



# Health and Disabilities Services in Early Head Start: Are Families Getting Needed Health Care Services?



U.S. Department of Health and Human Services  
Administration for Children and Families  
Office of Planning, Research and Evaluation  
Administration on Children, Youth and Families  
*Head Start Bureau*





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Office of Planning, Research, and Evaluation  
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And the Head Start Bureau  
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## Early Head Start Evaluation Reports

***Leading the Way:*** Describes the characteristics and implementation levels of 17 Early Head Start programs in fall 1997, soon after they began serving families.

**Executive Summary** (December 2000): Summarizes Volumes I, II, and III.

**Volume I** (December 1999): *Cross-Site Perspectives*—Describes the characteristics of Early Head Start research programs in fall 1997, across 17 sites.

**Volume II** (December 1999): *Program Profiles*—Presents the stories of each of the Early Head Start research programs.

**Volume III** (December 2000): *Program Implementation*—Describes and analyzes the extent to which the programs fully implemented, as specified in the Revised Head Start Program Performance Standards, as of fall 1997.

***Pathways to Quality and Full Implementation in Early Head Start*** (December 2002): Describes and analyzes the characteristics, levels of implementation, and levels of quality of the 17 Early Head Start programs in fall 1999, three years into serving families. Presents an analysis of the pathways programs followed to achieve full implementation and high quality.

***Building Their Futures: How Early Head Start Programs Are Enhancing the Lives of Infants and Toddlers in Low-Income Families:*** Presents analysis of the impacts that the research programs have had on children's development, parenting, and family development through 2 years of age.

**Summary Report** (January 2001): Synopsis of the major findings.

**Technical Report** (June 2001): Detailed findings and report on methodology and analytic approaches.

***Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start*** (June 2002): Presents analysis of the impacts that the research programs have had on children's development, parenting, and family development through the children's third birthday (including two to three years of program participation).

***The Role of Early Head Start Programs in Addressing the Child Care Needs of Low-Income Families with Infants and Toddlers: Influences on Child Care Use and Quality*** (February 2004): Describes the nature, types, and quality of child care arrangements in which Early Head Start and control group children enrolled, and presents findings on the impacts of Early Head Start on both child care use and quality.

***Health and Disabilities in Early Head Start: Are Families Getting Needed Health Care Services?*** (December 2003): Describes health services received by Early Head Start and control group families, and analyzes services for infants and toddlers with disabilities.

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In 1995, a new federal initiative aimed at enhancing the development of infants and toddlers began with 68 grantees. This program, named Early Head Start by the Secretary's Advisory Committee that created it, has grown into a national initiative with more than 700 grantees serving more than 55,000 families around the country. Seventeen of the initial program grantees participated in a national evaluation and local research studies that documented the implementation process and assessed program impacts and outcomes (Administration for Children and Families [ACF] 2002a and 2002b). These 17 research programs, which resemble all Early Head Start programs funded in 1995 and 1996, were the first to design and implement programs to meet the revised Head Start Program Performance Standards (U.S. Department of Health and Human Services [DHHS] 1996).

Early Head Start programs are comprehensive, two-generation programs that focus on enhancing children's development while strengthening families. Designed for low-income pregnant women and families with infants and toddlers up to age 3, the programs provide a wide range of services through multiple service delivery strategies. All programs provide child development services delivered in home visits or child care, parenting education, health care and referrals, and family support services. Early Head Start programs try to meet families' and communities' needs through one or more official program options: (1) home-based (weekly home visits and at least two group socializations per month for each family), (2) center-based (center-based child care plus other activities), (3) combination (in which families receive both home visits and center experiences), and (4) locally designed. Because a program may offer multiple options, we grouped programs according to three approaches: (1) home-based, providing services to all families through the home-based option; (2) center-based, providing services to all families through the center-based option; and (3) mixed-approach, providing

services to some families through the home-based option and to others through the center-based option, or providing services through the combination or locally designed option.

Because the health of infants and toddlers participating in Early Head Start can support or limit Early Head Start's efforts to enhance their development in other domains, the Head Start Program Performance Standards require programs to provide or link families to preventive health care services and to ensure that children received needed treatment for health problems. In addition, Early Head Start programs, like Head Start programs, must make at least 10 percent of enrollment opportunities available to children with disabilities, and they must ensure that these children and their families receive the special early intervention services they need.

Knowledge of the health problems and disabilities experienced by children in the program and of the services they received can help staff identify and begin to address gaps in health-related services. Information about which families and children tend to experience health problems and disabilities or fail to get needed health and therapy services can help program staff anticipate which families are likely to have important health goals or needs that should be addressed in their service plan and which families may need special help obtaining health care.

This paper draws on the data collected for the national Early Head Start Research and Evaluation study to address this need for information. The following sections summarize the health services provided by Early Head Start programs; present the data and methods used in the paper; describe the health status and problems, including disabilities, experienced by children who were enrolled in Early Head Start; review their health insurance coverage and receipt of health services; examine differences in health and health care among key subgroups of children and families; and discuss the implications of these findings.

## **A. INTEGRATION OF HEALTH SERVICES INTO EARLY HEAD START**

Good health is the foundation for child cognitive, language, and social-emotional development, and health services are a central focus of Early Head Start. The Head Start Program Performance Standards charge programs with ensuring that all children have a regular source of health care and access to the health, dental, and mental health services they need. Programs must also track health services to ensure that children receive all recommended well-child examinations, immunizations, and needed treatments. Within 90 days of enrollment, programs must assess whether each child has an ongoing source of health care, obtain a professional determination as to whether each child is up-to-date on preventive and primary health care, and develop and implement a follow-up plan for any health conditions identified.

