PreK Research Project: Final Report

Funded by the U.S. Department of Health and Human Services
Office of Planning, Research and Evaluation
Grant Number: 90YE101

Diane Schilder, Ed.D.
Stephanie Curenton, Ph.D.
Stephanie Kimura, Ed.M.
Jessica Young, Ph.D.
Louisa Anastasopoulos, M.P.P.
Stacy Ehrlich, Ph.D.
Candy Miller, Ed.M.

©2011, Education Development Center, Inc., All Rights Reserved

Suggested Citation:
Schilder, D. Curenton, S., Kimura, S., Young, J., Anastasopoulos, L, Ehrlich, S., & Miller, C. 2011. PreK Research Project, Final Report. Waltham, Massachusetts: Education Development Center, Inc.

© December 2011. Education Development Center, Inc. (EDC). With attribution, this report may be freely reproduced and distributed without permission for educational, non-commercial purposes, but cannot be sold or republished without written permission.

This report was developed by the PreK Project to learn if changes in state-funded universal preK are positively or negatively related to the supply of child care for low-income working families. EDC worked in partnership with the Ohio Department of Job & Family Services, the Ohio Department of Education, the New York State Office of Child Care and the New York State Department of Education. These state agencies provided the research team with data. EDC researchers regularly provided research updates to key stakeholders in both states.

The PreK Project is a project of the Learning and Teaching Division (LTD) of Education Development Center. LTD works in partnership with government agencies, foundations, districts, and community programs to expand opportunities for children, adolescents, and adults—at home, at school, and at work—and to improve the institutions that serve them.

The research activities conducted by the PreK Project have been funded through a grant from the U.S. Department of Health and Human Services, Office of Program, Research & Evaluation (Grant Number: 90YE0101). Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the funders.

If you have questions about the report, please contact Diane Schilder at dschlider@edc.org.

CONTENTS

EXECUTIVE SUMMARY

PreK Research Project Executive Summary

To address questions about the relationship between preK expansion and the supply and quality of child care available to low-income families, researchers at Education Development Center, Inc. (EDC), with colleagues at Rutgers University, engaged in a four-year, mixed-methods study designed to examine the relationship between state-funded preK expansion (and contraction) and the quality and supply of child care.

The research was divided into three distinct areas of inquiry. In two different states (New York and Ohio), we first examined the policy context to learn about the nature of the preK programs and the factors that key stakeholders have experienced that they believe affect how changes in preK influence child care quality and supply. Secondly, we collected survey data and existing administrative data from county resource and referral agencies and from child care centers that both were and were not participating in state preK programs to explore the degree to which child care center participation in state-funded preK programs was related to the quality of child care quality, for better or worse. Thirdly, we analyzed survey and administrative data to determine the relationship between changes in preK funding and enrollment and the supply of child care. The broad research questions we addressed were as follows:

1. What state policies, regulations and characteristics of administration regarding preK have the potential to influence child care quality and access for low-income working families?
2. What is the relationship between child care center participation in state-funded preK and characteristics and quality of center-based child care?
3. What is the relationship between changes in preK funding & enrollment and the supply of child care?

Methods in Brief

The research team collected qualitative data to address the first question about state preK policies, regulations and characteristics in New York and Ohio that had the potential to influence child care quality and supply. We interviewed 31 preK, child care, and early education experts and stakeholders, reviewed documents including laws and regulations from each state, and

analyzed data collected by the National Institutes for Early Education Research. We analyzed the data employing an axial coding schema to code for key themes.

To address questions about quality, we focused on child care centers in two counties within each of our target states. In Ohio, we collected data from a random sample of 352 child care centers in Cuyahoga and Franklin counties. In New York, we collected data from all of the 90 child care centers (the universe of centers) in Albany and Niagara counties. We surveyed the center directors in the spring of 2008 (wave 1) and the spring of 2009 (wave 2) and matched the survey data with administrative data provided by the county resource and referral agencies and from the U.S. Census. Given the exploratory nature of our study, we focused on structural indicators of quality that child care center directors could report through a telephone survey and features that were available through administrative data. We compared the characteristics of the centers that were participating in the state-funded preK programs with the characteristics of the non-participating centers and also compared the structural indicators of quality. We analyzed the data using descriptive and inferential statistical analyses including independent samples t-tests, Analysis of Variance (ANOVA), and Ordinary Least Squares (OLS) regression analysis.

To address questions about the relation between changes in preK funding & enrollment and child care supply, we re-analyzed the survey data we had collected in 2008 and 2009 and analyzed administrative data provided by each state's Department of Education, child care agency, and from county resource and referral agencies. In Ohio, we analyzed data from the 2002-03 academic year through the 2009-2010 academic year, focusing on the two target counties of Cuyahoga and Franklin. We performed independent samples t-tests to analyze differences between child care centers that were participating in state-funded preK and comparison centers. We performed Hierarchical Linear Modeling to analyze growth in child care supply (both center-based and family child care) as well as enrollment over time. In New York we analyzed data from all of the counties in the state and focused the analysis on the period of time in which the state had increased funding for preK—from 2007 through 2009.

Policy and Context Findings

When this research was first conceptualized, preK was expanding rapidly and states were enthusiastic about increasing funding. Ohio and New York both devoted substantial funds to state-funded preK through 2008. However, as each state's budget was affected by the recession,

Ohio reduced state-funded preK for the 2009-2010 academic year, thereby eliminating one large preK program and New York's planned increases did not go into effect.

The stakeholders we spoke to reported that the **fluctuations in preK funding** affected the quality and supply of child care. In Ohio and New York, directors of child care centers that offered state funded preK used these funds to enhance the quality of services. The directors were able to use these resources for teacher professional development, curriculum enhancements, and educational materials and supplies.

Beyond state regulations and policies, **district and county differences** also influenced child care center supply and quality. In New York, state preK funds are granted to school districts. In turn, districts can contract with child care providers and other community-based organizations to offer preK services. The percent of preK services offered through non-school based settings varied substantially across and within counties and shifted over time. While some districts focused on teacher professional development, others focused on curriculum enhancements, and still others focused on meeting the needs of children in families whose primary language is not English. In New York, school-based personnel reported that the timing of the funding award notice, the availability of school-based classroom space, existing relationships with directors of child care and other early education programs, and fluctuations in school enrollment influenced decisions about the number of preK classrooms to offer through school-based versus community based programs.

In Ohio, the largest preK program in existence through July 2009—called the Early Learning Initiative—supported full-day, full-year preK through consortia of early care and education providers. Through a competitive grant process the state awarded a lead agency funds and the lead agency determined the number and type of organizations that would offer preK services. The second largest state funded preK program supported school-based preK services. Stakeholders reported that local interpretation of state laws and regulations has led to differences in preK services across counties and districts.

Child care and district based preK providers reported that **state child care subsidy polices** in both states influenced how each state-funded preK program affected the quality and supply of child care. For example, child care centers in New York City experienced decreases in overall funds available to provide early education services when the City changed its policy that had allowed programs to combine subsidy and preK funds to offer quality services. Instead, the

City reduced the overall funding by subtracting the preK funds from the subsidy dollars programs could receive. Child care directors from Ohio who had offered preK through 2008 reported that the combination of the reduction in preK funds along with **reductions in state child care subsidy reimbursements** that occurred in late 2009 resulted in increases in vacancy rates and reductions in overall funding to centers. This in turn led to elimination of professional development opportunities for teachers, lay-offs of more educated teachers whose wages were higher than less educated workers, and closing of classrooms.

PreK and Child Care Center Characteristics and Quality Findings

Child care centers offering state-funded preK were significantly more likely than comparison centers to be located in high-poverty neighborhoods, to serve significantly more children from low-income families, to serve more racially diverse populations, and to serve children attending care full-time. These findings quell the concern, expressed by some early education experts, that as states expanded preK fewer early care and education opportunities would be available to children from low-income families.

Similarly, we explored whether preK centers served children from families whose primary language was not English. Previous research had suggested that center-based care served fewer Hispanic children and children from families whose primary language is not English. We found that across both waves and in both states preK centers were as likely as centers not offering preK to serve children whose families did not speak English. Moreover, in Ohio preK centers served higher percentages Hispanic children as non preK centers and in New York preK centers served similar percentages of Hispanic children as comparison centers.

In both states and across both waves of data collection, children attending preK centers were more racially and ethnically diverse and were more likely to come from low-income families than children attending comparison centers. In both waves and in both states, PreK centers served more diverse populations of students. In Ohio, preK centers served higher percentages of African American, Hispanic, and multiracial children and lower percentages of Caucasian children than comparison centers in both waves. Descriptive statistical analysis revealed apparent differences in New York. PreK centers served significantly higher percentages of African American children in wave 1, but in wave 2 differences were not significant. PreK centers served significantly fewer Caucasian children, but, again, differences were not significant in wave 2. And in wave 1 preK

centers served significantly fewer Asian children than comparison centers; and they served fewer multiracial children, however, these differences were not reported in wave 2.

The characteristics of the preK services offered at child care centers appeared to be based on some of each state's preK and child care laws and regulations. In Ohio the ELI program offered as many as 10 hours per day, 5 days per week, year-round. By contrast, the UPK program in New York offered services for between 2.5 and 5 hours per day, 5 days per week during the school year. We had hypothesized that the hours per day, days per week, and weeks per year of children's preK attendance would be related to each state's preK policies. The number of hours per day that children received preK services differed across states: in Ohio, children received preK services for approximately 8 hours across both waves, whereas in New York children attended about 5 hours per day. Our analysis revealed that in both states, the average number of days per week children received preK services was approximately 5.

Our hypothesis related to full-time attendance at preK centers was accurate. We found that in Ohio, toddlers and preschoolers attending preK centers were more likely to attend full-time than children at comparison centers, although similar percentages of infants attended preK centers full-time as those attending comparison centers. Differences for toddlers and preschoolers were significant across both waves. In New York, despite the small sample size, we found that both toddlers and preschoolers were more likely to attend preK centers full-time than those in attendance at comparison centers.

Selected Structural Indicators of Quality

When compared to child care centers that were not offering preK, we found that preK centers were significantly different from comparison centers on a number of structural indicators of quality. Our sample size in Ohio was substantially larger than the sample from New York because the counties in Ohio were substantially larger. We found that preK centers in Ohio were more likely than comparison centers to report significant differences in structural indicators of quality. In New York, preK centers reported differences in quality but differences were not consistently significant—perhaps because of the smaller sample size. Below we highlight key differences in quality:

- Health and developmental screenings. PreK centers in Ohio were significantly more likely to refer children to free health and development screenings, such as vision, hearing,

and developmental delay screenings. In New York, nearly all of the surveyed centers provided referrals to children in both waves; preK centers were no more likely to offer health and developmental screenings and referrals.

- Standard curriculum. PreK centers were more likely to use a standard curriculum than comparison centers across both waves in both states.
- Accreditation status. In Ohio, preK centers were not more likely to be accredited by the National Association for the Education of Young Children (NAEYC) than comparisons, but they were more likely to report seeking accreditation. In New York, descriptive analyses revealed that higher percentages of preK centers in our sample were accredited but similar percentages of centers were seeking accreditation.
- Salaries. In both Ohio and New York teachers at preK centers were significantly more likely than teachers at comparison centers to earn more than $15,000 per year. In Ohio teachers at preK centers with only a high school degree were as likely as similarly educated teachers at comparison centers to earn over $15,000 per year. Teachers with more education than a high school degree working at preK centers were significantly more likely than their similarly educated counterparts at comparison centers to earn over $15,000 per year. In New York, the sample size was too small to enable analysis of salary based on teachers' level of education but significantly more teachers overall at preK centers earned over $15,000 compared with teachers at comparison centers.
- Credentials. In Ohio, significantly more preschool teachers had a CDA (Child Development Associate credential) in preK centers than comparison centers in wave 2, but differences in wave 1 were only nearly significant. Yet, teachers at comparison centers were actually more likely to be certified in wave 2. In New York, significantly more preschool teachers at preK centers were certified in wave 1 but the differences were not significant in wave 2. Differences in percentages of preschool teachers with a CDA were not significant in wave 1 but were significant (p=.05) in wave 2.
- Education of Teachers. In Ohio across both waves, preschool teachers at comparison centers were significantly more likely to have a bachelor's degree than preschool teachers at preK centers. In New York, none of the differences were statistically significant across either wave of data collection.

- Teacher Training. Significantly higher percentages of teachers at preK centers participated in specific types of teacher training when compared with the comparison centers in both states and across both waves of data collection. In Ohio across both waves, significantly higher percentages of teachers attended child development training in wave 1; wave 2 differences were not significant. Significantly higher percentages of teachers attended literacy training in both waves. Significantly higher percentages attended CPR; wave 2 differences were not significant. Significantly higher percentages attended CDA training across both waves. Significantly higher percentages attended workshops in wave 1; but wave 2 differences were not significant. No differences were reported in the percentage of teachers attending college in wave 1; but in wave 2, significantly more teachers at preK centers attended college. In New York, significant differences were reported in the percentage of teachers who attended Literacy Training in wave 1; and nearly significant differences were reported in wave 2. Significant differences were reported in the percentage of teachers who attended CPR in wave 1; but differences were not significant for wave 2. And nearly significant differences were reported in the percentage of teachers who attended distance training in wave 2, with higher percentages of comparison teachers attending distance training.
- Participation in the U.S. Department of Agriculture Food and Nutrition Program. Previous studies have shown that participation in the U.S. Department of Agriculture Food and Nutrition is one asset that, combined with other structural variables of quality, is predictive of observed quality. We analyzed data on center participation in this program and found that preK centers in Ohio were more likely to participate in the program than comparison centers and New York preK centers were more likely to participate in the second wave of data collection. In wave 1 in Ohio, 80% of preK programs and 60% of comparison centers participated in the USDA Food and Nutrition Program. In wave 2, 100% of preK and comparison centers in Ohio participated. In the New York sample, 70% of preK programs participated in USDA Food and Nutrition Program in wave 1 and 60% in wave 2, compared to 70% of comparison programs in wave 1 and 30% of comparison programs in wave 2.
- Assets. We developed a composite of assets that other researchers had shown to be correlated with observed quality. PreK centers in Ohio reported significantly more assets

than comparison centers in Ohio across both waves (p<.001). In New York descriptive statistical analysis revealed higher assets across both waves, but inferential analysis revealed the differences were statistically significant only for wave 1 (p=.005).

PreK and the Supply of Child Care Findings

We rejected many of the hypotheses regarding the negative associations between preK expansion and child care supply. Our correlational findings lead us to important considerations for future research on the relationship between changes in preK and child care supply. We summarize the key findings below.

- Non-School Based preK Enrollment and Child Care Center Supply in New York. We found a strong positive relationship between New York's preK enrollment in non-school based settings and child care capacity. We examined the associations between the numbers of children attending preK in school-based versus non-school based settings (as well as the funding for these students). We found a very strong relationship between preK enrollment at non-school-based settings and child care center capacity. This is consistent with our hypothesis that as preK funding and enrollment at community-based organizations increases, child care center capacity increases.
- Family child care capacity in New York. We found a positive relationship between New York's preK funding and enrollment and family child care capacity. While the relationship was significant, it was not as strong as the relationship between preK funding and child care center capacity. This is consistent with our hypothesis since family child care providers can offer preK but the number is substantially lower than the number of centers offering preK.
- School-based preK and child care supply in New York. We found a positive association between dollars spent on school-based preK and child care center capacity. We found no association between school-based preK funding and family child care capacity. This finding was in contrast to our hypothesis and anecdotes from the field that expansion of school-based preK is associated with decreased child care centers closing and a corresponding decrease in child care capacity.
- Child Care Center Supply in Ohio. We found a significant positive relationship between Ohio's preK funding and child care capacity in the years 2002-03 academic years and the

2009-10 academic years. We also examined the period before and after preK funding increases. We found that child care center capacity was significantly higher in the period of funding increases than in the baseline years. Our descriptive analysis revealed that between 2005 and 2009, Cuyahoga County (a county with universal preK [UPK]) experienced an increase in child care center capacity. In contrast, the number in Franklin County (comparison county) remained relatively flat.

- Care for children of differing ages in Ohio. We rejected our hypothesis that preK expansion would be negatively associated with capacity of infant and toddler center-based care. Instead, we found a significant positive relationship between infant, toddler, and preschool capacity and state preK funding.
- Care in high-poverty neighborhoods. We found no significant difference in child care center capacity over time based on location. After funding declines, there is no significant difference in capacity between pre-K and comparison centers.
- Family Child Care. Between 2005 and 2009, Cuyahoga County experienced a decrease in the number of family child care providers. By contrast, in Franklin County the number decreased slightly between 2005 and 2007 but remained relatively stable between 2007 and 2009. Between 2005 and 2009, Cuyahoga County experienced increases in the proportion of family child care providers who were certified. By contrast, in Franklin County the proportion of family child care providers who were certified remained relatively stable. The proportion of certified providers in Cuyahoga County remained flat prior to UPK but increased dramatically after implementation of UPK. The proportion of certified providers increased steadily between and 2009.

INTRODUCTION

Policy Debate on Prekindergarten Expansion

State-funded prekindergarten (preK) programs represent a sizable segment of the early care and education system. Nearly 1.3 million children attended publicly funded preK programs (Barnett, et al., 2010) in the 2009–2010 school year, with the total funding for these programs exceeded $5.4 billion (Barnett et al., 2010).Early childhood experts, educators, and policymakers, however, share and debate concerns about how the expansion of state-funded preK services affects the quality and supply of child care for low-income working families (U.S. General Accounting Office 2004; Schumacher et al., 2007).

This debate stems from differing opinions about how changes in state preK funding contribute to, or detract from, the existing public and private child care providers. Experts in the field believe that child care providers, families, and children can all benefit from increases in preK funding if all types of child care providers are able to access these funds, and that these specific dollars make it possible for child care providers to offer full-day services that better meet the needs of working families (Mitchell 2001; Garcia and Gonzales 2006; Schumacher et al., 2007; Wat 2007). In addition, by accepting state preK funds, child care centers can use the additional monies (and accompanying requirements) to improve the quality of their early education services, since in many states state-funded preK programs must meet state standards for highly educated teachers, research-based curricula, and comprehensive services (Mitchell 1998; Hicks et al., 1999; Schumacher et al., 2001). Thus, the thinking goes, children attending these programs would benefit from enhanced educational experiences that better prepare them to enter school, (Kiron 2003; Schilder et al., 2003; Barnett et al., 2005; Committee on Early Childhood, Adoption et al., 2005; Stebbins and Scott 2007) and, ultimately, parents would have more options for full-day, full-year, high-quality care (Schilder et al., 2005; Schumacher et al., 2007).

However, other experts in the field of early childhood care and education predict unintended negative consequences as a result of the increase in state funding for preK programs, particularly in their potential to limit or reduce the quality and supply of child care. These concerned professionals acknowledge that 34 of the 40 states that invest in preK programs allow for a diverse mix of school-based as well as other public and private providers (Barnett et al.,

2010), yet they worry about how the competition between school-based programs and other early care education programs will play out. Will those non-school-based programs, even though they offer full-day, full-year care, experience a decline in enrollment if they have to compete against school-based programs? Typical school-based programs have a depth of resources—teachers, buildings, support staff, multiple levels of instruction—that some assert make it easier to adapt to funding and personnel fluctuations—those very kinds of changes that end up buffeting small, non-school-based programs (Schilder et al., 2011). Moreover, a Government Accountability Office report noted that child care providers reported that enrollment of four-year-olds in state preK could result in centers raising prices to compensate for the loss of revenues or to prevent them from going out of business (U.S. General Accounting Office 2004).

