Early Care and Education for Children in Immigrant Families

Lynn A. Karoly and Gabriella C. Gonzalez

Summary

A substantial and growing share of the population, immigrant children are more likely than children with native-born parents to face a variety of circumstances, such as low family income, low parental education, and language barriers that place them at risk of developmental delay and poor academic performance once they enter school.

Lynn Karoly and Gabriella Gonzalez examine the current role of and future potential for early care and education (ECE) programs in promoting healthy development for immigrant children. Participation in center-based care and preschool programs has been shown to have substantial short-term benefits and may also lead to long-term gains as children go through school and enter adulthood. Yet, overall, immigrant children have lower rates of participation in nonparental care of any type, including center-based ECE programs, than their native counterparts.

Much of the participation gap can be explained by just a few economic and sociodemographic factors, the authors find. To some extent, the factors that affect disadvantaged immigrant children resemble those of their similarly disadvantaged native counterparts. Affordability, availability, and access to ECE programs are structural barriers for many immigrant families, as they are for disadvantaged families more generally. Language barriers, bureaucratic complexity, and distrust of government programs, especially among undocumented immigrants, are unique challenges that may prevent some immigrant families from taking advantage of ECE programs, even when their children might qualify for subsidies. Cultural preferences for parental care at home can also be a barrier.

Thus the authors suggest that policy makers follow a two-pronged approach for improving ECE participation rates among immigrant children. First, they note, federal and state ECE programs that target disadvantaged children in general are likely to benefit disadvantaged immigrant children as well. Making preschool attendance universal is one way to benefit all immigrant children. Second, participation gaps that stem from the unique obstacles facing immigrants, such as language barriers and informational gaps, can be addressed through the way publicly subsidized and private or nonprofit programs are structured.

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Lynn A. Karoly is a senior economist at the RAND Corporation in Arlington, Virginia. Gabriella C. Gonzalez is an associate social scientist at the RAND Corporation in Pittsburgh, Pennsylvania.

Researchers and policy makers have long recognized the importance of early care and education (ECE) programs in promoting healthy development before children enter school and in shaping their success once they begin school. But do these programs hold the same promise for immigrant children? This article explores the current role of and future potential for early childhood education for the large and growing segment of immigrant children.

According to data from the 2005–06 American Community Survey, of the 15.7 million immigrant children in the United States, nearly 5.7 million are age five or younger.[1] Nationally, immigrant children make up about 24 percent of the under-six age group, and that share reaches as high as 50 percent in California. Although 94 percent of these youngest immigrant children were born in the United States, they are more likely than their native-born counterparts with native-born parents to face a variety of circumstances that place them at risk of developmental delay and poor academic performance once they enter school. Among immigrant children under age eighteen, for instance, 28 percent are in a linguistically isolated household where no one age fourteen or older speaks English "very well," 26 percent have parents without a high school degree, and 22 percent have family income below the poverty line.[2] At the same time immigrant children are a heterogeneous group. Many live in families where English is spoken fluently, parents are well educated, and the family enjoys a high standard of living.

As Robert Crosnoe and Ruth Turley discuss in more depth in their article in this volume, researchers and policy makers have long taken the view that elementary and secondary education supports the economic and cultural assimilation of immigrant children, but schools can also reinforce existing disparities associated with race and ethnicity, country of origin, and English fluency. The potential for high-quality early-learning settings to advance school readiness and academic achievement in absolute terms and to narrow gaps between less advantaged and more advantaged groups of children has spurred greater interest in promoting access to such programs, especially for disadvantaged children.[3] Growing policy support for early care and education more generally stems from advances in brain research demonstrating the importance of the first few years of life in laying a foundation for healthy cognitive, emotional, social, and physical development.[4] Thus, especially for disadvantaged immigrant children, it is important to understand the extent to which children already participate in ECE settings and the quality of those experiences, the potential benefits that might be expected from being in such programs, and the nature of the barriers that may preclude children who could benefit from participation. An understanding of these issues can then shape a policy agenda to remedy any issues identified with access and quality.

Our scope in this article covers child care and early-learning programs in home- and center-based settings that serve children from birth to their entry into kindergarten. Because the research base specific to immigrant children is richer for preschool-age children and center-based programs than it is for infants and toddlers and home-based care, we offer some original data analysis of ECE use and quality to complement previous research. In both our data analysis and literature review, we define immigrant children as those who are foreign-born or native-born with one or both parents being

foreign-born, groups that represent first- and second-generation immigrants, respectively. (Given that the first-generation group is so small among immigrant children under age six, sample sizes limit our ability to examine ECE patterns by immigrant generation.) We refer to children who are native-born with native-born parents as nonimmigrants or natives. This classification of immigrant status for children may differ from definitions in other studies of ECE use and impact. We note such differences when relevant.

Immigrant Children and Participation in ECE Programs

Despite the recent interest in participation in ECE programs, relatively few studies have focused on participation patterns specifically for immigrant children. One of the first analyses based on a nationally representative sample of immigrant children used detailed data on child-care arrangements for children under age six collected in the 1996 panel of the Survey of Income and Program Participation (SIPP).[5] The estimates showed that immigrant children under age six were more likely than their native counterparts to be in parental care only (59 versus 44 percent) and less likely to be in center-based care (14 versus 25 percent). The two groups were more similar in their use of nonrelative care and kin care.

This general pattern has been confirmed in other studies using data from the 2000 Census and the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) with a focus exclusively on preschool-age children. For example, estimates from the 2000 Census, which asks about regular school attendance including "nursery school or preschool," indicate that immigrant children participate in early education programs at lower rates than their native counterparts at both age three (30 versus 38 percent) and age four (55 versus 63 percent).[6] Estimates from the ECLS-K for the cohort that entered kindergarten in 1998–99 also show that children of mothers born outside the United States and children of Mexican immigrant families were less likely to be enrolled in center- or school-based preschool programs than other children in the year before they entered kindergarten, with a participation differential as large as 15 percentage points.[7]

Research also documents considerable variation by subgroup of immigrants and by geography in their use of nonparental care or specific types of care arrangements such as preschool programs. The evidence suggests, for example, that immigrant children from Mexico are even less likely to participate in preschool programs than immigrant children from Central America, the Dominican Republic, or Indochina.[8] Preschool participation rates for three- and four-year-olds also vary substantially by state, with the largest participation gaps between immigrant and native children in the states with the largest immigrant populations.[9]

An Updated Perspective on ECE Use by Immigrant Children

While informative, these studies offer a limited understanding of the patterns of ECE use for immigrants and natives, especially ECE use for infants and toddlers compared with preschool-age children. Furthermore, earlier studies relied on data from the 1990s or the 2000 Census, which may offer a dated perspective on ECE use given the recent expansion of subsidized child-care programs, including state-funded preschools.[10] Because of our interest in current ECE use among immigrant children—both first and second generation—from birth to kindergarten entry (typically at age five), we have

Table 1. Early Care and Education Arrangements for Children, by Age Cohort

Percent, except as indicated	0 to 2-year-olds		3-year-olds		4-year-olds	
Measure	**Immigrant**	**Native**	**Immigrant**	**Native**	**Immigrant**	**Native**
ECE arrangements for all children in the 2005 National Household Education Survey						
Any nonparental care	37.6	55.1	61.4	71.2	71.8	83.6
ECE by setting type						
Any center-based ECE	13.2	23.0	44.9	50.7	65.9	75.3
Any relative care	16.8	24.0	19.3	22.8	15.3	24.0
Any nonrelative care	12.9	16.6	9.1	13.7	9.1	9.1
Number (unweighted)	1,154	3,030	328	1,061	292	919
ECE arrangements for all children in the 2007 RAND California Preschool Study						
Any nonparental care	...	...	63.7	78.2	72.9	85.4
ECE by setting type	...	...				
Any center-based ECE	...	...	49.5	51.8	62.1	72.0
Any relative care	...	...	14.3	28.8	15.6	22.8
Any nonrelative care	...	...	10.4	14.6	12.1	15.8
Number (unweighted)	...	...	434	581	429	578

Source: Authors' analysis of 2005 NHES Early Childhood Program Participation and 2007 RAND California Preschool Study.
Notes: Tabulations are weighted. Immigrant children are those either born outside the United States or with at least one parent born outside the United States. In the NHES, the four-year-old age group includes those born between October 1999 and September 2000, so they were either age four or five when the survey was conducted between January and April 2005. The three-year-old cohort includes those born between October 2000 and September 2001, while those in the youngest cohort were born in October 2001 or later. In the California data, kindergarten entry cohorts were defined using the state's kindergarten entry cutoff of December 2.
... = Not available.

generated estimates of ECE use from the Early Childhood Program Participation (ECPP) module of the National Household Education Survey (NHES), which was last administered to a nationally representative sample of families with children under age six in the first four months of 2005.[11] The ECPP module collects detailed information about the use of various types of care arrangements at the time of the survey for children under age six who are not yet enrolled in kindergarten. Nativity information is also collected for the child and his or her parents.[12]

We also draw on data collected in the late winter and spring of 2007 on ECE use and quality for a representative sample of three- and four-year-olds in California as part of the RAND California Preschool Study.[13] Examination of the data from California, home of 27 percent of the nation's immigrant children under age six, is instructive for several reasons. First, the data for 2007 are even more current than those from the NHES. Second, according to the RAND data, 50 percent of all California three- and four-year-olds are first- or second-generation immigrants, so one can see if the patterns of ECE use among immigrants shown in national data also hold for California. Finally, in addition to collecting information on care arrangements and nativity status comparable to that in the NHES, the California study obtained information through direct observation of program quality for children in center-based programs. Thus the California data provide an opportunity to examine the quality of ECE received by immigrant and nonimmigrant children in center-based settings.[14]

Table 1 reports estimates of the use of nonparental care for children stratified by age group and immigrant status from the 2005 NHES (top panel) and the 2007 California study (bottom panel). Age groups are defined by school-entry cohorts (rather than age at the time of the survey) based on the month and year of their birth in the NHES and the birth date in the California data.[15] For example, at the time of either survey (the first part of the calendar year), children in the four-year-old age group would be age-eligible to enter kindergarten in the following fall, so they would typically be labeled four-year-old preschoolers. The three-year-olds, those children who are two years away from kindergarten entry, are likewise typically included in the preschool-age group. Those in the youngest age group (available only for the NHES), typically labeled infants and toddlers, are usually not yet eligible for preschool programs. Both sources of data ask about regular nonparental care arrangements and differentiate between center-based programs and care provided in a home by either a relative or nonrelative.[16]

Compared with their native counterparts, immigrant children at each age are less likely to be in center-based care or either type of nonparental home-based care.