Maternal health and prenatal care are essential for ensuring normal development of very young children. Late or inadequate prenatal care, malnutrition, and exposure to harmful substances are associated with poorer birth outcomes and later developmental disorders (Child Trends 2002). Thus, Early Head Start programs also emphasize prenatal care and education (by providing prenatal information, developing prenatal care and education plans, implementing prenatal education curricula, making referrals to prenatal care and childbirth preparation classes in the community, and encouraging breastfeeding).

Early Head Start programs facilitate access to health care, and in some instances, they arrange to provide health-related services directly. All 17 programs that participated in the national evaluation helped families find regular sources of medical care for their children, and some helped families navigate their state's Medicaid managed care system. Several programs had nurses on staff who provided some health services (especially well-child examinations), tracked receipt of health services, and helped families arrange services. Some programs provided mental health services through agency staff and community partners to families who

needed them. Some programs provided child mental health services on site at their centers. Several programs provided transportation to medical appointments when families needed it. The differences in health care services provided by the research programs reflected variations in families' health care needs as well as differences in the availability of health care in the communities they served. Ratings of implementation of health services for children showed that in many programs, it took time to fully implement key performance standards related to child health services, but three-quarters of the research programs did so within three years of beginning services to families (ACF 2002b).<sup>1</sup>

Like Head Start, Early Head Start programs also emphasize services to meet the needs of children with disabilities. The Head Start Program Performance Standards require programs to refer families to Part C when they suspect a child has a disability.<sup>2</sup> Staff must also work closely with Part C staff to coordinate services, and the performance standards encourage them to develop joint service plans whenever appropriate. Programs must make at least 10 percent of enrollment opportunities available to children with disabilities and make intensive efforts to recruit them.

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<sup>1</sup>In-depth site visits provided information for rating levels of implementation along key program elements (24 elements in 1997 and 25 in 1999) contained in the Early Head Start program grant announcement and the Head Start Program Performance Standards. Although the implementation ratings were designed for research purposes and were not used to monitor compliance, they included criteria on most of the dimensions that the Head Start Bureau uses in program monitoring, including child development and health, family development, community building, staff development, and management systems. Ratings were developed systematically through a consensus-based process involving site visitors, project staff, and outside experts. Details of the implementation study design and findings can be found in ACF (1999, 2000, and 2002b).

<sup>2</sup>Early intervention services are provided by agencies designated under Part C of the Individuals with Disabilities Education Act (IDEA) Amendments of 1997 (PL105-17) to be responsible for ensuring that services are provided to all children between birth and age 3 who have disabilities.

The Early Head Start programs participating in the national evaluation adopted a range of strategies for coordinating services for children with disabilities with Part C, including developing joint service plans, arranging therapy services to be provided in Early Head Start classrooms, arranging for Early Head Start staff to serve as the service coordinators for Individual Family Service Plans (IFSPs), participating with parents and Part C providers in service coordination meetings, and forming SpecialQuest teams with local Part C providers to work on enhancing coordination between the two programs (ACF 2002b).<sup>3</sup> As was the case for health services, ratings of implementation of services for children with disabilities showed that in many programs, it took time to fully implement key performance standards, but two-thirds of the research programs did so within three years of beginning services to families.

## **B. DATA SOURCES AND METHODS**

The national Early Head Start Research and Evaluation study was based on a rigorous experimental design. The study sample consists of approximately 3,000 families who applied to one of the 17 research programs and were randomly assigned to either a program group or a control group. The research programs are located in all regions of the country and in both urban and rural areas. They include all major Early Head Start program approaches (home-based, center-based, and mixed) and broadly resemble all the Early Head Start programs funded

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<sup>3</sup>SpecialQuest is part of the Head Start training and technical assistance system. It is a public-private partnership between the Conrad N. Hilton Foundation and the Head Start Bureau and is administered by the California Institute on Human Services at Sonoma State University. Its mission is to help professionals and family members involved in Early Head Start and Migrant Head Start programs develop skills and strategies for working with infants and toddlers who have significant disabilities.

## **MAKING A DIFFERENCE IN THE LIVES OF INFANTS AND TODDLERS AND THEIR FAMILIES: THE IMPACTS OF EARLY HEAD START**

A rigorous evaluation of Early Head Start services in 17 programs selected from the first groups of programs funded showed they had significant favorable impacts on a wide range of parent and child outcomes, some with implications for children's later school success. Findings from the study (*Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start*), using data gathered when children were age 3 and had completed the program, show that the programs sustained and broadened the pattern of impacts reported when children were age 2 (*Building Their Futures: How Early Head Start Programs Are Enhancing the Lives of Infants and Toddlers in Low-Income Families*, 2001). All Early Head Start evaluation reports are available at [[www.acf.dhhs.gov/programs/core/ongoing\\_research/ehs/ehs/intro.html](http://www.acf.dhhs.gov/programs/core/ongoing_research/ehs/ehs/intro.html)].

**Early Head Start Improved Many Outcomes.** The national evaluation conducted by Mathematica Policy Research, Inc. and Columbia University's Center for Children and Families at Teachers College, in collaboration with the Early Head Start Research Consortium, reported that 3-year-old Early Head Start children performed significantly better on measures of cognitive, language, and social-emotional development than a randomly assigned control group. In addition, their parents scored significantly better than control group parents on measures of many aspects of the home environment and parenting behavior. Furthermore, Early Head Start programs enhanced parents' progress toward self-sufficiency. Early Head Start fathers benefited as well. Although these overall impacts were generally modest, the pattern of favorable findings across outcomes in a wide range of key domains is promising. Impacts varied among key program and family subgroups, and impacts were larger in some subgroups.

