristics of teachers and centers are likely correlated with ethnicity.

Table 18. Quality Level by Teacher Characteristics and Classroom Age Configuration

Selected Characteristics	Infant			Mixed			Toddler		
	Low%	Med%	High%	Low%	Med%	High%	Low%	Med%	High%
Race/Ethnicity									
Black	11.1	77.8	11.1	23.1	71.8	5.1	12.5	64.8	22.7
Asian	0	50.0	50.0	25.0	50.0	25.0	27.3	54.5	18.2
White	3.3	70.0	26.7	11.8	60.5	27.6	6.3	70.6	23.0
Hispanic	0	88.9	11.1	11.4	80.0	8.6	10.5	57.9	31.6
Other	0	0	100.0	25.0	50.0	25.0	12.5	62.5	25.0
Teacher's Education									
High school or below	4.2	79.2	16.7	20.0	70.0	10.0	12.0	75.9	12.0
Some College/ No Degree	0	66.7	33.3	25.9	55.6	18.5	18.8	52.2	29.0
CDA	0	50.0	50.0	6.9	75.9	17.2	9.3	62.8	27.9
College Degree	10.0	80.0	10.0	8.7	63.0	28.3	2.9	67.0	30.1
Annual Salary									
"< $10,000"	0	66.7	33.3	10.5	73.7	15.8	12.5	70.8	16.7
" $10,001 to $20,000"	0	87.5	12.5	21.4	62.9	15.7	11.5	69.9	18.6
" $20,000 to $30,000"	0	60.0	40.0	8.3	66.7	25.0	5.2	62.9	32.0
" $30,001 to $40,000"	12.5	75.0	12.5	8.3	58.3	33.3	15.0	50.0	35.0
" $40,001 to $50,000"	0	0	100.0	0	100.0	0	16.7	58.3	25.0
">$50,000"	0	0	0	19.0	71.4	9.5	12.5	65.6	21.9
Teacher's Experience									
5 Years and Under	5.3	84.2	10.5	17.3	62.2	20.4	11.2	70.2	18.5
5-10 Years	0	64.3	35.7	15.4	69.2	15.4	12.1	60.6	27.3
10-15 Years	8.3	58.3	33.3	12.5	75.0	12.5	0	60.6	39.4
15-20 Years	0	75.0	25.0	0	80.0	20.0	0	66.7	33.3
Above 20 Years	0	100.0	0	0	100.0	0	33.3	0	66.7
Total	3.9	72.5	23.5	15.4	66.7	17.9	10.1	65.4	24.5

