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Developmental Needs and Individualized Family Service Plans Among Infants and Toddlers in the Child Welfare System

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This study examines levels of developmental need in young children investigated by child protective services, estimates early intervention service use, and examines need and service use variations during the 5-6 years after investigation on the basis of maltreatment substantiation status. Data were from the National Survey of Child and Adolescent Well-Being, the first nationally representative study of children investigated for maltreatment. The sample comprised 1,845 children aged 0 to 36 months at baseline. Logistic regression with covariate adjustment was used to examine the relationship between having an Individualized Family Service Plan (IFSP; a proxy and marker of early intervention services through Part C of the Individuals With Disabilities Education Act) and substantiation status. A high prevalence of developmental problems was found among children with substantiated cases and children with unsubstantiated cases. Few children with developmental needs had an IFSP. Substantiation status and level of child welfare system involvement were significantly associated with having an IFSP.

Keywords: *child and adolescent development; longitudinal research; measure development; children in child welfare; infants; logistic regression*

Maltreatment of children aged 0 to 3 years can have deleterious effects on their development (Anda

et al., 2006; Leslie, Gordon, Ganger, & Gist, 2002; Perry, 1997; Shonkoff & Phillips, 2000), effects that can be addressed by early intervention (Shonkoff & Meisels, 2000). The federal Keeping Children Safe Act of 2003 amended the Child Abuse and Prevention Treatment Act (CAPTA; Pub. L. No. 108-36) to require that states develop provisions and procedures for referring child maltreatment victims to early intervention services (CAPTA, 2003). The legislation targets children younger than age 3 who are involved in a case of child abuse or neglect that is substantiated by the child welfare system (CWS), and it specifies delivery of early intervention services funded under Part C of the Individuals With Disabilities Education Act of 1990 (IDEA, 21 USC § 106[b][2][A]). Part C services are intended to enhance the development of infants and toddlers with disabilities and minimize infants' potential for developmental delay. These services can also be an entrée into special education services when compromises to development are enduring.

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The CAPTA amendment's focus on substantiated cases was likely meant to ensure that those children who are truly maltreated are served; however, both researchers and CWS professionals have considerable doubt about the accuracy of substantiation as a measure of child maltreatment (Tumlin & Geen, 2000). Some cases are deemed unsubstantiated simply because of lack of sufficient evidence, even when caseworkers believe children have been harmed (Drake, 1996). Research has also suggested that children in unsubstantiated cases do not differ from children in substantiated cases in the degree to which their development is compromised (Hussey et al., 2005; Leiter, Myers, & Zingraff, 1994). No studies, however, have examined whether children in substantiated cases need and receive Part C services more often than children in unsubstantiated cases (S. Rosenberg & Robinson, 2003; S. A. Rosenberg, Smith, & Levinson, 2006).

Using a nationally representative sample of children involved with the CWS, this study compares children in substantiated and unsubstantiated cases on indicators of developmental delay and presence of an Individualized Family Services Plan (IFSP), which serves as the formal entry vehicle to Part C early intervention services and, later, presence of an Individualized Educational Plan (IEP), the formal entry vehicle to special education services. The IFSP is a legal document that defines the goals of the intervention and the services that will be provided. Children with an IFSP or an IEP may receive services or they may only be monitored for developmental delay; once they show developmental delay, they are entitled to services. Although the data precede the CAPTA amendment, they shed light on the relationship between substantiation and need for early intervention services, as well as the roles both need and substantiation have played in determining which children have received an IFSP and an IEP.

We address four research questions:

- What percentage of children aged 0 to 3 years involved in CWS investigations need Part C early intervention services?
- Do children in substantiated cases have greater need for an IFSP than children in unsubstantiated cases?
- What percentage of those in need receive an IFSP and later an IEP?
- Which is a better predictor of IFSP receipt, need or substantiation?

METHOD

This research is based on data from the National Survey of Child and Adolescent Well-Being (NSCAW),

which features the first national probability sample of children investigated for child maltreatment. NSCAW is a national longitudinal study of the well-being of 5,501 children aged 14 or younger who had contact with the CWS during a 15-month period starting October 1999. Two-stage random sampling was conducted to select 92 primary sampling units in 97 counties located in 36 states nationwide. Data were collected at baseline and at follow-ups conducted 1 year (only caseworkers' interviews), 1.5 years, 3 years, and 5 to 6 years after the completion of the investigation. Other publications contain additional information on NSCAW methodology (National Survey of Child & Adolescent Well-Being Research Group, 2002). These families included both open and closed cases (i.e., cases closed without services). Among cases that were open, some children were served in their homes, and some were served in out-of-home care (e.g., foster care). Because of statistical power requirements for key categories of cases, the sample design required oversampling of open cases, infants, and sexual abuse cases.

Participants

This analysis focuses on children aged 0 to 36 months at baseline who were involved in child maltreatment investigations as infants or toddlers and were part of the NSCAW child protective services sample. A total of 2,015 children and their caregivers met inclusion criteria. Approximately 6% (170 children) were missing data on substantiation status, leaving an analysis study sample of 1,845. There were no significant differences in age, sex, race, poverty, and level of CWS involvement at baseline between children with missing values for substantiation and those with complete data. At any follow-up, attrition was less than 20% of the sample size at baseline. Only at the 1.5-year follow-up (11.1% attrition) was there a statistically significant difference in one variable: Children not interviewed were more likely to be living at home at baseline (92.5%) than those interviewed (82.5%).

Procedures

Field representatives received 12 days of intensive training with special emphasis on the practice and administration of child assessment instruments (National Survey of Child & Adolescent Well-Being Research Group, 2002). Field representatives contacted caregivers and asked permission to interview them about the selected child and to assess the child directly by means of standardized measures. Baseline interviews and assessments were conducted an average of 4 months after the CWS investigation for maltreatment.

Interviews with the children's caregivers were conducted in English (96%) or Spanish (4%) at the children's homes, by means of computer-assisted personal interviewing. Caregivers received an honorarium of approximately \$40 for their participation in each interview. NSCAW also conducted 1-hr computer-assisted personal interviewing sessions with the CWS caseworkers, who were instructed to consult the case record as needed during the interview. The data analyzed here are drawn from child assessments and caregiver and caseworker interviews.

Measures

NSCAW was supervised by a panel of national experts to determine the list of instruments and tests used at each wave of data collection. Whenever possible, standardized instruments with national norms, or instruments or questions that had been used in previous studies with large and diverse national samples of children and families, were chosen.