As expected, both panels of table 1 show that use of nonparental care increases with the age of the child for both immigrant and nonimmigrant children. Of more interest is that at each age, the share of immigrant children in any nonparental care is smaller than the share of native children in nonparental care.[17] In the NHES the differential is 17 percentage points for children under three, 10 percentage points for those age three, and 12 percentage points for those age four. While the levels differ, the California data show a similar gap in the use of any nonparental care for the two older cohorts (14 and 12 percentage points, respectively).

Differentiated by care type, the use of center-based programs also increases with age, reaching 66 and 75 percent nationally (and 62 and 72 percent in California) for four-year-old immigrant and nonimmigrant children, respectively. Again, however, compared with their native counterparts, immigrant children at each age are less likely to be in center-based care or either type of nonparental home-based care (with the exception of nonrelative care among four-year-olds in the NHES). Interestingly, the immigrant-native gap in the use of center-based care is smaller for three-year-olds than it is for four-year-olds, especially in California. Nevertheless, the differential use of center-based care, especially in the two preschool-age groups, suggests that immigrant children may have less exposure to formal early-learning programs that can support their preparation for school entry. At the same time, the differential in center-based care for four-year-olds as of 2005 in the NHES is less than the differential measured in the ECLS-K cohort whose children would have attended preschool seven years earlier.[18] This finding suggests that the preschool participation gap may be narrowing over time, perhaps as a result of the expansion of state-funded programs.

The immigrant-native differences in the use of any nonparental care raise the question

Table 2. Early Care and Education Arrangements among Children in Nonparental Care, by Age Cohort

Percent, except as indicated	0 to 2-year-olds		3-year-olds		4-year-olds	
Measure	**Immigrant**	**Native**	**Immigrant**	**Native**	**Immigrant**	**Native**
ECE arrangements for children with any nonparental care in the 2005 National Household Education Survey						
ECE by arrangement with most hours						
Main arrangement: center-based	32.6	38.9	67.5	63.5	83.4	77.7
Main arrangement: relative	38.1	35.1	23.4	23.6	11.6	16.0
Main arrangement: nonrelative	29.3	26.0	9.1	13.0	5.0	6.4
ECE by arrangement hierarchy						
Any center-based ECE	35.0	41.7	73.1	71.3	91.8	90.0
Main arrangement: relative	37.4	33.5	19.3	19.2	6.4	7.3
Main arrangement: nonrelative	27.6	24.8	7.5	9.5	1.9	2.6
Number (unweighted)	455	1,725	217	803	227	783
ECE arrangements for all children with any nonparental care in the 2007 RAND California Preschool Study						
ECE by arrangement with most hours						
Main arrangement: center-based	...	...	69.8	57.5	80.5	74.0
Main arrangement: relative	...	...	16.3	31.5	10.8	13.3
Main arrangement: nonrelative	...	...	13.9	11.0	8.7	12.7
ECE by arrangement hierarchy						
Any center-based ECE	...	...	77.8	66.2	85.0	84.3
Main arrangement: relative	...	...	11.7	25.6	6.7	6.5
Main arrangement: nonrelative	...	...	10.5	8.2	8.3	9.1
Number (unweighted)	...	...	291	432	347	510

Source: Authors' analysis of 2005 NHES Early Childhood Program Participation and 2007 RAND California Preschool Study.
Notes: Tabulations are weighted. See definitions of immigrant status and age cohorts in table 1.
... = Not available.

of whether the use of different care settings, for children in any nonparental care, varies by immigrant status. Table 2 highlights these patterns for both data sources using two approaches to account for multiple care arrangements. First, the table classifies children by the care setting where they spend the most time based on weekly hours (labeled the "main arrangement"). As shown in the top panel of the table, among children in nonparental care, immigrant children in the two preschool-aged groups, both nationally and in California, are more likely than native children to spend the most hours in center-based care. The difference can be quite sharp, as evidenced by care in California, where 70 percent of three-year-old immigrant children and 58 percent of native children in care spend the most hours in center-based care. The reverse pattern holds for infants and toddlers, with immigrant children less likely than their native counterparts to spend the most hours in a center setting.

The second approach assigned children in any center-based program to that category regardless of hours spent there. Thus calculated, as shown in the bottom panel of table 2, rates of participation in any center-based care are very similar for immigrant and nonimmigrant children in nonparental care, especially for three- and four-year-olds. Three-year-olds in California are the exception, with natives having a smaller share than immigrants in any center setting. Among four-year-olds, upward of 10 to 12 percent

Table 3. Early Care and Education Arrangements for Children in 4-Year-Old Cohort by Selected Characteristics: 2005 National Household Education Survey

Percent, except as indicated	Any nonparental care		Any center-based care	
Characteristic	**Immigrant**	**Native**	**Immigrant**	**Native**
By poverty status				
Household income below poverty	68.8	79.7	53.8	67.9
Household income above poverty	73.0	84.4	70.6	76.8
By parental education				
Below high school graduate	66.0	71.1	52.3	56.5
High school graduate or above	73.7	84.4	70.2	76.5
By number of parents in family				
Two parents	26.8	35.1	66.0	74.5
One parent	67.4	89.0	64.9	77.5
By ethnicity				
Hispanic or Latino	69.8	69.9	59.3	56.7
Not Hispanic or Latino	74.1	85.1	73.6	77.3
Number (unweighted)	292	919	292	919

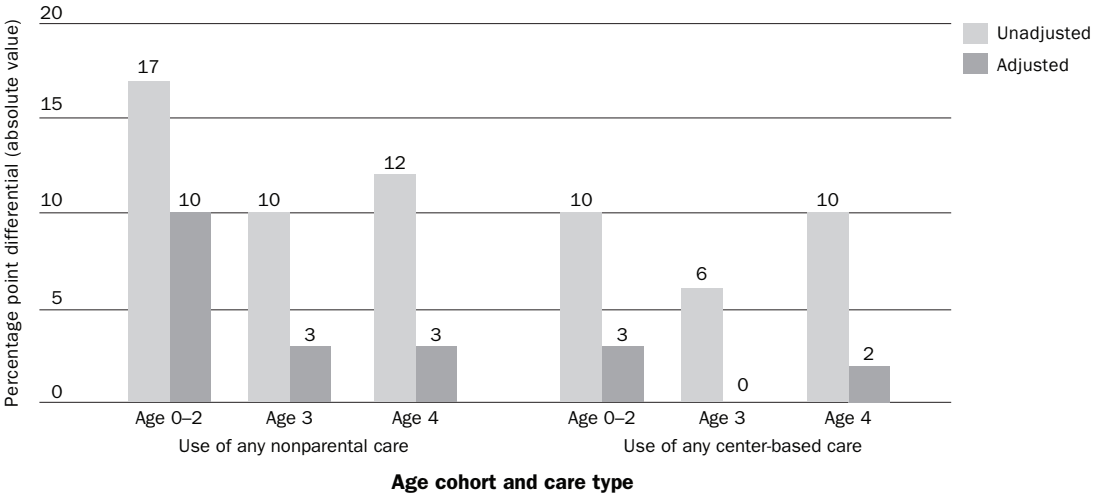
Source: Authors' analysis of 2005 NHES Early Childhood Program Participation.
Notes: Tabulations are weighted. See definition of immigrant status in table 1.

of immigrant and native children nationally are in center-based care, although they spend more time in some other non-center-based arrangement. Because many preschool programs last for only part of a day, children may spend more time in other care arrangements, especially when their parents need full-time care. Ultimately, these patterns indicate that, among all children in nonparental care, immigrant children in the preschool age groups—especially four-year-olds—are equally if not more likely than their native counterparts to be in a center-based setting.

Composition Differences and the Immigrant-Native Gap

Immigrant children would be expected to have lower rates of participation in nonparental care than native children, because they are more likely to have the characteristics associated generally with lower participation in care arrangements. For example, immigrant children are disproportionately from families with low income, with low parental education, with two parents, and of Hispanic ethnicity, all factors associated in earlier studies with lower use of nonparental care.[19] To what extent can these and other demographic or socioeconomic characteristics explain the immigrant-native gap? Table 3 explores this question by reporting immigrant-native differences in the use of any nonparental care and the use of any center care for four-year-olds in the NHES within subgroups defined by poverty status, parental education, the number of parents in the family, and ethnicity.[20] As expected, whether one looks at immigrants or natives, the use of any care and any center-based care is higher for children in families with income above poverty, with parents who have a high school degree or higher, within one-parent families, and who are not Latino. In other words, for example, immigrant children above the poverty line are more likely than immigrant children below the poverty line to use some form of nonparental care. Yet within all but one of these subgroups, immigrant children are less

Figure 1. Size of Unadjusted and Adjusted Immigrant-Native Gap in Care Use by Age Group: 2005 National Household Education Survey



Source: Authors' analysis of 2005 NHES Early Childhood Program Participation.
Note: Adjusted percentage point differential controls for poverty status, parental education, number of parents, and Hispanic ethnicity.

likely than their native counterparts to use any care, including center-based care. For example, the immigrant-native gap in the use of center-based care is 14 percentage points for children in poor families and 6 percentage points for those in nonpoor families. The one exception is for Latino children, where immigrants and native children (that is, third generation) are equally likely to use any nonparental care and Latino immigrants are slightly more likely than Latino natives to use center-based care.