Table 19. Regression Analyses of ITERS-R Subscale and Total Scores

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Space & Furnishings	Personal Care Routines	Listening & Talking	Activities	Interaction	Program Structure	Parents & Staff	Average ITERS-R
Years of Teaching	0.005	0.012	0.035***	0.002	0.007	0.019	0.021**	0.012
	(0.010)	(0.010)	(0.013)	(0.010)	(0.013)	(0.016)	(0.010)	(0.008)
Language Spanish	0.015	(0.019)	(0.396)	(0.229)	-0.541**	(0.335)	(0.161)	(0.214)
	(0.191)	(0.203)	(0.250)	(0.191)	(0.267)	(0.309)	(0.192)	(0.162)
Other Language	(0.205)	0.126	(0.095)	(0.101)	(0.033)	(0.325)	(0.106)	(0.107)
	(0.196)	(0.208)	(0.256)	(0.196)	(0.274)	(0.317)	(0.196)	(0.166)
Teachers' Education	0.146***	0.120***	0.154***	0.163***	0.121**	0.221***	0.166***	0.156***
	(0.039)	(0.041)	(0.051)	(0.039)	(0.055)	(0.063)	(0.039)	(0.033)
Salary	0.028	0.000	0.025	0.015	(0.041)	(0.010)	(0.002)	0.002
	(0.035)	(0.037)	(0.045)	(0.035)	(0.048)	(0.056)	(0.035)	(0.029)
Teachers' Age	0.001	(0.003)	(0.003)	0.000	0.000	(0.003)	0.001	0.000
	(0.004)	(0.004)	(0.005)	(0.004)	(0.006)	(0.007)	(0.004)	(0.004)
Black	(0.075)	-0.393***	-0.730***	-0.298**	-0.773***	-0.473**	(0.172)	-0.357***
	(0.140)	(0.149)	(0.183)	(0.140)	(0.196)	(0.227)	(0.141)	(0.119)
Asian	0.199	(0.366)	(0.539)	(0.161)	(0.519)	(0.410)	(0.417)	(0.269)
	(0.270)	(0.286)	(0.352)	(0.270)	(0.377)	(0.436)	(0.271)	(0.229)
Hispanic	(0.035)	(0.106)	(0.307)	0.114	(0.038)	(0.116)	(0.095)	(0.041)
	(0.188)	(0.199)	(0.246)	(0.188)	(0.263)	(0.304)	(0.189)	(0.159)
Other Race	(0.166)	(0.066)	(0.494)	0.014	(0.382)	(0.394)	(0.069)	(0.153)
	(0.245)	(0.260)	(0.320)	(0.245)	(0.342)	(0.396)	(0.246)	(0.208)
Class Infant	0.308*	0.414**	0.331	0.255	0.524**	0.520*	0.262	0.366**
	(0.169)	(0.180)	(0.221)	(0.169)	(0.237)	(0.274)	(0.170)	(0.144)
Class Toddler	0.169*	0.317***	0.284**	0.723***	0.009	0.411**	0.113	0.316***
	(0.102)	(0.108)	(0.133)	(0.102)	(0.142)	(0.164)	(0.102)	(0.086)
Local & State Funding including Abbott Funds	0.381**	0.332*	0.641***	0.783***	0.794***	0.733***	0.637***	0.628***
	(0.163)	(0.173)	(0.213)	(0.163)	(0.228)	(0.263)	(0.164)	(0.138)
Early Head Start	0.898***	1.280***	0.945***	0.984***	0.743***	0.901***	0.956***	0.963***
	(0.180)	(0.190)	(0.235)	(0.180)	(0.251)	(0.290)	(0.180)	(0.152)
Atlantic	0.377	(0.323)	0.949**	0.930***	0.371	1.115*	0.123	0.376
	(0.347)	(0.372)	(0.458)	(0.311)	(0.485)	(0.577)	(0.312)	(0.297)
Burlington	0.602**	(0.265)	0.735**	0.382	0.437	0.842*	0.301	0.289
	(0.271)	(0.293)	(0.361)	(0.234)	(0.379)	(0.461)	(0.235)	(0.234)
Camden	0.407	0.026	0.237	0.306	0.132	(0.277)	0.501**	0.180
	(0.253)	(0.275)	(0.339)	(0.204)	(0.354)	(0.432)	(0.205)	(0.220)
Cape May	0.393	0.272	0.866*	0.800**	0.938*	0.941	0.497	0.575*
	(0.389)	(0.416)	(0.512)	(0.363)	(0.545)	(0.646)	(0.364)	(0.332)
Cumberland	0.753**	0.262	0.348	0.647**	0.117	0.090	0.646**	0.404
	(0.330)	(0.352)	(0.433)	(0.291)	(0.461)	(0.548)	(0.292)	(0.281)
Essex	(0.276)	(0.048)	0.041		0.137	(0.231)		(0.142)
	(0.216)	(0.235)	(0.290)		(0.302)	(0.367)		(0.188)
Gloucester	0.772***	0.437	0.821**	0.485**	0.406	0.429	0.319	0.429*
	(0.274)	(0.296)	(0.364)	(0.239)	(0.383)	(0.464)	(0.240)	(0.236)
Hudson	(0.403)	(0.251)	(0.056)	(0.042)	(0.002)	(0.285)	0.005	(0.234)
	(0.290)	(0.310)	(0.383)	(0.244)	(0.406)	(0.488)	(0.245)	(0.248)
Hunterdon	(0.350)	(0.143)	0.007	0.004	(0.049)	(0.027)	(0.099)	(0.169)
	(0.403)	(0.431)	(0.531)	(0.383)	(0.564)	(0.671)	(0.384)	(0.344)
Mercer	0.016	(0.080)	(0.257)	0.635**	(0.203)	0.428	0.183	0.070
	(0.297)	(0.317)	(0.391)	(0.268)	(0.416)	(0.504)	(0.269)	(0.254)