Sociodemographics. Caregivers were asked about their child's sex, age, race or ethnicity, and family income and number of adults and children in the household. Family income and number of adults and children in the household were used to determine poverty level by means of U.S. Census Bureau guidelines (Dalaker, 2001).

Substantiation. Children were classified as having a substantiated maltreatment case on the basis of caseworkers' responses to the following question: "What was the outcome of the investigation: (1) substantiated, (2) indicated, (3) neither substantiated or indicated, or unfounded or ruled out, (4) high risk, (5) medium risk, (6) low risk?" In this study, for 27.6% of children the outcome of the investigation was substantiated, which is almost the same percentage (28%) reported for 2000 in the National Child Abuse and Neglect Data System (U.S. Department of Health & Human Services, 2002). For almost half the children (48%), the outcome of the investigation was neither substantiated nor indicated, and for 9.8% it was indicated. In 14.6% of cases, caseworkers reported a level of risk instead of a substantiation decision (high risk, 3.5%; medium risk, 2.6%; and low risk, 8.5%), either because a traditional investigation was not conducted or because the caseworker was unaware of the substantiation decision. Following the criteria used for the annual national reports on child maltreatment, which are based on the National Child Abuse and Neglect Data System, only when caseworkers chose *substantiated* did NSCAW classify children's cases as such. All other cases were classified as unsubstantiated.

Maltreatment characteristics. NSCAW used the Limited Maltreatment Classification System (Barnett, Manly, & Cicchetti, 1993) to capture information about the reported maltreatment. Caseworkers were provided with a card with examples of each type of maltreatment. The most serious type of maltreatment was assessed by asking the caseworkers in the baseline interview,

Of the types of abuse or neglect that were reported, please tell me the type that you felt was the most serious (physical maltreatment, sexual maltreatment, emotional maltreatment, physical neglect [failure to provide], neglect [lack of supervision], abandonment, moral/legal maltreatment, educational maltreatment, exploitation, and other).

Caseworkers also completed 4-point Likert-type scale items about the degree of harm the child experienced and the degree of risk the child was at (*none, mild, moderate, or severe*).

Caseworker report on caregiver problems. NSCAW used the risk assessment questions from the risk assessment tools used in child protective services in Michigan, New York, Washington, Illinois, and Colorado to collect information about the main caregiver: "At the time of the investigation was there active alcohol abuse by caregiver?" "Did caregiver have any serious mental health or emotional problem?" "Was there active domestic violence?" "Was there a history of abuse and neglect of caregiver?" "Was there low social support?" "Did the family have trouble paying for basic necessities such as food, shelter, clothing, electricity or heat?"

Level of CWS involvement. Level of involvement with CWS at baseline (at home with an open CWS case, at home with no open CWS case, or placed out of home) was obtained from the CWS agency workers. Kinship foster care was included in the out-of-home category.

Infant development. Developmental data on NSCAW's infants and toddlers are based on direct assessment of the child by the field representative. The instruments or versions appropriate to the child's age were used for assessment at baseline and 1.5-, 3-, and 5- to 6-year follow-up.

Cognitive development. NSCAW used the cognitive domain of the Battelle Developmental Inventory, which assesses perceptual discrimination, memory, reasoning, academic skills, and conceptual development for children 0 to 4 years old (Newborg, Stock, & Wnek, 1988). At follow-ups, the Kaufmann Brief Intelligence Test (Kaufman & Kaufman, 1990) was

used for children 4 years of age and older. The Kaufmann Brief Intelligence Test is a brief, individually administered measure of verbal and nonverbal intelligence.

Language. The Preschool Language Scale–3 was used to measure language development from birth to age 5. The Preschool Language Scale–3 assesses auditory comprehension and expressive communication (Zimmerman, Steiner, & Pond, 1992). The Letter-Word Identification and Passage Comprehension sections of the Woodcock-Johnson III Tests of Cognitive Abilities (Woodcock, McGrew, & Mather, 2001) were the language measures used at the 5- to 6-year follow-up. Letter-Word Identification measures basic reading skill involving naming letters and reading words aloud from a list. Passage Comprehension is a measure of reading comprehension in which the individual has to orally supply the missing word removed from each sentence.

Analytic skills. Children's analytic skills were assessed with the Calculation and Applied Problems sections of the Woodcock-Johnson III Tests of Cognitive Abilities (Woodcock et al., 2001). Calculation is a test of math achievement measuring the ability to perform arithmetic computation with paper and pencil. Applied Problems is a test of math reasoning requiring the individual to solve oral word problems.

Living skills. NSCAW used the Daily Living Skills items from the Vineland Adaptive Behavior Scale Screener. These items assess personal care skills (e.g., how the child eats, dresses, and performs personal hygiene), domestic skills (household tasks the child performs), and community skills (how the child spends his or her time; Sparrow, Balla, & Cicchetti, 1984).

Operationalizing need for Part C early intervention services. Under Part C, states have two mandated eligibility categories of children whom they must serve and one discretionary category of children whom they can choose to serve. The two mandated eligibility categories are (a) children who are experiencing a developmental delay (determined by developmental assessment) and (b) children who have a diagnosed mental or medical condition that has a high probability of resulting in developmental delay (e.g., conditions such as chromosomal abnormalities, genetic or congenital disorders, severe sensory impairments, or exposure to toxic substances). The discretionary category is at-risk children (Shackelford, 2006). Two subcategories of at-risk children are frequently described by states that choose to serve children who are at risk of developmental delay: biomedical risks

(e.g., low birth weight, failure to thrive, or chronic lung disease) and environmental risks (e.g., parental substance abuse, poverty, parental age, or child abuse or neglect). Currently, about two thirds of states define *developmental delay* as being 2 standard deviations below the mean in at least one developmental area (cognitive development, physical development, communication development, social or emotional development, or adaptive development) or 1.5 standard deviations below in two areas. The other third of states define *developmental delay* as being 1.5 standard deviations below in one area. Only a few states serve children because of biomedical and environmental risk factors; in those few places, children were eligible for Part C early intervention services on the basis of maltreatment even before the 2003 CAPTA amendment because the maltreatment was considered an environmental risk factor (Shackelford, 2006).

For this study, children were considered in need of Part C if they were 2 standard deviations below the mean on at least one standardized developmental measure or 1.5 standard deviations below the mean on at least two standardized developmental measures. Determination of a child's having a relevant diagnosed mental or established medical condition was based on caregiver responses to a list of questions about specific medical conditions the child might have. These conditions were brain tumor, cerebral palsy, epilepsy, fetal alcohol syndrome, birth defects, sickle cell anemia, spina bifida, autism, deafness, visual impairment including blindness, hearing impairments, multiple disabilities, mental retardation, and traumatic brain injury.