Considering each of these characteristics alone, as in table 3, cannot eliminate the immigrant-native gap. But if composition differences across all four characteristics are simultaneously accounted for in a regression model, much of the immigrant-native gap for the two older age groups can be explained. The results of the regression are illustrated in figure 1, which shows the absolute size of the immigrant-native gap in the use of any care and use of center-based care. For each age group, the first bar shows the unadjusted percentage-point gap (the same as those reported in table 1), while the second bar shows the gap that remains after accounting for poverty status, parental education, number of parents, and Hispanic ethnicity. With the exception of the use of any care among infants and toddlers, the adjusted gap is reduced to 3 percentage points or less after controlling for the four characteristics. In other words, much of the lower use of nonparental care and center-based care on the part of immigrant children, at least for three- and four-year-olds, can be explained by four factors: higher poverty rates, low parental education, and a higher propensity to be in two-parent families and of Hispanic ethnic origin. One implication is that efforts to address low rates of ECE use for low-income families or families with low parental education would also potentially encompass immigrant children who share these characteristics. It also means that there

Table 4. Quality of Care Measures for Preschool-Age Children: 2007 California Preschool Study

	Total		Mean		
Quality measure	**Mean**	**SD**	**Immigrant**	**Native**	**Effect size**
Early Childhood Environment Rating Scale-Revised					
Mean score for space and furnishings	4.4	1.14	4.2	4.5	0.26
Mean score for activities	3.9	1.24	3.8	3.9	0.08
Mean score combined	4.1	1.09	4.0	4.2	0.18
Classroom Assessment Scoring System					
Mean score for emotional support	5.5	0.88	5.4	5.5	0.11
Mean score for classroom organization	4.9	1.06	4.7	5.0	0.28
Mean score for instructional support	2.6	1.05	2.5	2.8	0.29

Source: Authors' analysis of 2007 RAND California Preschool Study data.
Notes: Sample size is 615. Tabulations are weighted. See definition of immigrant status in table 1. Missing data are imputed using N = 10 imputations. Both ECERS-R and CLASS are scored on a 7-point scale, with 7 being the highest quality. The effect size is calculated as the ratio of the difference in the group means divided by the overall standard deviation. SD = standard deviation.

is a residual gap in ECE use for immigrants, albeit a relatively small one for preschoolers, that must be explained by other factors that may be more germane to the immigrant population. We turn to such potential barriers in a later section.

Quality Differences in Center-Based ECE Programs for Immigrant Children

Researchers have made few efforts to link data on care use with measures of quality for the ECE settings children use for representative samples of children. The RAND California Preschool Study provides such an opportunity for preschool-age children because it collected observational measures of program quality in center-based settings for a subset of the sample children in center care. These data show that measures of global quality, namely, the Early Childhood Environment Rating Scale-Revised (ECERS-R) and the Classroom Assessment Scoring System (CLASS), as well as other measures of structural quality such as group sizes and ratios, vary only modestly across groups of children defined by family income, parent education, mother's nativity, linguistic isolation, and other characteristics.[21]

Differences by race and ethnicity were somewhat more pronounced and showed that Latino children experienced somewhat higher quality on some dimensions. However, all groups of children, both less and more advantaged, experience shortfalls with respect to benchmarks that are associated with high-quality care environments, often by large margins. (Examples of benchmarks are achieving an ECERS-R score of 5 or better on a scale of 1 to 7 or having a lead classroom teacher with a bachelor's degree.)

The lack of large differences in quality for children in more disadvantaged groups relative to their more advantaged peers suggests that differences in quality for immigrant versus native children would not be large, a contrast that was not made in previous research using these data. Indeed, as demonstrated in table 4, the two global quality measures, both set on a 7-point scale, show only modest differences between immigrant and nonimmigrant children in center-based programs. On average, the two subscales of the ECERS-R collected show quality for all children falls between the minimally acceptable level (a score of 3) and the good level (a

score of 5). The variation by immigrant status is small, about 0.2 of a standard deviation, although the scores are always somewhat lower for immigrant children than for their native peers.

A similar pattern emerges for the CLASS, which is viewed as capturing process aspects of care quality. As seen in table 4, the scales for emotional support and classroom organization are in the middle-score range, but the score for instructional support is on the low end of the scale, a common result in other studies that have used the CLASS in preschool-age settings.[22] Together these scores indicate that teachers in center-based settings are relatively successful in creating emotionally supportive and well-managed classrooms, but they fall short in promoting higher-order thinking skills, providing high-quality feedback, and developing students' language skills. Like the ECERS-R, however, differences in the CLASS components by immigrant status are modest, although again the scores are consistently lower for immigrant children.

Taken together, the portrait that emerges from this review and updated analysis of ECE use and center-based ECE quality for immigrant children versus their native counterparts suggests several results worth highlighting. First, for infants, toddlers, and preschool-age children, immigrants have lower rates of participation in any nonparental care and center-based care. Evidence suggests that the participation gap may be narrowing over time, but double-digit differences in participation remain even so. Second, among those in care, preschool-age immigrant children are as likely as native children, if not more likely, to be in center-based ECE programs, especially if one looks at the arrangement where children spend the most time. Thus, for immigrant-native participation differences, whether or not care is used at all is more relevant than the type of care arrangement used. Third, much of the participation gap can be explained by just a few economic and sociodemographic factors, such as low parental education or low family income. Thus, lower use of care may result not from being an immigrant child per se but from factors associated with disadvantaged groups. Finally, the data for California indicate that center-based care environments are falling short of benchmarks associated with high-quality care for both immigrant and native preschool-age children alike. These results may not extend to other states, but they imply that, at least in the state with the largest share of immigrant children, ECE quality needs to be raised, especially in areas like instructional support, which has been shown to have a positive relationship with gains on cognitive assessments during the preschool year and on subsequent school achievement success.[23]

The Potential Benefits for Immigrant Children from ECE Programs

The interest in participation in high-quality ECE programs stems from an extensive body of research demonstrating the potential for benefits to children in school readiness and later school success. The strength of this research base is rooted in the use of rigorous approaches to evaluation, including experimental studies, often viewed as the gold standard, together with quasi-experimental methods that closely approximate the experimental approach. Much of the existing literature focuses on programs serving disadvantaged children, and these findings are equally relevant for immigrant children, who, as already noted, disproportionately experience poverty, low parental education,

and other stressors in early childhood. But some direct evidence also indicates that immigrant children and English learners benefit from high-quality programs. A relatively understudied issue is the potential benefits to parents from programs that serve their children.

Benefits from Targeted ECE Programs

Arguably the most active area of research in recent years has centered on the potential short- and longer-term benefits from high-quality early-learning programs serving children one or two years before they enter kindergarten.[24] The body of research includes experimental evaluations of small-scale demonstration programs such as the High-Scope/Perry Preschool Project, as well as of larger-scale publicly funded programs like Head Start. More recently, as states have expanded their preschool programs, a series of studies has used quasi-experimental methods to examine the effects of these larger-scale public programs in a handful of states on prereading and premath skills, as indicators of school readiness. Studies have also used observational data from the ECLS-K and other sources to further quantify the effects of preschool on readiness and later school performance. The Perry Preschool evaluation along with the evaluation of the Chicago Child-Parent Centers (CPC) program, both with longer-term follow-up, provide evidence of longer-term benefits from preschool participation. As noted, most of the preschool programs evaluated to date serve targeted groups of disadvantaged children based on family income or other risk factors. One exception is Oklahoma's state-funded universal preschool program, whose effects on school readiness for the diverse population of students who participate in the program have been studied extensively.

The preponderance of the evidence from this body of research indicates that high-quality preschool programs can produce cognitive benefits at the time of school entry, with magnitudes that can be large relative to other education interventions such as smaller class sizes in the early elementary grades, especially for the highest-quality programs. Children's levels of socioemotional development can also be higher, although the gains tend to be smaller than those for cognitive domains. Some studies even suggest that preschool programs may negatively affect child behavior, but these findings tend to be associated with observational studies that cannot account for program quality. Evidence, albeit limited, from the Perry Preschool and Chicago CPC evaluations shows the potential for high-quality preschool programs to generate educational benefits that extend into the elementary grades, such as less use of special education and reduced rates of grade repetition. The evaluations of these two programs further show meaningful lasting benefits such as higher rates of high school graduation and improved economic and social outcomes in adulthood such as higher earnings, reduced welfare use, and lower rates of crime. At the same time, the national Head Start experimental evaluation shows little lasting advantage of participation as of the last follow-up when treatment and control group members had reached the end of first grade. Lasting Head Start benefits may be lacking because the quality of the average Head Start program falls below that of Perry Preschool or Chicago CPC and because many children in the control group participated in other Head Start or early education programs.