The quality of existing child care programs are also likely to suffer from disruption and instability if more qualified teachers move from child care programs to work in higher-paying school-based preK programs (Bellm et al., 2002; Schumacher 2007). Will enrollment declines and predictable shifts in state funding ultimately threaten child care centers, leading to closure and ultimately fewer care options for working parents (Schumacher et al., 2005)?

PreK Research Project

To address questions about the relationship between preK expansion and the supply and quality of child care available to low-income families, researchers at Education Development Center, Inc. (EDC), with colleagues at Rutgers University, engaged in a four-year, mixed-methods study designed to examine the relationship between state-funded preK expansion (and contraction) and how it affected the quality and supply of child care.

The research was divided into three distinct areas of inquiry. In each state, we examined the policy context to learn about the nature of the preK programs and the factors that key stakeholders have experienced regarding the relationship between preK changes and child care quality and supply. Secondly we collected survey data and existing administrative data from county resource and referral agencies and from child care centers that both were and were not participating in state preK programs to explore the degree to which child care center participation in state-funded preK programs was related to the quality of child care quality, for better or worse. Thirdly, we examined survey and administrative data to determine the relationship between

changes in preK funding and preK enrollment (preK funding/enrollment) and the supply of child care. The broad research questions we addressed were as follows:

1. What **state policies, regulations and characteristics** of administration regarding preK have the potential to influence child care quality and access for low-income working families?
2. What is the relationship between child care center participation in state-funded preK and the **quality** of center-based child care?
3. What is the relationship between changes in preK funding and enrollment and the **supply** of child care?

It is important to note that this study was initially designed to examine the effects of the increase in state-funded preK services and the associated policies on the overall quality and supply of early child care services. At the point of the study's inception, state monies for early child care and education had been increasing for many years and states were planning new increases. However, through the study, states began significantly reducing their funding for preK and other early childhood services (Barnett et al., 2010; Ridley and Ganzglass 2011). In response, we added a new study question related to the relationship between declines in state funds: When states cut preK funding, do stakeholders report an associated change in child care quality and supply?

In general, we focused our research on how preK is related to child care for low-income families for two reasons. Studies show that low-income parents often face barriers to obtaining high-quality services that meet their employment or job training schedules and position their children for success in school (Long et al., 1998; Gallagher and Clifford 2000; Kagan 2001; Adams and Rohacek 2002; Besharov and Germanis 2002; Sonenstein et al., 2002). Research has shown that quality child care contributes to stable employment for low-income parents and that quality care contributes significantly to children's long-term school readiness and success (Forry et al., 2011). Low-income working parents using child care subsidies report greater employment stability than parents who do not receive subsidies, but the quality of care affects parents' workforce participation and child outcomes. Parents with lower quality child care have less employment stability (Gennetian et al., 2002); conversely, low-income children who participate in high-quality programs demonstrate higher cognitive gains, compared with their peers, reduced grade retention, and needed special education placements (Garber and Heber 1981; Lazar and

Darlington 1982; Consortium for Longitudinal Studies 1983; Berrueta-Clement et al., 1984; Reynolds et al., 2001). Moreover, a substantial body of research establishes that high-quality early childhood education can provide positive benefits for low-income children and their families(Barnett 1985; Ramey et al., 1992; Barnett 1995; Barnett 1998; Shonkoff and Phillips 2000; Reynolds et al., 2001). Studies reveal that early childhood education that offers structural indicators of quality—such as low child/staff ratios, higher teacher qualifications, use of a developmentally appropriate curriculum—and positive caregiver interactions benefit children and families (Vandell and Wolfe 2000; Fiene 2002; Layzer and Goodson 2006). Despite a well-established body of research on what constitutes quality, studies reveal that the quality of care available to low-income families varies, with substantial portions of care rated as low-quality or unacceptable (Cost Quality and Child Outcomes Study Team 1995; Peisner-Feinberg, et al., 1999; Glantz and Layzer 2000; Marshall et al., 2001; Marshall et al., 2004). Thus, many states are targeting preK to meet the needs of children in low-income families, but questions remain about the relationship between preK and child care quality and access for this target group.

Definitions

This PreK Research Project uses a number of terms that are central to the report's work and to its subsequent findings, analysis, and discussion. In particular, the project uses the term "preK" to mean state prekindergarten programs that offer structured group-based learning experiences to young children who have not yet entered kindergarten. Services in these programs are offered outside of children's own homes for a minimum of 2.5 hours per day, two days per week. These programs are financed solely or in part with public funding, and states regulate at least some aspect of the programs' early learning standards. We based this definition on existing preK programs throughout the country and on the definitions used in various states and by the National Institutes for Early Education Research (NIEER).

It is important to note that when a state's definition of preK differed from the NIEER definition, we used the state's definitions. This is very important as Ohio referred to one of its largest early education programs, called the Early Learning Initiative, as preK, but NIEER did not include this program in its list of programs in its first two years of existence. Subsequently when Ohio changed the workforce participation requirement, ELI did meet the NIEER definition and was included in the NIEER Yearbooks. The reason the program was not initially included is

that NIEER defined preK as programs that based did not exclude children based on parents' status. Nonetheless, since the state called this program preK and devoted over $100 million dollars to the initiative during a critical period of our study, we did include this in our examination of the relation between preK and child care supply.

Other definitions key to this study, see Appendix A. For a discussion of additional contributing factors of this document's definition of preK and how states are employing the term, see Appendix B.

Geographical Focus

This study focuses on early care and education settings in New York and Ohio because these two states devote substantial public funds to preK, they share a history of gubernatorial and legislative support for preK, and they allow local control over the delivery of services—leading to variations in the child care involvement in preK across communities. (For additional information about why these two states were studies, see Appendix C.)

RESEARCH QUESTIONS

This project had three distinct areas of inquiry. The first was an examination of the policies and contact features of Ohio and New York that potentially influenced preK services in each state. The second examined the relationship between changes in preK funding and enrollment and child care quality. The third explored the relationship between changes in preK funding and enrollment and the supply of child care.

Policy Context

State policy on preK funding and oversight serves to shape the context in which early learning programs develop and whether they thrive or languish. Below we present the policy questions used in this study and the methods for examining the specific policies affecting preK and child care providers in New York and Ohio. (For a discussion of the research methods and analytical approach to the data gathered on state policy, see Appendix D).

Questions

The first set of research questions was designed to gather information that would establish a policy context in each state and then determine how those policies influenced the overall availability of child care. We specifically asked the following:

1. What state policies and regulations regarding state-funded preK services have the potential to positively impact child care quality and access for low-income working families?
2. And, what promising practices and lessons have been learned in preK expansion efforts that can positively impact child care quality and access for low-income working families?

Child Care Center Characteristics and Indicators of Quality

In addition to questions of state policy, this project focused on the relationship between child care center participation in the preK program and child care characteristics as well as indicators of quality. For a description of the structural indicators, methods, and analytical approach of this study related to quality, see Appendix E.

Questions

To examine the relation between preK participation and child care quality, the study addressed the following research questions:

1. What differences exist between child care centers offering state-funded preK (preK centers) and comparison centers that did not offer state-funded preK in terms of location, affiliation, and population of children served?
2. What differences exist between preK centers and comparison centers in terms of structural indicators of quality?

Hypothesis

We made several specific hypotheses based on existing state-funded preK program characteristics: the Ohio preK programs target low-income children; the New York preK program is technically a universal program, but initial grants were made to districts with high percentages of low-income families. At the same time, some expressed concern that programs that were not targeted might lead to fewer services being offered to children in low-income families. Therefore, we had a two-tailed hypothesis. We hypothesized that more centers offering state-funded preK would be located in high-poverty neighborhoods than comparison centers, thereby leading to increased access to preK services in those high-poverty areas. At the same time, it could be that the universal program – offered in New York – might be less likely to be in high-poverty neighborhoods.

Based on evidence from previous studies (Schilder et al., 2005; Schilder et al., 2005), we also hypothesized that centers offering preK services would serve more diverse populations of students than those centers without state preK funding (comparison centers). At the same time, some had expressed concern that children of Hispanic origin and English Language Learners would be less likely to be served by preK centers. Previous research had shown lower rates of center-based participation by Hispanics and English Language Learners (Eggers-Piérola 2005).

We hypothesized that preK centers would serve higher percentages of infants and toddlers than comparison centers. Infant and toddler care is more expensive to provide—since ratios are more stringent (lower) and thus fewer parents pay toward each teachers' salary; many centers subsidize the costs of infant and toddler care with preschool revenues. We hypothesized that centers receiving preK funds would have more resources for the center and would be better

able to serve younger children. By contrast, centers not receiving preK funds would have fewer overall resources to administer services. We had been informed by some child care directors not participating in preK programs that they closed infant and toddler classrooms because they had fewer overall resources to offer such care compared with the centers participating in the preK program.

We further hypothesized that the centers offering state-funded preK services would report higher quality (as measured by structural indicators of quality) than comparison centers. This hypothesis was based on each state's preK regulations that allow child care centers to offer preK services but require these centers to abide by state quality guidelines. Since these guidelines differ, we finally hypothesized that we would find differences in quality between centers in Ohio and those in New York.

Supply

The third focus of this study was relationship between state preK funding and the available supply of child care centers, in particular on whether fluctuations in state funding for preK services were related to changes in child care supply. We initially conceptualized a study that would systematically examine changes employing a quasi-experimental design. Based on state budget projections and detailed information from child care policymakers in the selected counties, we anticipated that the states and counties in our study would be increasing funding for preK in the years of our study. However, we found that instead, state funding fluctuated, county policies changed, and data availability at the county level changed. Therefore, rather than examining the *impact* of preK expansion on child care supply, we studied the relationship between changes in preK and changes in child care supply. For a discussion of the study's methods and analytical approaches related to supply, see Appendix F.

Questions

To address questions about the supply of child care, the study obtained data from states, county child care resource and referral agencies, and from surveyed child care centers. We developed detailed research questions about the relation between preK funding and enrollment and the supply and configuration of child care services. The research questions were as follows:

1. What is the relation between preK funding and enrollment and the supply of center-based care? Are there differences in overall capacity, enrollment rates, and vacancy rates based on ages served? Are there differences based on high-poverty neighborhood?
2. What is the relation between changes in preK funding and enrollment and the supply of family child care?
3. What is the relation between preK delivery model (school-based versus child care center-based) and the supply and configuration of child care services?

Hypothesis

We hypothesized that child care centers offering state-funded preK services would demonstrate lower vacancy rates than comparison centers. We hypothesized that vacancies would differ by age group. Specifically, centers offering state-funded preK services would demonstrate lower vacancy rates for preschool-aged children but similar vacancy rates for infants and toddlers, since state preK funding in both New York and Ohio targeted preschool-aged children.

Secondly, we hypothesized that, as Ohio devoted increased funding to improve the quality of center-based child care, the supply family child care would decline. We further hypothesized that when Cuyahoga County began to implement UPK, the decline in family child care providers would be greater than in the comparison county of Franklin. In New York, we hypothesized that as preK funding and enrollment increased, we would see an increase in the supply of family child care providers but this increase would not be as strong as the increase in center-based providers. In New York, family child care providers were able to offer prekindergarten services but only a small percentage of children received prekindergarten through family child care providers (New York State Education Department 2007).

We developed separate hypotheses regarding the relationship between state preK funding and enrollment and the supply of child care centers without state funding. First, we hypothesized that we would find a positive relationship between preK funding and enrollment and the supply of center-based care in those areas where child care centers were allowed to access state preK funds. Second, we had a two-tailed hypothesis regarding the relationship between state-funded preK services offered through school-based programs and the supply of center-based care. On the one hand, in the communities with state preK funding for center-based care, we would find a positive relationship between center funding and center supply if children were receiving part-

day preK services and parents wanted additional child care. On the other hand, some providers suggest that school-based programs siphon away children from center-based centers, leading to lower enrollment and ultimately to center closings.

FINDINGS ON POLICY CONTEXTS

Policy decisions in Ohio and New York have contributed significantly to changes in those states' child care and education services. A convenience sample of stakeholders report numerous factors that they experienced that they believed affected how changes in state preK funding and enrollment affected child care quality and supply.

State-funded PreK Programs in New York and Ohio

During the last half century, New York and Ohio have seen significant changes in their policy and fiscal commitment to prekindergarten programs. The following timelines provide an overview of that change.

Table 1. Timeline: PreK Milestones in New York

1966		**Early support for pre-K.** New York establishes the Experimental Prekindergarten (EPK) program. EPK is later renamed Targeted Prekindergarten (TPK) and offers funding which supports half-day preschool, family activities, and social services.
1985–1995		**Efforts to enhance collaboration.** The state forms several state task forces and commissions to focus on meeting family needs for early care and learning including support for collaboration among Head Start, child care, and pre-K.
1997		**UPK is launched.** Legislation passes creating a 2.5 hour per day, 5-day a week universal pre-K (UPK) program for 4-year-olds (Pre-K Now 2009).
1998–1999		**Pre-K is implemented.** New York implements its new state pre-K program; approximately 18,000 children enroll in 65 school districts at a cost of $67 million. The program funds half-day preschool, family activities, and social services (Pre-K Now 2009).
2000–2004		**Pre-K expands.** Pre-K funding grows to $200 million. The program reaches about 60,000 children in 201 school districts, serving nearly 60% in non-school-based settings.
2004		**Standards change.** A legislative amendment exempts certain non-school-based pre-K providers, including child care providers, from some teacher education requirements until at least 2010 (New York State Education Department 2008).
2005		**Full-day pre-K expands.** An increase of $99 million for pre-K is proposed and $6 million is allocated to open 1,000 new, full-day pre-K spaces (Pre-K Now 2009).
2006		**UPK increases.** The legislature proposes and approves a 2006–07 state budget that includes a $50 million increase in funding for the UPK program that offers services to 4-year-olds in the state, regardless of income (New York State Education Department 2008; New York State Education Department 2009; Pre-K Now 2009).
2007		**UPK grows substantially.** Total authorized funding for UPK is $450 million in 2007–08.
2008		**UPK grows, new regulations are issued.** The legislature appropriates an increase of only $4.8 million, making the total UPK budget $450.8 million. In the same year, the state adopts new UPK regulations that emphasize the alignment of curricula and instruction with the learning standards and assessment (Pre-K Now 2009).
2009		**Funding for UPK is reduced to $375.2 million.**

Source: New York State Profile from *PreK Now* and personal communications with leaders in New York State.

Table 2. Timeline: PreK Milestones in Ohio

1990		**Early support for state-funded pre-K.** Ohio establishes the Public Preschool Program (renamed the Early Childhood Education (ECE) program) to provide partial-day, school-year education through school- and community-based programs to 3- to 4-year-olds living in low-income families (Barnett, et al., 2008; Ohio Department of Education 2008; Pre-K Now 2009). Ohio launches a state-funded Head Start initiative that provides state general revenue funds to Head Start providers to offer services to more low-income children (Pre-K Now 2009).
1990–2000		**Increases in funding.** The state offers supplemental funding to Head Starts that partner with child care to offer full-day, full-year services. By 1999, Ohio served a high percentage of low-income children through federal and state Head Start supplemental funding (Kelly and Blasko 2009).
2001		**Funding Cuts.** As the state faced budget deficits, the legislature reduced funding for Ohio Head Start by more than 12 percent (Honeck and Lovell 2004).
2003		**Changes in funding, declines in enrollment.** A shift to using Temporary Assistance for Needy Families (TANF) funds for the state Head Start supplement results in a large drop in enrollment between 2004 and 2006(Schilder et al., 2005; Pre-K Now 2009) due to TANF's more stringent eligibility requirements and a new authorization process. The new program is referred to as Ohio Head Start Plus.
2004		**Programmatic changes.** Ohio replaces state-funded Head Start with a TANF-funded Early Learning Initiative (ELI) offering full-day, full-year pre-K to 3- to 4-year-olds from families at or below 185% of federal poverty level. Schools, Head Starts, and child care providers are eligible and can subcontract with like agencies or family child care providers (Ohio Department of Education 2007; Pre-K Now 2009).
2006		**Advocates make recommendations.** The School Readiness Solutions Group (SRSG) recommends the creation of a coherent, effective system of early learning as Ohio's voluntary child care quality rating system, Step Up to Quality, expands statewide (Schilder et al., 2005; Pre-K Now 2009).
2007		**New gubernatorial support.** Governor Strickland's executive order increases the child care provider market rate and creates an Early Childhood Cabinet and director position.
2008		**Increases in funding.** Ohio's FY08–09 budget includes an additional $270 million for early care and education that allows nearly 8,000 children to have access to high-quality pre-K. **Elimination of eligibility restrictions.** The work requirement for ELI program eligibility is removed; program eligibility is assessed yearly rather than every six months (Kelly and Blasko 2009; Pre-K Now 2009; The Pew Center on the States 2009) ELI serves 13,049 children (average cost of $8,491/child) and is available in 91% of the counties.
2009		**Major cuts as a result of budget woes.** The legislature eliminates the ELI program and cuts ECE program funding by $11.5 million. Subsidy eligibility is reset at 150% of the federal poverty level; provider reimbursement rates are cut by 15%. Separate from ELI, 9,400 children are projected to lose services due to changes in child care eligibility.

Source: Ohio State Profile from *PreK Now*, personal communications with key stakeholders in Ohio, and reviews of existing documents.

PreK Authorizing Legislation and Related Regulations

New York's and Ohio's state-funded preK programs support a mixed delivery system, but the nature of the programs differ. The authorizing legislation establishing New York's UPK program creates a part-day, part-year program designed to support young children's early learning and

requires that at least a portion of services be offered through child care programs, Head Start agencies, or other community organizations, such as museums. Ohio has supported a number of different preK programs over the years, including some targeted primarily to schools, some available to child care programs, and others that supplement Head Start but require child care program participation. These programs and their differences are described below.

New York

Ever since New York pioneered state support of preschool in 1966, the state's preK authorizing legislation has focused specifically on providing young children with high-quality educational services. In 1997, the authorizing language called for a universal program and UPK was created, with state leaders planning to phase in the program so that it would eventually reach all eligible four-year-olds. High-need and larger school districts were given first priority, with the aim that the neediest children would be given initial served. Consistent with the focus on early childhood education as opposed to a focus on simply child care, the program funded part-day, part-year services through grants to school districts (New York State Legislature n.d.; Onecle n.d.).

The legislation and accompanying UPK regulations required that, if the demand for slots exceeds the supply, districts must employ a lottery to select children in order to maintain the universal aspect of the program.(New York State Education Department 2008) Some state and local leaders in New York have pointed out the challenges experienced by child care and Head Start providers in randomly selecting children to participate in preK when funding was not sufficient to fund all eligible children. How do they randomly select some children to receive a "preK" portion of the day while others in attendance denied the service? This segmentation of preK funding that is directed at some children and not others will ultimately create a fragmented system.

By contrast, part-year, school-based programs can maintain waiting lists prior to the beginning of the school year and can randomly select from the list of children to participate in the school-year-long program. Some districts in New York have attempted to meet the requirement that 10% of preK slots be in non-school-based settings, but have only school-based preK because child care and Head Start programs have not been able to randomly select children to participate in the preK option. The state allows districts to seek an exemption from the 10%

rule if districts reach out but cannot find child care centers or others to contract within their districts.

Statewide, approximately 60% of UPK classrooms have been operated by non-school-based providers, including child care centers and Head Start programs, since the program's inception (New York State Education Department 2007). This far exceeds the UPK legislation's mandate that at least 10% of the capacity be in non-school-based settings through contracts with local school districts. Currently, the percentage of preK services offered in school-based settings varies substantially within counties and districts across the state (Kolben 2010). See table above (New York State Education Department 2007).