The identification of biomedical risk factors was based on the caregiver report of four conditions: AIDS, failure to thrive, lead poisoning, and low birth weight. The identification of environmental risk factors was based on caseworkers' report of one or more of the following problems of the primary caregiver: active alcohol or drug abuse, serious mental health problems, cognitive impairment, or physical impairments. Environmental risk was also identified if children were exposed to two or more of the following: caregiver age at delivery younger than 19 years old, active alcohol or drug abuse by secondary caregiver, incarceration of primary caregiver, and single caregiver.

It should be noted that this study uses NSCAW data to measure need for Part C services. The study does not have information about official determination of eligibility by Part C service teams, which is based on professional assessment of the child from multiple sources.

IFSP and IEP. Legislation establishing Part C services requires that an IFSP be developed in collaboration with the child's caregiver as a first step in the delivery of Part C services. Because NSCAW includes a variable measuring provision of an IFSP but not a variable on Part C services per se, receipt of an IFSP was used as a proxy for receipt of Part C services. A legal document, the IFSP identifies goals and individualized supports and services that will enhance the child's development. Early intervention services are usually provided at the child's home and include speech and language therapy, special instruction, occupational therapy, developmental monitoring, and physical therapy (Hebbeler et al., 2007). In some cases, the assessment reveals that children are developing adequately, and the IFSP specifies that children will be monitored and evaluated every 6 months. As children approach school age, those who need special education services receive an IEP, addressed by Part B of IDEA (Danaher, 2005).

For IFSP identification, both caregiver and caseworker reports were used. Caseworkers were asked, "Was an Individual Family Service Plan developed for child?" If the child was more than 36 months of age, caseworkers were asked, "Was an Individual Educational Plan developed for child?" Caregivers were asked, "Has child been given an Individual Education Plan (IEP) or an Individual Family Service Plan (IFSP)? That is, has child been classified as needing special education?" Children were classified as having an IFSP or an IEP if either the caseworker or the caregiver responded affirmatively to these questions.

Analyses

All analyses were conducted with weighted data, using the SUDAAN statistical package version 9.0.1 to take into account NSCAW's complex sampling design (RTI International, 2002). Thus, all percentages are adjusted (weighted) for sampling probabilities; listed sample sizes have not been adjusted (i.e., are unweighted). Analyses examined whether children in substantiated and unsubstantiated cases differed on a number of variables related to need for Part C services and potentially related to receipt of these services. We examined the distributions of child demographic characteristics, maltreatment characteristics, caregiver problem variables, environmental characteristics, and IFSP and IEP receipt for the total sample and separately for substantiated and unsubstantiated cases. Pearson chi-square tests adapted for complex samples were used to test for the statistical significance of the differences between substantiated and unsubstantiated cases on these

variables. Logistic regression analyses modeled IFSP receipt as a function of substantiation status and child developmental need at baseline. The model controls for several variables that are associated with Part C receipt, including the child's age, sex, race, and poverty level (Hebbeler et al., 2007; Hebbeler, Spiker, Mallik, Scarborough, & Simeonsson, 2004) and variables associated with referrals and the level of service use through CWS, namely type of maltreatment and level of CWS involvement (Leslie et al., 2002; Stahmer et al., 2005). Because of collinearity with substantiation, we did not include level of harm and severity of risk in the model. We report adjusted odds ratios with 95% confidence intervals obtained from the multivariate logistic model and *p* values based on Wald *F* tests.

RESULTS

Most children's cases were not substantiated (72.5%; Table 1). Overall, at baseline 32.3% were aged 0 to 1 year, 39.7% were aged 1 to 2 years, and 28.0% were aged 2 to 3 years. Children with substantiated cases (44.6%) were more likely to be infants than were children with unsubstantiated cases (27.7%), 0 to 12 months compared with 13 to 24 months, $\chi^2(1, N = 1,575) = 12.8, p < .001$, and 0 to 12 months compared with 25 to 36 months, $\chi^2(1, N = 1,359) = 6.3, p < .05$. About half were boys and half were girls. Almost half were White (45.5%), 28.2% were Black, 19.6% were Hispanic, and 6.7% were other.

Maltreatment Characteristics

For the majority of children, the main type of maltreatment was neglect (32.6% lack of supervision and 27.6% failure to provide), followed by physical abuse (20.8%). Children in unsubstantiated cases (23.1%) were more likely than children in substantiated cases (14.8%) to have been victims of physical abuse, physical abuse compared with physical neglect, $\chi^2(1, N = 1,303) = 4.6, p < .05$. The harm to the child reported by caseworkers in substantiated cases was significantly more likely to be moderate (35.3%) or severe (28.9%) than in unsubstantiated cases (14.4% and 5.0%, respectively); none compared with moderate, $\chi^2(1, N = 996) = 43.5, p < .001$, and none compared with severe, $\chi^2(1, N = 906) = 47.0, p < .001$. Caseworkers' assessment of the degree of risk in substantiated cases was significantly more likely to be moderate (37.5%) or severe (42.8%) than in unsubstantiated cases (14.2% and 6.8%, respectively); none compared with moderate, $\chi^2(1, N = 719) = 34.9, p < .001$, and none compared with severe, $\chi^2(1, N = 765) = 52.9, p < .001$.

TABLE 1: Sociodemographic Characteristics and Maltreatment History of Children in the Child Welfare System (CWS) According to Substantiation Status