**Early Head Start Had a Few Impacts on Health Service Use and Health Outcomes of Children.** Early Head Start had small but statistically significant positive impacts on the percentage of children who visited a doctor for treatment of illness (83 compared with 80 percent) and receipt of immunizations (99 compared to 98 percent). The program also decreased the likelihood of hospitalization for an accident or injury in the child's third year (0.4 compared with 1.6 percent). Although the data on breastfeeding are limited to families who enrolled before their child was born, they suggest that Early Head Start may have increased the rate of breastfeeding to levels found among less disadvantaged families. Findings for impacts on health care service use and health outcomes may have been limited by the high rate of health care services received by both program and control groups and by recruitment strategies. Nearly all families and children in both the program and control groups received some health services, reflecting the accessibility of health services afforded by Medicaid and the State Children's Health Insurance Programs. It also reflects the fact that many of the research programs recruited families at health clinics or WIC offices, where families were linked to health services before applying to Early Head Start.

**No Impacts on the Health Care Use or Health Status of Primary Caregivers Were Found.** In nearly all families, family members other than the focus child received health services during the follow-up period, and the program impact on such services was not significant. Similarly, Early Head Start had no impact on the receipt of mental health services as reported by parents. We also found no statistically significant impact on the health status of the primary caregiver.

initially, in both program and family characteristics (Administration on Children, Youth and Families [ACYF] 1999).

The data used in this paper come from the approximately 1,500 families who enrolled in the study between July 1996 and September 1998 and were assigned to the program group, which was eligible to receive Early Head Start services. In addition to using baseline data collected using the Head Start Family Information System (HSFIS) Program Application and Enrollment forms, this paper makes use of follow-up data collected at multiple time points based on (1) the number of months since random assignment, and (2) the age of the focus child. Data on use of health services and some data on health status were collected in Parent Services Follow-up Interviews (PSIs) at selected intervals following enrollment—targeted for 6, 15, and 26 months and completed an average of 7, 16, and 28 months after enrollment. Children were, on average, 10, 22, and 32 months old at the time of these interviews. Other data, particularly those related to child development, safety practices, and hospitalizations, were collected in Parent Interviews (PIs) and child assessments on a schedule tied to children’s birth dates—targeted for 14, 24, and 36 months of age and completed on average at 15, 25, and 37 months of age.

The information on health and health care was provided by children’s primary caregivers, not obtained from medical records, so the data may contain discrepancies resulting from difficulty recalling health histories or health care visits, poor communication with health care providers, difficulty understanding medical terminology, or misunderstanding of children’s health conditions (Miller et al. 2001).

Response rates varied across data sources and as expected, declined somewhat over time. Response rates to the PSIs ranged from about 84 percent (6-month PSI) to 71 percent (26-month PSI) of all program families. Response rates to the PIs ranged from 79 percent (14-month PI) to 73 percent (36-month PI) of all program families. Response rates to the Bayley child

assessments were somewhat lower, ranging from 64 percent (14-month assessment) to 58 percent (36-month assessment) of all program families. ACF 2002a, Volume I, describes the study design and data in more detail, and Appendix B in ACF 2002a, Volume II, describes the data collection and response rates in greater detail. The data used in this paper were weighted for differential nonresponse.

In this paper, the measures based on PSI data are consistently reported for families who completed the 26-month PSI and provided data for the full follow-up period. Thus, the reported changes over time reflect changes that occurred within the same group of families and children. The age-based measures are reported for all children for whom data were collected at 36 months of age.

All the differences highlighted in the text are statistically significant at the 10 percent level or greater. Statistical tests of differences in means and distributions were conducted using T-tests and chi-squared tests, respectively.

### **C. OVERVIEW OF CHILD AND FAMILY CHARACTERISTICS**

At the time of enrollment, the program group families were a diverse group (Table 1):

- Early Head Start applicants (99 percent of whom were mothers) were on average 23 years old. About 62 percent were first-time parents.
- One-fourth of the primary caregivers lived with a spouse. Slightly more than one-third lived with other adults, and a similar proportion lived alone with their children.
- Teenage parents headed slightly more than one-third of families enrolled in Early Head Start.
- Overall, one-third of families were African American, one-fourth were Hispanic, and slightly more than one-third were white (with a small percentage in other groups). Eleven programs were largely homogeneous, with at least two-thirds of the families representing a single racial/ethnic group (four programs enrolled predominantly African American families, three were predominantly Hispanic, and five were predominantly white); in six, the racial/ethnic composition was diverse.

TABLE 1

KEY CHARACTERISTICS OF FAMILIES AND CHILDREN AT ENTRY  
INTO THE EARLY HEAD START RESEARCH PROGRAMS

	All Research Programs Combined (Percentage)	Range Across Research Programs (Percentage)
Primary Caregiver (Applicant) Is Female	99	97 to 100
Primary Caregiver Is a Teenager (Under 20)	39	19 to 90
Primary Caregiver Is Married and Lives with Spouse	25	2 to 66
Primary Caregiver's Race/Ethnicity		
African American	34	0 to 91
Hispanic	24	0 to 90
White	37	2 to 91
Other	5	0 to 14
Primary Caregiver's Main Language Is Not English	20	0 to 81
Primary Caregiver Does Not Speak English Well	11	0 to 55
Primary Caregiver Lacks a High School Diploma	48	24 to 88
Primary Caregiver's Main Activity		
Employed	23	11 to 44
In school or training	22	4 to 64
Other	55	24 to 78
Primary Caregiver Receives Welfare Cash Assistance (AFDC/TANF)	36	12 to 66
Child's Age		
Unborn	25	7 to 67
0 to 4 months	42	12 to 57
5 to 12 months	33	1 to 75
<b>Number of Applicants/Programs</b>	<b>1,513</b>	<b>17</b>

SOURCE: Head Start Family Information System application and enrollment data.