Ohio

Ohio was an early supporter of preK funding and services. Over the past two decades, the state legislature authorized a number of preK programs designed to provide high-quality educational services to children in Ohio's lowest income families: the Ohio Head Start program, the Ohio Head Start Plus program, the Early Learning Initiative program, and the Early Childhood Education Program (ECE). Each of these programs has supported mixed delivery approaches, but in different ways and to slightly different target groups.

The legislation authorizing the Ohio Head Start program was designed to ensure all eligible children in Ohio of access to Head Start services. Similar to federal Head Start, this program provided grant funds to Head Start agencies to support high-quality comprehensive services to children living in families with incomes below the federal poverty line. Participating programs were required to follow federal regulations regarding quality of services. Unlike the federal program, this program required grantee agencies to partner with child care and other early education programs, leading to a significant increase in the number of Head Start agencies partnering with other district- and community-based providers. As a result, in 1999, Ohio's Head Start enrollment was high, and the number of Head Start programs in partnerships with child care was among the highest in the nation (Schilder et al., 2003; Honeck and Lovell 2004).

Between 2000 and 2005, several changes occurred in Ohio's preK programs. Ohio legislation created the Ohio Head Start Plus program that allowed child care and preK providers to receive grant funds directly—rather than simply as partners to a lead Head Start agency—and

at the same time expanded income eligibility to families above the 100% of poverty threshold used by the federal Head Start program.

The Ohio legislature ultimately changed the nature and name of the program when it created the Early Learning Initiative (ELI) program. With a dual goal to enhance children's school readiness and to improve parents' workforce participation, the ELI program offered full-day, full-year services and allowed a consortia of child care and early education providers to offer preK and supplementary services to low-income children (Ohio Department of Education 2008). In a departure from the previously authorized early education programs, the ELI program was jointly administered through the state Department of Education and the Department of Job and Family Services—which oversees child care subsidies and public assistance programs. Agencies providing early education services could apply for contracts, which were administered by county welfare agencies. The agencies that initially received contracts and provided services over the life of the ELI program represented the mixed market—each year between 2005 and 2009, services were provided through federal Head Start programs (50%), licensed child care centers (38%), and school districts and Education Service Centers (12%) (Ohio Department of Education 2008; Miller 2010).

PreK Standards

New York and Ohio both have specific monitoring requirements for programs receiving state-preK monies; these programs must meet state standards for program delivery, participate in regular assessments, and use valid assessments when assessing classrooms and children (New York State Education Department 2009; Ohio Department of Education 2009). Nonetheless, in both states, some standards for non-school-based providers have been less rigorous than for school-based providers. The UPK program in New York and the ECE program in Ohio have allowed teachers working in child care centers to have lower levels of education than teachers in school-based settings. In New York, teachers working in non-school-based settings must have an education plan that will lead to obtaining New York State teacher certification for Birth–Grade 2 within five years, allowing programs to meet the more rigorous standards over time; (New York State Education Department 2010) individuals seeking employment in school-based settings cannot be even considered for hire without this certificate.

Ohio and New York differ in their assessments requirements of classroom quality and child development.(New York State Education Department 2009; Ohio Department of Education 2009) Ohio's ELI program requires all providers to use the *Early Language and Literacy Classroom Observation* toolkit (ELLCO) to assess classroom quality and the *Get it, Got it, Go* assessment to measure children's language and literacy outcomes (Ohio Department of Education 2008; Miller 2010). The state uses the ELLCO results to provide tailored technical assistance to providers as part of a continuous improvement process. New York's UPK requires each participating program to select a curriculum aligned with the state's early learning standards and to regularly evaluate children using any valid assessments of their choice. Some localities have made strides in aligning assessments across settings, although this alignment is not universal.

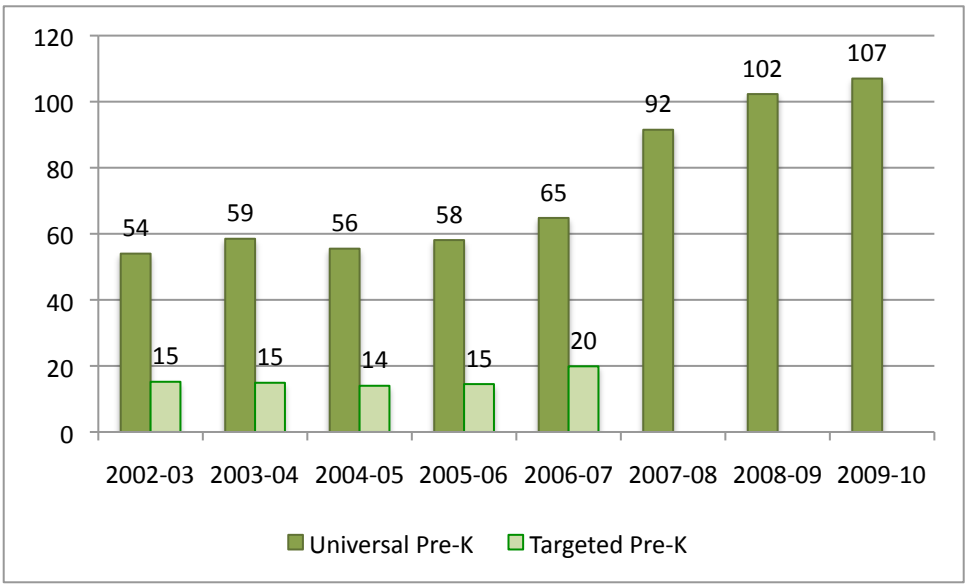
UPK Funding

New York and Ohio supported increases in state preK funding but were also affected by changes in funding related to the current recession. In New York, state funding for UPK was projected to increase in the 2010–2011 school year, but local providers reported challenges in offering preK services as school district budgets have been cut. In Ohio, state preK funding increased through 2008, but stakeholders reported that the recession resulted in lower state funding levels for preK, and local providers reported that the quality and accessibility of services were affected by these cuts.

New York

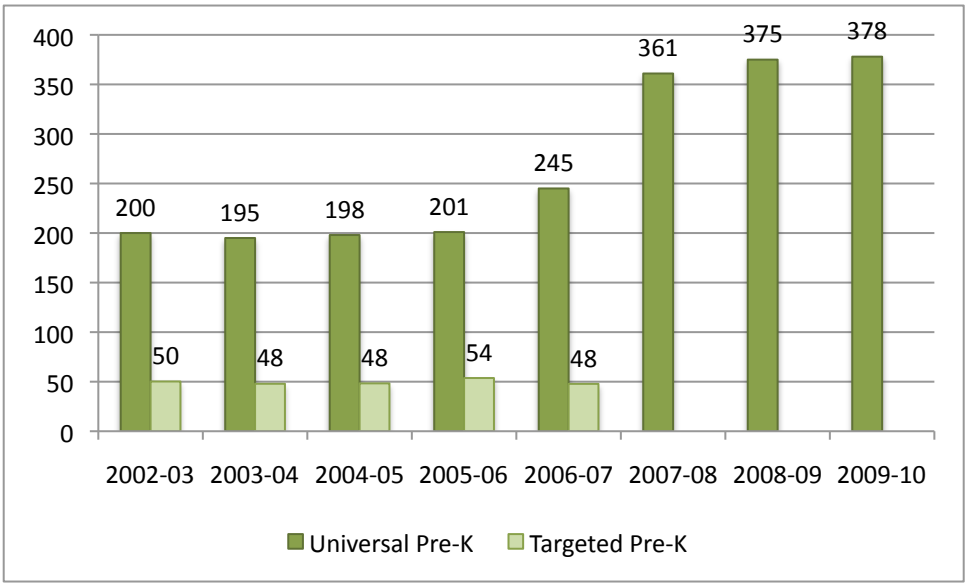
In New York funding for UPK increased steadily between 2000 and 2005 and jumped between 2006 and 2008 (see figures 1 and 2). During this period, federal funding for Head Start remained relatively constant, with between about 48,000 and 49,000 children served annually in New York (Early Childhood Learning and Knowledge Center, 2004-2010).

Figure 1. The number of children (in thousands) enrolled in Universal preK and Targeted preK in New York.



Source: 2003–2010 NIEER Yearbooks

Figure 2. The amount of funding (in millions of dollars) provided for Universal preK and Targeted preK in New York.



Source: 2003–2010 NIEER Yearbooks
Note: Targeted preK was merged into the Universal Prekindergarten program in the 2007-08 school year.

As seen in the timeline of New York's preK milestones in Table 1, a considerable expansion of preK services occurred during the 2007–2008 school year, with a large increase in funding and a shift in the funding structure (Holcomb 2006).[a] The UPK budget authorization increased in 2007 to $450 million. However, because of significant challenges related to timing (the funding became available in July of 2007 and programs had to be in place by September 1), only $354 million was spent on UPK during the 2007–2008 academic year (Pre-K Now 2009). While legislature approved subsequent increases in funding,(Pre-K Now 2009) that funding was based on the student count of previous years. What resulted was a cascading effect of lower funding, in part because of demographic fluctuations, but also because of the impractical timing requirements around the original funding and the resulting and continued under-spending of the allotted amount. The projected fiscal year 2011 allocation, based on what had been spent was only $375.2 million (Paterson and Megna n.d.).

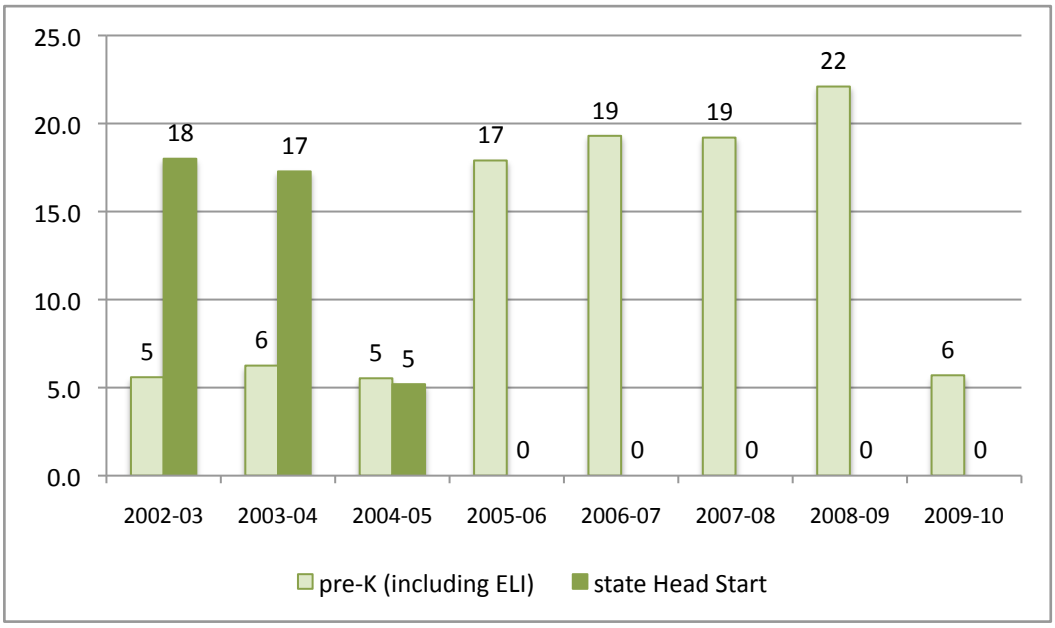
In sum, stakeholders reported that the fluctuation in state preK funding affected both school-based and non-school-based preK providers, but in different ways. Some reported that sudden increases in preK funding led to increased preK services offered through child care centers, as such organizations have flexibility to hire and enroll children more quickly than the typically larger school-based programs. However, because of their smaller size, decreased funding could threaten the very existing of some child care centers in ways that school-based centers could more easily absorb.

Ohio

For more than 20 years, Ohio governors and legislative leaders championed early childhood education. Funding and related enrollment declined when the state experienced budget deficits (See table 2 above). The past decade has been marked both by periods of strong state support for preK and by declining support and funding (see figures 3 and 4 below).

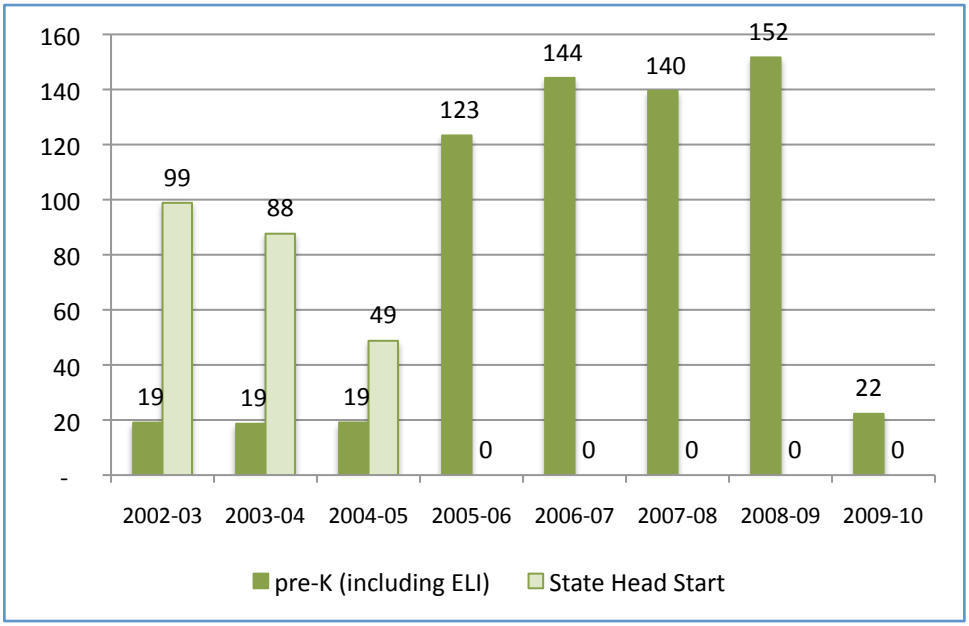
[a]UPK is still funded as a grant program, but the funding levels are now based on the new Foundation Aid Formula, an assessment of both community wealth and student need that ranges from $2,700 to $5,800 per child, Kolben, N. (2010). Executive Director, Center for Children's Initiatives, New York. Personal Communication. D. Schilder.

Figure 3. The number of children (in thousands) enrolled in preK and Head Start from in Ohio.



Sources: 2003–2010 NIEER Yearbooks, and Ohio Department of Education for ELI data.

Figure 4. State funding (in millions of dollars) for preK and Head Start in Ohio.



Sources: 2003–2010 NIEER Yearbooks, and Ohio Department of Education for ELI data.

In 2000, Ohio was considered an exemplar in providing Head Start services to most eligible children in the state, but funding and support declined over the next three years. Between 2003 and 2009, federally funded Head Start remained relatively constant, serving approximately 37,000–38,000 children in Ohio annually (Early Childhood Learning and Knowledge Center, 2004-2010).

In 2005 and 2006, and again in 2008, the state legislature, with support from the governor, expanded preK funding. According to some local stakeholders, the funding increases had an impact on the supply of child care, but the mixed-delivery approach led to substantial differences across communities.

Some early care and education leaders in Ohio reported that the design of ELI as a mixed-delivery approach eliminated the potentially negative impact of state-funded preK expansion on the supply of child care. However, others suggested that shifts and declines in state funding had a negative impact on the quality and supply of child care because smaller care facilities in particular did not have the resources they needed to absorb significant financial fluctuations.

Most recently and despite support from the governor and early childhood advocates throughout the state, the state legislature—faced with a budget deficit—voted in the summer of 2009 to eliminate the ELI and reduced funding for the ECE program by $11.5 million (Ohio Department of Education 2008). Not surprisingly, as a result of these cuts there was a sharp decline in enrollment in preK during the 2009–2010 academic year. Twelve thousand ELI slots were eliminated (The Pew Center on the States 2009), and the cuts to ECE funds resulted in the elimination of services for another 2,000 children. In an effort to ameliorate the impact on enrollment, the Ohio Department of Education reduced the per-child funding levels for ECE, with the anticipated enrollment thus reduced by only 1,400 children (Ohio Department of Education 2008).

The elimination of all ELI funding affected the child care market (Osborne-Fears 2009; Stoneburner 2009; Hare 2010). Community leaders from child care, Head Start, and school-based preK programs reported that the elimination of funding resulted in some child care providers closing their doors.

In general, child care providers throughout Ohio reported that the instability of preK funding had a negative impact on both the supply and quality of child care. They also noted that

other factors, including the reduction in the child care subsidy rates/eligibility and the recession, had a negative impact on child care quality and supply. A number of child care directors reported that they had experienced lower quality and fewer child care slots as a result of the combination of the economic recession, reductions in child care subsidies, and the elimination of ELI.

State Policy on Braided Funds

During the timeframe of this study, some preK providers in New York and Ohio were able to deliver full-day, full-year services by offering additional child care hours using child care subsidy dollars. Both states issued policy clarifications to assist preK providers that were combining funds at the point of service delivery to offer full-day, full-year services. With the ELI program, Ohio combined TANF funds with CCDF dollars for eligible families to create a full-day, full-year program; and the state regularly posted clarification in response to appeals from providers and families regarding eligibility for both child care subsidies and ELI services.[49-51] In New York, the state issued policy guidance to districts regarding child care subsidy eligibility and provided answers to questions from communities regarding braiding subsidy dollars with preK funds (Mitchell 1998; Springsteel and Cooper 2002).

Challenges Associated with Fluctuations in Funding

Stakeholders reported that substantial declines in one funding source, such as TANF, affected the quality and accessibility of services received by families from providers across the spectrum of services using that funding source. State leaders and preK providers in both states reported that changes in subsidy eligibility has also affected children's access to services, as well as the quality of services offered.

Stakeholders in Ohio reported that relying on TANF as the funding source for the ELI preK program had a negative impact on access to preK services for low-income families. In 2009 the Ohio state legislature terminated the TANF-funded ELI program because its funds were viewed as essential for cash assistance for needy families and thus channeled there. For some stakeholders, the simultaneous and substantial reduction in income eligibility for accessing child care subsidies further affected access for children and affected providers' ability to offer preK programs that had been braided with subsidy dollars to offer full-day services to low-income children (Kelly and Blasko 2009). Families whose children were no longer eligible fore subsidies

pulled their children out of preK settings, and many providers ended up with fewer children and thus funds to offer full-day quality services.

Ohio stakeholders reported that the reliance on TANF funds during the early years of the ELI program—and the concomitant need to follow TANF's stringent eligibility requirements and authorization process based on parents' workforce participation—presented child care providers with a significant challenge. These providers struggled to offer services to children who were potentially cycling in and out of eligibility. Some ELI directors reported that from month to month children's subsidy eligibility could change; this created problems for children whose educational services were disrupted, management challenges in terms of hiring the appropriate number of qualified teachers, and administrative challenges in terms of budgeting for services (Schilder et al., 2011). Early child care and education efforts that were part of a school district, however, seemed to have fared somewhat better. One superintendent of a large urban school district reported that changes in preK funding affected school-based programs, but changes—such as reductions in the number of preK classrooms—have been made on an annual basis rather than a monthly basis. She reported that decisions regarding school budgets are made annually, based on assumptions regarding revenue that will be received. She reported that child care providers can have more flexibility in adapting to changes in funding on a monthly basis—by reducing staff or services, but she surmised that because their overall budgets have been much smaller than school district budgets and the changes has affected all children attending the program, such changes could have a more dramatic overall impact (Kelly and Blasko 2009).