Middlesex	0.025			0.422*	(0.081)	0.034	(0.021)	
	(0.262)			(0.222)	(0.367)	(0.449)	(0.222)	
Monmouth	0.138	(0.399)	(0.247)	0.079	-0.858**	(0.052)	-0.421*	(0.319)
	(0.283)	(0.304)	(0.374)	(0.246)	(0.395)	(0.479)	(0.247)	(0.243)
Morris	0.185	(0.069)	(0.378)	0.259	(0.318)	0.176	0.031	(0.048)
	(0.244)	(0.265)	(0.326)	(0.203)	(0.342)	(0.424)	(0.204)	(0.212)
Ocean	0.028	(0.032)	(0.262)	0.190	(0.055)	0.247	(0.256)	(0.101)
	(0.264)	(0.284)	(0.349)	(0.231)	(0.369)	(0.457)	(0.232)	(0.227)
Passaic	(0.130)	0.130	(0.128)	(0.228)	(0.052)		(0.041)	(0.186)
	(0.272)	(0.295)	(0.363)	(0.227)	(0.380)		(0.228)	(0.236)
Salem	(0.370)	0.168	0.307	(0.048)	0.059	(0.817)	0.053	(0.118)
	(0.431)	(0.459)	(0.566)	(0.408)	(0.603)	(0.708)	(0.409)	(0.367)
Somerset	(0.136)	-1.026***	(0.322)	(0.051)	(0.729)	(0.772)	(0.479)	-0.541*
	(0.336)	(0.358)	(0.441)	(0.305)	(0.471)	(0.561)	(0.306)	(0.286)
Sussex	(0.350)	(0.543)	(0.791)	(0.486)	(0.424)	0.892	(0.478)	(0.482)
	(0.491)	(0.524)	(0.645)	(0.474)	(0.686)	(0.808)	(0.476)	(0.419)
Union	0.454	0.633	0.645	0.994***	0.970*	0.781	0.566*	0.663**
	(0.358)	(0.384)	(0.473)	(0.322)	(0.500)	(0.594)	(0.323)	(0.307)
Warren	(0.172)	(0.209)	(0.766)	(0.659)	(0.717)	(0.080)	0.255	(0.433)
	(0.489)	(0.522)	(0.644)	(0.468)	(0.685)	(0.806)	(0.470)	(0.418)
Bergen		(0.405)	(0.242)	(0.085)		0.309	-0.362*	(0.230)
		(0.278)	(0.343)	(0.216)		(0.440)	(0.217)	(0.222)
Observations	511	511	511	511	511	511	511	511
R-squared	0.193	0.205	0.21	0.286	0.145	0.158	0.207	0.266

** p<0.01, * p<0.05

ESSEX COUNTY INFANT/TODDLER QUALITY IMPROVEMENT PROJECT

The Essex Infant/Toddler Quality Improvement Project (EQUIP) is a study of 91 center-based classrooms and 63 Family Child Care Provider homes including 41 registered and 22 approved providers operating in the cities of East Orange, Irvington, Newark and Orange. The 91 classrooms in the EQUIP study are included among the 121 Essex county classrooms in the NJCYC study reported above. All of the procedures followed for data collection were identical between the two studies for centers. The procedures were essentially the same for the study of family home child care quality except that a parallel instrument specifically designed for family home care was employed. The Family Child Care Environmental Rating Scale, Revised Edition (FCCERS-R) is highly similar to the ECERS-R and also is widely used (Harms, Cryer, & Clifford, 2007).