- Overall, one-fifth of the Early Head Start primary caregivers did not speak English as their primary language.
- Nearly half the Early Head Start primary caregivers did not have their high school diploma at the time they enrolled.
- At enrollment, 45 percent of primary caregivers were employed or in school or training.
- Most families were receiving public assistance of some kind (77 percent were covered by Medicaid, 88 percent were receiving WIC benefits, almost half were receiving food stamps, just over one-third were receiving AFDC or TANF, and 7 percent were receiving SSI benefits).
- About one-fourth of primary caregivers enrolled while they were pregnant. The Early Head Start children who were born by the time of enrollment varied in age, with almost half under 5 months.
- The greatest self-reported needs of parents were for adequate child care (34 percent of families overall, ranging from 11 to 68 percent across the programs); transportation (21 percent, ranging from 12 to 35); and medical care (14 percent overall, ranging from 3 to 36 percent).
- Several local research teams worked with their program partners to collect information that would provide a richer understanding of the characteristics of the families. Eight teams obtained comparable maternal mental health data using the CES-D (Center for Epidemiological Studies Depression) scale, which provides information on the mothers' risk for depression. Across these eight programs, on average, 48 percent of parents scored in the at-risk range.

#### **D. OVERALL HEALTH STATUS OF EARLY HEAD START CHILDREN AS INFANTS AND TODDLERS**

Meeting the health care needs of infants and toddlers in Early Head Start is a challenge. In general, low-income parents are less likely than parents of children in higher-income families to report that their children are in very good or excellent health and are more likely to report that their children experience poor health (DHHS 2001). Early Head Start parents' reports of their children's health are consistent with this pattern.

Most children in the research sample, all of whom enrolled in Early Head Start before they reached age 1, were reported by their mothers to be in excellent or very good health at each

assessment point.<sup>4</sup> As children grew up, more were reported by their mothers to have excellent or very good health and fewer were reported in fair or poor health (Table 2). A little more than half of the children (56 percent) were reported to have excellent or very good health at 14 months of age, and 19 percent were reported to be in fair or poor health. By 36 months of age, nearly three-fourths (71 percent) were reported in excellent or very good health, and 8 percent were in fair or poor health. These trends can also be seen in the average ratings mothers provided to describe their child's overall health status. On average, mothers' ratings of their child's overall health status increased from 3.6 when their children were 14 months old to 3.8 when their children were 24 months old and 4.0 when their children were 36 months old.

The percentage of 3-year-old Early Head Start children reported by their parents to be in excellent or very good health was comparable to the percentage reported by parents of a broader group of low-income children—those under age 5 in families with incomes below the poverty level—in the National Health Interview Survey (NHIS). According to parents who completed the NHIS, 76 percent of children under 5 years of age in families below the poverty level were in excellent or very good health in 1998 (DHHS 2001). Given the rise in Early Head Start parents' health ratings as children got older, the proportion of children reported to be in very good or excellent health by age 5 is likely to be comparable to that reported in the NHIS study for all children under 5.

Parents of Early Head Start infants and toddlers, however, were more likely than parents of infants and toddlers nationally to report them to be in fair or poor health and less likely to report that their children were in very good or excellent health. At 14 and 36 months of age,

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<sup>4</sup>Parents were asked to rate their child's overall health status as poor (1), fair (2), good (3), very good (4), or excellent (5).

TABLE 2

## EARLY HEAD START CHILDREN'S OVERALL HEALTH STATUS, BY AGE

	Child's Age		
	14 Months	24 Months	36 Months
Child's Overall Health Status <sup>a</sup>			
Excellent or very good (%)	55.8	64.8	71.1
Good (%)	25.2	22.5	20.6
Fair or poor (%)	19.0	12.6	8.4
Average rating	3.6	3.8	4.0
<b>Sample Size</b>	<b>978</b>	<b>970</b>	<b>1,104</b>

Source: Parent interviews conducted when children were approximately 14, 24, and 36 months of age.

<sup>a</sup> Primary caregivers were asked to rate their child's overall health status as poor (1), fair (2), good (3), very good (4), or excellent (5).

respectively, 17 and 8 percent of Early Head Start children were reported by their parents to be in fair or poor health. In contrast, nationally, 1.4 percent of children under age 5 (above and below poverty) were reported to be in fair or poor health (DHHS 2002), and in 1997, the Panel Study of Income Dynamics found that 3 percent of infants (less than 1 year old) and 4 percent of toddlers (1 to 2 years old) were in fair or poor health or were limited in their activities (Hofferth 1998).

A few children in the Early Head Start sample died during the course of the study. In all, 21 children died, 12 in the control group and 9 in the program group. Eleven out of the 21 deaths were to children who were unborn at enrollment, and among the 9 for whom a cause of death is known, 8 were miscarried or stillborn. Among the 10 deaths to children who were already born at enrollment, little is known about the causes of death.

#### **E. SPECIFIC HEALTH PROBLEMS EXPERIENCED BY EARLY HEAD START CHILDREN**

The low socioeconomic status of Early Head Start families places them at greater risk for health problems that can have important consequences for children if they are not detected and treated early. Some health conditions can place children at risk for later developmental disabilities. For example, chronic ear infections can impair children's hearing and hinder language development, and lead poisoning or seizures can affect children's neurological development with impacts on cognitive or motor skills. For this reason, Early Head Start programs are required to conduct or arrange for screening tests for all children to identify potential health problems and developmental delays.

To learn about children's specific health problems, we asked primary caregivers, "Has the doctor ever told you (NAME OF CHILD) has the following? Does he/she have...?" with regard to 14 specific problems. The primary caregivers were also asked to report any other health problems not listed.

Among the physical health problems experienced by Early Head Start children, ear infections were by far the most frequent problem reported by primary caregivers. By the time of the third follow-up interview, which was conducted an average of 28 months after enrollment in Early Head Start, half of the children (51 percent) were reported to have been diagnosed as having recurrent ear infections (Table 3). Parents were asked if a doctor ever told them their child had recurrent ear infections. Parents' understanding of this question probably varied, so their responses may have included children with as few as two ear infections in one year (not uncommon in early childhood) as well as children who experienced multiple infections.