New York leaders (see table 2) also reported that blending child care subsidy dollars with preK funds could create challenges. For example, New York City has a policy of encouraging providers to offer full-day, full-year accessible services. Prior to 2009, for a child in full-day care that included a preK portion of the day, New York City allowed providers to access preK funds to support the quality enhancements offered during the preK portion of the day and the full-day child care subsidy. In essence, the preK dollars and the full-day care subsidy could all be used to support the same child. However, the city began reducing per child funding by subtracting preK funding from the total per child subsidy amount. As one state early care and education leader noted, "Whereas programs initially had been enriched by the receipt of UPK dollars, that is no longer the case. For the city, it's become a zero-sum game." As in Ohio, this practice affected child care providers to a greater degree than it did school-based providers because of their

smaller size and commensurately shallower funding; thus child care providers were faced with a decision of either reducing the hours of care offered to families or reducing the quality of services offered.

County Child Care Subsidy Role

According to state and local stakeholders in New York and Ohio, it is important to understand the role of county child care subsidy offices in the actual implementation of preK that is offered through child care centers (Schilder et al., 2011). During the timeframe of our study, child care subsidy policies in both states were determined at the state level, but subsidies were administered at the county level. In Ohio, with its 88 counties, one leader reported, "We have one state policy, but 88 different interpretations of that policy. If we as a state have a policy like we did during Head Start expansion to extend the eligibility period for families receiving child care subsidies, there might be 88 different interpretations of that policy. As a result, a family in one county might receive full-day, full-year services, but in another county the services might not be available as the county figures out how long the eligibility period should be."

New York policies also varied from county to county, leading to differences in the ability of child care programs to offer consistent, high-quality preK services. For example, child care providers in some counties received higher rates if they had been accredited by a national organization, so these providers simply had more money to use in improving their services. Stakeholders report that families were affected by these varying subsidy policies, since they were required to pay 10% of their incomes over the poverty level in child care subsidy copayments in one county, 35% in another, and anywhere in between in still others. In general, a family might pay substantially more for a full-day of combined preK and child care services in one county than in another or might be eligible for a subsidy in one county but not in another (Akhtar and Antos 2010). Discussing the fallout of this inconsistency, one state leader reported, "Parents are making logical decisions to move closer to work or to a more affordable residence but find that they are no longer eligible for child care or that their co-payment increases to the point that they can no longer send their children to child care. And often their children lose out on the preK portion of the day as well. This can create immense instability for the parents and for the children."

District Role in PreK

During the period of this study, the New York UPK program was administered by the state, and UPK grants were awarded directly to school districts. Ohio's ECE program was directly administered by school districts. In both states, districts had a role in determining the relative priorities of the preK program.

Some districts made full access a priority and therefore encouraged child care providers to braid preK funds with CCDF subsidies. Other districts focused on assessment, curriculum, or professional development for teachers and encouraged providers to use their state preK resources in these areas. Because the priorities of the school district influenced the quality of preK services and the supply of preK funds for child care and Head Start programs, children could receive very different levels and kinds of services simply by moving from one school district's boundaries into another—dual language services and support here, and none there, for example. Stakeholders reported that as a result of county, district, and community variability, the supply of high-quality, accessible preK services for children and families differed from community to community.

FINDINGS ON PROGRAM CHARACTERSITICS AND THE CHILDREN IN ATTENDANCE

Stakeholders in both New York and Ohio experienced a number of factors that affected how changes in preK influenced the quality of child care. This section of the report presents findings from an analysis of the quantitative survey data from a sample of child care centers that offered state-funded preK services and from comparison centers that did not offer such services. (For a discussion of the strengths and limitations of the research design on quality, as well as statistical analyses and tables related to quality, see appendix E.) It is important for readers to be aware that the findings are descriptive in nature. We are not implying that prekindergarten *caused* changes in quality. Nonetheless, these descriptive findings can inform future policy decisions and lay the groundwork for future experimental research that could determine if the correlations we have found are indeed causal in nature.

Description of Centers in the Sample

In both Ohio and New York, preK centers were more likely than comparison centers to be located in high-poverty neighborhoods. Thus, our analysis revealed that there was no evidence to support the concern that prekindergarten services would not be accessible to children in low-income families.

In Wave 1 in Ohio, 80% of preK programs and 60% of comparison centers participated in the USDA Food and Nutrition Program. In Wave 2, 100% of preK and comparison centers in Ohio participated in the USDA Food and Nutrition Program. In the New York sample, 70% of preK programs participated in USDA Food and Nutrition Program in Wave 1 and 60% in Wave 2, compared to 70% of comparison programs in Wave 1 and 30% of comparison programs in wave 2.

More details about the characteristics of the centers in the sample in terms of religious affiliation, non-profit status, and school affiliation can be found in Appendix E.

Access to PreK Services

In terms of hours of service, the ELI program in Ohio offered as many as 10 hours per day, 5 days per week, year-round. By contrast, the UPK program in New York offered services for

between 2.5 and 5 hours per day, 5 days per week during the school year. While we had hypothesized that the hours per day, days per week, and weeks per year of children's preK attendance would be related to each state's preK policies, our analysis revealed that in both states, the average number of days per week children received preK services was approximately 5. The exact number of hours per day that children received preK services did differ across states. In Ohio, children received preK services for approximately 8 hours across both waves, whereas in New York children attended about 5 hours per day.

Distribution of Children in Attendance by Age

We found that in Ohio across both waves there were no significant differences between preK and comparison centers in the percentage of infants in attendance in wave 1, although preK centers served significantly higher percentages of infants in wave 2. We found that preK centers served a higher percentage of toddlers and these percentages were significant across both waves. We also found that preK centers served a lower percentage of preschool-aged children than comparison centers across both waves.

In New York, we found that in wave 1 the percentage of infants in attendance in preK centers was significantly lower at than the percentages at comparison centers, although no such differences were reported for wave 2. PreK centers served lower percentages of toddlers across both waves, and preK centers served higher percentages of preschool-aged children in wave 1 but not in wave 2.

We found that in Ohio, toddlers and preschoolers attending preK centers were more likely to attend full-time than children at comparison centers, although similar percentages of infants attended preK centers full-time as those attending comparison centers. Differences for toddlers and preschoolers were significant across both waves.

In New York, despite the small sample size, we found that both toddlers and preschoolers were more likely to attend preK centers full-time than those in attendance at comparison centers.

Characteristics of Children in Attendance

In both states and across both waves of data collection, children attending preK centers were more racially and ethnically diverse and were more likely to come from low-income families than children attending comparison centers. However, they were no more likely to be from families whose primary language is not English.

Children in Attendance by Race/Ethnicity

In both waves and in both states, PreK centers served more diverse populations of students. In Ohio, preK centers served higher percentages of African American, Hispanic, and multiracial children and lower percentages of Caucasian children than comparison centers in both waves.

Descriptive statistical analysis reveals apparent differences in New York but differences were not consistently significant in wave 2. PreK centers served significantly higher percentages of African American children in wave 1, but in wave 2 differences were not significant. PreK centers served significantly fewer Caucasian children, but, again, differences were not significant in wave 2. And in wave 1 preK centers served significantly fewer Asian children than comparison centers; and they served fewer multiracial children, however, these differences were not reported in wave 2.

Percent of Children from Families Whose Primary Language Is Not English

The percent of children in attendance from families whose primary language was not English was higher in preK centers than in comparison centers, but not significantly higher across states and waves.

Percent of Children from Low-Income Families

The percent of children in attendance from low-income families was significantly higher in preK centers than in comparison centers across states and waves.

Health and Developmental Screenings and Referrals

When compared to child care centers that were not offering preK, preK centers in Ohio were significantly more likely to refer children to free health and development screenings, such as vision, hearing, and developmental delay screenings. In New York, nearly all of the surveyed centers provided referrals to children in both waves; preK centers were no more likely to offer health and developmental screenings and referrals.

Standard Curriculum

PreK centers were more likely to use a standard curriculum than comparison centers across both Waves in both states.

Accreditation Status

Accreditation status differed by state and wave. In Ohio, preK centers were not more likely to be accredited by the National Association for the Education of Young Children (NAEYC) than comparisons, but they were more likely to report seeking accreditation. In New York, descriptive analyses revealed that higher percentages of preK centers in our sample were accredited but similar percentages of centers were seeking accreditation.

Teaching Staff[b]

Racial Diversity

Teachers at preK centers were more racially and ethnically diverse than at comparison centers, but were not as diverse as the students attending the centers. In Ohio, significantly higher percentages of teachers were African American in preK centers than in comparison centers across both waves; and significantly lower percentages of teachers were White/Caucasian in preK centers than in comparison centers across both waves. In New York, the percentage of White/Caucasian teachers at preK centers was lower than at comparison centers in wave 1; there was a nearly significant difference in the percentage of African American teachers in wave 1, although no significant differences were reported for New York for wave 2.

Salaries

In both Ohio and New York teachers at preK centers were significantly more likely than teachers at comparison centers to earn more than $15,000 per year. In Ohio teachers at preK centers with only a high school degree were as likely as similarly educated teachers at comparison centers to earn over $15,000 per year. Teachers with more education than a high school degree working at preK centers were significantly more likely than their similarly educated counterparts at comparison centers to earn over $15,000 per year. In New York, the sample size was too small to enable analysis of salary based on teachers' level of education but significantly more teachers overall at preK centers earned over $15,000 compared with teachers at comparison centers.

[b] Our study focused on lead teachers – those responsible for a classroom and did not include data on assistant teachers.

Credentials

In Ohio, significantly more preschool teachers had a CDA (Child Development Associate credential) in preK centers than comparison centers in wave 2, but differences in wave 1 were only nearly significant. Yet, teachers at comparison centers were actually more likely to be certified in wave 2.

In New York, significantly more preschool teachers at preK centers were certified in Wave 1 but the differences were not significant in wave 2. Differences in percentages of preschool teachers with a CDA were not significant in wave 1 but were significant (p=.05) in wave 2.

Education of Teachers[c]

In Ohio across both waves, preschool teachers at comparison centers were significantly more likely to have a bachelor's degree than preschool teachers at preK centers. In New York, none of the differences were statistically significant across either wave of data collection.

We compared the education levels of preschool teachers with those of infant and toddler teachers. Some national child care and preK experts had expressed concerns that preK programs that required teachers to have higher levels of education could lead to an unintended consequence of moving more highly educated teachers from infant and toddler classrooms into preschool classrooms. Our study design did not enable us to track movement of teachers. But we were able to collect descriptive data to inform the levels of education of teachers across age groups.

In New York, no significant differences were found in the percentage of infant, toddler, and preschool teachers at preK and comparison centers who were certified. However, there was a nearly significant effect of preK status on the percentage of teachers with CDAs in wave 1. Higher percentages of infant and toddler teachers at both comparison and preK centers had a CDA than preschool teachers. In wave 2, for example, 42 percent of infant teachers and 40 percent of toddler teachers had a CDA, compared with 26 percent of preschool teachers. Moreover, higher percentages of preschool teachers had bachelor's degrees. In wave 1, for example, 29 percent of infant teachers, 26 percent of toddler teachers, and 51 percent of preschool teachers had a bachelor's degree or higher. However, there were no differences in the

[c] Our study focused on lead teachers – those responsible for the classroom. We did not collect data on assistant teachers.

percentages of teachers with a bachelor's degree or higher based on the preK status of the centers.

Teacher Training

Significantly higher percentages of teachers at preK centers participated in specific types of teacher training when compared with the comparison centers in both states and across both waves of data collection.

Ohio

In Ohio across both waves, significantly higher percentages of teachers attended child development training in wave 1; wave 2 differences were not significant. Significantly higher percentages of teachers attended literacy training in both waves. Significantly higher percentages attended CPR; wave 2 differences were not significant. Significantly higher percentages attended CDA training across both waves. Significantly higher percentages attended workshops in wave 1; but Wave 2 differences were not significant. No differences were reported in the percentage of teachers attending college in wave 1; but in wave 2, significantly more teachers at preK centers attended college.

New York

In New York, significant differences were reported in the percentage of teachers who attended Literacy Training in wave 1; and nearly significant differences were reported in wave 2. Significant differences were reported in the percentage of teachers who attended CPR in wave 1; but differences were not significant for Wave 2. And nearly significant differences were reported in the percentage of teachers who attended distance training in wave 2, with higher percentages of comparison teachers attending distance training.

Assets

PreK centers reported significantly more assets than comparison centers in Ohio across both waves ($p<.001$). In New York descriptive statistical analysis revealed higher assets across both waves, but inferential analysis revealed the differences were statistically significant only for wave 1 ($p=.005$).

Child Care Directors

In Ohio, child care center directors at preK and comparison centers reported similar characteristics in terms of credentials, years in the early childhood field, and duration of employment at the center. Across both waves of data collection and across both types of centers, slightly more than 40 percent of directors had an early childhood credential, the average duration as center director was about seven years, and the average number of years in the early childhood field was about 17. (See Appendix E for detailed tables.)

Discussion

We found that in both states and across both waves, preK centers reported some aspects of structural quality that were not present in comparison centers. In both Ohio and New York, preK centers were more likely to use a structured curriculum than were comparison centers. Moreover, teachers were more likely to receive training, especially in literacy in both states. PreK Centers in Ohio reported significantly more assets than comparison centers. In New York, descriptive analysis revealed that preK centers appeared to employ more educated teachers but inferential analysis revealed that these differences were not statistically significant. One important consideration is that New York regulations required that one individual in the center have at least a bachelor's degree whereas in Ohio, the education requirements were linked to the preschool teachers.

We did find that in both states, preK centers were more likely to be located in high-poverty neighborhoods. Thus, questions about whether increases in preK would lead to fewer quality services for children living in high-poverty neighborhoods appears unwarranted. We did find that in Wave 2, as more comparison centers changed status and began to offer preK services the distribution of preK centers shifted with more preK centers in non-poor neighborhoods.

Because of our study design, we were unable to determine any causal relationship between preK funding and quality, but our analysis reveals that there does appear to be a difference in quality between centers that are offering preK and those that are not offering state-funded preK. Moreover, at least with regard to referrals, the differences appear to be related to state preK policies.

Our findings lead us to a number of questions for future research. Does preK funding make a difference in quality over time? Or, do higher quality centers opt into state preK

programs? Our findings regarding teacher characteristics and location of preK centers during the second wave of our study lead us to question whether centers that begin to offer preK differ in terms of overall characteristics and quality indicators from those that have been offering such services for a longer period of time.

Moreover, the study leads to questions about the relationship between preK funding, child care subsidy changes and changes in county and district policies and conditions. Do centers that blend child care subsidies with preK funds have more resources to offer improved quality or does instability in funding streams affect quality?

We did not track individual teachers and classrooms in our study, and yet we did hear during our data collection that some child care centers began offering preK by focusing on a single classroom but over time expanded services to more classrooms and more children. This leads us to question whether the number of children participating within a given center is related to quality indicators. Moreover, we wonder if centers move resources across classrooms within a program day or during the week. We recommend that future research focus on addressing these important questions.

FINDINGS ON PREK FUNDING AND ENROLLMENT AND CHILD CARE SUPPLY

Changes in Supply of Child Care

We rejected many of the hypotheses regarding the negative associations between preK expansion and child care supply. Our correlational findings lead us to important considerations for future research on the relationship between changes in preK and child care supply. We summarize the key findings below. Appendix F provides detailed information about our methodological approach.

Child Care Supply in New York

We found a strong positive relationship between New York's preK funding and child care capacity between the 2007-08 and 2009-10 academic years. We also examined funding devoted specifically to community-based organizations—child care centers, Head Start programs, nursery schools and other providers. We found a very strong relationship between preK funding and center capacity. This is consistent with our hypothesis that as preK funding increases, child care center capacity increases.

We found a positive relationship between New York's preK funding and family child care capacity. While the relationship was significant, it was not as strong as the relationship between preK funding and child care center capacity. This is consistent with our hypothesis since family child care providers can offer preK but the number is substantially lower than the number of centers offering preK.

We rejected our hypothesis that there would be a negative association between school-based preK funding and child care capacity. We found a positive association between dollars spent on school-based preK and child care center capacity. We found no association between school-based preK funding and family child care capacity.

Child Care Center Supply in Ohio

We found a significant positive relationship between Ohio's preK funding and child care capacity in the 2002-03 and 2009-10 academic years. We also examined the period before and after preK funding increases. We found that child care center capacity was significantly higher in the period of funding increases than during the baseline years.

Our descriptive analysis revealed that between the 2005-06 and 2009-10 academic years, Cuyahoga County (a county with universal preK) experienced an increase in child care center capacity. In contrast, the number in Franklin County (comparison county) remained relatively flat.

Family Child Care

Between 2005-06 and 2009-10, Cuyahoga County experienced a large decrease in the number of family child care providers. By contrast, in Franklin County the number decreased slightly between the 2005-06 and 2007-08 academic years but remained relatively stable between 2008-09 and 2009-10.

Between 2005-06 and 2009-10, Cuyahoga County experienced increases in the proportion of family child care providers who were certified. By contrast, in Franklin County the proportion of family child care providers who were certified remained relatively stable.

The proportion of certified providers in Cuyahoga County remained flat prior to UPK but increased dramatically after implementation of UPK. The proportion of certified providers increased steadily between 2005-06 and 2009-10.

Care for children of differing ages in Ohio

We rejected our hypothesis that preK expansion would be negatively associated with capacity of care, especially for infants and toddlers. Instead, we found a significant positive relationship between infant, toddler, and preschool capacity and state preK funding and a significant positive relationship between infant, toddler, and preschool enrollment. We also found that

Care in high-poverty neighborhoods

We found no significant difference in child care center capacity over time based on location. After funding declines, there is no significant difference in capacity between pre-K and comparison centers.

Discussion

It is important that these descriptive correlational findings be viewed with caution. Our correlational analysis revealed that preK expansion does not appear to be related to reductions in child care capacity for preschoolers, nor does it appear to be negatively related to capacity of

infant or toddler center-based care. As well, preK expansion does not appear to be negatively related to child care capacity available to low-income families. Finally, declines in preK funding alone do not appear to be related to an immediate decline in child care capacity.

These findings raise a number of questions: Is there a lag in declines in preK funding and child care center capacity? Within centers, is there a reconfiguration of capacity as preK funding increases? Do increases in preK funding—which effectively offer families free care for a portion of the day—lead to increases in parents' workforce participation, ultimately leading to an increased demand for care of younger children?

In recent years a number of important studies have examined continuity of care for particular target groups of children or using specific funding streams. Questions have been raised about how programs interact to impact the overall supply of early care and education (Gomby et al., 2004; Mitchell and Stoney 2006; Ewen and Matthews 2007; Ewen 2009; Mitchell and Stoney 2009; Kreader 2011; Ridley and Ganzglass 2011; Tvedt 2011). Our study leads us to consider important methodological issues for future research on the supply of child care. Our understanding of factors that influence the supply of early care and education could benefit from future studies that go beyond research on a singles auspice of care—such as child care centers, or one specific funding stream, such as preK funds and that examine the dynamic nature and interactions among policies and funding. Goodson and colleagues have recently suggested that employing an epidemiological approach in which all providers are mapped and all assets are considered could benefit the field. We recommend that future research focus on addressing these important questions.

REFERENCES

Adams, G. and M. Rohacek (2002). "More than a work support? Issues around integrating child development goals into the child care subsidy system." Early Childhood Research Quarterly **17**: 418-440.

Akhtar, S. and S. Antos. (2010). "Mending the patchwork." Retrieved September 24, 2010, 2010, from http://www.empirejustice.org/assets/pdf/publications/reports/mending-the-patchwork-1.pdf.