<i>Characteristic or History</i>	<i>N</i>	<i>Substantiated (% [SE])</i>	<i>Unsubstantiated (% [SE])</i>	<i>p</i>	<i>Total (% [SE])</i>
Total	1,845	27.6 (2.5)	72.5 (2.5)		
Child characteristics					
Gender: Male	1,845	51.1 (2.8)	49.9 (3.8)	<i>ns</i>	49.9 (2.9)
Age	1,845			<.001	
0 to 12 months		44.6 (3.7)	27.7 (2.7)		32.3 (2.7)
13 to 24 months		30.1 (3.2)	43.4 (4.3)		39.7 (3.3)
25 to 36 months		25.4 (3.5)	29.0 (4.1)		28.0 (3.3)
Race or ethnicity	1,842			<i>ns</i>	
White		43.0 (4.7)	46.5 (4.7)		45.5 (4.1)
Black		30.5 (3.8)	27.6 (4.3)		28.2 (3.5)
Hispanic		21.1 (3.7)	19.0 (4.1)		19.6 (3.2)
Other		5.4 (1.3)	7.2 (2.2)		6.7 (1.6)
CWS investigation					
Main type of maltreatment	1,816			<.01	
Physical		14.8 (2.4)	23.1 (2.5)		20.8 (1.9)
Sexual		3.3 (1.2)	6.9 (2.0)		5.9 (1.6)
Emotional		7.8 (2.1)	3.0 (1.4)		4.3 (1.3)
Physical neglect (failure to provide)		28.9 (2.7)	27.1 (3.1)		27.6 (2.5)
Neglect (lack of supervision)		35.9 (3.3)	31.3 (3.9)		32.6 (3.0)
Abandonment		4.1 (1.2)	1.0 (0.3)		1.9 (0.4)
Other		5.1 (1.3)	7.5 (2.0)		6.8 (1.5)
Level of harm	1,831			<.001	
None		12.3 (2.0)	52.2 (4.4)		41.3 (3.6)
Mild		23.5 (3.2)	28.5 (3.5)		27.1 (2.7)
Moderate		35.3 (3.1)	14.4 (2.4)		20.1 (2.0)
Severe		28.9 (3.2)	5.0 (1.1)		11.6 (1.3)
Severity of risk	1,633			<.001	
None		3.1 (1.3)	40.3 (5.5)		28.3 (4.0)
Mild		16.6 (2.7)	38.6 (4.8)		31.5 (3.6)
Moderate		37.5 (3.1)	14.2 (2.7)		21.7 (2.0)
Severe		42.8 (3.6)	6.8 (1.4)		18.4 (2.1)
Caseworker risk assessment of primary caregiver					
Alcohol abuse	1,699	17.3 (2.5)	7.2 (1.3)	<.001	9.9 (1.2)
Drug abuse	1,736	34.9 (4.7)	7.1 (1.0)	<.001	14.8 (1.9)
Mental health or emotional problems	1,737	30.9 (3.1)	14.1 (2.7)	<.001	18.6 (2.4)
Poor parenting skills	1,793	61.9 (3.0)	27.9 (4.4)	<.001	37.1 (3.3)
History of domestic violence	1,704	42.2 (3.6)	30.0 (2.7)	<.01	33.2 (2.2)
Active domestic violence	1,745	28.3 (3.1)	14.4 (2.2)	<.001	18.2 (2.0)
History of abuse and neglect	1,572	37.4 (3.7)	21.4 (3.3)	<.01	25.6 (2.5)
Low social support	1,790	35.7 (2.7)	26.2 (3.1)	<.05	28.8 (2.3)
Trouble paying basic necessities	1,765	41.9 (3.3)	23.6 (2.6)	<.001	28.6 (2.2)
Environmental characteristics:	1,684	44.9 (3.5)	52.0 (3.6)	<i>ns</i>	50.0 (2.8)
At or below 100% federal poverty level					
Setting	1,845			<.001	
In home with no services		27.8 (3.7)	73.5 (3.1)		60.9 (3.0)
In home services		37.9 (4.1)	17.0 (2.0)		22.8 (1.8)
Out of home		34.4 (4.3)	9.5 (2.2)		16.3 (2.4)

NOTE: All percentages are weighted.

Caseworker Reports of Caregiver Problems

Caseworkers also reported that caregivers in substantiated cases were more likely than caregivers in unsubstantiated cases to have a range of different problems that placed children at risk. The primary caregiver in substantiated cases was more likely to be

identified as having alcohol abuse (17.3% and 7.2%, respectively), $\chi^2(1, N = 1,669) = 10.3, p < .01$; drug abuse (34.9 and 7.1%, respectively), $\chi^2(1, N = 1,736) = 23.9, p < .001$; mental health or emotional problems (30.9% and 14.1%, respectively), $\chi^2(1, N = 1,737) = 17.8, p < .001$; poor parenting skills (61.9% and 27.9%, respectively), $\chi^2(1, N = 1,793) = 30.6, p < .001$;

a history of domestic violence against them (42.2% and 30.0%, respectively), $\chi^2(1, N = 1,704) = 7.1, p < .01$; active domestic violence against them at the time of contact with CWS (28.3% and 14.4%, respectively), $\chi^2(1, N = 1,745) = 13.1, p < .001$; childhood history of abuse and neglect (37.4% and 21.4%, respectively); $\chi^2(1, N = 1,572) = 8.5, p < .01$; low social support (35.7% and 26.2%, respectively), $\chi^2(1, N = 1,790) = 4.8, p < .05$; and trouble paying for basic necessities (41.9% and 23.6%, respectively), $\chi^2(1, N = 1,765) = 17.0, p < .001$. In terms of environmental characteristics, about half of the sample was living at or below the federal poverty level. Children whose cases were substantiated were more likely than children whose cases were unsubstantiated to be receiving child welfare services at home (37.9% and 17.0%, respectively); in home with no services compared with in-home services, $\chi^2(1, N = 1,273) = 33.1, p < .001$, and to be out of home (34.4% and 9.5%, respectively), in-home with no services compared with out of home, $\chi^2(1, N = 1,118) = 30.3, p < .001$.

What Percentage of Children Aged 0 to 3 Years and Involved in CWS Investigations Need Part C Early Intervention Services?

On the basis of the eligibility criteria used by most states, NSCAW data suggest that 35.2% of children needed Part C services at baseline. Thirty-two percent of children were in need because of developmental delay, 2.0% had both developmental delay and an established medical condition, and 1.5% had an established condition without showing signs of developmental delay yet.

At 1.5 years follow-up, 39.2% of children had service needs because of developmental delay or an established medical condition. By 3-year follow-up, when all children were more than 3 years old and no longer qualified for Part C services, 41.1% of children needed Part B or special education services because of developmental delay or an established medical condition. At the 5- to 6-year follow-up, with all children now of school age, 42.0% of children needed special education services because of developmental delay or an established medical condition.

If biomedical risks and environmental risk factors were included as criteria, as they were in eight states at baseline, 64.0% of children would have met criteria for Part C services at baseline, even if we did not include child maltreatment as an environmental risk factor. Although only a few were in need because of a biomedical risk (0.4%), an additional 28.4% were arguably in need at baseline because of environmental risks other than child maltreatment.

Do Children in Substantiated Cases Have Greater Need for an IFSP Than Children in Unsubstantiated Cases?