EQUIP extends the work of the statewide quality study in two important ways. First, it provides a sufficiently large sample to go below the county level to examine quality in individual cities. Second, EQUIP provides information on the quality of care delivered by family child care providers. The EQUIP results are presented below and compared to the NJCYC results. Overall, quality in the EQUIP study centers was slightly below the statewide average, still in the same low 4 range. In the analysis below, the data from all three different child care settings is compared. In addition, the findings from the 91 center-based classrooms are compared with the findings for NJCYC. Table 20 describes the characteristics of the teachers and family child care providers. The lead teachers in Essex County are similar to those in the state as a whole, except that they are more likely to be African American. Family child care providers in the EQUIP sample are less well educated, older, more likely to be monolingual Spanish speaking, and paid less on average.

Table 20. EQUIP: Characteristics of Lead Teachers/Family Child Care Providers (FCCP)

Provider Characteristics		**Teachers** n %	**FCCP** n %
Education	High School or Less	24 27.00%	32 50.80%
	Some College/No Degree	20 22.50%	18 28.60%
	CDA	25 28.10%	1 1.60%
	College Degree	20 22.50%	9 14.30%
	Missing	0 0.00%	3 4.80%
Ethnicity	African American/Black	61 68.50%	41 65.10%
	Asian	1 1.10%	0 0.00%
	Hispanic/Latino	24 27.00%	20 31.70%
	Other	3 3.40%	1 1.60%
	Missing	0 0.00%	1 1.60%
Income	< $10,000	8 9.00%	27 42.90%
	$10,001 to $20,000	37 41.60%	15 23.80%
	$20,000 to $30,000	28 31.50%	9 14.30%
	">$30,001"	4 4.50%	4 6.40%
	Missing	12 13.50%	8 12.70%
Age Group	18~31	23 25.80%	5 7.90%
	32~45	28 31.50%	13 20.60%
	46~59	25 28.10%	36 57.10%
	60+	11 12.40%	7 11.10%
	Missing	2 2.20%	2 3.20%
Language	English Only	61 67.00%	41 65.10%
	Spanish Only	3 3.30%	12 19.00%
	English and Other	23 25.30%	9 14.30%
	Other Language Only	2 2.20%	0 0.00%
	Missing	2 2.20%	1 1.60%

Findings

Overall Quality in Essex County

The average quality score for classrooms was 4.09, virtually identical to the 4.12 for the full sample in Essex County and similar to the statewide average. Scores were lower for family home care. Registered Homes are those that have voluntarily registered with the state and receive training and technical assistance. Approved homes have been selected by parents to receive a subsidy and typically are family, friends or neighbors and are not registered. As seen in Table 21, family home care is of lower quality than center care, with Approved Homes falling well below a 3 (minimal quality), much worse than Registered Homes. Patterns of strength and weakness are similar. Both centers and family child care had difficulty with personal care routines and activities subscales. In addition, the Approved Homes scored poorly on program structure.

Table 21. EQUIP: ITERS-R Quality Scores by Subscale and Provider Type

Subscales	Center Based Programs n=91	Registered Homes n=41	Approved Homes n=22
	ITERS-R Mean	FCCERS-R Mean	FCCERS-R Mean
Space & Furnishings	3.93	3.08	2.19
Personal Care Routines	3.46	2.77	2.33
Listening & Talking	4.08	3.68	2.89
Activities	3.45	2.35	1.78
Interactions	5.13	5.53	4.42
Program Structure	4.06	3.23	2.07
Parents & Staff	4.08	4.02	2.30
Average EQUIP Score by Subscale	**4.09**	**3.23**	**2.37**

Quality by City

In the EQUIP sample, quality varied by city, with East Orange having the highest ITERS-R (4.61), followed by Newark at about the state average and then Orange and Irvington (see

Table 22). The Irvington sample scored the lowest with a 3.36, a full point lower than East Orange. Patterns of strength and weakness across the subscales were similar to those in New Jersey generally. The Interactions subscale received the highest average score; it was the only subscale in the "high" range. Activities and Personal Care Routines scores were lower. Orange and Irvington also scored relatively low on Program Structure.