Barnett, W. S. (1985). "Benefit-cost analysis of Perry Preschool program and its policy implications." Educational Evaluation and Policy Analysis **7**: 333-342.

Barnett, W. S. (1995). "Long-term effects of early childhood programs on cognitive and school outcomes." The Future of Children **5**(3): 25-50.

Barnett, W. S. (1998). Long-term effects on cognitive development and school success. Early care and education for children in poverty: Promises, programs, and long-terms results. W. S. Barnett and S. S. Boocock. New York, NY, State University of New York Press**:** 11-44.

Barnett, W. S. et al. (2010). The state of preschool 2010: State preschool yearbook. New Brunswick, NJ, National Institute for Early Education Research.

Barnett, W. S. et al. (2008). The state of preschool 2008: State preschool yearbook. New Brunswick, NJ, National Institute for Early Education Research.

Barnett, W. S. et al. (2005). The effects of state prekindergarten programs on young children's school readiness in five states. New Brunswick, NJ, National Institute for Early Education Research.

Bellm, D. et al. (2002). Inside the pre-K classroom: A study of staffing and stability in state-funded prekindergarten programs. Washington, DC, Center for the Child Care Workforce.

Berrueta-Clement, J. R., et al. (1984). Changed lives: The effects of the Perry Preschool program on youths through age 19. Ypsilanti, MI, High/Scope Press.

Besharov, D. J. and P. Germanis (2002). Chapter 1: Introduction. Family well-being after welfare reform. D. J. Besharov. College Park, MD, University of Maryland.

Bryk, A. S. and S. W. Raudenbush (1992). Hierarchical linear models: Applications and data analysis methods. Newbury Park, CA, Sage.

Committee on Early Childhood, Adoption, et al. (2005). "Quality early education and child care from birth to kindergarten." Pediatrics **115**(1): 187-191.

Consortium for Longitudinal Studies (1983). As the twig is bent: Lasting effects of preschool programs. Hillsdale, NJ, Lawrence Erlbaum Associates.

Cost Quality and Child Outcomes Study Team (1995). Cost, quality, and child outcomes in child care centers. Denver, CO, University of Colorado at Denver.

Eggers-Piérola, C. (2005). Connections and commitments: Reflecting Latino values in early childhood programs. Portsmouth, NH, Heinemann.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2004*. n.d. [cited 2010 November 10]; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/HeadStartProgra.htm.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2005*. n.d. [cited 2010 November 10]; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/AHeadStartProgr.htm.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2006*. n.d.; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/bHeadStartProgr.htm.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2007*. n.d. [cited 2010 November 10]; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/cHeadStartProgr.htm.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2008*. n.d.; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/dHeadStartProgr.htm.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2009*. n.d.; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/eHeadStartProgr.htm.

Early Childhood Learning and Knowledge Center. *Head Start Program Fact Sheet Fiscal Year 2010*. n.d.; Available from: http://eclkc.ohs.acf.hhs.gov/hslc/About%20Head%20Start/fHeadStartProgr.htm.

Ewen, D. (2009). Director of Child Care and Early Education, Center for Law and Social Policy, Washington, DC. Personal Communication. D. Schilder.

Ewen, D. and H. Matthews (2007). Title I and early childhood programs: A look at investments in the NCLB era. Washington, DC, Center for Law and Social Policy.

Fiene, R. (2002). 13 Indicators of quality child care: Research update. Washington, DC, U.S. Department of Health and Human Services.

Forry, N., R. et al. (2011). Linking home-based child care and state-funded preschool: The Community Connections Preschool Program (Illinois Action for Children). Evaluation phase 1--Implementation Study. New York, NY, National Center for Children in Poverty.

Gallagher, J. and R. Clifford (2000). The missing support infrastructure in early childhood. Early Childhood Research & Practice. **2**.

Garber, H. L. and R. Heber (1981). The efficacy of early intervention with family rehabilitation. Psychosocial influences in retarded performance: Vol. 2. Strategies for improving competence. M. Begab, H. Garber and H. C. Haywood. Baltimore, MD, University Park Press**:** 71-88.

Garcia, E. E. and D. M. Gonzales (2006). Pre-K and Latinos: The foundation for America's future. Washington, DC, Pre-K Now.

Gennetian, L. A. et al. (2002). Making child care choices: How welfare and work policies influence parents' decisions. New York, NY, MDRC.

Glantz, F. B. and J. Layzer (2000). The Cost, Quality and Child Outcomes Study: A critique. Cambridge, MA, Abt Associates.

Gomby, D. S. et al. (2004). Building an early childhood system for Cuyahoga County. Cleveland, OH, Invest in Children.

Greenberg, M. and R. Schumacher (2003). Financing universal pre-kindergarten: Possibilites and technical issues for states in using funds under the Child Care and Development Fund and Temporary Assistance for Needy Families block grant. Washington, DC, Center for Law and Social Policy.

Hare, T. (2010). Chief of Ohio Department of Job and Family Services. Personal Communication. D. Schilder.

Hicks, S. A. et al. (1999). Promising practices: New York State universal prekindergarten. Ithaca, NY, The Cornell Early Childhood Program.

Hinkle, D. (2000). School involvement in early childhood. Washington, DC, U.S. Department of Education, Office of Educational Research and Improvement, National Institute on Early Childhood Development and Education.

Holcomb, B. (2006). A diverse system delivers for pre-K: Lessons learned in New York state. Washington, DC, Pre-K Now.

Honeck, J. and V. Lovell (2004). Staying employed: Trends in Medicaid, child care, and Head Start in Ohio. Cleveland, OH, Institute for Women's Policy Research.

Huberman, A. M. and M. Miles (1998). Data management and analysis methods. Collecting and interpreting qualitative materials. N. Denzin and Y. Lincoln. Thousand Oaks, CA, Sage**:** 428-445.

Kagan, S. L. (2001). "Giving America's young children a better start: A change brief." Retrieved August 1, 2003, from http://www.ecs.org/clearinghouse/25/51/2551.htm.

Kelly, K. and S. Blasko (2009). Early care and education funding in Ohio. State Budgeting Matters. Clevland, OH, The Center for Community Solutions. **5**.

Kiron, E. (2003). Blending early care and education funds: Issues, opportunities, and strategies. Newton, MA, Education Development Center.

Kolben, N. (2010). Executive Director, Center for Children's Initiatives, New York. Personal Communication. D. Schilder.

Kreader, J. L. (2011). Director of Research Connections, National Center for Children in Poverty. Personal Communication.

Layzer, J. I. and B. D. Goodson (2006). "The "quality" of early care and education settings: Definitional and measurement issues." Evaluation Review **30**(5): 556-576.

Lazar, I. and R. Darlington (1982). "Lasting effects of early education: A report from the Consortium for Longitudinal Studies." Monographs of the Society for Research in Child Development **47**(2-3, Serial No. 195).

Long, S. K. et al. (1998). Child care assistance under welfare reform: Early responses by the states. Washington, DC, Urban Institute.

Marshall, N. L. et al. (2001). The cost and quality of full day, year-round early care and education in Massachusetts: Preschool classrooms. Wellesley, MA, Wellesley Centers for Women and Abt Associates.

Marshall, N. L. et al. (2004). The cost and quality of full-day year-round early care and education in Massachusetts: Infant and toddler classrooms. Wellesley, MA, Center for Research on Women.

Miles, M. and A. Huberman (1994). An expanded sourcebook: Qualitative data analysis. Thousand Oaks, CA, Sage.

Miller, S. (2010). Director, Office of Early Learning and School Readiness at Ohio Department of Education. Personal Communication. D. Schilder.

Mitchell, A. (1998). Implementing universal prekindergarten in New York: Blended funding and other financial considerations. Climax, NY, Early Childhood Policy Research.

Mitchell, A. (1998). Implementing universal prekindergarten in New York: Blended funding and other financial considerations. Climax, NY, Early Childhood Policy Research.

Mitchell, A. (2001). Prekindergarten programs in the states: Trends and issues. Climax, NY, Early Childhood Policy Research.

Mitchell, A. and L. Stoney (2006). Financing early childhood care and education systems in the states: A standards-based approach, Alliance for Early Childhood Finance.

Mitchell, A. and L. Stoney (2009). Maximizing resources from the Stimulus Package: Possible strategies for funding quality rating and improvement systems, Alliance for Early Childhood Finance.

New York State Education Department. (2007). "New York State Education Department Web site." Retrieved June 27, 2007, from http://www.nysed.gov/.

New York State Education Department (2008). Amendment of the regulations of the commissioner of education. Albany, NY, Author.

New York State Education Department (2008). UPK regulations. Albany, NY, Author.

New York State Education Department (2009). New York State Education Department universal prekindergarten. Albany, NY, Author.

New York State Education Department. (2010, September 10, 2010). "Questions and Answers, Including Mid-Year Programs." Retrieved November 10, 2010, from http://www.p12.nysed.gov/upk/faq.html.

New York State Legislature. (n.d.). "Laws of New York." Retrieved September 24, 2010, from http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=$$EDN3641$$@TXEDN03641+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=04977285+&TARGET=VIEW.

Ohio Department of Education. (2007). "Early learning initiative program report: State fiscal year 2007." Retrieved June 1, 2009, from http://education.ohio.gov/GD/Templates/Pages/ODE/ODEDetail.aspx?page=3&TopicRelationID=466&ContentID=393&Content=62521.

Ohio Department of Education. (2008). "Early childhood education." Retrieved January 8, 2010, from http://www.ode.state.oh.us/GD/DocumentManagement/DocumentDownload.aspx?DocumentID=47166.

Ohio Department of Education. (2008). "Early learning initiative program report." Retrieved June 1, 2009, from http://education.ohio.gov/GD/Templates/Pages/ODE/ODEDetail.aspx?page=3&TopicRelationID=466&ContentID=393&Content=62521.

Ohio Department of Education. (2009). "Early learning initiative program details." Retrieved January 7, 2010, from http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEDetail.aspx?page=3&TopicRelationID=466&ContentID=4996&Content=62518.

Onecle. (n.d.). "New York education - Part 1 - § 3602-E Universal Prekindergarten program." Retrieved September 28, 2010, from http://law.onecle.com/new-york/education/EDN03602-E_3602-E.html.

Osborne-Fears, B. (2009). Director, Starting Point, Cleveland, OH. Personal Communication. D. Schilder.

Paterson, D. A. and R. L. Megna (n.d.). 2010-11 Executive budget: Briefing book. Albany, NY, New York State Education Department.

Peisner-Feinberg, E. S. et al. (1999). The children of the Cost, Quality, and Outcomes Study go to school. Chapel Hill, NC, FPG Child Development Center.

Pre-K Now. (2009). "State profiles: New York." Retrieved December 15, 2009, from http://www.preknow.org/resource/profiles/newyork.cfm.

Pre-K Now. (2009). "State profiles: Ohio." Retrieved December 15, 2009, from http://www.preknow.org/resource/profiles/ohio.cfm.

Ramey, C. T. et al. (1992). "The Infant Health and Development Program for low birthweight, premature infants: Program elements, family participation, and child intelligence." Pediatrics **3**: 454-465.

Raudenbush, S. W. et al. (2000). HLM5: Hierarchical linear and nonlinear modeling. Lincolnwood, IL, Scientific Software International.

Reynolds, A. J. et al. (2001). "Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools." Journal of the American Medical Association **285**(18): 2339-2346.

Ridley, N. and E. Ganzglass (2011). Responding to the Great Recession: How the Recovery Act boosted training and innovation in three states. Washington, DC, Center for Law and Social Policy.

Schilder, D. et al. (2005). Child Care/Head Start Partnership Study: Final report. Newton, MA, Education Development Center.

Schilder, D. et al.(2005b). Ohio Head Start Plus Study: Final report. Newton, MA, Education Development Center.

Schilder, D. et al. (2011). Perspectives on the impact of pre-K expansion: Factors to consider and lessons from New York and Ohio. Preschool Policy Brief. E. C. Frede and W. S. Barnett. New Brunswick, NJ, National Institute for Early Education Research.

Schilder, D. et al.(2003). Early care and education partnerships: State actions and local lessons. Newton, MA, Education Development Center.

Schumacher, R. (2007). Senior Fellow for Child Care and Early Education Policy, Center for Law and Social Policy. Personal Communication.

Schumacher, R. et al. (2005). All together now: State experiences in using community-based child care to provide pre-kindergarten. Child Care and Early Education Series. Washington, DC, Center for Law and Social Policy.

Schumacher, R. et al. (2001). State initiatives to promote early learning: Next steps in coordinating subsidized child care, Head Start, and state prekindergarten. Washington, DC, Center for Law and Social Policy.

Schumacher, R. et al. (2007). Making pre-kindergarten work for low-income working families. Child care and education series. Washington, DC, Center for Law and Social Policy.

Shonkoff, J. P. and D. A. Phillips, Eds. (2000). From neurons to neighborhoods: The science of early childhood development. Washington, DC, National Academies Press.

Sonenstein, F. L. et al. (2002). "Primary child care arrangements of employed parents: Findings from the 1999 National Survey of America's Families." Retrieved February 25, 2003, from http://www.urban.org/UploadedPDF/310487_OP59.pdf.

Springsteel, A. and A. Cooper (2002). New York City Universal Prekindergarten frequently asked questions. New York, NY, The Early Childhood Strategic Group.

Stebbins, H. and L. C. Scott (2007). Better outcomes for all: Promoting partnerships between Head Start and pre-K. Washington, DC, Pre-K Now & the Center for Law and Social Policy.

Stoneburner, C. (2009). Executive Director, Ohio Child Care Resource & Referral Association, Columbus, OH. Personal Communication. D. Schilder.

The Pew Center on the States. (2009). "Pew report: Ohio lawmakers commitment to high-quality pre-k is derailed." Retrieved January 12, 2010, from http://www.preknow.org/resource/votescount/press/VC_FY10_OH_release.pdf.

Tvedt, K. (2011). Partner, Christian & Tvedt Consulting LLP. Personal Communucation.

U.S. General Accounting Office (2004). Prekindergarten: Four selected states expanded access by relying on schools and existing providers of early education and care to provide services. Washington, DC, Author.

Vandell, D. L. and B. Wolfe (2000). Child care quality: Does it matter and does it need to be improved? Washington, DC, U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

Wat, A. (2007). Dollars and sense: A review of economic analyses of pre-K. Washington, DC, Pre-K Now.

Zaslow, M., Martinez-Beck, I. (Eds) (2005) *Critical issues in early childhood professional development*. Baltimore: Brookes.

APPENDIX A

Child Care

Child care refers to full-day care for children, away from their family homes and that typically accessed so that parents can work or go to school.

Child Care Center

A child care center is a licensed program that is listed with a county resource and referral agencies, has an operating telephone number, has a valid mailing address, and follows state regulations regarding minimum health and safety standards.

State-specific Definitions of Child Care Centers

In Ohio, child care centers are defined as those programs that provide care for a group of children, meet state licensing requirements, and are included in the R&R lists. Only the Head Start and school-based programs that offer child care are licensed by the state and are included in the R&R lists.

In New York, the definition of a child care center is broader and includes those programs that provide care for a group of children for more than three hours per day; that are based in a location that is not a personal residence; and that meet state licensing regulations for facility, health, safety, staffing, and educational program. The R&Rs in New York include licensed nursery schools[d] in their databases (although licensing is not a requirement for these schools). Those nursery schools that are licensed are thus included in this study.

Full-time Services

Different states define full-day care differently, as reflected in the two states discussed in this study: in New York, five hours is considered full day; in Ohio, ten hours.

[d] Nursery schools in New York are defined as educational and social programs that provide care for three to five year olds for less than three hours per day, two to five times per week; they often follow a school-year schedule. Licensing for them is optional Preschools that operate more than three hours a day are required to become licensed through the NYS Office of Children and Family Services. Preschools operated by public or private schools are exempt from licensing. Thus, the term child care center in New York refers to programs that are licensed but could include nursery school, Head Start programs, or preK programs that have obtained child care licensing.

Universal PreK

"Universal preK (UPK) refers to programs that are universally available to all parents and that provides them with the opportunity to have their children participate in a high-quality learning experience.[e] Many states and some communities have authorized legislation that creates programs called universal preK. In some instances, these programs are not funded at levels to actually provide access to services for all families. In other words, the law creating the program states that the services will be available to all, but the budget does not support services for all families. In such cases, some states offer the services in selected communities and others begin by targeting the most needy children based on income or other eligibility criteria. Thus, although the term UPK technically implies that services will be universally available, in reality many states that have adopted UPK programs are not providing the services universally, especially at the early stages of program implementation.

Mixed-delivery system

A mixed-delivery system related to state-funded preK services is a policy determination in a state that allows preK funding to be available to any child care or education entity, public or private, that is able to fulfill certain state-determined requirements for teacher quality, curriculum and instruction, and general services and oversight.

[e] NIEER: http://nieer.org/faq/index.php?TAid=133

APPENDIX B

The working definition of preK in this study differs considerably from some common perceptions: that preK services constitute a school-based program that is administered by school districts, and that it follows standards that are similar to elementary schools. However, the reality shows a more expanded conception of preK service delivery. Our analyses revealed that preK can be administered by states and counties as well as school districts, can be provided by child care programs, and can follow standards that are either widely divergent from or very similar to those followed by school districts.

PreK Offers Education

An analysis of states preK programs reveals that, when states fund preK programs, they all use the term "preK" to refer to some type of education. Requirements and regulations regarding what constitutes education, however, vary substantially. Some states have authorizing legislation or regulations that require their state-funded preK to follow a specific curriculum, specific assessments, and specific services, such as home visiting or screenings to young children. The authorizing legislation in other states uses the term preK broadly to refer to any type of early education program.

PreK Targets Children Who Have Not Yet Entered Kindergarten

All states use the term preK to refer to education that is offered to children before the age of school entry, but the target group of preK varies substantially. PreK programs in some states, such as Connecticut, target children ages 3–4; others, such as those in Vermont, target children ages 3–5; those in Florida and New York target 4-year-olds; and still others, such as those in Arkansas, make preK programs available to children from birth through the age of school entry. While the target group had expanded in recent years, as of 2010 most state preK programs were targeting 4-year-olds, and many states reported sharp declines in the percent of children at other ages who were served (Barnett, et al., 2010).

PreK Offers Group-Based Education Services Outside of Children's Homes

An analysis of delivery models reveal that state preK programs are delivered through a variety of entities but all states use the term to refer to services that are offered primarily to a group of children and outside of the children's own homes.[f] In some states, schools deliver preK services in elementary school classrooms (Hinkle 2000). In others, child care centers or family child care providers offer preK services. In still others, Head Start offers preK; or community organizations, such as a museum, will provide preK services (U.S. General Accounting Office 2004). Nationally, 34 states offer state-funded preK services in non-school-based settings, and 15 states allow family child care providers to access state preK funds (Barnett, et al., 2010). The preK programs that are included in this study offer group-based education services in a variety of settings, including schools, child care centers, and family child care homes.

PreK Is Supported, at Least in Part, with State Funds

The term "state preK" refers to programs that are supported and regulated at the state-level. Many states allow private programs to offer the services, but all states provide some public funding to support preK. This state funding for preK services comes from a variety of revenue sources and may include state general revenue funds, federal and state Temporary Assistance to Needy Families (TANF) funds, state Child Care and Development Fund (CCDF) matching or maintenance of effort (MOE) funds, and funds from specific tax revenues, such as tobacco taxes (Greenberg and Schumacher 2003; U.S. General Accounting Office 2004). Some states require their preK dollars to be matched at the local level; in other states, school districts provide a sizable portion of the preK funding from their education dollars, distinct from preK revenue sources. Yet even in all cases, state funding supports preK.