Results of the initial assessments at baseline and follow-ups were examined by substantiation status (Figure 1). Of children involved in CWS investigations who had a valid developmental measure at baseline ($N = 1,635$), 36.0% had extremely low cognitive, adaptive behavior, or language scores (below $-2 SD$) that would indicate eligibility for early intervention services. More children had problems at baseline in the cognitive domain (30.4%) than in the adaptive behavior (8.6%) or language (13.8%) domains. Children with unsubstantiated reports (38.2%) were more likely to need Part C services because of developmental delay or an established medical condition than children in substantiated reports (27.6%), $\chi^2(1, N = 1,635) = 6.8, p < .01$.

By the 1.5-, 3-, and 5- to 6-year follow-ups, these differences by substantiation status were no longer significant; more than a third of both children with substantiated cases and children with unsubstantiated cases had developmental needs, and only in one area across time were there significant differences between children with substantiated cases and children with unsubstantiated cases (children with substantiated cases had worse scores than children with unsubstantiated cases in adaptive behavior at 1.5- and 5- to 6-year follow-up).

Only a small percentage (3.5%) of infants and toddlers were identified at baseline as having a medical condition with a high probability of resulting in developmental delay. At 1.5-, 3-, and 5- to 6-year follow-ups, the percentages of children ever identified as having an established medical condition increased to 10.7%, 19.3%, and 29.7%, respectively. No significant differences were observed by substantiation status (Figure 2).

What Percentage of Those in Need Receive an IFSP and Later Receive an IEP?

Of those children we identified as in need of Part C services (slightly more than a third of children in this study, as already reported), 12.7% had received an IFSP by age 3; among children not identified as in need, 16.3% had received an IFSP (this difference was not statistically significant). Most of the children in need had already received the IFSP between entry to the study and the 1-year follow-up (10.5%). At the 1.5-year follow-up, 5.7% of those in need had an IFSP, and 8.8% had an IEP. Receipt of an IEP at this age indicates preliminary access to Part B services, which would include school-based special education.

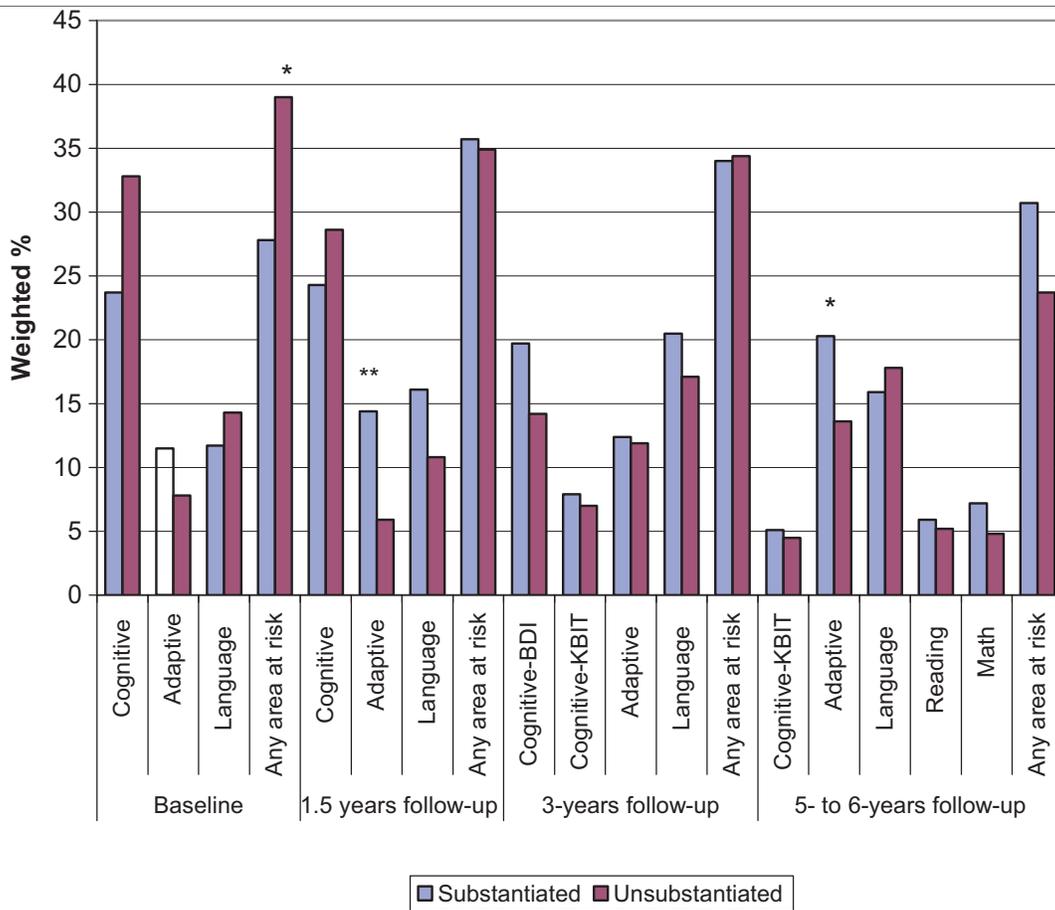


FIGURE 1: Extremely Low Scores (–2 SD) on Developmental Measures Among Substantiated and Unsubstantiated Infants and Toddlers Reported to the Child Welfare System

NOTE: The bars represent the percentage of substantiated (light gray) and unsubstantiated (dark gray) children who had extremely low scores in the developmental domain measured at baseline and each follow-up. At baseline, all children with a valid Battelle Developmental Inventory (BDI; Newborg, Stock, & Wnek, 1988) had a score for the cognitive area. Because of the scarce number of items used to evaluate young infants, children had to be at least 12 months old to have a valid Vineland Adaptive Behavior Scale Screener (Sparrow, Balla, & Cicchetti, 1984) for the adaptive behavior area and at least 10 months old to have a valid Preschool Language Scale–3 (Zimmerman, Steiner, & Pond, 1992) for the language area. K-BIT = Kaufmann Brief Intelligence Test.

* $p < .01$. ** $p < .001$.

Of those in need, 17.5% had an IEP at 3-year follow-up, and 26.8% had one at the 5- to 6-year follow-up.

The percentages differ little if we look at all young children investigated by CWS, not just those we found to be in need. Of all children in the study, 11.7% had received an IFSP between entry to the study and the 1-year follow-up. At the 1.5-year follow-up, 6.2% had an IFSP, and a small percentage of children were reported to have an IEP (4.6%). At the 3-year follow-up, 11.3% had an IEP, and 19.5% had one at the 5- to 6-year follow-up. Of those who had received an IFSP by age 3, 33.4% received an IEP once they were 3 years old or older.