Table 22. EQUIP: ITERS-R Subscale Scores for Center Classrooms by City

ITERS-R Subscales	All Classrooms n=91	East Orange n=21	Newark n=41	Orange n=4	Irvington n=25
Space & Furnishings	3.93	4.45	4.01	3.55	3.42
Personal Care Routines	3.46	3.96	3.76	3.15	2.60
Listening & Talking	4.08	4.62	4.18	4.50	3.41
Activities	3.45	3.98	3.67	2.71	2.76
Interactions	5.13	5.63	5.27	5.06	4.50
Program Structure	4.06	4.65	4.30	3.67	3.22
Parents & Staff	4.88	5.38	5.14	4.50	4.08
Total Average Score	**4.09**	**4.61**	**4.29**	**3.74**	**3.36**

The observed quality of family home care as reported in Tables 23 and 24 varied less across the cities than did center quality,. There was some intercity variation in Registered Homes and none in Approved Homes (which scored uniformly low). However, the sample of Approved Homes is quite small over all with very few participating outside East Orange. In general, the sample of home child care of all types is small as a basis for conclusions about variations by city. Our best estimate is that the quality of family home care generally is around minimal (a score of 3) across all four communities and considerably below the average quality of centers in these communities.

Table 23. EQUIP: FCCERS-R Subscale Scores for Registered Homes by City

FCCERS-R Subscales	All Homes n=41 Mean	Newark n=22 Mean	Irvington n=7 Mean	East Orange n=9 Mean	Orange n=3 Mean
Space & Furnishings	3.08	3.19	2.79	3.24	2.44
Personal Care Routines	2.77	3.02	2.52	2.48	2.33
Listening & Talking	3.68	3.79	3.62	3.70	3.00
Activities	2.35	2.55	1.84	2.48	1.65
Interaction	5.53	5.58	5.83	5.40	4.83
Program Structure	3.23	3.34	2.57	3.46	3.33
Parents & Provider	4.02	4.11	4.11	3.75	3.92
Total Average Score	3.24	3.39	2.98	3.22	2.77

Table 24. EQUIP: FCCERS-R Subscale Scores for Approved Homes by City

FCCERS-R Subscales	All Homes n=22 Mean	Newark n=16 Mean	Irvington n=2 Mean	E. Orange n=4 Mean	Orange n=0 Mean
Space & Furnishings	2.19	2.24	2.17	2.00	-
Personal Care Routines	2.33	2.24	2.75	2.42	-
Listening & Talking	2.89	2.91	2.83	2.83	-
Activities	1.78	1.78	1.86	1.76	-
Interactions	4.42	4.47	3.88	4.52	-
Program Structure	2.07	2.00	2.50	2.13	-
Parents &Staff	2.30	2.55	1.50	1.75	-
Total Average Score	2.37	2.39	2.36	2.29	-

Variations in Quality with Program Features

Center quality in Essex County varied by funding source as it did statewide with Early Head Start programs having the highest quality (Table 25).

Table 25. EQUIP: ITERS-R Subscale Scores by Funding Source

ITERS-R Subscales	Funding Source								
	Early Head Start Funds			Formerly State Funded			Private		
	n*	Mean	SD	n*	Mean	SD	n*	Mean	SD
Space & Furnishings	16	4.59	.52	18	4.21	.63	57	3.66*	.95
Personal Care Routines	16	5.16***	.77	18	3.56	.89	57	2.95	1.08
Listening & Talking	16	5.04***[a]	.98	18	4.33	1.13	57	3.74	1.22
Activities	16	4.57	.68	18	3.86	1.15	57	3.01**	1.07
Interaction	16	6.06**[a]	.59	18	5.18	1.09	57	4.86	1.36
Program Structure	16	4.92**[a]	1.10	18	4.30	1.33	57	3.74	1.42
Parents & Staff	16	5.87***	.76	18	5.20	1.01	57	4.50	1.13
Total ITERS	**16**	**5.14*[b]**	**.47**	**18**	**4.36**	**.78**	**57**	**3.71**	**.93**