A related research literature considers the effects of targeted early intervention programs serving children from birth to age three, as well as the relationship of the

quality of child-care programs more generally to child developmental outcomes.[25] Like the preschool literature, smaller- and larger-scale experimental studies have evaluated targeted center-based developmental programs for infants and toddlers (sometimes with extended services into the preschool years) such as Abecedarian, the Infant Health and Development Program, and Early Head Start. Observational studies have likewise estimated the effects of participation in nonparental care on children's developmental trajectories in cognitive and noncognitive domains.[26]

This body of research demonstrates that well-designed targeted programs serving infants and toddlers can produce short-term developmental benefits and even longer-term gains for school performance and adult outcomes. However, the stronger benefits are associated with smaller-scale programs whose benefits may not be as large when taken to scale. Indeed, the recent evaluation of the federally funded Early Head Start programs documents initial gains that were considerably more modest than those found for model programs and that were not sustained several years after the program ended.[27] Moreover, the evidence on the relationship between child care and children's development points to the importance of quality in determining whether children benefit from nonparental care.

Benefits Specifically for Immigrant Children and English Learners

For the most part, recent studies of the benefits of participation in ECE programs have not considered whether immigrants or English learners gain more or less than native children. The handful of studies that do look at this question indicate that immigrant children or English learners stand to benefit as much as, if not more than, children from other groups. Like the larger research literature, much of this research has considered the effects on school readiness measured in terms of academic skills in reading and mathematics. But there may be other benefits unique to immigrants. For example, center-based ECE can assist immigrant children in their adaptation to a sociocultural environment that might be different from the one at home, helping them to learn rules and norms of school settings, play cooperatively with diverse peers, and understand how to relate to teachers or other authority figures outside their families.[28] These potential socialization benefits may enable the gains in cognitive domains that have been the focus of the research available to date.

In terms of more academic outcomes, the quasi-experimental evaluation of Oklahoma's universal preschool program, for example, has documented that the gains in school readiness extend to children from diverse backgrounds, with estimated gains on measures of prereading and premath skills that are at least as large for Latino children as they are for white and African American children.[29] A more in-depth examination of the effects of Oklahoma's program on Latino children found the largest benefits for those whose parents spoke Spanish at home or were born in Mexico.[30] Because some children were tested in both English and Spanish, the study was also able to demonstrate that the language gains were generally larger in the former than in the latter.

Further evidence of the benefits of preschool participation for children from immigrant backgrounds comes from two observational studies based on the ECLS-K. One study estimated that children whose mothers were born outside the United States and who

This body of research demonstrates that well-designed targeted programs serving infants and toddlers can produce short-term developmental benefits and even longer-term gains for school performance and adult outcomes.

attended center-based preschool programs in the year before they started kindergarten had higher reading and math scores at kindergarten entry than did their counterparts who did not attend preschool, although the improvements were modest (about 0.2 for both achievement measures), and the gains from preschool were the same for children of immigrant mothers as for children of native-born mothers.[31] Head Start participation was also found to raise English-language proficiency at the time of kindergarten entry, especially for children of foreign-born mothers with less than a high school education. Compared with those not attending preschool, the empirical estimates also offered some suggestive evidence of larger improvements in English proficiency and academic achievement for immigrant children who attended preschool and whose mothers only speak a language other than English. This finding is similar to the results in the Oklahoma evaluation. On the other hand, a second study using a similar methodology and the ECLS-K found more muted gains from preschool participation on math achievement at kindergarten entry for the sample of Mexican-origin immigrant children (the first or second generation), in contrast to the findings from the research on Latinos in Oklahoma's program.[32]

One limitation of the ECLS-K for examining the effects of preschool on children's school readiness is that the assessment of reading skills was given only to children who demonstrated proficiency in English, a screen that was passed by only 74 percent of children of immigrant mothers. Children who were not English proficient but spoke Spanish could take a Spanish-language version of the math assessment, so the children evaluated on math skills make up a somewhat less selected sample. Another concern is that, in the absence of random assignment to preschool participation or no participation (or alternatively the use of quasi-experimental methods that approximate the experimental approach), estimates based on the ECLS-K may be biased if there are unmeasured factors that make children more likely to attend preschool and that also increase school readiness. For example, parents who provide more support at home for their children's early development may be more likely to send their children to preschool. Consequently, some or all of the measured preschool benefit may instead be the result of parental support or other unmeasured factors correlated with preschool participation. A final issue with the ECLS-K is that no information is available on the quality of the preschool programs that children attended, so the measured gains are those associated with the average or typical program rather than those that might be possible with higher-quality programs like Oklahoma's.

Across these studies, one issue that remains unexplored is the existence of longer-term benefits of preschool participation for immigrant children. On the one hand, immigrant

children, because they are relatively more disadvantaged than their native counterparts, might be expected to experience extended benefits from participation in high-quality ECE programs, consistent with the research evidence of sustained improvements from participation in targeted programs. However, as discussed in more detail in the Crosnoe and Turley article in this volume, the immigrant-native gap evident at the time of school entry tends to narrow over time as immigrants with low initial readiness, such as those from Latin America, experience faster growth in their reading and math scores than their native counterparts.[33] Again, given the diversity within the population of immigrant children, it may be those who are most vulnerable who experience both larger initial gains from ECE participation as well as longer-term positive benefits.

Another issue that merits more attention is the role of program quality in influencing the magnitude of the educational gains realized by immigrant children from participation in early-learning programs. One critical program feature for immigrant children is the approach to working with English learners. As more and more English learners participate in formal early-learning programs, researchers have turned their attention to more rigorous evaluations of approaches to serving them. Just as with K–12 education, alternatives include English immersion, bilingual instruction designed to transition students to English-only instruction, and two-way bilingual immersion (also known as dual language) designed to promote acquisition of both the home language and English.

A recent and rare experimental evaluation by W. Steven Barnett and colleagues compared the English immersion and two-way bilingual immersion approaches for a sample of three- and four-year-olds in a high-quality preschool program.[34] Both approaches generated gains for participants in language, emergent literacy, and mathematics consistent with those found for other high-quality programs. Although the two program models showed no significant differences on assessments conducted in English, the dual immersion program produced stronger gains in Spanish vocabulary for native-Spanish speakers. Thus, the research to date does not suggest that one particular approach to early education for English learners is better than another. At the same time, there may be other reasons to support dual immersion programs, given the longer-term cognitive advantages of bilingualism as well as the growing importance of fluency in other languages in an increasingly interconnected global economy.[35]

Benefits for Participating Parents

Much of the research evaluating ECE programs has focused on effects on child development, but parents, especially immigrant parents, may benefit as well from having their children participate in formal programs before they enter school. For example, a child-care center, preschool, or prekindergarten program is an institution with its own set of rules, norms, practices and procedures, and schedule. By virtue of these norms and procedures, such as determined drop-off and pick-up times, parent-teacher meetings, or classroom holiday celebrations, parents engage with each other and with the center's staff. This engagement provides opportunities for parents to widen their circle of acquaintances and potentially improve their social resources. The resources that inhere in social relationships, or social capital, in turn, can work to improve the quality of life for the family.[36]

In a study of child-care centers in New York City, Mario Small found that parents were

comfortable interacting and making connections with strangers they met at their children's day cares.[37] The centers gave parents with enrolled children a sense of trust and legitimacy, making the development of social ties and relationships fairly easy. The centers also provided opportunities for parents to meet and interact with each other in a safe environment. This analysis did not specifically focus on immigrant parents, but immigrant parents may likewise experience gains in their social capital depending on the center's institutional norms and practices.

Specialized services provided through ECE programs, often directed toward more disadvantaged families or those needing special assistance, may provide supports that are particularly relevant for immigrant parents with young children. These services may include English-language classes for parents or assistance in finding a job, both of which, in turn, enable the immigrant parent to become better integrated economically and socially into the broader U.S. society. For example, AVANCE, a program established in 1973 and based in California, New Mexico, and Texas, has a "whole-family" philosophy. AVANCE centers target families with children from birth to age four, providing early childhood education as well as parenting, adult literacy, English-language, and healthy-marriage training to parents. AVANCE's family support programs address low self-esteem and dependency, improving parents' connectivity to the community.[38]

Finally, participation in ECE programs may also support immigrant parents in realizing their educational goals for their children. Parents of immigrant children tend to have high aspirations for their educational attainment.[39] ECE programs that engage parents in their children's development are able to leverage those ambitions to teach parents how to participate in their children's learning and how to navigate the U.S. educational system. A study of Mexican immigrant mothers of young children enrolled in the Dallas AVANCE program found that, by showing the mothers how to participate in their children's learning through concrete activities (such as regular mother-child conversation, daily reading, and playtime activities that teach developmental skills), the mothers were able to overcome their own lack of schooling and motivate their children to pursue academic success.[40]

Barriers to Participation in High-Quality ECE Programs

While a growing body of evidence points to the positive benefits for immigrant children and their families from participating in high-quality ECE programs, we have also documented sizable gaps in participation rates in ECE programs between immigrant children and their native counterparts. Some of these differences can be explained by demographic and socioeconomic factors that are linked in the broader child-care and preschool literature to lower rates of ECE use.[41] These include being in a two-parent family and having low family income, parents with low education, or a nonworking parent.[42] Yet other determinants of care use, such as language barriers and knowledge gaps that relate to time in country, are unique to immigrants.[43] These demographic and socioeconomic characteristics of immigrant families do not operate in isolation. They affect and are affected by a number of factors—structural, informational, bureaucratic, and cultural—as well as by immigrants' perceptions, all of which can impede immigrant families' access to various types of nonparental care during the years before school entry.