Children with an established medical condition at baseline (3.5% of the sample) were more likely to receive an IFSP than other children. Out of this small group, 40.3% had received an IFSP between

entry to the study and the 1-year follow-up. As children grew, more were identified as having an established medical condition. By 1.5-year follow-up, of the 10.7% that ever had an established medical condition, 13.4% had received an IFSP and 39.6% an IEP. At 3-year follow-up, of the 19.3% of children that ever had an established medical condition, 58.0% had received an IEP. At the 5- to 6-year follow-up, of the 29.7% of children that ever had an established medical condition, 51.5% had an IEP.

Among children with developmental delay at baseline, 9.7% had an IFSP between baseline and the 1-year follow-up, 12.0% had an IFSP and 4.2% had an IEP at the 1.5-year follow-up, 24.3% had an IEP at the 3-year follow-up, and 46.9% had an IEP at the 5- to 6-year follow-up.

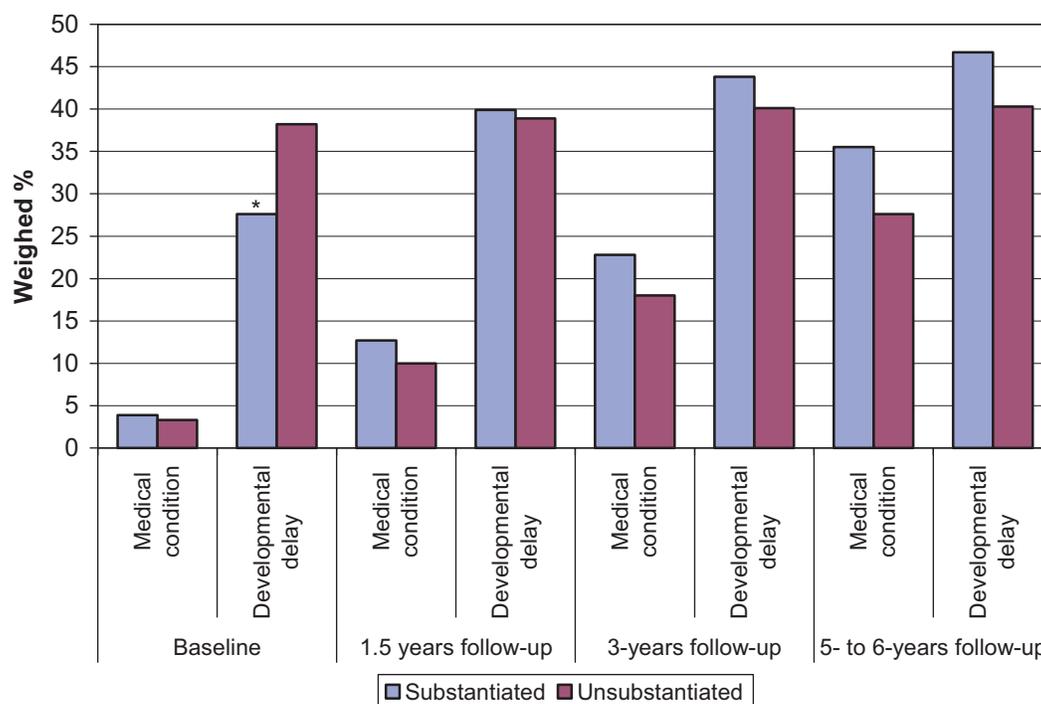


FIGURE 2: Established Medical Conditions and Developmental Delay Among Substantiated and Unsubstantiated Infants and Toddlers Reported to the Child Welfare System

NOTE: The bars represent the percentage of substantiated (light gray) and unsubstantiated (dark gray) children ever identified by their caregivers as having a medical condition that has a high probability of resulting in developmental delay and the percentage with developmental delay determined with developmental assessment.

* $p < .01$.

We next examined IFSP and IEP rates according to substantiation status (Figure 3). Even when children with unsubstantiated cases had more developmental needs at baseline and similar levels of need at follow-ups, children with substantiated cases were more likely to have an IFSP or IEP at baseline, 1.5-year, and at 5- to 6-year follow-up than children with unsubstantiated cases.

Which Is a Better Predictor of IFSP Receipt—Need or Substantiation?

Table 2 reports the results of a multiple predictor logistic regression examining how substantiation status and developmental need or medical condition (or both) at baseline explain IFSP receipt. The analysis controls for child's age, sex, race or ethnicity, poverty, type of maltreatment, and CWS involvement. The adjusted odds that children would have an IFSP were almost two times greater in substantiated cases than in unsubstantiated cases. Developmental need or medical condition at baseline, as measured by NSCAW, was not a significant predictor of having an IFSP. Level of CWS involvement also predicted having an IFSP: Children living

at home with an active CWS case and children out of home (in foster or kinship care) were more likely to have an IFSP than children living at home without an active CWS case.

DISCUSSION

This study found that 35.2% of children aged 0 to 3 years involved in CWS investigations were in need of Part C services at baseline. Caregivers and caseworkers reported, however, that only a minority of these children in need were receiving the IFSPs (12.7%) to which they were entitled under federal law. This gap between entitlement and receipt of services is a critical finding of this study, one urging policy and practice redress.

Moreover, children in substantiated cases did not have a greater need for Part C services than children in unsubstantiated cases. On the contrary, at the time of the index investigation, children with unsubstantiated reports were significantly more likely to need Part C services because of developmental delay or an established medical condition than children in substantiated reports (38.2% and 27.6%, respectively). This study is the first using a national probability sample to demonstrate that need among