Many Early Head Start children experienced asthma and respiratory problems. According to their parents, more than one-fourth of the children (28 percent) had been diagnosed with asthma or respiratory problems by the time of the third follow-up interview, when children were 32 months old, on average. In 1998, national data showed that parents of 8 percent of children under age 5 had ever been told that their child had asthma. Among children of all ages, those in families with annual incomes below \$20,000 had rates of asthma that were about 30 percent higher than children overall, which suggests that nearly 11 percent of children under age 5 in poor families may have had asthma (DHHS 2002).

Children in center-based programs were more likely to have asthma/respiratory problems (35 percent) than children in mixed (29 percent), or home-based programs (23 percent). This could be related to children's increased exposure to infectious diseases, including respiratory infections, in group care settings.

Few Early Head Start parents reported that their children were diagnosed with other serious health problems during the 28 months, on average, after they enrolled in the program. Less than 5 percent of the children experienced more serious problems such as seizures (2 percent) or heart problems (4 percent). Only two children were reported to have been diagnosed with diabetes.

TABLE 3  
 INCIDENCE OF DIAGNOSED HEALTH PROBLEMS  
 BY 28 MONTHS AFTER ENROLLMENT

	Percentage
Children Ever Diagnosed With Health Problems, as Reported by Primary Caregivers	
Recurrent ear infections	51.4
Asthma or respiratory problem	28.3
Any vision, hearing, or speech problem	11.5
Vision problem	2.8
Hearing problem	3.1
Speech problem	7.2
High lead level	6.0
Heart problem	3.6
Seizures	2.3
Allergies	2.1
Gastrointestinal problem	1.8
Any serious condition	1.1
Children Exposed to Household Smoking	57.2
<b>Sample Size<sup>a</sup></b>	<b>697-1,032</b>

Source: Parent services follow-up interviews completed 7, 16, and 28 months after enrollment for families who completed the 28-month follow-up interview.

<sup>a</sup> Range reflects minimum and maximum sample sizes for items in table.

## **F. DISABILITIES AND DEVELOPMENTAL DELAYS AMONG EARLY HEAD START CHILDREN**

The most commonly diagnosed problems that were reported by Early Head Start parents and could indicate potential functional disabilities were those involving speech (7 percent), hearing (3 percent), and vision (3 percent). Altogether, 12 percent of parents ever reported that a doctor had ever told them that their child had a vision, hearing, or speech problem by 28 months after enrollment (Table 3).

When asked to describe their child's sight, hearing, and use of arms and legs and to compare their child's communication abilities with those of other children about the same age, trouble with communication was the problem most often reported by Early Head Start parents. In the follow-up interviews completed an average of 16 and 28 months after enrollment, about 2 percent of parents reported that their child did not hear normally (Table 4). Similarly, at each point, 2 percent of parents reported that their child did not see normally. Only 1 percent of parents reported that their child did not have normal use of arms or hands, and the same proportion reported that their child did not have normal use of legs or feet. In contrast, 10 to 11 percent of parents reported in each follow-up interview that, compared with other children about the same age, their child had trouble communicating his or her needs to parents and others.

Not all these problems interfered with children's participation in normal childhood activities. In the follow-up interviews completed an average of 16 and 28 months after enrollment, 4 to 6 percent of parents reported that their child was limited in any way in any activities because of an impairment or health problem. Across the two interviews, approximately 8 percent of parents ever reported that their child had an impairment or health problem that limited his or her activities (Table 4). In the 1997 Panel Study of Income Dynamics, 2 to 3 percent of infants, toddlers, and preschoolers were reported to be limited in their activities

TABLE 4  
FUNCTIONAL DISABILITIES AMONG EARLY HEAD START CHILDREN

	16 Months After Enrollment	28 Months After Enrollment	Ever by 28 Months After Enrollment (*or by Age 3)
Percentage of Children Reported by Their Primary Caregiver to Have:			
Diagnosed or suspected hearing problem	2.1	2.2	
Diagnosed or suspected sight problem	1.7	2.3	
Eyeglasses prescribed	0.8	1.0	
Trouble communicating	9.1	8.9	} 17.1
Lot of trouble communicating	1.4	0.8	
No communication	0.5	0.4	
Reached developmental milestone of talking <sup>a</sup>	83.0	98.1	
If child says words yet, he/she is:			
Very easy for others to understand	32.5	47.8	} 36.9
Fairly easy for others to understand	40.2	33.5	
Somewhat hard for others to understand	19.4	15.7	
Very hard for others to understand	7.9	3.0	
A little trouble using arms or hands	0.5	0.3	} 1.0
A lot of trouble using arms or hands	0.1	0.2	
No use of arms or hands	0.3	0.1	
A little trouble using legs or feet	0.9	0.6	} 1.8
A lot of trouble using legs or feet	0.5	0.5	
No use of legs or feet	0	0.1	
Uses equipment to get around	0.3	0.2	
A physical condition or impairment that limits normal childhood activities	3.8	5.8	7.6
Percentage of Children Ever Diagnosed with a Cognitive Delay or Low Bayley Mental Development Index Score <sup>b</sup>	NA	NA	17.5*
Percentage of Children Ever Diagnosed with a Behavior Problem or High Score on Behavior Problems Checklist <sup>c</sup>	NA	NA	8.5*
<b>Sample Size<sup>d</sup></b>	<b>947-954</b>	<b>1,070-1,076</b>	<b>936-1,075</b>

Source: Parent Services Follow-Up Interviews (PSIs) completed an average of 16 and 28 months after enrollment for families who completed the 28-month follow-up interview.

NA = not available.