The lower rates of enrollment in ECE programs on the part of immigrant children have prompted research into the causes. Much of this research is qualitative, drawing on small samples that may or may not be generalizable. Even so, it is reasonable to conclude from this literature that no single factor can explain why proportionately fewer immigrant children enroll in ECE programs. Rather, a combination of factors can be at play, and those factors may vary for different immigrant subgroups. The relative importance of different barriers may also change as immigrant families make decisions about ECE use for children at different stages of early childhood.

Structural Barriers

A number of structural factors can affect affordability, availability, and access to ECE programs for disadvantaged immigrant children, just as they do for disadvantaged families more generally. The cost of child-care and early-learning programs, particularly center-based care for infants, is a significant factor affecting the choices of low-income and working-class families.[44] Children in low-income families are therefore less likely to use formal ECE programs because of the costs associated with participation.[45] For example, in 2008 the market rate for care of preschool-age children was $180 a week; the rate for infant care was $267 a week, which was nearly equivalent to the weekly pay of a single minimum-wage earner.[46] Affordability of programs is a particularly acute issue for many immigrant families because, on average, immigrant families have lower incomes than nonimmigrant families.[47] As shown earlier using the NHES, children in low-income immigrant families use center-based child care less frequently than children of immigrant families with higher incomes or children in low-income, native families.[48]

Because immigrant children are overrepresented in the poverty population, they are typically eligible for subsidized care and early-learning programs through federal programs like Early Head Start, Head Start, or programs administered at the state level such as state-funded preschool programs or subsidized child care provided through Temporary Assistance to Needy Families (TANF) and

A number of structural factors can affect affordability, availability, and access to ECE programs for disadvantaged immigrant children, just as they do for disadvantaged families more generally.

the Child Care Development Fund (CCDF) block grant. Most immigrant children under age six are U.S. citizens and are therefore eligible for these programs if their families meet other requirements such as low income and, in some cases, a demonstrated need for care because the parents work or meet other criteria. Even if a child is eligible, an undocumented parent may not be able to demonstrate that he or she qualifies for the subsidized program. If parents are working outside of the formal labor market and have no verification of employment, a common situation for many undocumented immigrant workers, they will not be able to access available slots.[49] In addition, the available subsidized programs do not cover all children who are eligible, and immigrant families may be

less likely to obtain access if they are not able to navigate the system.

Beyond cost, there may be few care options in the community that can meet parents' needs for hours of care and other requirements. For example, a recent study for California documented that the shortage of suitable spaces for preschool-age children (that is, school-based slots or licensed private center-based providers in the child's neighborhood) is greatest for minority children, those with low parental education, and those whose parents do not speak English as their primary language.[50] Immigrants live predominantly in segregated neighborhoods with fewer services compared with nonimmigrants.[51] In addition, immigrants with low education tend to work jobs that have nontraditional hours or to work multiple jobs at various hours. The limited supply of programs in communities where immigrants are concentrated often cannot meet their needs for bilingual or culturally competent staff, flexible hours, or subsidized spaces.[52]

Getting a child to and from an ECE provider can also be a barrier. Programs that are not within walking distance of the family or are not located along public transit lines can be particularly difficult to reach for immigrants who do not drive. This is an issue particularly for lower-income immigrants who cannot afford a car, undocumented immigrants who are not able to obtain a U.S. driver's license, and immigrant mothers who never learned to drive in their countries of origin because of cultural mores against women driving. Even those programs that are accessible by public transportation may be difficult to reach if the immigrant family is unable to navigate transportation schedules because of language barriers.[53]

Informational and Bureaucratic Barriers

The structure of ECE markets and the complex array of subsidized alternatives that exist in many states can make it challenging for immigrant families to understand all their options and pursue their preferred choice. Studies of immigrant families note that many are simply unaware of the existence or availability of the ECE programs that their children could attend. Furthermore, the research has shown that the predominant method of sharing information about child-care and early-learning programs within immigrant communities is word of mouth, not formal information provision. City agencies and child-care providers may not be effectively using direct, language-appropriate outreach or media to educate immigrant families about the options available to them.[54] Yet, even if such outreach were available, immigrant families, because they rely predominantly on their co-ethnic immigrant peers to inform them of ECE options, may lack the necessary social resources and capital to understand and navigate the broad child-care market at their disposal.[55]

Enrollment processes in both public and private ECE programs involve complex paperwork and often long waiting lists. Immigrant parents may need to rely on community agencies to facilitate the process or to translate written or oral communications. Forms for subsidized programs can be even more complicated and time consuming because parents have to demonstrate their eligibility for the subsidy, documenting income level and, for some subsidies, employment status.[56] This process can be daunting, particularly for immigrants who do not know English well or who do not have many years of formal schooling in their home country. In a study in New York City, for example, immigrant parents who were interviewed remarked that they would

prefer to pay for unsubsidized center-based care or informal care by a trusted kin member or acquaintance because there would be fewer hassles and immediate enrollment.[57]

Another potential barrier to enrollment in center-based ECE programs is the need for a medical examination of the child or, at minimum, a certificate that the child's vaccinations are up-to-date. This additional step could dissuade some immigrants from enrolling their children in center-based programs. On average, immigrants have difficulty accessing the health care system—either because of a lack of knowledge about how to navigate the system or because of a lack of health insurance.[58] Furthermore, immigrant parents who work irregular or nontraditional hours have difficulty making an appointment for their children with medical professionals who are available only during traditional hours.

Cultural Barriers

A reason often cited for lower enrollment rates of immigrants is a familistic culture that characterizes immigrants from many parts of the world and that is particularly salient for Latino immigrant families. This culture leads parents to prefer that their children be cared for at home, rather than by nonrelatives in a formal educational setting.[59] And, because immigrant children are more likely to live in two-parent families, there is a preference for parental care because the parent at home can therefore promote the children's ethnic and cultural identities.[60] Although the cultural explanation may have some merit, recent research has demonstrated that structural factors are a stronger influence than familistic cultural factors on immigrant children's use of center-based care.[61] Immigrant parents' choice to use care by family members is largely a reflection of the care options available to them rather than a preference for informal or kin-based care.[62]

Another potential cultural barrier is the comfort level parents have interacting with child-care providers at a group care setting. This comfort level, in turn, can affect parental involvement in their children's child-care experience. Research has shown that parental involvement in their elementary and secondary school students' education is positively linked to students' academic and behavioral success.[63] Yet, parents modify their involvement at their children's school depending on the opportunities made available to them by the school or school staff.[64] If providers are not culturally sensitive or responsive, do not know the language of an immigrant family that has difficulty speaking English, or are unsupportive of immigrant families, the parents may not feel welcome and may not be responsive to requests for parent-teacher conferences or involvement in other activities. Research notes that being culturally responsive is critical in supporting parent participation, in allowing parents to communicate with the teachers to understand what is happening and to support their child's learning at home, and in developing trust in the program.[65] Research on kindergarten students finds that parental involvement in early education is linked to academic and behavioral success in elementary school, yet minority immigrant parents report more barriers to participation in their children's schooling and subsequently are less likely to be involved in school than their minority native-born counterparts, even when taking into consideration family demographic, racial and ethnic, and socioeconomic characteristics.[66] Immigrant parents may also prefer that their children enroll in programs that are familiar or supportive of the native language or culture.[67]

Barriers Created by (Mis)perceptions

A remaining set of potential barriers that can affect choices about care use for immigrant children can be labeled "perceptions," or maybe more accurately "misperceptions."As noted earlier, many immigrant children are eligible for federal or state-funded subsidized ECE programs. But the immigrant experience can result in distrust of the government and public programs, especially among those who are undocumented. In a study of Chicago immigrant parents, for example, fear of contacting public agencies was commonly cited as a reason for not enrolling their children in center-based or government-subsidized care.[68] Many immigrant parents also believe that restrictions placed on public benefits for certain types of immigrants such as those who are undocumented or in specific states mean that they are ineligible for any programs funded with federal dollars.[69]

A group especially likely to have a suspicious view of government programs is unauthorized immigrants who fear being deported or jeopardizing their future prospects for citizenship—even if their children are U.S. citizens and even if their fears are unfounded.[70] Even immigrant parents in the country legally often fear contact with public agencies. One reason is that the U.S. Citizenship and Immigration Services can deem an immigrant who is likely to become "primarily dependent on the government for subsistence" as a public charge. Such a finding can lead to severe hardships in adjusting one's immigration status (for an undocumented immigrant to become a permanent resident, for example, or for a permanent resident to become a U.S. citizen) or even lead to deportation in extreme cases.[71] Research has documented that fear of a "public charge" determination lowers participation of immigrants in public benefits programs. However, enrollment in most public benefits programs, including Head Start, state preschool programs, and subsidized child care, would not qualify an immigrant as a public charge.[72]

Some immigrant parents are also wary of filling out documentation that requires the disclosure of sensitive information, such as a Social Security number (SSN) or immigration status. In many cases, immigrant parents believe that they need to provide an SSN to demonstrate need for subsidized child care or that they need to divulge their immigration status. However, according to the Federal Privacy Act, applicants for child-care subsidies are not required to give an SSN.[73]

A study of immigrants in New York City found that some immigrant families do not want to use any form of subsidized care because of the stigma associated with its use. Believing they must be self-sufficient, families are afraid that accessing subsidized care will label them as burdens on the government as well as jeopardize their immigration status and their status within their co-ethnic immigrant community.[74]

Immigrant parents with few years of schooling and from certain countries of origin tend to be unaware of how important early education programs are for their children's subsequent school achievement.[75] They may not understand that center-based care, particularly in the preschool years, is the typical "mode of initiation into the education process for children with highly educated parents."[76] Previous research has noted a positive link between the rates of early child-care enrollment in the country of origin and that immigrant group's propensity to enroll their children in preschool.[77]

Policy Implications and Options

As researchers and policy makers focus on the use, quality, and impact of child-care and early-learning experiences before school entry, they must not ignore the situation of immigrant children. A substantial and growing share of the population, immigrant children are a diverse group that spans the full range of family socioeconomic status experienced by their native counterparts. Yet immigrant children disproportionately face stressors in early childhood such as low family income, low parental education, and lack of exposure to the English language that may affect their ability to enter school ready to learn.