a. "Federal agency including Early Head Start & other Federal Funds" is different from "Private"

b. "Early Head Start/Federal agency other than Head Start" is different from "Private"; "State Funding including Abbott & Vouchers" is different from "Private"; "Federal agency including Early Head Start & other Federal Funds" is different from "State contract/Other State agency"

EQUIP Age Configuration

The association with age configuration was somewhat different from the statewide pattern as quality was higher for toddler classrooms than mixed or infant-only classrooms (Tables 26 and 27). This is because infant-only classrooms had lower quality in Essex County. By contrast, family care home quality (Tables 28 and 29) was higher for mixed age groupings, though in no case was it high—none of the observed homes scored good or better on the FCCERS-R—and all of those serving infants only scored below minimal quality (less than 3).

Table 26. EQUIP: ITERS-R Scale Scores by Age

ITERS-R Subscales	Age Configuration		
	Infant n=4	Toddler n=57	Mixed n=30
Space & Furnishings	3.05	4.11	3.7
Personal Care Routines	2.9	3.83	2.83
Listening & Talking	3.75	4.29	3.73
Activities	2.18	3.88	2.8
Interaction	5.06	5.2	5.03
Program Structure	3.33	4.37	3.56
Parents & Staff	4.5	5.08	4.55
Total Average Score	**3.46**	**4.35**	**3.67**

Table 27. EQUIP: Quality Level by Age

	Low	Med	High
Infant	25%	75%	0%
Mixed	20%	73.3%	6.7%
Toddler	12.3%	61.4%	26.3%

Table 28. EQUIP: FCCERS-R Subscales by Age

FCCERS-R Subscales	Infant n=7	Toddler n=30	Mixed n=23
Space & Furnishings	2.02	2.58	3.28
Personal Care Routines	2.38	2.65	2.72
Listening & Talking	3.1	3.2	3.8
Activities	1.42	2.07	2.53
Interaction	5.55	4.9	5.43
Program Structure	2.29	2.68	3.09
Parents & Provider	3.07	2.99	3.98
Total Average Score	2.52	2.76	3.3

Table 29. EQUIP: Home Quality Level by Age

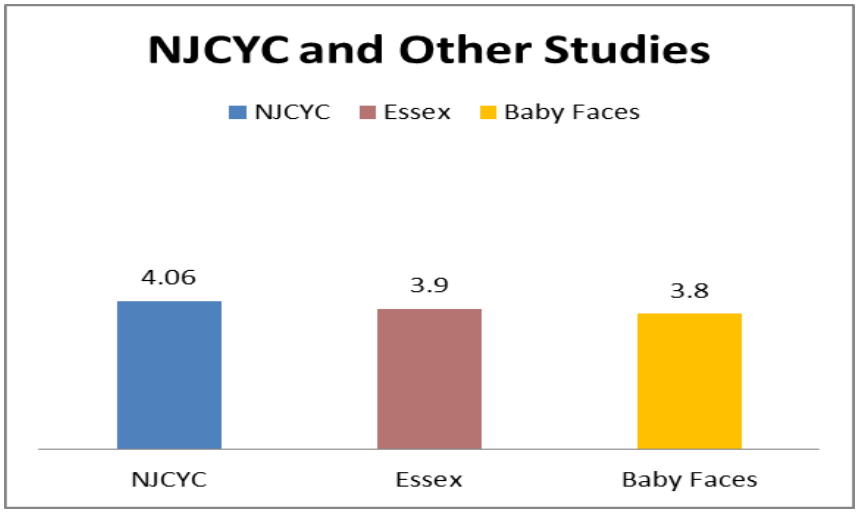
	Low	Med	High
Infant	100%	0%	0%
Mixed	40%	60%	0%
Toddler	67.70%	32.30%	0%