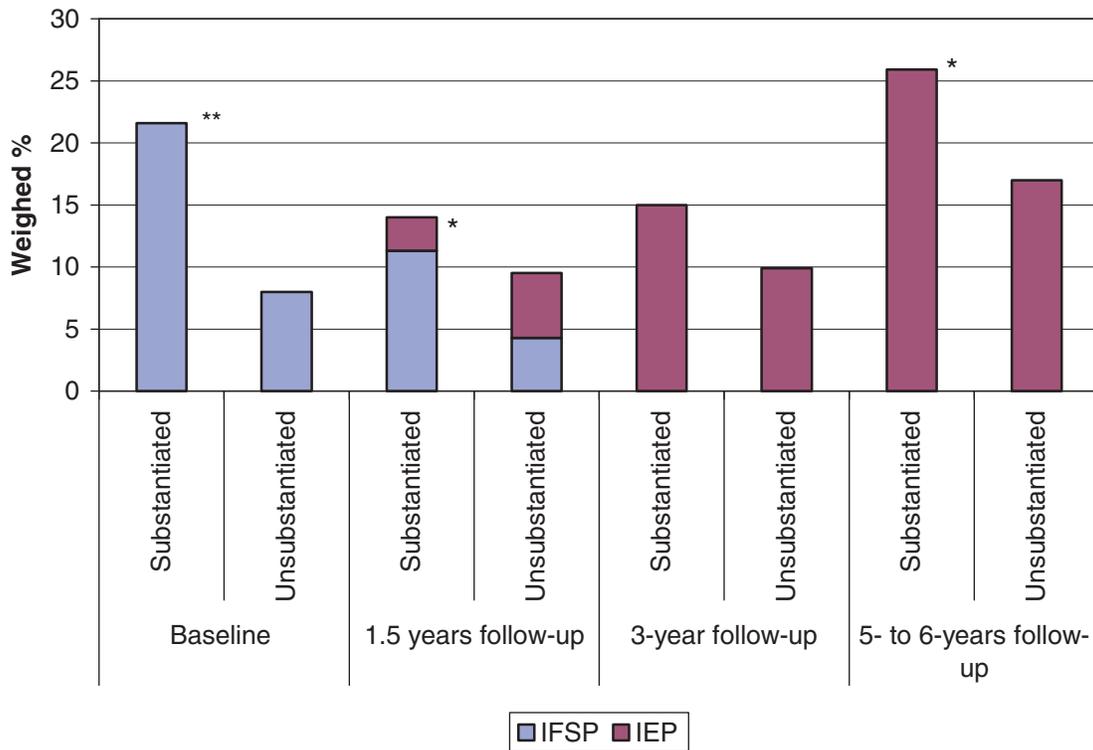


FIGURE 3: Individualized Family Service Plan and Individualized Educational Plan Among Substantiated and Unsubstantiated Infants and Toddlers Reported to the Child Welfare System

NOTE: The bars represent the percentage of children who had an IFSP (light gray) or an IEP (dark gray) among children with substantiated cases and children with unsubstantiated cases. IFSP = Individualized Family Service Plan; IEP = Individualized Educational Plan.

* $p < .05$. ** $p < .001$.

children with substantiated cases did not exceed those of children in unsubstantiated cases at any of the follow-up periods across 5-6 years.

At baseline, children with unsubstantiated investigations were more likely than those in substantiated cases to need early intervention services, which suggests the need for research on the deleterious effects of environmental characteristics among children with unsubstantiated cases. However, by the 1.5-, 3-, and 5- to 6-year follow-up, these differences by substantiation status were no longer significant, and the groups resembled one another in terms of special education needs. Previous studies with similar findings have focused on older children (Hussey et al., 2005; Leiter et al., 1994). Perhaps the most important finding of the present study, therefore, is that need as measured by standardized instruments was high in both the substantiated and the unsubstantiated groups. It is also noteworthy that even when 35% of children at baseline and about 40% at follow-ups were found in need of early intervention services, special education services, or both, about 60% did not appear to need such a service, evidencing a

remarkable resilience, despite their having been investigated for abuse or neglect at an early age.

The logistic regression model found that the child's substantiation status and the level of CWS involvement were significant predictors of having an IFSP, and the developmental delay and medical condition variable was not. Both substantiation status and level of CWS involvement relate to the child's visibility to the CWS and the CWS's degree of responsibility for the child. Once a case is substantiated, caseworkers are obligated to develop a service plan that they might otherwise have not. Increased CWS involvement may in turn increase the likelihood that CWS will mobilize to connect the child in need to early intervention services.

These findings have direct policy consequences. If substantiation triggers referral to Part C, the developmental needs of many children in unsubstantiated cases are being overlooked. This study underscores the recommendation of the National Research Council/Institute of Medicine report *From Neurons to Neighborhoods: the Science of Early Childhood Development* (Shonkoff & Phillips, 2000) that "all children who are referred to

TABLE 2 Logistic Regression Analysis of Individualized Family Service Plan ($N = 1,656$)

<i>Variable</i>	<i>b Coefficient</i>	<i>SE</i>	<i>Odds Ratio (95% Confidence Interval)</i>	<i>p</i>
Substantiation status (ref = no)	0.66	0.23	1.94 (1.22–3.1)	.0059
Developmental need and/or medical condition at baseline (ref = no)	–0.02	0.23	0.98 (0.61–1.56)	.9242
Gender male (ref = female)	0.06	0.29	1.06 (0.59–1.89)	.8337
Age (ref = 25 to 36 months)				.3188
0 to 12 months	–0.31	0.47	1.37 (0.53–3.50)	
13 to 24 months	–0.07	0.46	0.93 (0.38–2.30)	
Race/ethnicity (ref = White)				.2148
Black	–0.36	0.30	0.70 (0.38–1.28)	
Hispanic	–0.79	0.39	0.45 (0.21–1.00)	
Other	–0.50	0.53	0.60 (0.21–1.74)	
Poverty (ref = above federal poverty level)	0.31	0.26	1.36 (0.80–2.30)	.2480
Main type of maltreatment (ref = neglect, lack of supervision)				.5063
Physical maltreatment	0.45	0.47	1.57 (0.62–3.97)	
Sexual maltreatment	–0.59	0.62	0.56 (0.16–1.93)	
Emotional maltreatment	–0.08	0.65	0.92 (0.25–3.36)	
Physical neglect (failure to provide)	0.25	0.22	1.28 (0.83–1.98)	
Abandonment	0.88	0.62	2.42 (0.70–8.37)	
Other	0.43	0.50	1.54 (0.57–4.14)	
Level of child welfare system involvement (ref = in home, not active)				.0000
In home, active	1.34	0.30	3.82 (2.12–6.89)	
Out of home	1.68	0.27	5.38 (3.12–9.27)	

NOTE: Dependent variable represents ever having an Individualized Family Service Plan while being less than 3 years old. Overall model Wald $F(16) = 27.97$, $p < .0001$. ref = reference category.

a protective services agency for evaluation of suspected abuse or neglect be automatically referred for a developmental-behavioral screening under Part C of the Individuals with Disabilities Act” (p. 12).