TABLE 4 (continued)

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<sup>a</sup> On average, children were 20 months old when the 16-month PSI was completed and 32 months old when the 28-month PSI was completed.

<sup>b</sup> Doctor told parent that child had a developmental delay or child received a score below 70 on the Bayley MDI conducted at 14, 24, or 36 months of age.

<sup>c</sup> Doctor told parent that child had an emotional disturbance or child received a score above 18 on the Child Behavior Checklist: Aggressive Behavior subscale at 14, 24, or 36 months of age.

<sup>d</sup> Range reflects minimum and maximum sample sizes for items in table.

(Hofferth 1998). The higher incidence of limitations among Early Head Start children probably reflects the programs' efforts to recruit and serve children with disabilities.

The reported incidence of several potential disabilities increased over time as children got older and staff and parents had more opportunity to observe and conduct assessments with children and determine whether potential delays were temporary (Table 4). The proportion of parents who reported that their child had a condition or impairment that limited normal childhood activities increased from about 4 percent when children were 20 months old, on average, to about 6 percent a year later. Parents were also more likely to report diagnosed speech problems as children got older (3.4 percent 28 months after enrollment, when children were 20 months old, on average, compared with 2.2 percent a year earlier). This increase in diagnosed speech problems may not reflect an increase in the incidence of problems, however. In the last follow-up interview, parents were slightly less likely to report that their child had trouble communicating and more likely to report that their child was very easy for others who did not know the child to understand, which reflects children's normal language development (or decreased concern about language after the child started talking at all).

The child assessments conducted for the national Early Head Start Research and Evaluation study suggest that a substantial proportion of Early Head Start children may have had potential developmental or behavioral problems. Nine percent of the Early Head Start children had potential behavior problems by age 3, as indicated by a score above 18 on the Child Behavior Checklist (Table 4).<sup>5</sup> Eighteen percent of Early Head Start children had a potential cognitive delay by age 3, as indicated by Bayley MDI scores below 70 at any of the assessments. Children

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<sup>5</sup>A score of 18 is the clinical cut-off indicating the need for referral (Achenbach and Rescorla 2000).

in mixed-approach programs were more likely than children in center- or home-based programs to have potential cognitive delays (22 compared with 15 percent).

Potential developmental and behavioral problems were much less likely to be identified by physicians (as reported by parents). Less than 1 percent of parents reported that a doctor had advised them that their child had a behavior problem. Similarly, less than 1 percent of parents reported that a doctor had advised them that their child had a developmental delay.

The revised Head Start Program Performance Standards stipulate that at least 10 percent of programs' enrollment opportunities must be made available to children with identified disabilities. Nearly 8 percent of families in the research sample ever reported that their child was eligible for early intervention services during the combined follow-up period (Table 5).<sup>6</sup> About 5 percent of families in the research sample reported receiving early intervention services. Parents may have underreported their children's eligibility for and receipt of early intervention services (they may have been unaware of their child's eligibility or may not have recognized the name of the local Part C program). According to reports by program staff in summer 2000, 13 percent of children in the research sample had been identified as eligible for Part C.

The extent to which Early Head Start families in the research reported eligibility for and receipt of early intervention services varied widely among programs. The proportion of children ever reported by parents to be eligible for early intervention services ranged from 2 to 22 percent across programs (not shown). According to parents, the proportion of children who received early intervention services ranged from 0 to 16 percent across programs (not shown). These

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<sup>6</sup>The percentages reported here do not necessarily reflect the percentage of children with identified disabilities served by the programs at any given point in time. Follow-up interviews occurred over a 28-month period, on average, during which programs also served other families who were not in the research sample but who may have had children with identified disabilities.

TABLE 5

ELIGIBILITY FOR AND RECEIPT OF EARLY INTERVENTION SERVICES  
BY EARLY HEAD START CHILDREN

	16 Months After Enrollment	28 Months After Enrollment	Ever by 28 Months After Enrollment
Percentage of Children Reported by Primary Caregivers to:			
Be eligible for early intervention services	3.9	6.1	7.5
Have received early intervention services since last interview	2.7	4.1	4.9
Have received Part C services coordinated with Early Head Start services	2.0	2.5	3.6
Percentage of Children Reported by Program Staff to be Eligible for Part C Early Intervention Services by Summer 2000			
	NA	NA	13.0
<b>Sample Size<sup>a</sup></b>	<b>935-951</b>	<b>1,064-1,075</b>	<b>1,050-1,073</b>

Source: Parent Services Follow-Up Interviews completed an average of 16 and 28 months after enrollment and program records for families who completed the 28-month follow-up interview.

NA = not available.

<sup>a</sup> Range reflects minimum and maximum sample sizes for items in table.

variations may reflect varying efforts to reach out to and recruit families with children with disabilities, differences in state Part C eligibility criteria, or differences in the emergence of disabilities as children got older.

Not all families who reported that their child was eligible for early intervention services reported that they had received early intervention services. This may reflect, in part, the time required to set up services after identification (or parents' decision to seek additional services similar to early intervention but called something different). Four percent also reported that their child's early intervention services were being coordinated with the Early Head Start program. Some parents with children who had been identified as eligible for Part C may not have recognized that their child was receiving early intervention services because the services were well-coordinated with Early Head Start services.

## **G. HEALTH RISKS FACED BY EARLY HEAD START CHILDREN**

All the children enrolled in Early Head Start are at increased risk of health problems due to the low socioeconomic status of their families. Specific environmental conditions, such as exposure to cigarette smoking and lead, may also pose health risks for Early Head Start children.

More than half of the Early Head Start children (57 percent) were exposed to household smoking, which appears to have increased the likelihood that they experienced several health problems. Children exposed to household smoking were more likely than those who were not to have recurrent ear infections (55 percent compared to 47 percent) and more likely to have asthma or respiratory problems (31 compared with 24 percent) (not shown). National studies have shown similar relationships between environmental tobacco smoke exposure and ear infections and asthma (Gergen et al. 1998; Adair-Bischoff and Sauve 1998; and Stathis et al. 1999).