States fund for preK programs have an impact on children's eligibility and on the continuity of services. For example, in the past Ohio used the term preK to refer to a program that has relied on TANF funds and followed stringent TANF eligibility guidelines that required parents to maintain employment or job training as a condition for their child's enrollment. When parents lost their job, the child would no longer be eligible for services. Some national preK experts believe such programs are not technically preK, since eligibility is not focused on the children. Moreover, some believe that programs that are not offered consistently for a school

[f] An analysis of data from all states reveals that only Vermont offers preK to children in their own home but served a very small number— 56 children—services in their homes.

year should not be included. However, for our study, we included all programs that New York and Ohio defined as preK in statute but describe the aspects of these programs in the context section of this report.

PreK Is Regulated, at Least in Part, by the State

States use the term preK to refer to programs that are authorized in state statute and are regulated by the state. Some states delegate many decisions about these programs—such as hours of operation, curriculum used, assessments, and teacher training requirements—to school districts, counties, or grantees. Yet across all programs, some aspect of preK related to children's education is regulated, at least in part, by a state agency. We include all state-regulated preK programs in our study.

PreK Is Offered a Minimum of 2.5 Hours Per Day, Two Days Per Week

This study's analysis of data from the National Institutes for Early Education Research reveals that the majority of states require preK to be offered a minimum of 2.5 hours per day and at least two days per week. Currently 11 state preK programs offer full-day services, 12 states offer half-day services, and 29 allow localities to determine the hours and days of operation. While the majority of state preK efforts represent part-day, part-year programs, most state preK programs allow those services to be extended for children who are receiving preK services.

APPENDIX C

New York and Ohio presented a rich and varied range of state-funded preK settings for study because in the past decade they have supported the expansion of preK programs, at the same time taking into account the impact of such expansion on the quality and supply of child care for low-income families.

Each state offers preK programs through school-based models as well as through a mixed-delivery system that also allows child care centers and Head Start programs to receive state funds for preK services (Barnett, et al., 2008). When these states were selected as the focus of this study in 2007, both states had planned to expand preK. However, in 2010 both states' legislatures cut funds allocated to preK services.

Within each state, the study focused new data collection on two counties. In New York, we focused on Albany and Niagara as these counties provided a contrasting mix of providers offering preK services (school-based programs and child care centers.)

Table 3. Percent of Children in School-Based and Community-Based Settings

COUNTY	Example District	Percent of total preK Enrollment that is School-based		Percent of total preK enrollment that is through community based organizations	
		Half-time	Full-time	Half-time	Full-time
ALBANY	Albany City School District	0%	47%	0%	53%
	South Colonie Central School District	100%	0%	0%	0%
	Ravena-Coeymans-Selkirk Central School District	100%	0%	0%	0%
	Cohoes City School District	0%	0%	0%	100%
NIAGARA	Lewiston-Porter Central School District	76%	0%	24%	0%
	Lockport City School District	41%	3%	56%	0%
	Newfane Central School District	81%	0%	19%	0%
	Niagara Falls City School District	0%	80%	0%	20%

Source: New York State Department of Education

In Ohio, the study focused on Cuyahoga and Franklin counties. In 2007, Cuyahoga was planning to roll out a universal preK (UPK) program, which was funded at nearly $3 million; 998 children were served in 61 classrooms across 24 county sites in 2008. The funds were used

to provide resources to enhance program quality and to provide supplemental scholarships to families at or below 400% of the Federal Poverty Level. UPK services in Cuyahoga could be offered through public or private schools, Head Starts providers, child care centers, or family child care homes. Franklin County was not planning to implement UPK and so would serve as a point of clear contrast, a "business as usual" county that offered state-funded preK through partnerships with child care providers as well as through a school-based model.

In our examination of the relationship between preK and the supply of child care, we focused on two counties in Ohio but because New York counties were relatively small, we focused on the entire state of New York.

APPENDIX D

Research on Issues of Policy

Methods

We took a number of steps to find answers to these questions (see table D.1 below). We interviewed key stakeholders in the Ohio and New York state departments of education, child care administrators' offices, Head Start State collaboration offices, resource and referral associations, advocacy organizations, and counties offices, as well as with school district representatives, local child care providers, and leading national early care and education experts. We reviewed the following documents: a) published academic literature on preK expansion and child care quality, and research on the impact of blended funding on early care and education program quality and supply; b) state funding documents; c) state policy reports; d) state legislation; e) state regulations; f) state policy guidance; and g) state data reported to the federal government. Finally, we performed secondary analysis of data collected by the National Institute for Early Education Research (NIEER), examining changes in the number of children served, the state dollars devoted to preK services, quality indicators, and eligibility rules over time.

Table D.1 Data Sources

Source	Description	Number
State agency leaders and stakeholder interviews	Director of state pre-K program Director of state child care subsidy agency Director of state coordinating agency/council Head Start State collaboration director* Director of state child care resource & referral association	New York: 5 Ohio: 4
Early care and education provider interviews	School-based prekindergarten directors Child care center directors Head Start agency directors Assistant directors responsible for partnership/coordination	New York: 4 Ohio: 11
Other community stakeholder interviews	District personnel (superintendents and pre-K coordinators) Local child care resource & referral agency directors	New York: 4 Ohio: 3
National expert interviews	Prekindergarten researchers, child care advocates, early care and education policy experts	5
Child care resource & referral data	Secondary data from the Ohio child care subsidy agency from child care providers	Data from 2004–2009
Secondary sources	National Institute for Early Education Research yearbooks, Pre-K Now state summaries, policy briefs and analyses, state early care and education budget documents, and state	All sources cited in text with references

	early care and education policies and regulations	in bibliography

*In New York State the chair of the state coordinating council is also the Head Start State collaboration director.

We reviewed the following documents: a) published academic literature on the impact of pre-K expansion on child care quality as well as research on the impact of blended funding on early care and education program quality and supply; b) state funding documents; c) state policy reports; d) state legislation; e) regulations; f) policy guidance; and g) data reported to the federal government. We performed secondary analysis of data collected by the National Institute for Early Education Research (NIEER). We examined changes in the number of children served, the dollars devoted to pre-K, quality indicators, and eligibility rules over time.

Analytic Approach

Analysis of the qualitative data employed methods guided by Miles and Huberman's framework of creating an initial coding schema, refining the codes after preliminary analysis and exploring emerging themes and trends (Miles and Huberman 1994). The qualitative data was then coded based on a schema that examined the relationships among actors (e.g., governors, state legislative bodies, state agency directors, and advocates), actions (e.g., changes in state preK laws and regulations, budgets, and policy directives), and outputs (e.g., changes in numbers of children served and numbers of providers participating in preK) and desired outcomes (e.g., reported changes in child care quality and supply). We also performed simple descriptive analyses of secondary data to address questions about changes in preK funding & enrollment.[g](Huberman and Miles 1998)

[g] It is important to note that the themes and trends identified in this study emerged specifically from analyses of interviews with stakeholders and a review of documents. Other factors—including education reform and demographic shifts—contribute to the supply and quality of child care in states in the wake of preK expansion.

APPENDIX E

Research on Child Care Center Characteristics and Quality Indicators

Structural Indicators

This study focused on structural indicators of quality as existing research literature shows a strong correlation between these structural features and observed quality. We recognize that child care quality is multifaceted and interactions between teachers and children are critically important aspects of quality. However, research clearly demonstrates that certain structural indicators are highly predictive of observed quality. This study focuses on those structural indicators.

Working from what Raikes and her colleagues found highly predictive of observed quality (Zaslow & Martinez-Beck, 2005), this study includes the following indicators in its definition of quality:

1. The highest level of educational achievement of lead[h] teachers (both their level of education and their specialized training, as evidenced by teachers having a Child Development Associate credential (CDA)
2. Recent professional development; teacher wages
3. Employment benefits
4. Use of structured curriculum
5. Accreditation by professional associations, such as the National Association for the Education of Young Children (NAEYC)
6. Participation in the Child and Adult Care Food Program
7. Partnership with a Head Start or Early Head Start provider

Methods

Telephone Interview Sample. In both states, a sample of child care centers that were licensed by the state[i] and that appeared in the respective counties' R&R database master lists were

[h] We focused on lead teachers—those who were responsible for the classroom and did not collect data on assistant teachers.

selected for the telephone interviews. Because in New York the number of centers in each county was small, all 90 of the state's centers were selected. In Ohio the number of centers in the target counties exceeded 800, so 436 licensed providers from a systematic random sample of centers were selected.

In the spring of 2008 (Wave 1), 436 child care center directors from Ohio and 90 from New York were contacted, first by mail and then through telephone interview. These directors were again contacted in the spring of 2009 (Wave 2). All of the directors from New York who participated in the 2008 interviews agreed to participate in the 2009 interview. In Ohio, 27 of the original centers had either closed or changed location, and 56 directors who participated in the 2008 interview either refused to participate or were unable to schedule an interview during our Wave 2 data collection period. Thus, the response rate for Ohio for the Wave 2 interview—subtracting the centers that had closed—was 86% of the original centers.

Table E.1 below shows the matched comparison data by state and by wave of data collection.

Table E.1: Sample of Centers. **The numbers of child care centers participating in telephone interviews, by state and by wave.**

	Wave 1 (2008)		Wave 2 (2009)	
	New York	**Ohio**	**New York**	**Ohio**
PreK Center	11	163	17	167
Comparison Center	78	184	73	182
Partnership Status not Reported	1	5	0	3
Total by State	90	352	90	352

In both states, a majority of center directors were female—97% of the directors from Ohio and 98% of the directors from New York. Across both interview waves and in both states, the majority of the directors described themselves as white. In Ohio 65% (Wave 1) and 69%

[i]In Ohio, centers could participate in a preK program through a contract or formal agreement with any one of these three entities. In New York, centers could participate in a preK program through a contract or formal agreement with the school district.

(Wave 2) of directors were white, and in New York 82% (Wave 1) and 85% (Wave 2) of directors were white. A large majority of the directors we spoke with in Wave 2 had served as the director of that center in the previous year: 84% of the Ohio directors and 86% of the New York directors.

Telephone Interview Methods. In March 2008 and again in March 2009, child care center directors received a letter describing the PreK Research Study, informing them of the nature of the interview, and informing them that they would be receiving following with a telephone call. During March and April in 2008 and again in 2009, center directors participated in a 15-minute survey. Trained data collectors conducted the interviews using a computer-assisted telephone interview (CATI) survey, which is programmed into the computer and includes all skip-patterns and reliability checks, reducing the likelihood of data collector error during the call.

The survey consisted of 25 unique items that were then expanded, based on the respondents' answers. The survey included questions about the following:

1. Characteristics of the students enrolled in the center (including age, race/ethnicity, English proficiency, and subsidy receipt)
2. Characteristics of teachers working at the center (including race/ethnicity, highest level of education, training, and turn-over)
3. Services provided
4. Program characteristics (such as accreditation and use of standard curriculum)
5. Characteristics of the program director (including education, training and beliefs, and turn-over)
6. Vacancy rates (described in more detail below).

To enhance the validity of the protocol, the research team asked questions that had been effective in similar research projects in Florida and Ohio. In addition, members of the study's advisory group [see Appendix G] reviewed the questions, and the instrument was modified based on that expert input.

To enhance the reliability of the data collection, telephone interviewers received training and developed protocols that included clear decision-rules for ambiguous answers. As part of this training, each interviewer practiced the protocols with a center director who was not participating in the study. A debriefing with each interviewer followed the practice calls. Only those

interviewers who had reached a clear level of reliability went on to conduct interviews that contributed to the study's data.

We enhanced reliability by using clear prompts and skip patterns in the CATI programming. For example, once a teacher had reported her highest level of education, the computer program skipped to the next question.

Secondary Data Used to Address Questions about Quality. The interviews were supplemented with data from the US Census Bureau and from county R&Rs. From the US Census, data on neighborhood characteristics at the census-track level were compiled, including the number and percentage of families living in poverty and their employment data. From the R&R, annual data on the following characteristics of the programs studied each of the four counties were compiled:

1. Type of care (e.g., full-time child care center, nursery school, etc.)
2. Affiliation (e.g., faith-based, non-profit, etc.)
3. Participation in the Child and Adult Care Food Program
4. Partnership with a Head Start or Early Head Start provider (This variable was only available from the Ohio database.)

We also developed cleaning and re-coding protocols to ensure all variables were comparable for our analysis.

Analytic Approach

To address questions about the relationship between preK expansion and child care quality we used a range of descriptive and inferential analyses. We calculated means and standard deviations of continuous variables and calculated frequencies of categorical variables. We analyzed individual variables and also developed an asset composite variable that included the following dichotomous variables:

1. Lead preschool teacher has a CDA
2. Teachers participate in at least 15 hours of CPR professional development training annually
3. Teachers participate in at least 15 hours of college coursework annually
4. Lead teachers salary is more than $15,000 annually
5. Center offers retirement benefits
6. Center offers health care benefits

7. Center offers tuition reimbursements to teachers
8. Center uses a structured curriculum
9. Center is accredited by professional associations—such as the National Association for the Education of Young Children (NAEYC)
10. Center participates in U.S. Department of Agriculture Food and Nutrition Program

We also included a teacher education variable. New York's preK program requires lead teachers to have a bachelor's degree or higher. For New York, we included a dichotomous variable: bachelor's degree or higher. Ohio's preK program requires lead teachers to have an associate's degree or higher, so for Ohio we included a dichotomous variable: associate's degree or higher.

To examine differences between preK centers and comparison centers for Wave 1 and Wave 2, we performed independent samples t-tests, Analysis of Variance (ANOVA) and Chi Square analyses. The sample size for Ohio was sufficiently large to develop regression models; (the sample size for New York was not). Regression analyses were thus performed on the Ohio data to examine differences between centers and across waves of data collection, controlling for neighborhood poverty and selected center characteristics.

Strengths and Limitations of Research Design

To determine if the convenience sample of stakeholders' experiences were generalizable, the research team collected and analyzed quantitative survey data from child care centers in both states and supplemented this data with administrative data from R&Rs.

Our research team designed the quantitative component of the study to obtain generalizable findings from two contrasting states. The team developed a correlational research design that examined the relationship between preK funding & enrollment and child care quality. The research team collected data from a systematic random sample of providers to be able to generalize to other centers throughout the target counties. However, the research team did not assign centers to an intervention group (centers offering preK) and a control group (those not offering preK). Rather, we surveyed centers that were participating in preK. Thus, the research does not examine causal relationships between preK participation and quality. Nonetheless, our findings present important information about differences in such centers and lay the groundwork

for possible future studies that could employ random assignment thereby determining if the relationships we were exploring are causal.

Description of Centers in the Sample

We analyzed program characteristic data provided to us by Resource & Referral (R&R) Agencies in each state and provided by the U.S. Census. The R&R database had complete data on program participation in the U.S. Department of Agriculture Food and Nutrition program; but some of the program characteristic data, such as non-profit status, religious affiliation, and partnership with Head Start, were not complete across each wave of data collection. Therefore, we present program characteristic data based on the most recent year for which complete data were available.

PreK Centers More Likely Than Comparison Centers to Participate in U.S. Department of Agriculture Food and Nutrition Program

In wave 1 in Ohio, 80% of preK programs and 60% of comparison centers participated in the USDA Food and Nutrition Program. In wave 2, 100% of preK and comparison centers in Ohio participated in the USDA Food and Nutrition Program. In the New York sample, 70% of preK programs participated in USDA Food and Nutrition Program in wave 1 and 60% in wave 2, compared to 70% of comparison programs in wave 1 and 30% of comparison programs in wave 2.

PreK Centers Less Likely Than Comparison Centers to be Faith-Based in New York but Not Ohio

In wave 1 Ohio, the percentage of preK centers that were faith based appeared to be somewhat lower than the percentage of comparison centers, but differences were not statistically significant ($p=.06$). And, in wave 2, there appeared to be equal percentages of centers in both groups that were faith-based (20%). By contrast, in New York, none of the centers were faith-based, while 40% of comparison centers were in Wave 1 and 20% were in wave 2. These differences were significant across both waves: Wave 1 $t(18) = 3.24$, $p < .005$; Wave 2 $t(32)=2.67$, $p=.006$.

Table E.2 Percent of Centers by Program Characteristic, State, and Center PreK Status

	Comparison		PreK	
	n	%	n	%
Ohio				
Faith Based^	58	20	94	20
USDA~	45	100	108	100
Non-Profit~	53	57	90	61
New York				
Faith Based^	56	20	5	0
USDA~	68	32	13	38
Non-Profit~	70	33	17	83

Note. *p<.05, **p<.01, ***p<.001; ^Data from 2008; ~Data from 2009

PreK Centers More Likely than Comparison Centers to be in High Poverty Neighborhoods.

In Ohio across both waves, the percent of preK centers in high-poverty neighborhoods was double that of comparison centers. These differences were statistically significant across both waves: Wave 1 t(294) = -3.55, p <.001; Wave 2 t(296)=2.67, p=.008.

In New York in Wave 1, 90 percent of preK centers were located in high-poverty neighborhoods, compared with 16 percent of comparison centers. In Wave 2, the percent of centers in high-poverty neighborhoods was not as high (approximately 60%), but differences were still dramatic (see table X below). These differences were significant across both waves: Wave 1 t(70) = -5.91, p <.001; Wave 2 t(20)=-3.32, p=.003.

Table E.3. Percent of Centers in High Poverty Neighborhood by State and preK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio	156	10** (30)	145	12** (32)	140	26**(44)	153	24 (43)**
New York	62	16 (37)	57	18(38)	10	90 (31)	16	62(50)***

Note.*p<.05, **p<.01, ***p<.001

Access to PreK Services

We hypothesized that the hours per day, days per week, and weeks per year of children's preK attendance would be related to each state's preK policies. The ELI program in Ohio offered up to 10 hours per day, 5 days per week, year-round. By contrast, the UPK program in New York offered services for between 2.5 and 5 hours per day, 5 days per week during the school year.

Our analysis revealed that in both states, the average number of days per week children received preK services was approximately 5 (see Table 7). However, the hours per day that children received preK differed. In Ohio, children received preK services for approximately 8 hours across both waves whereas in New York children attended about 5 hours per day.

Table E.4. Average Days Per Week and Hours Per Day Children Attended PreK

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Days Per Week	153	4.96 (.40)	181	4.91 (.70)	11	5.00 (0)	16	5.6 (.25)
Hours Per Day	159	8.45 (1.91)	181	8.08 (2.09)	10	5.15 (2.21)	15	4.90 (1.78)

Note. + Sample size for New York is too small for inferential results, thus only descriptive analyses are presented.

Distribution of Children in Attendance by Age

We hypothesized that preK centers would serve higher percentages of infants and toddlers than comparison centers. Infant and toddler care is more expensive to provide—since ratios are more stringent (lower) and thus fewer parents pay toward each teachers' salary; many centers subsidize the costs of infant and toddler care with preschool revenues. We hypothesized that centers receiving preK funds would have more resources for the center and would be better able to serve younger children. By contrast, centers not receiving preK funds would have fewer overall resources to administer services. We had been informed by some child care directors not

participating in preK programs that they were "forced" to close infant and toddler classrooms because they had fewer overall resources than the centers participating in the preK program. In Ohio we found that across both waves there were no significant differences between preK and comparison centers in the percentage of infants in attendance in Wave 1, but preK centers served significantly higher percentages of infants in Wave 2 t(338) =-2.23, p =.013. We found that preK centers served a higher percentage of toddlers and these were significant across both waves: Wave 1 t(342) =-2.71, p =.0014; Wave 2 t(303)=-2.17, p=.016.