To some extent, the risks that disadvantaged immigrant children face resemble those of their similarly disadvantaged native counterparts, but other factors are unique to immigrant children. Thus patterns of ECE use, quality, and impact for immigrant children are consistent with those of their native counterparts with similar demographic and socioeconomic characteristics. For example, the lower rates of use of nonparental care among immigrant infants, toddlers, and preschoolers can be at least partially explained by their higher prevalence of poverty and low parental education, among other factors. At the same time, immigrant children appear to benefit as much or potentially more than their native peers from high-quality ECE programs, perhaps because of the greater disadvantages they face on average. Thus, to improve ECE access and quality, policy makers can consider options that pertain to disadvantaged children more generally as well as those that address the issues unique to immigrant children. In the remainder of this section, we consider options using this two-pronged approach.

Policy Options for Increasing Use and Quality of ECE Programs for Disadvantaged Children

Given researchers' attention to shortfalls in ECE use and quality among disadvantaged children, policy makers are already considering, and in many cases implementing, reforms at the federal, state, and local levels.[78] Immigrant children who fall into the groups targeted by these efforts stand to benefit as well. Indeed, there may already be some narrowing of the immigrant-native gap in ECE participation that might be attributable to efforts to expand participation of underrepresented groups in new or existing programs like Early Head Start, Head Start, and state prekindergarten programs.

At the federal and state levels, reform strategies planned or under way include increasing funding for subsidized ECE programs so that greater numbers of eligible children can participate; integrating federal and state funding streams to create consolidated subsidized systems that are easier for parents to navigate; raising program quality through quality rating and improvement systems that also link provider reimbursement rates to program quality; improving the quality of ECE programs and classroom staff through reforms to workforce development systems; aligning early-learning education standards with those in the elementary grades and promoting more effective transitions from preschool to kindergarten; and linking and enhancing data systems to support evaluation of the reform efforts. Of course, existing reforms can always be improved, and various prescriptions for improvement exist.[79] These are all efforts that should benefit disadvantaged immigrant children, although ongoing evaluation is required to determine if the objectives of these policy reforms are realized.

In their efforts to expand access to ECE programs, some states have moved toward publicly funded universal provision, particularly for preschool programs serving four-year-olds. Immigrant children may benefit in multiple ways from this approach. Not only would all children be eligible so that affordability is no longer a concern, but barriers related to eligibility determination and the stigma of targeted programs would also be eliminated. Since universal programs are usually voluntary, immigrant children may still participate at lower rates if their parents have cultural reasons for preferring other types of care. However, the data examined earlier in this paper and other cited studies suggest that the cultural differences between immigrant and nonimmigrant families regarding use of care are less important than demographic and socioeconomic factors.

Immigrant children disproportionately face stressors in early childhood such as low family income, low parental education, and lack of exposure to the English language that may affect their ability to enter school ready to learn.

While many states aspire to universal provision, not all have the resources to do so. For the foreseeable future, most states will continue to provide both subsidized child care and preschool programs on a targeted basis. Even with targeted programs, however, alternative approaches to targeting may have differential consequences for immigrant children.[80] For example, in most states, subsidized ECE programs are available to children in families who meet specific eligibility criteria regarding income and other characteristics like employment status. Programs that rely on person-based targeting include Early Head Start, Head Start, subsidized child care through TANF and CCDF, and state-funded preschool programs. Such person-based targeted approaches are associated with a number of the barriers to immigrant participation enumerated earlier, such as difficulties with the application process, fear of exposure on the part of undocumented parents, and the stigma of participating in a targeted program.

Another approach, one that is in effect in New Jersey's Abbott Districts preschool program, is to use geographic targeting. Under this approach, all children in targeted communities are eligible for the program, regardless of other family circumstances. The targeting efficiency of this approach may be particularly effective for immigrant children who are often clustered in neighborhoods with a high concentration of immigrant families.[81] With geographic targeting, families need only document their residency (as they would for elementary school enrollment), and stigma is reduced because all children in the community are eligible. In the end, whether publicly funded ECE programs are universally available or limited to targeted populations, further research is needed to determine which subgroups of immigrant children could benefit the most from participation in high-quality programs and whether those subgroups are underrepresented in current programs.

Addressing the Unique Needs of Immigrant Children

Our assessment of the barriers to higher participation of immigrant children in high-quality ECE programs indicates that a number of obstacles represent unique issues faced by immigrants such as legal status, language barriers, cultural sensitivities, informational gaps, and perceptions about government services or the importance of early-learning programs. These issues can potentially be addressed through the way publicly subsidized programs are structured as well as by how providers themselves configure their programs. In many cases, the strategies we suggest below are being tried in states and communities across the country, and the knowledge base about what does and does not work is growing. A potential role for state or federal agencies in this process, or even for the research community, is the building of a centralized repository of information about those strategies that have proven effective and those that need further refinement or should be avoided.

At the institutional level, the agencies that implement or support publicly subsidized programs—federal and state departments, local education agencies, resource and referral agencies—can take steps to reduce barriers that limit the use of ECE programs by immigrant families. For example, language-accessible communication strategies can be targeted to immigrant communities to increase awareness of the programs and services available to them, the benefits of participation, and the lack of harmful consequences (such as becoming a public charge).[82] Given the tendency for immigrants to rely on informal social networks to find out about programs and to navigate the application process, policies could encourage the development of formal peer-to-peer networks for immigrant parents or could engage parents that use subsidized ECE programs to share information about the process and their experiences. Such strategies may even benefit from the use of new online tools for social networking that are gaining in popularity. This approach could help to ease the confusion about available options, provide support for any required application process, and work toward diminishing the stigma or fear of negative consequences associated with using subsidized care.

Other strategies could go beyond increasing information flows and addressing misperceptions to directly change bureaucratic processes. For example, government agencies could streamline their administrative requests and paperwork necessary for low-income immigrants to receive child-care benefits. Applications can be translated into more languages than the most common immigrant languages (Spanish, Mandarin, and Vietnamese). Furthermore, to ensure that U.S. citizen children receive the child-care subsidies to which they are entitled, applications could refrain from requesting a parent's SSN and instead ask for the number of the applicant child.

A number of studies have shown that parental involvement in children's elementary and secondary education is linked to academic or behavioral success of students. Thus efforts made to improve immigrant parents' involvement with ECE programs could prove fruitful in promoting children's success and transition to elementary school. Alongside outreach efforts to encourage parents to use child-care options, efforts need to be made to communicate to immigrant parents the importance of being engaged with their children's early education progress by attending

parent-teacher conferences, engaging in the process of transitioning to kindergarten, and communicating with teachers and staff. Unfortunately, rather than attributing lower levels of school participation to language or cultural barriers, ECE staff may assume that immigrant parents are not engaged in their child's development or social progress. This perception may have detrimental effects on the child's learning and development. Likewise, ECE programs can encourage more involvement by ensuring that staff are linguistically capable of communicating with parents whose second language is English.

The capacity of the existing ECE workforce to meet the specialized needs of immigrant communities is another area to target. Workforce development systems, whether in formal degree programs or ongoing professional development activities, can be enhanced to increase the cultural competency of program administrators and classroom staff so that they are knowledgeable about and can address the unique needs of immigrant families and their young children.[83] Programs also need to provide training in approaches to working effectively with English learners, whether on a whole classroom basis or in one-on-one interactions. Workforce development efforts also need to target both licensed and license-exempt home-based care providers to increase training on these same issues of cultural competency and English learners. Professional networks for at-home providers offer one strategy for reaching these more isolated providers and improving the quality of care.

Providers themselves also have a role to play in how they organize their programs and reach out to immigrant families. As the population has become more diverse in general, ECE providers and the institutions that support them (such as education and training institutions and accreditation agencies) have stressed the need for programs to be more culturally competent. For example, the National Association for the Education of Young Children, the premier organization that accredits child-care and early-learning programs, has an initiative to define culturally competent practices.[84] Although an understanding of best practices has yet to fully emerge, programs can be responsive in many ways, from hiring teachers and staff who speak the languages of the parents or who are from the same country, to creating formal roles for parents and others to act as cultural liaisons, to honoring and respecting cultural and religious practices that may differ from those of the mainstream American society.[85]

Another critical element in supporting immigrant children is the implementation of curricula and other practices that support English learners. These may be formal strategies, such as the dual language immersion approach discussed earlier, as well as strategies that support the development of the English learners in a classroom or group. Here further research is needed to support program administrators and classroom staff in their efforts to identify best practices and to engage in a process of continuous improvement. Other program elements that may have particular benefit for immigrant children are approaches to supporting the transition from preschool to kindergarten.