High blood lead levels can cause serious health effects, and somewhat elevated blood lead levels have been associated with adverse effects on cognitive development and behavior among

preschool-age children. In 1994, an estimated 5.9 percent of children 1 to 2 years old had elevated blood lead levels (Advisory Committee on Childhood Lead Poisoning Prevention 2000). A similar proportion (6 percent) of the Early Head Start children were reported by their parents to have been diagnosed with a high lead level.

Children in center-based Early Head Start programs were less likely to be diagnosed with a high lead level. One percent of children in center-based programs, compared to 6 percent of children in home-based programs and 8 percent in mixed-approach programs were reported by their parents to have been diagnosed with a high lead level. This may reflect less economic disadvantage and better living conditions among families in center-based programs, where parents were more likely to be employed and less likely to be receiving welfare cash assistance.

## **H. PARENTS' PHYSICAL AND MENTAL HEALTH**

Parents' health problems may also put children at risk of poorer health and developmental outcomes. The health of children's primary caregivers can influence their parenting behavior and relationships with their children. Physical health problems may limit parents' activities with their children, and mental health problems may make it more difficult for parents to develop strong healthy relationships with their children. Poor physical or mental health can also interfere with parents' ability to work and support their children economically.

Half the Early Head Start mothers reported their own health to be excellent or very good and one-fifth reported their health to be fair or poor (Table 6). Nationally, nearly one-third of poor women 18 years old and above reported their overall health status to be fair or poor in 1995 (Pamuk et al. 1998). The more favorable overall health status reported by Early Head Start mothers in the research programs probably reflects their young age (nearly 40 percent were under 20, and nearly all were under 30).

TABLE 6

HEALTH STATUS OF PRIMARY CAREGIVERS IN EARLY HEAD START,  
BY CHILD'S AGE

	Child's Age		
	14 Months	24 Months	36 Months
<b>Primary Caregiver's Overall Health Status<sup>a</sup></b>			
Excellent or very good (%)	47.9	51.1	45.8
Good (%)	34.4	31.0	34.3
Fair or poor (%)	17.7	17.9	20.0
Average rating	3.5	3.5	3.4
<b>Father/Father-Figure's Overall Health Status<sup>a,b</sup></b>			
Excellent or very good (%)	NA	55.3	60.9
Good (%)	NA	29.6	25.5
Fair or poor (%)	NA	15.1	13.7
Average rating	NA	2.4	2.3
	Time Since Enrollment		
	7 months	16 months	28 months
<b>Primary Caregiver's Functional Limitations</b>			
Limited in vigorous activities (%)	9.9	10.0	9.1
Limited in moderate activities (%)	4.5	5.1	4.0
Limited in mild activities (%)	4.2	4.6	3.9
<b>Sample Size (Fathers)</b>	<b>946-959</b>	<b>937-961 (349)</b>	<b>1,066-1,093 (346)</b>

Source: Parent interviews conducted when children were approximately 14, 24, and 36 months of age. Parent services follow-up interviews were completed 7, 16, and 28 months after enrollment.

NA = not available.

<sup>a</sup> Primary caregivers and fathers/father-figures were asked to rate their overall health as poor (1), fair (2), good (3), very good (4), or excellent (5).

<sup>b</sup> Fathers and father-figures were interviewed in 12 of the 17 research sites when children were approximately 24 and 36 months of age.

Early Head Start fathers and father figures were interviewed in 12 of the 17 research sites when children were 24 and 36 months old. Slightly more than half the fathers and father-figures who completed the interviews reported that their overall health was excellent or very good (55 to 60 percent), and approximately 15 percent reported it to be fair or poor.

Nine to 10 percent of the Early Head Start mothers reported, at each of the assessment points, that their health limited their participation in vigorous activity.<sup>7</sup> Four to 5 percent of the mothers reported being unable to carry out moderate activities such as walking several blocks, lifting or carrying groceries, or climbing a single flight of stairs. Another 4 to 5 percent of the mothers reported that they were unable to take part in even minimal activities such as walking, bending, kneeling, or bathing or dressing themselves. By 28 months after enrollment, 40 percent of Early Head Start mothers reported some limitations in their activities due to health problems. This is considerably higher than the 23 percent of low-income adults reporting activity limitations in national studies (National Center for Health Statistics, 2002) and is likely related to temporary limitations due to pregnancy. Primary caregivers reporting activity limitations related to health were more likely to have been pregnant at some time between enrollment and the 28-month interview than those who did not have health related activity limitations (69 versus 48 percent).

Maternal depression is a special health concern, because it is associated with increased negative parenting behaviors, parenting stress, family conflict, and child aggressive behavior

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<sup>7</sup>Parents were read a list of specific activities and asked if their health currently limited their ability to participate in the activity. Activities ranged from vigorous (including sports or climbing several flights of stairs) to more moderate activities (climbing single flight of stairs or moderate sports) to minimal (bending, kneeling, dressing self). Parents reporting that their health limited their participation in the activity a lot were compared to those reporting that their health limited participation a little or not at all.

(NICHD 1999). At the time of enrollment, nearly half the mothers (48 percent) in the eight programs where mothers were asked about depression reported enough depressive symptoms to suggest that they may have been clinically depressed.<sup>8</sup> One-third of the mothers in all 17 Early Head Start research programs reported depressive symptoms when their children were 14 months old, and a similar proportion reported depressive symptoms when their children were 36 months old. For some mothers, depression appeared to be persistent; 12 percent were depressed at both the 14- and 36-month assessments.