Comparing Infant Toddler Care Quality in New Jersey to Other Benchmarks

One source of comparative data is a national study of Early Head Start that conducted observations in 223 classrooms in 2009 (Vogel et al., 2011). The Early Head Start study, also called Baby FACES (Family and Child Experiences Survey), looked at classrooms serving children at about one year of age. Most were mixed age, though 10 percent included no children older than 12 months, and only 16 percent included children over 30 months of age. Quality was measured by the ITERS-R, excluding the Parents and Staff items, and the average score was 3.80. Figure 4, displays the average scores for NJCYC and EQUIP, adjusted for removal of the Parents and Staff items, as well as the Baby FACES scores for Early Head Start's national sample. As can be seen, the scores are roughly equivalent, about a 4, though New Jersey's statewide average is slightly higher.

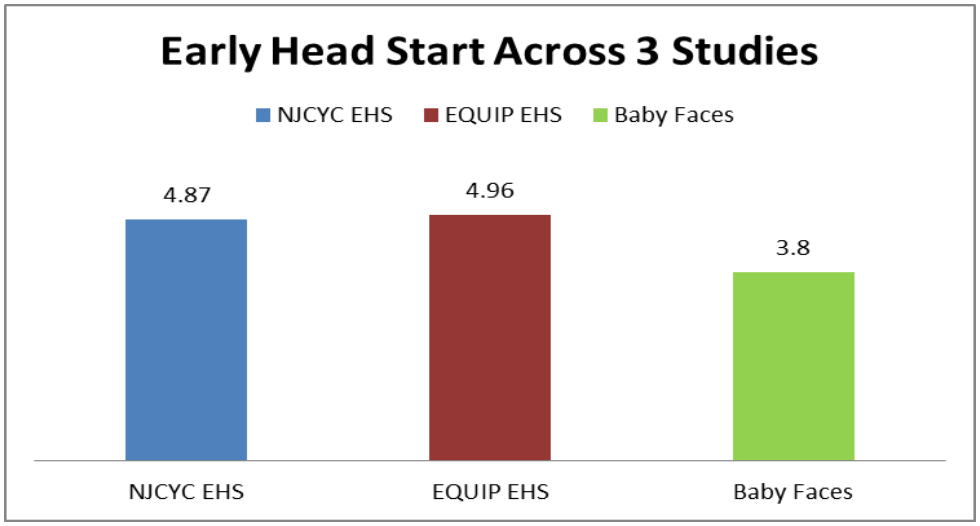
If we return to a consideration of the full score including Parent and Staff items, the Baby FACES equivalent is 3.93, while studies of infant/toddler classrooms in Colorado and North Carolina produced state averages of about 4.9. The New Jersey and Essex County average scores are closer to the FACES score.

Figure 4. NJCYC, EQUIP and Baby Faces ITERS-R Scores (excl. Parent & Staff items)



Early Head Start in NJCYC and EQUIP scored substantially above the national average for Early Head Start quality in 2009 (Figure 5). We adjusted the New Jersey scores for comparison to Baby FACES by deleting scores on Parent and Staff items. The number of New Jersey Early Head Start programs in our studies is relatively small, but the apparent difference is quite large, as displayed in Figure 5. This difference may reflect specific differences in New Jersey or nationwide improvements in Early Head Start child care since 2009.

Figure 5. Early Head Start ITERS-R Scores (excl. Parent & Staff items) in NJCYC, EQUIP and Baby Faces



CONCLUSIONS

The two studies reported here find that the quality of center-based infant and toddler care in the State of New Jersey is primarily of moderate quality, with the vast majority less than good. Although not as bad as many feared, it is not as good as anyone would wish. The quality of family home infant toddler care is much lower. Although we have quality data on family home care only for Essex County, the quality of center care in Essex County is quite close to the state

average. This suggests that Essex County also provides a reasonable ballpark estimate of family home care for the state. Our finding of lower quality home care is consistent with nationally representative data indicating home-based child care is of much lower quality than center care for children at age 4 (National Center for Education Statistics, 2010).