We also found that preK centers served a lower percentage of preschool-aged children than comparison centers across both waves: Wave 1 t(335) =5.38, p <.001; Wave 2 t(288)=5.12, p<.001.

In New York, we found that in Wave 1 the percentage of infants in attendance was significantly lower at preK centers than comparison centers: t(87) =2.64, p=.008. However, no such differences were reported for Wave 2. PreK centers served lower percentages of toddlers across both waves: Wave 1 t(87) =-2.52, p=.007; Wave 2 t(82)=1.92, p=.034. And preK centers served higher percentages of preschool-aged children in Wave 1 but not in Wave 2: Wave 1 t(87) =2.3, p=.012.

Table E.5 Distribution of Children in Attendance by Age Group and Center PreK Status

	Comparison				**PreK**			
	Wave 1		**Wave 2**		**Wave 1**		**Wave 2**	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio								
Infants	184	9.22 (11.82)	166	8.71 (11.74)*	163	10.74 (10.03)	181	11.45 (11.13)
Toddlers	184	15.79 (13.33)*	167	16.54 (15.35)*	163	19.30 (10.79)	182	19.69 (11.27)
Preschoolers	184	61.11 (27.71)*	167	61.80 (28.97)	163	47.06 (20.60)	181	48.12 (19.57)
New York								
Infants	78	14.77* (16.38)	68	15.44 (16.84)	11	5.36 (10.07)	16	11.63 (15.79)
Toddlers	78	22.19* (18.00)	68	22.50* (15.79)	11	9.18 (12.98)	16	14.81 (14.11)
Preschoolers	78	51.78* (27.32)	67	55.16 (25.88)	11	74.09 (29.01)	16	61.87 (29.66)

Note. *p<.05, **p<.01, ***p<.001

We hypothesized that higher percentages of children in attendance at preK centers in Ohio would be attending full-time than children at comparison centers. Moreover, we hypothesized that more toddlers and preschoolers would be attending full-time at preK centers than at comparison centers in Ohio. We had a two-tailed hypothesis in New York, since preK services were offered only for part of the day. On the one hand, parents might enroll their children for the full day of services, since the preK portion was free to them. On the other hand, parents might enroll their children only for the portion of the day that preK funds supported.

We found that in Ohio, toddlers and preschoolers attending preK centers were more likely to attend full-time than children at comparison centers, but similar percentages of infants attended preK centers full-time as those attending comparison centers (see Table X). Differences for toddlers were significant across both waves: Wave 1 $t(243) = -4.2$, $p < .001$; Wave 2 $t(208) = -3.37$, $p < .001$. Differences for preschoolers were significant across both waves: Wave 1 $t(313) = -9.29$, $p < .001$; Wave 2 $t(266) = -8.54$, $p < .001$.

In New York, despite the small sample size, both toddlers and preschoolers were more likely to attend preK centers full-time than those in attendance at comparison centers (see Table E.6 below). These differences were significant for toddlers across both waves: wave 1 $t(18) = 4.92$, $p < .001$; wave 2 $t(22) = -2.19$, $p = .02$. Differences for preschoolers were not significant in wave 1 but were significant in wave 2 $t(53) = -4.07$, $p < .001$.

Table E.6. Percent of Children Attending Full-Time by Age Group and Center preK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio								
Full time Infants	98	81.23 (32.48)	83	86.8 2(25.41)	109	82.95 (31.23)	125	83.99 (30.02)
Full time Toddlers	133	64.84 (39.85)*	120	68.28 (39.73)*	149	82.66 (29.85)	164	82.73 (29.16)
Full time Preschoolers	183	48.86 (41.15)*	164	50.10 (42.79)*	162	83.03 (26.28)	182	83.18 (26.41)
New York								
Full time Infants	50	70.82 (30.66)	42	77.5 2(31.78)	3	100 (0)	8	65.00 (40.71)
Full Time Toddlers	55	65.49 (32.41)*	51	69.56* (35.01)	5	94.40 (8.76)	9	86.11 (17.28)
Full time Preschoolers	74	58.77 (34.91)	66	61.38* (38.99)	11	76.00 (38.41)	16	88.13 (17.97)

Note. *p<.05, **p<.01, ***p<.001

Characteristics of Children in Attendance

In both states and across both waves of data collection, children attending preK centers were more racially and ethnically diverse and were more likely to come from low-income families than children attending comparison centers. However, they were no more likely to be from families whose primary language is not English.

Children in Attendance by Race/Ethnicity

In both waves and in both states, PreK centers served more diverse populations of students. In Ohio, preK centers served higher percentages of African American, Hispanic, and multiracial children and lower percentages of Caucasian children than comparison centers in both waves. PreK centers served significantly higher percentages of African Americans across both waves, with preK centers serving higher percentages: wave 1 $t(314) = -7.78$, $p<.001$; wave 2 $t(333) = -9.24$, $p<.001$. Differences in percentages of Caucasians were significant across both waves, with

comparison centers serving significantly more Caucasian children: wave 1 t(331) =8.58, p<.001; wave 2 t(340)=10.07, p<.001. Differences in percentage of Hispanic children were significant across both waves: wave 1 t(268) =-1.95, p=.026; wave 2 t(330)=-2.46, p=.008. Differences in multiracial children were significant across both waves: wave 1 t(216) =-2.62, p=.005; wave 2 t(338)=-2.37, p=.009. Differences in Asians served were significant only for wave 1: t(269) =3.05, p=.002.

Descriptive statistical analysis reveals apparent differences in New York but differences were not consistently significant in wave 2. PreK centers served significantly higher percentages of African American children in wave 1 t(11)=-3.02, p=.006, but in wave 2 differences were not significant: t(18)=-1.34, p=.09. PreK centers served significantly fewer Caucasian children t(87)=11.82, p=.017 in wave 1, but differences were not significant in wave 2: t(19)=1.6, p=06. And in wave 1 preK centers served significantly fewer Asian children than comparison centers: t(75)=3.60, p<.001; and they served fewer multiracial children: t(82)=4.08, p <.001. However, these differences were not reported in wave 2.

Table E.7. Race of Children in Centers by State and PreK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
Racial Ethnic Group	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio								
African American*	181	23.67 (32.50)	164	19 (29.5)	161	53.88 (38.63)	180	53.0 (39.3)
Asian*	182	3.58 (8.07)	165	3.0 2(5.84)	161	1.52 (3.94)	180	1.97 (6.85)
Caucasian*	182	66.14 (34.18)	165	68.35 (33.56)	161	33.60 (35.83)	180	31.73 (33.92)
Hispanic*	181	2.74 (6.13)	165	3.49 (10.09)	161	4.45 (9.51)	180	6.6 4(13.57)
Multiracial*	181	3.04 (4.73)	165	3.86 (7.20)	160	5.41 (10.56)	180	5.92 (8.87)
New York								
African American	78	18.21* (26.36)	68	19.0 (23.48)	11	55.27 (39.45)+	16	32.38 (38.33)
Asian	78	3.22* (5.69)	68	2.35 (4.17)	11	<1 (1.21)	16	1.69 (3.42)
Caucasian	78	66.24* (30.81)	68	65.04 (30.08)	11	37.00 (38.98)+	16	47.63 (41.77)
Hispanic	78	4.24 (9.04)	68	5.06 (12.97)	11	4.46 (4.82)	16	12.19 (25.81)
Multiracial	78	7.19 * (10.44)	68	6.78 (11.21)	11	1.82 (1.94)	16	6.00 (11.23)

Note. + p<.10,*p<.05, **p<.01, ***p<.001

Percent of Children from Families Whose Primary Language Is Not English

The percent of children in attendance from families whose primary language was not English was higher in preK centers than in comparison centers, but not significantly higher across states and waves. The percent of such children in Ohio was nearly significant across both waves: wave 1 t(292)=-1.5, p=.07; wave 2 t(342)=-1.56, p=.06. In New York, the differences were not significant in either wave.

Table E.8. Percent of Children Whose Primary Language Is Not English by State and PreK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio	181	6.76 (16.58)+	166	11.97 (27.21)+	162	10.01 (22.65)	180	16.88 (31.20)
New York	77	2.75 (3.92)	67	14.11 (31.62)	11	14.18 (29.61)	16	15.38 (33.33)

Note. +<.10, *p<.05, **p<.01, ***p<.001

Percent of Children from Low-Income Families

The percent of children in attendance from low-income families was higher in preK centers than in comparison centers across states and waves. In Ohio, differences were significant across both waves: wave 1 t(274)=-8.17; p<.001; wave 2 t(383)=-9.04, p<.001. In New York, differences were also significant across both waves: wave 1 t(18)=-3.93, p<.001; wave 2 t(77)=-2.46, p=.012.

Table E.9. Percent of Children From Low-Income Families by Center PreK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio	142	33.6 (37.7)***	145	31.4(37.7)***	139	67.8(32.2)	173	67.2 (31.9)
New York	64	40.8 (38.8)***	64	38.7 (34.4)***	11	78.0(27.0)	15	65.8 (39.4)

Note. +<.10, *p<.05, **p<.01, ***p<.001

Health and Education Referrals

When compared to other centers, PreK centers in Ohio were more likely to refer children to free health and development screenings, such as vision, hearing, and developmental delay screenings. Independent samples t-tests revealed these differences between preK programs and comparison programs in Ohio as significant: wave 1 t(344) = -3.97, p <.001; wave 2 t(342)=2.18, p=.014 (see

Table E.10). In New York, more than 90% of all centers provided referrals to children in both waves.

Table E.10. Health and Education Referrals by State and PreK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio	183	64 (48)**	165	70 (46)	163	83 (38)*	179	80 (40)
New York	78	92 (27)	67	94	11	100 (0)	16	94 (25)

Note. *p<.05, **p<.01, ***p<.001

Standard Curriculum

PreK centers were more likely to use a standard curriculum than comparison centers across both waves in both states. As shown in Table E.11, the percentage of preK centers in both states that reported using a standard curriculum was higher than the percentage of comparison centers.

Table E.11. Curriculum Use by State and PreK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
New York	78	32.05***(46.97)	68	39.71**(49.29)	11	90.91(30.15)	16	75 (44.72)
Ohio	181	48.62***(50.12)	166	55.42***(49.86)	163	84.05(36.73)	180	76.11 (42.76)

*p<.05, **p<.01, ***p<.001

Independent samples t-test analysis revealed that differences in Ohio were very significant across both waves: wave 1 t(328)=-7.45, p<.000; wave 2 t(336) =-4.12, p <.000. Analyses of New York data also revealed very significant differences: wave 1 t(18)=-5.59, p<.000; wave 2 t(24)=-2.8, p=.005.

Accreditation Status

Accreditation status differed by state and wave. In Ohio, preK centers were not more likely to be accredited by the National Association for the Education of Young Children (NAEYC) than

comparisons, but they were more likely to report seeking accreditation. In New York, descriptive analyses revealed that higher percentages of preK centers in our sample were accredited but similar percentages of centers were seeking accreditation.

Independent samples t-test analyses of Ohio data revealed that differences in the percentage of centers seeking accreditation were significant across both waves: wave 1 t(237)=-2.5, p=.007; wave 2 t(273) =-2.54, p <.007. Analyses of New York data revealed no differences for those seeking accreditation but very significant differences for centers that were accredited in wave 1: t(10)=-2.11, p=.03, but not in wave 2.

Table E.12. Use of Standard Curriculum by State and by Type of Program

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
New York Accredited	76	3.95 (19.60)	66	7.58 (26.66)	11	36.36 (50.45)	15	13.33 (35.19)
New York Seeking Accreditation	72	13.89 (34.82)	61	11.48 (32.13)	7	14.29 (37.80)	13	15.38 (37.55)
Ohio Accredited	180	22.22 (41.69)	165	18.18 (38.69)	163	22.70 (42.02)	181	16.57 (37.29)
Ohio Seeking Accreditation	136	19.12** (39.47)	133	10.53** (30.81)	122	32.79 (47.14)	149	21.48 (41.20)

+p<.10 (nearly significant);*p<.05, **p<.01, ***p<.001

Teaching Staff

Teachers at preK centers were more racially and ethnically diverse than at comparison centers, but were not as diverse as the students attending the centers.

In Ohio, significantly higher percentages of teachers were African American in preK centers than in comparison centers across both waves: wave 1 t(304)=-6.7, p<.001; wave 2 t(317) =-8.26, p <.001. In Ohio, significantly lower percentages of teachers were White/Caucasian in preK centers than in comparison centers across both waves: wave 1 t(329) =8.2, p <.001; wave 2 t(329)=8.2, p<.001.

In New York, the percentage of White/Caucasian teachers at preK centers was lower than at comparison centers in Wave 1 (82)-1.8, p=.04. Moreover, there was a nearly significant difference in the percentage of African American teachers in wave 1: t(82)=-1.2, p=.08. No significant differences were reported for New York for wave 2.

Table E.13. Percentage of Teachers by Racial/Ethnic Category by State and PreK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
Racial Ethnic Group	n	Mean % (SD)	n	Mean % (SD)	n	Mean % (SD)	n	Mean % (SD)
Ohio								
African American	178	19.75*** (31.60)	158	14.96***(29.15)	161	46.41 (40.13)	178	47.10 (41.67)
Asian	179	1.30 (4.63)	158	1.29 (5.14)	161	1.18 (6.60)	178	<1 (4.26)
Caucasian	178	75.93*** (33.31)	158	78.60***(32.08)	161	46.13 (39.88)	178	45.95 (40.81)
Hispanic	179	1.86(6.64)	158	3.14 (12.71)	161	4.05 (14.11)	178	4.10 (13.23)
Multiracial	179	<1 (4.10)	158	<1 (3.73)	161	1.24 (6.08)	178	1.48 (6.04)
New York								
African American	75	10.56 (22.61)+	66	11.09 (23.81)	9	21.96 (26.43)	15	16.89 (24.41)
Asian	75	<1 (3.18)	67	<1 (2.83)	9	3.70 (11.11)	15	1.94(5.19)
Caucasian	75	85 .30*(25.76)	66	82.95 (28.97)	9	68.39 (31.45)	15	80 .33(25.65)
Hispanic	75	1.22 (5.88)	67	2.29 (10.02)	9	4.37 (9.04)	15	<1 (3.20)
Multiracial	75	1 .46(5.76)	66	0	9	1.59 (4.76)	15	0

Note. +<.10, *p<.05, **p<.01, ***p<.001

Salaries

Teachers at preK partnering centers are significantly more likely than teachers at non-partnering centers to earn more than $15,000 per year. Analyses reveal that the differences are significant for teachers, regardless of education (except for those with only a high school degree). In Wave 1, partnering centers reported that all (100%) of the teachers with master's degrees earned more than $15,000, compared with 64% of teachers at non-partnering centers. Centers reported that more than 90% of teachers with a bachelor's degree and an associate's degree earned more than

$15,000. By contrast, 72% of teachers with bachelor's degrees earned more than $15000 in wave 1 and 82% of teachers with associate's degrees in wave 1. Similar patterns were reported for wave 2; the percent of teachers earning more than $15,000 was significantly higher at partnering centers for all groups of teachers except those with a high school degree.

Regression analysis reveals that partnership status is not significantly related to changes in the percent of teachers earning more than $15,000. However, dependent samples t-test analysis reveals that fewer teachers at all centers with a master's degree were earning more than $15,000 in Wave 2, regardless of the partnership status of the center.

Credentials

We hypothesized that preschool teachers at preK centers would be more likely than preschool teachers at comparison centers to have credentials consistent with the state's preK requirements. In Ohio, the preK program requires that teachers working at centers have or be working toward a CDA; whereas in New York, the state required teachers to have or be working toward a teaching credential.

In Ohio, significantly more preschool teachers had a CDA in preK centers than comparison centers in wave 2, but differences in wave 1 were only nearly significant: wave 1 $t(327)=-1.24$, $p=.10$; wave 2 $t(327)=-1.9$, $p=.03$. Yet, teachers at comparison centers were actually more likely to be certified in wave 2 $t(313)=1.8$, $p=.04$. Differences in wave 1 were not significant.

In New York, differences were not significant for wave 1. In wave 2 no differences were reported in the percentage of certified teachers, but differences were nearly significant in the percentage of lead teachers with CDA's: $t(20),=-1.4$, $p=.08$.

Table E.14. Percent of Preschool Teachers by Type of Credential, State, and preK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio								
CDA	170	14 (29)+	156	11 (22)*	159	18 (38)	176	17 (28)
Certified	170	26 (38)	156	29 (35)*	159	24 (36)	176	22 (31)
New York								
CDA	69	24 (38)	61	22 (34)+	11	22 (33)	16	39 (44)
Certified	69	44 (80)	61	35 (39)	11	52 (59)	16	46 (39)

Note. +<.10, *p<.05, **p<.01, ***p<.001

Education of Lead Teachers

We hypothesized that preschool teachers at preK centers would be more likely than preschool teachers at comparison centers to have levels of education aligned with the state's preK requirements. In Ohio, lead preschool teachers were required to have only a high school diploma along with a CDA. In New York, lead teachers were required by the year 2012 to have a bachelor's degree. Table E.15 below illustrates differences in the highest level of education for preschool teachers working in preK and comparison centers by state.

In Ohio, more preschool teachers at preK centers than at comparison centers had a high school diploma as their highest level of education. In wave 1, t(315)=-2.08, p=02; in wave 2, t(330)=-2.08, p=.02. In wave 2, differences in the percentage of preschool teachers with an associate's degree were nearly significant: t(329)=-2.08, p=.06. Across both waves, preschool teachers at comparison centers were significantly more likely to have a bachelor's degree than preschool teachers at preK centers: wave 1, 1(325)=t3.94, p<.001; wave 2, t(314)=3.15, p=.001.

In New York, none of the differences were statistically significant across either wave of data collection.

Table E.15. Percent of Preschool Teachers by Highest Level of Education, State, and Center preK Status

Preschool teachers highest level of education	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*
Ohio								
High school	170	37 (55)	156	36 (38)	159	50 (62)	176	44 (39)
Associate's degree	170	18 (29)	156	16 (26)+	159	22 (38)	176	20 (37)
Bachelor's degree or higher	170	49 (41)***	156	48 (40)***	159	33 (35)	176	35 (36)
New York								
High school	69	13 (26)	61	15 (30)	11	7 (16)	16	12 (27)
Associate's degree	69	28 (37)	61	32 (39)	11	28 (37)	16	29 (35)
Bachelor's degree	69	50 (41)	61	52 (41)	11	56 (41)	16	59 (40)

We compared the education levels of preschool teachers with those of infant and toddler teachers. Some national child care and preK experts had expressed concerns that preK programs that required teachers to have higher levels of education could lead to an unintended consequence of moving more highly educated teachers from infant and toddler classrooms into preschool classrooms. Our study design did not enable us to track movement of teachers. But we were able to collect descriptive data to inform the levels of education of teachers across age groups.

In New York, no significant differences were found in the percentage of infant, toddler, and preschool teachers at preK and comparison centers who were certified. However, there was a nearly significant effect of preK status for the percentage of teachers with CDAs in wave 1 (p=.06). Descriptive analyses revealed that higher percentages of infant and toddler teachers at both comparison and preK centers had a CDA than preschool teachers. In wave 2, for example, 42 percent of infant teachers and 40 percent of toddler teachers had a CDA, compared with 26 percent of preschool teachers. Moreover, higher percentages of preschool teachers had

bachelor's degrees. In wave 1, for example, 29 percent of infant teachers, 26 percent of toddler teachers, and 51 percent of preschool teachers had a bachelor's degree or higher. However, Analysis of Variance revealed no differences in the percentages of teachers with a bachelor's degree or higher based on the preK status of the centers.