Ultimately, it is important to recognize that high-quality child-care and early-learning programs alone will not fully close the gaps in school readiness and achievement that exist for immigrants or immigrant subgroups. While not specific to immigrant children, several studies have estimated the potential

of increasing access to and the quality of ECE programs as a strategy for narrowing racial-ethnic gaps in readiness and academic achievement.[86] These studies show that a modest to substantial share of existing gaps can be closed, depending on the assumptions about the effectiveness of high-quality ECE programs. These findings are likely to extend to immigrant children as well, given that readiness and achievement gaps and effectiveness of ECE programs for immigrants versus natives are comparable in magnitude to those seen across racial and ethnic groups. Yet, even the most effective programs will not overcome all of the disadvantages facing immigrant children as they prepare for school and beyond. Thus, the strategies covered in this article must be integrated with those in the other articles in this volume to provide a continuum of supports for immigrant children and youth as they transition to adulthood.

Endnotes

1. The figures in this paragraph are from the Urban Institute's Children of Immigrants Data Tool (http://datatool.urban.org/charts/datatool/pages.cfm). For recent demographics, see also Karina Fortuny and others, *Children of Immigrants: National and State Characteristics*, Brief 9 (Washington: Urban Institute, August 2009).

2. The corresponding shares for native-born children with native-born parents are 1, 8, and 16 percent, respectively.

3. Katherine A. Magnuson and Jane Waldfogel, "Early Childhood Care and Education: Effects on Ethnic and Racial Gaps in School Readiness," *Future of Children* 15, no. 1 (2005): 169–96.

4. Jack P. Shonkoff and Deborah A. Phillips, eds., *From Neurons to Neighborhoods: The Science of Early Child Development* (Washington: National Academy Press, 2000).

5. Peter Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States," *International Migration* 42, no. 1 (2004): 65–87.

6. Donald J. Hernandez, Nancy A. Denton, and Suzanne E. Macartney, "Early Childhood Education Programs: Accounting for Low Enrollment in Newcomer and Native Families," in *The Next Generation: Immigrants in Europe and North America,* edited by Richard D. Alba and Mary C. Waters (New York University Press, forthcoming); Donald J. Hernandez, Nancy A. Denton, and Suzanne E. Macartney, *Children in Immigrant Families—The U.S. and 50 States: National Origins, Language, and Early Education*, Publication 2007-11 (State University of New York-Albany, Child Trends and the Center for Social and Demographic Analysis, April 2007).

7. Katherine Magnuson, Claudia Lahaie, and Jane Waldfogel, "Preschool and School Readiness of Children of Immigrants," *Social Science Quarterly* 87, no. 5 (2006): 1241–62; Robert Crosnoe, "Early Child Care and the School Readiness of Children from Mexican Immigrant Families," *International Migration Review* 41, no. 1 (2007): 152–81.

8. Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6); Crosnoe, "Early Child Care and the School Readiness of Children from Mexican Immigrant Families" (see note 7).

9. Hernandez, Denton, and Macartney, *Children in Immigrant Families* (see note 6).

10. W. Steven Barnett and others, *The State of Preschool 2008: State Preschool Yearbook* (New Brunswick, N.J.: National Institute for Early Education Research, 2008).

11. National Center for Education Statistics, Institute of Education Sciences, "National Household Education Surveys Program" (http://nces.ed.gov/nhes). The 1996 NHES has previously been used to examine care arrangements for immigrant versus nonimmigrant children. See Christine Winquist Nord and James A. Griffin, "Educational Profile of 3- to 8-Year-Old Children of Immigrants," in *Children of Immigrants: Health, Adjustment and Public Assistance*, edited by Donald J. Hernandez (Washington: National Academy Press, 1998).

12. In addition to the Census, SIPP, and ECLS-K, another possible source of nationally representative data on ECE use is the Early Childhood Longitudinal Study—Birth Cohort (ECLS-B). One drawback of the ECLS-B is that the sample consists of a cohort of children born in 2001 in the United States, so children

born abroad are excluded. In the case of the ECLS-K, the survey began with a kindergarten cohort, so only limited retrospective information is available about early care and education experiences before kindergarten entry.

13. Lynn A. Karoly and others, *Prepared to Learn: The Nature and Quality of Early Care and Education for Preschool-Age Children in California* (Santa Monica, Calif.: RAND Corporation, 2008).

14. Because of both data and space constraints, the empirical analysis is limited to a general exploration of patterns for immigrant children. It does not afford a more in-depth analysis of the variation in outcomes for children defined by race and ethnicity, country of origin, or English fluency.

15. While the birth-date cutoffs for kindergarten entry vary across states (and sometimes within states), thirty-five states as of 2005 had a cutoff between August 31 and October 16, so a mixture of four- and five-year-olds will enter kindergarten each fall (Education Commission of the States, "State Statutes Regarding Kindergarten" (Denver, April 2005) (www.ecs.org/clearinghouse/58/28/5828.pdf). In the NHES, because we did not have access to the restricted file with state identifiers, we defined kindergarten entry cohorts as those who will turn five by October 1. For example, for the 2005 NHES, the four-year-olds are those born between October 1, 1999 and September 30, 2000, the group that would be eligible in most states to enter kindergarten in September 2005. Thus, at the time of the NHES interview in January to April 2005, the oldest children in the four-year-old cohort will have already turned five, while the youngest will still be age four. This same approach applies to the California data although in that case, kindergarten entry cohorts are defined for the California cutoff, which is December 2, one of the later state cutoffs.

16. The survey instrument for the RAND California study was modeled in part on the NHES, including the modules that collect information on regular nonparental care arrangements.

17. Because of small sample sizes in the single-year age cohorts in the NHES and California data, the differences in ECE use by immigrant status reported in table 1 are generally statistically significant only for the youngest age group, which covers three single-year age cohorts and therefore has three times the sample size.

18. For example, Magnuson, Lahaie, and Waldfogel, "Preschool and School Readiness of Children of Immigrants" (see note 7), estimated preschool plus Head Start participation in the year before kindergarten as 73 percent for children of native-born mothers versus 58 percent for children of immigrant mothers, a 15-percentage-point differential in contrast to the 10-percentage-point differential for center-based care for four-year-olds shown in table 1. The figures from Magnuson and colleagues are not strictly comparable to those in table 1 because of the different definition of immigrant status.

19. Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States" (see note 5).

20. Given the differences in ECE use by age cohorts, we focus on a single cohort in table 3. The general patterns observed for four-year-olds are replicated when we focus instead on the two younger age groups.

21. Karoly and others, *Prepared to Learn* (see note 13).

22. Ibid.

23. Bridget K. Hamre and Robert C. Pianta, "Can Instructional and Emotional Support in the First-Grade Classroom Make a Difference for Children at Risk of School Failure?" *Child Development* 76, no. 5 (2005):

949–67; Carollee Howes and others, "Ready to Learn? Children's Per-Academic Achievement in Pre-Kindergarten Programs," *Early Childhood Research Quarterly* 23, no. 1 (2008): 27–50.

24. For recent reviews, see Barbara T. Bowman, M. Suzanne Donovan, and M. Susan Burns, eds., *Eager to Learn: Educating Our Preschoolers* (Washington: National Academy Press, 2001); Bruce Fuller, Margaret Bridges, and Seeta Pai, *Standardized Childhood: The Political and Cultural Struggle over Early Education* (Stanford University Press, 2007); William T. Gormley Jr., "Early Childhood Care and Education: Lessons and Puzzles," *Journal of Policy Analysis and Management* 26, no. 3 (2007): 633–71; Lynn A. Karoly, *Preschool Adequacy and Efficiency in California: Issues, Policy Options, and Recommendations* (Santa Monica, Calif.: RAND Corporation, 2009). Recent formal meta-analyses of the effects of preschool programs are provided by Laurie M. Anderson and others, "The Effectiveness of Early Childhood Development Programs: A Systematic Review," *American Journal of Preventive Medicine* 24, no. 3 (2003): 32–46; Geoffrey Nelson, Anne Westhues, and Jennifer MacLeod, "A Meta-Analysis of Longitudinal Research on Preschool Prevention Programs for Children," *Prevention and Treatment* 6 (2003): 1–34; and Gregory Camilli and others, "Meta-Analysis of the Effects of Early Education Interventions on Cognitive and Social Development," *Teachers College Record* 112, no. 3 (2010). The Head Start follow-up study is found in U.S. Department of Health and Human Services, Administration for Children and Families, *Head Start Impact Study: Final Report* (2010).

25. For recent reviews, see Shonkoff and Phillips, eds., *From Neurons to Neighborhoods* (see note 4); Lynn A. Karoly, M. Rebecca Kilburn, and Jill S. Cannon, *Early Childhood Interventions: Proven Results, Future Promise* (Santa Monica, Calif.: RAND Corporation, 2005); Gormley, "Early Childhood Care and Education" (see note 24).

26. National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network (ECCRN), "The Relation of Child Care to Cognitive and Language Development," *Child Development* 74, no. 4 (2000): 960–80; NICHD ECCRN and Greg J. Duncan, "Modeling the Impacts of Child Care Quality on Children's Preschool Cognitive Development," *Child Development* 74, no. 5 (2003): 1454–75; NICHD ECCRN, *Child Care and Child Development: Results from the NICHD Study of Early Child Care and Youth Development* (New York: Guilford Press, 2005).

27. Administration for Children and Families, "Preliminary Findings from the Early Head Start Prekindergarten Follow-Up" (U.S. Department of Health and Human Services, 2006).

28. Rubén Rumbaut, "Ties That Bind: Immigration and Immigrant Families in the United States," in *Immigration and the Family: Research and Policy on U.S. Immigrants*, edited by Alan Booth and others (New Jersey: Lawrence Erlbaum Associates, Inc., 1997), pp. 3–46.

29. The effect sizes for Hispanic children on the Woodcock-Johnson Applied Problems, Letter-Word Identification, and Spelling subtests were 0.99, 1.50, and 0.98, respectively, all statistically significant. See William T. Gormley and others, "The Effects of Universal Pre-K on Cognitive Development," *Developmental Psychology* 41, no. 6 (2005): 872–84.