The quality of infant/toddler care is quite a contrast to the quality of state funded pre-K for 3- and 4-year-olds in the former Abbott districts, which is good to excellent (Barnett et al., 2013). Yet, the quality of pre-K in the Abbott districts prior to implementation of the state's reforms was quite similar to the quality of infant/toddler care today, with the vast majority of pre-K classrooms below a 5 (less than good). It follows that New Jersey could produce a similar transformation of infant/toddler care by following a similar approach to pre-K—raising standards, improving teacher preparation, providing adequate funding, and putting into place a continuous improvement system that would include coaching.

The greatest opportunity to improve infant/toddler care quality in New Jersey is in the areas of *personal care routines* and *activities* that enhance early learning. No county scored at a high level for these two subscales that are so essential to the quality of the care and proper stimulation provided to infants and toddlers. At the other end of the spectrum, *interaction* presents as a real strength for New Jersey. In fact, 76 percent of the counties scored in the high range for *interaction*. Another area of strength in New Jersey seems to be the Early Head Start Programs. On average, Early Head Start scored higher than other care providers. Early Head Start has many of the components of the Abbott formula for program improvement. Having stable, reasonable funding, regular professional development, and a continuous improvement system with accountability seems to make a difference in New Jersey

RECOMMENDATIONS

- Planning should begin immediately to improve the quality of infant/toddler care with two top priorities. One is to raise the quality of family home child care generally, as this is a common mode of care, and it is, on average, of relatively low quality. The other is to raise quality in the roughly 1 in 10 classrooms that score below a 3 on the ITERS-R (less than minimal quality).
- No classroom should score below a three overall or on any of the subscales. Technical assistance should be provided with priority to counties with the highest percentage of low scoring classrooms. Training and technical assistance for teachers with a follow up ITERS-R observation to assess progress could be particularly helpful.
- Further analysis of the data collected in these studies could inform targeted efforts to improve quality in New Jersey by the state, communities, and philanthropy. Such analysis can provide highly specific data for policymakers and other stakeholders.
- Training and technical assistance is unlikely to suffice by itself to eliminate low quality and induce more high quality. Teacher and home care provider compensation is quite low. Ten percent of the teachers observed have a salary under $10,000. Increased funding will be required to raise teachers' salaries. State reimbursement rates for care should be analyzed, and recommendations developed for increases in rates that would support more adequate teacher and home caregiver compensation.
- Special attention should be paid to programs serving infants and toddlers in mixed age groups as the quality of care for these classrooms is lower in this study.
- Systematic statewide improvements in formal teacher education and ongoing professional development are indispensable to raising the level of quality so that parents can be assured

that the development of their infants and toddlers is not being compromised by the care received while parents work. Specifically the state should:

  - Establish state infant-toddler credentials
  - Develop a career ladder to support the development of people interested in caring for infants and toddlers
  - Promote agreements with higher education institution so infant toddler teachers can transfer credits, courses, and evidence based in-service professional development.
  - Create tuition reimbursement programs so that providers can obtain relevant education and training.
  - Develop new reimbursement rates that permit increased compensation for teachers who improve their qualifications and/or provide high quality care.

- Disseminate the results of this study among diverse group of stakeholders including ECE Directors and teachers to raise awareness on the specific needs of infants and toddlers.
- Build on this study by conducting studies of the structural characteristics of programs. Understanding programs structures will help extend our knowledge on what contributes to care quality. Specifically, the following aspects of care settings are recommended for further studies: cost, staff-child ratio, reimbursement rates, teacher compensation, teacher turnover, parent engagement, curriculum, and program directors' characteristics (including business management and fundraising capacities as well as educational leadership).

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