Teacher Training

Significantly higher percentages of teachers at preK centers participated in teacher training in the previous year when compared with the comparison centers.

Ohio

In Ohio across both waves, significantly higher percentages of teachers attended child development training in wave 1: $t(320)=-2.59$, $p<.001$; wave 2 differences were not significant. Significantly higher percentages of teachers attended literacy training in both waves: wave 1 $t(325)=-2.50$, $p=.007$; wave 2 $t(293)=-3.09$, $p=.001$. Significantly higher percentages attended CPR in wave 1 $t(294)=-2.10$, $p=.018$; wave 2 differences were not significant. Significantly higher percentages attended CDA training: wave 1 $t(321)=-1.85$, $p=.03$; wave 2 $t(322)=-2.60$, $p=.005$. Significantly higher percentages attended workshops in wave 1: $t(323)=-2.063$, $p=.02$; but wave 2 differences were not significant. No differences were reported in the percentage of teachers attending college in wave 1; but in wave 2, significantly more teachers at preK centers attended college: $t(307)=-3.02$, $p=.002$.

New York

In New York, significant differences were reported in the percentage of lead teachers who attended Literacy Training in wave 1: $t(19)=-2.90$, $p=.004$; and nearly significant differences were reported in wave 2: $t(25)=-1.39$, $p=.09$.

Significant differences were reported in the percentage of lead teachers who attended CPR in wave 1: $t(7)=-2.53$, $p=.007$; but differences were not significant for wave 2.
And nearly significant differences were reported in the percentage of lead teachers who attended distance training in wave 2: $t(26)=1.42$, $p=.07$, with higher percentages of comparison teachers attending distance training.

Table E.16 Percent of Preschool Teachers by Training, State and Center PreK Status

Percent of Teachers by Training	Comparison		PreK	
	Wave 1	Wave 2	Wave 1	Wave 2
	% M *(SD)* n=173	% M *(SD)* n=149	% M *(SD)* n=154	% M*(SD)* n=175
Ohio				
Child Development Training	76.88 (42.28)	83.22 (37.49)	87.66 (33.00)	87.43 (33.25)
Literacy	67.05 (47.14)	63.09 (48.42)	79.22 (40.70)	78.29 (41.35)
CPR	91.33 (28.22)	99.33 (8.19)	96.75 (17.78)	98.29 (13.02)
CDA	53.18 (50.04)	41.61 (49.46)	56.49 (49.74)	56.00 (49.78)
Distance	11.56 (32.07)	10.74 (31.06)	5.84 (23.53)	9.14 (28.90)
College	60.12 (49.10)	51.01 (50.16)	62.23 (48.61)	67.43 (47.00)
College Distance	32.21 (46.47)	35.57 (48.03)	35.71 (48.07)	32.00 (46.78)
Workshop	76.88 (42.28)	77.85 (41.66)	85.71 (35.10)	80.57 (39.68)
New York				
Child Development Training	83.33 (37.50)	91.19 (28.57)	90.91 (30.15)	93.75 (25.00)
Literacy	58.97 (49.50)	57.35 (48.82)	90.91 (30.15)	75.00 (44.72)
CPR	92.31 (36.82)	95.59 (20.68)	100.00 (0)	87.50 (34.16)
CDA	44.87 (50)	39.71 (49.29)	45.45 (52.23)	43.75 (51.23)
Distance	29.49 (46.00)	35.29 (48.14)	45.45 (52.23)	18.75 (40.31)
College	58.97 (49.51)	51.47 (50.35)	72.73 (46.70)	56.25 (51.24)
College Distance	35.90 (48.28)	32.35 (47.13)	36.36 (50.45)	18.75 (40.31)
Workshop	80.78 (39.67)	80.88 (39.62)	90.91 (30.15)	87.50 (34.16)

Assets

PreK centers reported significantly more assets than comparison centers in Ohio across both waves ($p<.001$). In New York descriptive statistical analysis revealed somewhat higher assets, but inferential analysis revealed the differences were not statistically significant.

Child Care Directors

In Ohio, child care center directors at preK and comparison centers reported similar characteristics in terms of credentials, years in the early childhood field, and duration of employment at the center. Across both waves of data collection and across both types of centers, slightly more than 40 percent of directors had an early childhood credential, the average duration as center director was about seven years, and the average number of years in the early childhood field was about 17.

APPENDIX F

Research on Issues of Supply

To address research questions about the relationship between changes in preK funding & enrollment and child care center supply, we collected data through the structured telephone interviews described above and performed a secondary analysis of data acquired from county resource and referral agencies (R&Rs), state child care subsidy offices, and state departments of education. New York and Ohio provided to the research team different databases, which are described separately below.

New York Data and Analytic Techniques. To examine the relationship between preK funding & enrollment and changes in the child care market over time, we obtained child care data and preK data from state agencies in New York. We analyzed data from all counties throughout the state of New York because, as noted above, Albany and Niagara are both small counties and the number of child care providers in these counties was too small to perform the types of analyses that would effectively examine differences based on fluctuations in preK funding & enrollment and service delivery models. We supplemented the data with census data on population and poverty.

The New York Early Care and Learning Council provided our research team with child care data related to the supply of licensed and regulated child care centers and the smaller family child care homes (New York state collects and reports differently on child care providers, depending upon their size) from 2007 through 2009 for every county in the state. This dataset included the number of child care providers in existence, the types of child care provider (child care center versus family child care provider) and each provider's capacity.

In addition, the New York Department of Education provided data on preK funding & enrollment for each school district in the state from 2008 through 2010. This data included information from 2008 through 2010 on the number of children who were served in community-based child care settings and the number served in school-based programs. Moreover, the database included information on the number of children who received part-time versus full-time state-funded preK services.

The data we acquired from New York allowed us to examine the relationship between the delivery of preK services (school-based versus child care center-based) and child care capacity at the county level.

We performed descriptive and inferential statistical analyses to examine the relationship between preK funding & enrollment and the changes in the supply of child care. By examining the correlation between preK funding and enrollment, we found, as expected, that preK funding and enrollment are highly are correlated (.977). We then examined the correlation between preK funding and child care capacity for individual years. Next, we performed repeated measures Analysis of Variance to examine differences for each year. Finally, we developed growth models to determine the slop after New York implemented the Universal prekindergarten (UPK) in 2007. Because data were not available in a comparable format for years prior to 2007, we were not able to compare the slope prior to UPK implementation and after UPK implementation.

Analyses were performed with all three UPK variables as the outcome (half-day, full-day, and total). The only predictor in the model was the adjusted Allocated funding (per $1,000). Funding was centered around the grand mean, so the intercept is the number of half-day enrollments in a center with average amount of allocated funding. There were no additional predictors at level 2, but the HLM took into account that the funding and enrollment numbers in different years are nested within programs/districts and are therefore not independent from one another (as is assumed in the correlations above).

Level-1 Model

UPK_HALF = P0 + P1*(ADJALLOC) + e

Level-2 Model

P0 = B00 + r0
P1 = B10

ADJALLOC has been centered around the grand mean.

Run-time deletion has reduced the number of level-1 records to 1724

Run-time deletion has reduced the number of level-2 groups to 676

New York Data Tables

Table F.1. Correlation between State PreK Funding and State PreK Enrollment (n=1724)

PreK Enrollment	Adjusted Allocation R^2	State preK Half Day R^2	State preK Full Day R^2	State preK Total R^2
PreK Enrollment Across all Districts	1	.989	.982	.991
PreK Enrollment Across all Districts except NYC	1	.667	.723	.936

Explanation: UPK funding and UPK enrollment are highly correlated.

Table F.2. Correlation between PreK Funding and Child Care Capacity at County Level

Child Care Capacity	PreK Funds to School-Based preK		PreK Funds to CBO's	
	B (df=58)	*SE*	*B* (df=58)	*SE*
Child Care Center Capacity***	.121	.033***	.118	.031***
Family Child Care Capacity	.265	.286	-.05	.020*

Note: *p < .05; ** p < .01; * , <.05

Explanation: State preK funding to schools and CBOs is significantly and positively correlated with increased child care center capacity. State preK funding to CBO's is positively correlated with increased family child care capacity (p <.05), but state preK funding to schools is not correlated with increased family child care capacity (p=.38).

Ohio Data and Analytic Techniques. The data from Ohio enabled us to address questions about the relationship between changes in preK funding and child care supply and allowed us to examine relationship between preK services and the supply of available child care centers.

When we began our study we had hypothesized that preK expansion would be positively related to the supply and configuration of the child care market. Specifically, the supply we hypothesized that the supply of center-based care would increase in those counties where child

care centers were allowed to access preK funding. Conversely, this increase in centers would accompany a decrease in the supply family child care providers.

To address this question, we acquired data from the Ohio Department of Job & Family Services (ODJFS) and from the county resource and referral agencies. ODJFS provided our research team with child care subsidy data from 2005 through 2010 for child care centers and 2005 through 2009 for family child care homes.

To examine changes in child care capacity over time, we ran hierarchical linear models with years (time) nested within program centers. All analyses were conducted using HLM software (Raudenbush, et al., 2000). At level 1, potential variables include funding for each year, or any other variable that changed from year to year ("time variant" variables). At level 2, we can include any variable that doesn't change over time but instead is statically related to each center ("time invariant"). HLM is the most appropriate technique as it takes into account the interdependencies, or shared variance, among the levels(Bryk and Raudenbush 1992). In this case, it took into account that changes in capacities occurred within the same center, and therefore were not independent over time.

Two sets of analyses were conducted. The first established the simple correlation between funding the capacity. For these models, we used a series of OUTCOME VARIABLES including total capacity, infant enrollment, toddler enrollment, and preschool enrollment as the outcome variables, and only entered funding as a predictor at level 1. Funding was adjusted to represent changes per every $100,000 in state preK funding, so the interpretation of the coefficients can be interpreted as "changes in enrollment per $100,000 increase in state preK funding." No variables were entered at level 2.

The models were as follows:

Level 1: $\text{OUTCOME VARIABLE} = \beta_{0j} + \beta_{1j}\,(\text{Funding}_{ij}) + r_{ij}$

Level 2: $\beta_{0j} = \gamma_{00} + u_{0j}$

$\beta_{1j} = \gamma_{10}$

This analysis showed whether the outcome variable was related to funding over the years, while taking into account the dependencies between capacity and particular centers over the years.

The second set of HLM analyses looked at changes over time relative to when increases in funding were announced and went into effect. Again, we nested time within centers and

looked at capacity as the outcome. Three variables were entered at level 1 to capture patterns changes over time. The first, PRE, takes on a value of -5 in 2002; -4 in 2003; -3 in 2004; -2 in 2005; -1 in 2006; 0 in 2007 and all later years (giving the pre-intervention slope). The second, PREPOST, takes on a value of 0 for years 2002 thought 2007, and 1 in 2008 and 2009 (giving the change in capacity from 2007 to 2008). The last variable, POST, takes on a value of 0 for years 2002 through 2007, 1 in 2008, and 2 in 2009 (giving the post-intervention slope). Planned contrasts were set up to test for differences between the pre-intervention and post-intervention slope. No predictors were added at level 2, however the slopes for the level 1 predictor PRE were allowed to vary randomly at level 2, given significant differences in the pre-intervention slopes across centers.

The models were as follows:

Level 1: $\text{OUTCOME VARIABLE} = \beta_{0j} + \beta_{1j}(\text{PRE}_{ij}) + \beta_{2j}(\text{PREPOST}_{ij}) + \beta_{3j}(\text{POST}_{ij}) + r_{ij}$

Level 2:
$$\beta_{0j} = \gamma_{00} + u_{0j}$$
$$\beta_{1j} = \gamma_{10} + u_{1j}$$
$$\beta_{2j} = \gamma_{20}$$
$$\beta_{3j} = \gamma_{30}$$

Ohio Data Tables

Table F.3 Ohio: preK Funding and Child Care Center Capacity by County, Year, and Age

	Cuyahoga		Franklin	
	Mean	*SD*	Mean	*SD*
2002				
Infant Capacity	7.186	*9.113*	8.119	*9.201*
Toddler Capacity	17.822	*15.440*	18.286	*15.777*
Preschool Capacity	47.593	*28.421*	48.516	*27.235*
Inf+Toddler+PreK	72.602	*42.739*	74.921	*42.165*
2003				
Infant Capacity	7.763	*9.430*	8.108	*10.089*
Toddler Capacity	17.947	*15.388*	17.233	*16.455*
Preschool Capacity	45.221	*29.217*	49.133	*28.629*
Inf+Toddler+PreK	70.931	*44.027*	74.475	*44.834*
2004				
Infant Capacity	7.891	*9.276*	8.099	*9.923*
Toddler Capacity	18.093	*15.690*	17.027	*15.296*
Preschool Capacity	42.829	*26.841*	50.297	*26.875*

	Cuyahoga		Franklin	
	Mean	*SD*	Mean	*SD*
Inf+Toddler+PreK	68.814	*42.299*	75.423	*39.668*
2005				
Infant Capacity	8.050	*9.113*	8.445	*10.151*
Toddler Capacity	18.511	*15.367*	17.898	*16.661*
Preschool Capacity	43.950	*28.127*	50.391	*29.644*
Inf+Toddler+PreK	70.511	*42.738*	76.734	*45.306*
2006				
Infant Capacity	8.206	*9.085*	8.856	*9.841*
Toddler Capacity	19.044	*15.439*	18.813	*16.014*
Preschool Capacity	43.963	*29.364*	48.942	*29.591*
Inf+Toddler+PreK	71.213	*44.337*	76.612	*43.791*
2007				
Infant Capacity	8.297	*9.216*	9.242	*10.123*
Toddler Capacity	19.250	*15.565*	17.809	*14.856*
Preschool Capacity	45.052	*28.976*	47.180	*30.380*
Inf+Toddler+PreK	72.599	*44.385*	74.230	*43.674*
2008				
Infant Capacity	8.649	*9.326*	9.904	*10.619*
Toddler Capacity	19.041	*15.433*	18.792	*15.236*
Preschool Capacity	44.936	*28.682*	49.382	*29.814*
Inf+Toddler+PreK	72.807	*43.840*	78.079	*43.066*
2009				
Infant Capacity	8.733	*9.090*	10.284	*10.593*
Toddler Capacity	19.170	*15.306*	19.335	*15.285*
Preschool Capacity	45.345	*28.677*	49.466	*30.028*
Inf+Toddler+PreK	73.248	*43.871*	79.085	*43.596*

Table F.4 Ohio PreK Funding and Child Care Center Existence

Child care centers in existence at any point 2002-2008	Comparison	PreK
Number of centers	2022	461
Mean funding	1076 (250)	1248 (256)

Table F.5 Ohio preK funding (controlling for CCDF funding) Predicting Child Care Center Enrollment by Age Group

	Model 1			Model 2		
	β		*SE*	*β*		*SE*
TOTAL ENROLLMENT						
Intercept	71.181	***	2.215	71.042	***	2.220
Pre-Post Difference	2.905	***	0.747	-0.204		0.641
Post Increase in Funding				1.025	***	0.237
INFANT ENROLLMENT						
Intercept	8.512	***	0.509	8.488	***	0.510
Pre-Post Difference	0.525	***	0.142	0.021		0.147
Post Increase in Funding				0.167	***	0.050
TODDLER ENROLLMENT						
Intercept	17.926	***	0.794	17.902	***	0.796
Pre-Post Difference	0.897	***	0.238	0.382		0.229
Post Increase in Funding				0.170		0.885
PRESCHOOL ENROLLMENT						
Intercept	44.888	***	1.455	44.803	***	1.459
Pre-Post Difference	1.332	*	0.613	-0.771		0.490
Post Increase in Funding				0.690	***	0.176

*** <=.001; ** <=.01; * <=.05; N = 2,343 time points, 349 programs

Explanation: For infants and preschool-aged children, there was a significant overall difference in enrollment numbers before the increase in funding compared to after the state increased funding for preK. In Model 2, there is not a significant difference between the "pre" numbers (in the years 2002 – 2004) and enrollment numbers in 2005. However, there is then a significant increase in the years after 2005, when funding continued to increase. For toddlers, the pattern is similar, except the growth in the "post" years is not quite significant. The overall pattern is the

same, but the differences are not large enough or consistent enough across programs to be significant in the model.

Telephone Interview Data and Analytic Techniques. The telephone interview processes that we describe in detail above allowed us to address questions about the relationship between vacancies in child care centers and preK expansion. These interviews included questions about vacancy rates by age group and desired capacity.

We began by performing descriptive and inferential statistical analyses of the data to determine vacancy rates by age group in 2008 and 2009. With the New York data, we performed independent samples t-tests for each wave of data to examine differences in vacancy rates for each age group. (The sample size was too small to perform regression analysis.) The Ohio sample was sufficiently large to perform regression analyses to examine differences in vacancy rates by age group for each wave of data. We also built regression models to examine differences in vacancy rates based on whether or not the provider was located in a high-poverty neighborhood.

Survey Data Table

Table F.6 Vacancy Rates by Age, State, and preK Status

	Comparison				PreK			
	Wave 1		Wave 2		Wave 1		Wave 2	
	n	M *(SD)*	n	M *(SD)*	n	M *(SD)*	n	M*(SD)*
Ohio								
Infant	165	.02 (.08)	144	.04 (.10)	134	.02 (.09)	139	.05 (.13)
Toddler	151	.05 (.15)	126	.09 (.34)	109	.06 (.14)	120	.08 (.16)
Preschool-aged	134	.09 (.20)	128	.03 (.07)	109	.06 (.11)	120	.15 (.11)
New York								
Infant	72	.02 (.05)*	65	.12 (.03)	11	.00 (.00)	15	.00 (.01)
Toddler	75	.02 (.06)*	65	.02 (.06)	11	.00 (.00)	15	.01 (.04)
Preschool-aged	73	.06 (.11)	65	.02 (.06)	11	.06 (.08)	15	.01 (.04)

* $p < .05$

Explanation: No significant differences were found between comparison and preK centers in Ohio in vacancy rates in by age group. In New York, preK centers reported significantly lower vacancy rates for infants and toddlers in wave 1 but no differences were reported in wave 2 between preK centers and comparison centers.

APPENDIX G

We are grateful to our advisors for sharing their valuable insights regarding the study design, data collection instruments, and analysis plans. Advisors with in depth knowledge of state issues reviewed summaries of findings and provided important contextual information to assist with interpretation of results. Our advisors included: Steve Barnett, Diane Bennett, Danielle Ewan, DeSylvia Dwyer, Robert Fisher, Donna Fredlund, Terrie Hare, Nancy Kolben, Lee Kreader, Billie Osborne-Fears, Meg McNiff, Lynnette Pannucci, Janice Molnar, Sandy Miller, Anne Mitchell, Carol Saginaw, Stephanie Siddens, and Doris Hill-Wyley.

We are also grateful to Action for Children, the Capital District Child Care Council, the Child Care Resource Network of Niagara, the Empire Justice Project, New York Department of Education, the New York Office of Children & Family Services, the New York State Early Care & Learning Council, the Ohio Department of Education, the Ohio Department of Job & Family Services, and Starting Point for providing us with child care and preK data. Without the generous contributions of datasets and the staff time donated to our project by key personnel from these organizations, our study would not have been possible.

We acknowledge Donna Dervershian, Jean Foley, Pam Naab, and Alicia Lichulous who assisted us with coordination and with final report production, and are grateful for their efforts. Jess Gropen and Craig Hoyle served as methodological advisors and helped guide the analysis of the trends in child care supply.