Although we do not know why caseworkers were more likely to refer children in substantiated cases for Part C services, the results here provide some clues. Specifically, caseworkers appear to believe that these children had suffered greater harm and were exposed to higher levels of risk because of caregiver and family factors. Another NSCAW analysis of children of all ages found that caseworkers perceived children in substantiated cases to have more needs than children in unsubstantiated cases, even though children in the two groups did not differ significantly on standardized measures of well-being (U.S. Department of Health & Human Services, 2007). Because the CWS gathers more information on and prioritizes maltreatment and risk over developmental delay and medical status, it is not surprising that substantiation plays a greater role than these latter variables in receipt of IFSP. It is also possible that agencies, individual workers, or both, even before the 2003 CAPTA amendment, may have used substantiation status as an indicator of environmental

risk requiring referral to Part C services. Nevertheless, in recent years, some states have developed stricter criteria for Part C eligibility, and now only a few states provide Part C services on the basis of environmental risk (Shackelford, 2006). Referral rates, therefore, may be lower now than they were when the present data were collected in 1999–2000.

The percentage of CWS-involved children found here to need Part C because of developmental delay or an established medical condition (35.2%) was substantially higher than the percentages found for the general U.S. population, which range from 2% to 23% (Blanchard, Gurka, & Blackman, 2006; Centers for Disease Control & Prevention, 1995; Nolin, Montaquila, Nicchitta, Hagedorn, & Chapman, 2004; Simpson, Colpe, & Greenspan, 2003; Stevens, 2006; Zill & Schoenborn, 1990). However, reliable national data on the prevalence of developmental delay are limited because of different eligibility criteria across states.

Most previous research on CWS-involved young children has focused on children who were in out-of-home care. These studies have found prevalence rates of developmental delay between 18% and 83% (Blatt & Saletsky, 1997; Centers for Disease Control & Prevention, 1995; Halfon, Mendonca, & Berkowitz,

1995; Robin, Combs-Orme, Risley-Curtiss, & Heisler, 1994; Vig, Chinitz, & Shulman, 2005). We are aware of only two previous studies (including one that used NSCAW data) that have compared prevalence of developmental delay across CWS placement types (e.g., biological parent, kinship care, and nonrelative foster care) and found similar rates of developmental delay across different placements (Leslie et al., 2002; Stahmer et al., 2005). Like these two studies, the current research found high rates of developmental delay among CWS-involved young children but extends our knowledge by analyzing the association between substantiation status and receipt of an IFSP while controlling for placement type, an issue critical to the CAPTA amendment not explored by the previous studies.

Even with different definitions of eligibility for Part C among states, the estimate that nationally about a third of infants and toddlers investigated by CWS have developmental problems is critical to determining need for Part C services in the CWS population. Likewise, the finding here that about 40% of these children had developmental problems at each follow-up is critical for assessing need for later special education as these children grow up. The high percentage of CWS children with developmental problems may be partly explained by the number of risk factors faced by these infants, many of whom suffer from poverty, parental substance abuse, and child maltreatment (Leslie et al., 2002; Shonkoff & Phillips, 2000; Stahmer et al., 2005; Vig et al., 2005). The high rate of developmental problems among the CWS population strongly suggests the need to refer a large percentage of these children for Part C and other developmental services, regardless of substantiation status.

This study found that almost 12% of children had an IFSP during the 12 months following the CWS investigation; similar percentages had an IFSP or IEP at the follow-ups. This rate far exceeds the 2.2% of all infants and toddlers receiving Part C nationwide (Office of Special Education & Rehabilitation Services, 2006), but nevertheless does not appear to match need. Most children (66.6%) who ever had an IFSP did not continue to have an IEP through Part B special education services. This is not because they outgrew their need for special education; many children continued to show indications of service need. National estimates based on children receiving Part C services indicate that 63% of children move on to receive Part B (Hebbeler et al., 2007). Consequently, the discontinuity of early intervention and special education services for children in CWS is a cause for concern and should prompt future research.

Limitations

Given the structure of the CWS, the report in NSCAW for both the substantiation decision and the risk assessment were provided by the caseworker. This dual role may introduce a degree of subjectivity and error into the analysis. However, caseworkers' knowledge and perceptions are exactly what would be operating to lead them to make decisions about referrals to Part C and other services. Second, data are lacking about which services were specified in the IFSP and which children were actually receiving services. Some of the children with an IFSP might have been monitored without receiving any early intervention. Third, need resulting from developmental delay as described here is based on child screening and assessment instruments and not on a formal clinical evaluation. In the field, multidisciplinary teams of clinicians evaluate children for Part C eligibility, using both standardized measures and clinical judgment. It is possible, therefore, that some children who were deemed eligible or ineligible according to our algorithms would have legitimately received a different designation in the field.

Future Research

The developmental status of young children with different substantiation results warrants further research for several reasons. First, infants and toddlers have contact with the CWS early in their life, and early services can substantially improve the chances of limiting the impact of child maltreatment. Second, the growing understanding of the impact of developmental delay on outcomes for young children in the CWS when they reach school age also suggests the need to intervene early (Meisels & Shonkoff, 2000; National Educational Goals Panel, 1998; Shonkoff & Phillips, 2000). Third, developmental delay can escalate parent-child relationship problems that exacerbate the risk of maltreatment (Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001).

In-depth community studies of young children involved with CWS are needed. In addition, NSCAW continues to be a resource for researchers (see Family Life Development Center, 2007). Abundant data on child development, well-being, services, and CWS decisions are available in the NSCAW data set, yet many research questions remain to be analyzed. One critical question is whether IFSPs reduce need over time. This question requires examination of services received through Part C, information forthcoming in a new NSCAW study. Data collection for a new NSCAW cohort will begin in 2008. The data will add to our knowledge detailed information about the services

received by infants and toddlers through Part C and, as they grow, through Part B. It will also provide an opportunity to explore the impact of the 2003 CAPTA amendment. Moreover, the new NSCAW data will make use of updated versions of all the developmental measures, as well as some new measures. This updating will allow for detailed exploration of the developmental needs of this vulnerable population.

Conclusions

Developmental need is prevalent among young children in the CWS, independent of substantiation status. The multiple areas of developmental need found in this study require the intervention of experts in child development, infant health, mental health, and education. Although findings from this research demonstrate that as children grow, they are more likely to receive services if they have developmental delay or an established medical condition, many children who were found to be in need because of developmental delay and who likely met Part C and Part B eligibility criteria received no services. Proactively providing needed services at an early age to all children in need in CWS is urged because early services may well preempt these children's need for extensive future developmental and educational services.

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