30. William T. Gormley Jr., "The Effects of Oklahoma's Pre-K Program on Hispanic Children," *Social Sciences Quarterly* 89, no. 4 (2008): 916–36.

31. Magnuson, Lahaie, and Waldfogel, "Preschool and School Readiness of Children of Immigrants" (see note 7).

32. Crosnoe, "Early Child Care and the School Readiness of Children from Mexican Immigrant Families" (see note 7).

33. Wen Jui Han, "The Academic Trajectories of Children of Immigrants and Their School Environments," *Developmental Psychology* 44, no. 6 (2008): 1572–90; Sean Reardon and Claudia Galindo, "The Hispanic-White Gap in Math and Reading in the Elementary Grades," *American Educational Research Journal* 46, no. 3 (2009): 853–91.

34. W. Steven Barnett and others, "Two-Way and Monolingual English Immersion in Preschool Education: An Experimental Comparison," *Early Childhood Research Quarterly* 22, no. 3 (2007): 277–93.

35. Ibid.

36. Social capital can include the obligations and trust that people who are connected may feel toward each other, the sense of solidarity they may call upon, the information they are willing to share, and the services they are willing to perform. For more information about the theoretical underpinnings of social capital, see Pierre Bourdieu, *Outline of a Theory of Practice* (Cambridge University Press, 1977); James Coleman, *Foundations of Social Theory* (Cambridge, Mass.: Belknap Press, 1990); Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology* 24 (1998): 1–24; and Nan Lin, *Social Capital: A Theory of Structure and Action* (Cambridge University Press, 2001).

37. Mario Small, *Unanticipated Gains: Origins of Network Inequality in Everyday Life* (Oxford University Press, 2009).

38. AVANCE, "About Us" (http://national.avanceinc.org).

39. Grace Kao and Marta Tienda, "Optimism and Achievement: The Educational Performance of Immigrant Youth," *Social Science Quarterly* 76, no. 1 (1995): 1–19.

40. Ana Schaller, Lisa Rocha, and David Barshinger, "Maternal Attitudes and Parent Education: How Immigrant Mothers Support Their Children's Education despite Their Low Levels of Education," *Early Childhood Education Journal* 34, no. 5 (2007): 351–56.

41. See, for example, Cheryl Hayes, John Palmer, and Martha Zaslow, *Who Cares for America's Children? Child Care Policy for the 1990s* (Washington: National Academy Press, 1990); David Blau, *The Child Care Problem: An Economic Analysis* (New York: Russell Sage Foundation, 2001); NICHD ECCRN, "Familial Factors Associated with the Characteristics of Nonmaternal Care for Infants," *Journal of Marriage and the Family* 59 (1997): 389–408.

42. Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States" (see note 5).

43. Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6).

44. Ruby Takanishi, "Leveling the Playing Field: Supporting Immigrant Children from Birth to Eight," *Future of Children* 14, no. 2 (2004): 61–81.

45. Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6); Gormley and others, "The Effects of Universal Pre-K on Cognitive Development" (see note 29); Donald Hernandez, "Demographic Change and the Life Circumstances of Immigrants," *Future of Children* 14, no. 2 (2004): 16–47.

46. Department of Labor, "Minimum Wage Laws in the States" (www.dol.gov/whd/minwage/america.htm).

47. Hannah Matthews and Danielle Ewen, *Reaching All Children? Understanding Early Care and Education Participation among Immigrant Families* (Washington: CLASP, 2006).

48. See also Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States" (see note 5).

49. Matthews and Ewen, *Reaching All Children?* (see note 47).

50. Molly Munger and others, *California's Preschool Space Challenge: What Preschool Advocates, Parents, and Policy-Makers Need to Know* (Los Angeles: Advancement Project, 2007).

51. George Borjas, *Heaven's Door: Immigration Policy and the American Economy* (Princeton University Press, 1999).

52. Gina Adams and Marla McDaniel, *Fulfilling the Promise of Preschool for All: Insights into Issues Affecting Access for Selected Immigrant Groups in Chicago* (Washington: Urban Institute, 2009).

53. Rasmia Kirmani and Vanessa Leung, "Breaking Down Barriers: Immigrant Families and Early Childhood Education in New York City," Policy Brief (New York: Coalition for Asian American Children and Families, 2008).

54. Ibid.; Adams and McDaniel, *Fulfilling the Promise of Preschool for All* (see note 52).

55. Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States" (see note 5).

56. Adams and McDaniel, *Fulfilling the Promise of Preschool for All* (see note 52).

57. Kirmani and Leung, "Breaking Down Barriers" (see note 53).

58. Kathryn P. Derose and others, "Immigrants and Health Care Access, Quality, and Cost," *Medical Care Research and Review* 66, no. 4 (2009): 355–408.

59. Xiaoyan Liang, Bruce Fuller, and Judith D. Singer, "Ethnic Differences in Child Care Selection: The Influences of Family Structure, Parental Practices, and Home Language," *Early Childhood Research Quarterly* 15, no. 3 (2000): 357–84; Lynet Uttal, "Using Kin for Child Care: Embedment in the Socio-economic Networks of Extended Families," *Journal of Marriage and the Family* 61, no. 4 (1999): 845–57.

60. Peter D. Brandon, "The Living Arrangements of Children in Immigrant Families in the United States," *International Migration Review* 36, no. 2 (2002); Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States" (see note 5).

61. See, for example, Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6); Brandon, "The Child Care Arrangements of Preschool-Age Children in Immigrant Families in the United States" (see note 5).

62. Miriam Calderon, *Buenos Principios: Latino Children in the Earliest Years of Life* (Washington: National Council of La Raza, 2007); National Task Force on Early Childhood Education for Hispanics, *Para Nuestros Ninos: Expanding and Improving Early Education for Hispanics* (Arizona University, 2007).

63. For a review of the field, see Kristen Turney and Grace Kao, "Barriers to School Involvement: Are Immigrant Parents Disadvantaged?" *Journal of Educational Research* 102, no. 4 (2009): 257–71.

64. Abe Feuerstein, "School Characteristics and Parent Involvement: Influences on Participation in Children's Schools," *Journal of Educational Research* 94 (2000): 29–40.

65. Hannah Matthews and Deanna Jang, *The Challenges of Change: Learning from the Child Care and Early Education Experiences of Immigrant Families* (Washington: CLASP, 2007).

66. Turney and Kao, "Barriers to School Involvement" (see note 63). In this study, barriers were defined as inconvenient meeting times, problems with safety going to school, no child care at meetings, not feeling welcomed by the school, problems with transportation, problems because of speaking a language other than English, and family members not getting time off from work.

67. Shonkoff and Phillips, eds., *From Neurons to Neighborhoods* (see note 4); Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6).

68. Adams and McDaniel, *Fulfilling the Promise of Preschool for All* (see note 52).

69. Ibid.

70. Kinsey A. Dinan, *Federal Policies Restrict Immigrant Children's Access to Key Public Benefits* (New York: National Center for Children in Poverty, 2005), notes that there is little evidence to suggest that undocumented immigrants are deported because they access benefits for their children. For examples of Haitian and Mexican immigrants' lack of participation in public benefits programs and avoidance of the state, even when their children are U.S. citizens and eligible, see Philip Kretsedemas and Ana Aparicio, eds., *Immigrants, Welfare Reform, and the Poverty of Policy* (New York: Greenwood Press, 2004).

71. Calderon, *Buenos Principios* (see note 62).

72. For more information on public charge, see Shawn Fremstad, *The INS Public Charge Guidance: What Does It Mean for Immigrants Who Need Public Assistance?* (Washington: Center on Budget and Policy Priorities, 2000): 12.

73. See U.S. Department of Health and Human Services, Administration for Children and Families, "Clarifying Policy Regarding Limits on the Use of Social Security Numbers under the CCDF and the Privacy Act of 1974" (www.acf.hhs.gov/programs/ccb/law/guidance/current/pi0004/pi0004.htm).

74. Kirmani and Leung, "Breaking Down Barriers" (see note 53).

75. Adams and McDaniel, *Fulfilling the Promise of Preschool for All* (see note 52); Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6).

76. Hernandez, Denton, and Macartney, "Early Childhood Education Programs" (see note 6).

77. Adams and McDaniel, *Fulfilling the Promise of Preschool for All* (see note 52).

78. Karoly, *Preschool Adequacy and Efficiency in California* (see note 24).

79. As one example, Karoly, *Preschool Adequacy and Efficiency in California* (see note 24), makes recommendations for California regarding strategies for increasing the use and quality of publicly subsidized ECE programs in the state that serve children one or two years before kindergarten entry.

80. See Karoly, *Preschool Adequacy and Efficiency in California* (see note 24), for a discussion of the merits of the alternative approaches to targeting and estimates of the implications for which groups of children are served.

81. Gabriella Gonzalez, *Educational Attainment in Immigrant Families: Community Context and Family Background* (New York: LFB Scholarly Publishers, 2005).

82. Kirmani and Leung, "Breaking Down Barriers" (see note 53).

83. Adams and McDaniel, *Fulfilling the Promise of Preschool for All* (see note 52).

84. National Association for the Education of Young Children, "New Tool from NAEYC on QRIS and Cultural Competence" (Washington 2009) (www.naeyc.org/federal/07_22_09).

85. Matthews and Jang, *The Challenges of Change* (see note 65).

86. Karoly, *Preschool Adequacy and Efficiency in California* (see note 24); Magnuson and Waldfogel, "Early Childhood Care and Education" (see note 3).