Rates of depression among Early Head Start fathers were also high. When children were 24 months old, 18 percent of Early Head Start fathers reported depressive symptoms indicating they may have been clinically depressed, and when children were 36 months of age, the rate was 16 percent.

## **I. PRENATAL CARE AND NEWBORN HEALTH STATUS**

Among the Early Head Start families who completed the third follow-up interview, 75 percent enrolled after their child was born and 25 percent enrolled while they were pregnant with the focus child. For infants born prior to enrollment, information on prenatal care and newborn health status was obtained at baseline using the Head Start Family Information System (HSFIS) application and enrollment forms. For infants born after enrollment, data were obtained from parents in the second follow-up interview (completed 16 months after enrollment, on average).

Like mothers nationally, almost all Early Head Start mothers (99 percent) received prenatal care at some time during their pregnancy with the focus child, and most (82 percent) initiated

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<sup>8</sup>Depression was assessed using the Center for Epidemiological Studies—Depression scale. See ACF 2002a for more information about the measure.

prenatal care during their first trimester of pregnancy (Table 7).<sup>9</sup> Fourteen percent began receiving care during the second trimester, and 3 percent did not receive care until their third trimester. Mothers who enrolled while still pregnant were more likely to begin prenatal care in their first trimester (88 percent) than were mothers who enrolled after their child was born (80 percent). The high proportion of Early Head Start mothers beginning prenatal care in their first trimester of pregnancy may reflect the fact that many of the research programs recruited families in health care and WIC offices, where mothers were already receiving health care or referrals to health care providers.

Data on prenatal complications experienced by mothers during their pregnancy with the focus child were collected differently depending on whether or not the mother was pregnant at the time of enrollment in Early Head Start. At the time of enrollment, mothers of infants born prior to enrollment were read a list of specific prenatal problems and asked to indicate if they had experienced each particular problem during their pregnancy. Mothers who were pregnant at the time of their enrollment were asked a more general question approximately 16 months after enrollment, “Did you have any complications during your pregnancy?” Because of these differences in the data, analysis of prenatal complications for mothers pregnant at the time of enrollment was conducted separately from mothers of infants born prior to enrollment.

The two approaches to asking mothers about pregnancy complications produced substantially different estimates of their incidence. Twenty-eight percent of the mothers of infants born after enrollment and 59 percent of the mothers of infants born prior to enrollment reported experiencing some complications during their pregnancy. The particular complications

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<sup>9</sup>Nationally, in 2000, 83 percent of mothers reported receiving prenatal care during their first trimester of pregnancy, and 4 percent received prenatal care late or not at all (DHHS 2002).

TABLE 7  
EARLY HEAD START CHILDREN'S PRENATAL HEALTH STATUS  
AND HEALTH CARE

	Percentage
Prenatal Care Began in First Trimester	81.6
Prenatal Complications Reported	
For child born prior to enrollment <sup>a</sup> (n=770)	58.5
For child born after enrollment <sup>a</sup> (n=195)	28.1
Child Hospitalized at Birth Due to Medical Problems	17.0
Birthweight (in pounds)	
Low birthweight (under 5.5 pounds)	8.3
Very low birthweight (under 3.25 pounds)	1.0
(Average weight in pounds)	(7.1)
<b>Sample Size<sup>b</sup></b>	<b>917-945</b>

Source: Head Start Family Information System (HSFIS) application and enrollment forms, and parent services follow-up interviews (PSIs) completed 7, 16, and 28 months after enrollment, for families who completed the 28-month follow-up interview.

<sup>a</sup> In the HSFIS, mothers were asked to respond “yes” or “no” to a list of possible complications. In the PSI, mothers were asked whether or not they experienced any complications during their pregnancy.

<sup>b</sup> Range reflects minimum and maximum sample sizes for items in table except as indicated in label.

reported by mothers of infants born prior to enrollment included hypertension (13 percent), bleeding (14 percent), anemia (18 percent), sickle cell anemia (1 percent), diabetes (3 percent), premature labor (13 percent), and swelling (39 percent).

According to mothers, less than one-fifth of Early Head Start infants and toddlers (17 percent) required hospitalization for medical problems at birth. As with findings for mothers' prenatal complications, newborns' health status was not related to whether or not their mother began prenatal care in the first trimester.

Average birth weight was 7.1 pounds. Approximately 8.3 percent of Early Head Start infants were born at a low birth weight (under 5.5 pounds), and 1 percent were born at a very low birth weight (under 3.25 pounds). The rate of low birth weight among Early Head Start infants was similar to the national average of 7.6 percent in 1998 but considerably lower than the rate for African American infants (13.2 percent) (DHHS 2001).

Breastfeeding can promote healthy development and protect infants from illness, as well as promote maternal health and conserve family economic resources (American Academy of Pediatrics 1997). Information on breastfeeding is available for some Early Head Start children in the research sample who were born after enrollment and suggests that 60 percent of mothers breastfed their children.<sup>10</sup> This rate of breastfeeding is comparable to the national rate of breastfeeding in 1995 (American Academy of Pediatrics 1997).

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<sup>10</sup>Data on breastfeeding were available for 185 children, out of the 269 who were born after enrollment and for whom PSI data are available (the HSFIS enrollment forms did not obtain information on breastfeeding for children who were born prior to enrollment). The measured characteristics of families with and without these data are very similar.

## **J. HEALTH INSURANCE COVERAGE**

Levels of health insurance coverage among Early Head Start children were higher than those among low-income children in general, but some children were uninsured. According to parents, most Early Head Start children (87 to 91 percent) were covered by Medicaid or private health insurance at each of the follow-up interviews (Table 8). Nationally, 79 percent of children under 18 in families with incomes below the poverty level were covered by health insurance in 1996 (Pamuk et al. 1998). The proportion of Early Head Start children reported to be covered by some health insurance declined slightly over time, from 91 percent approximately 6 months after enrollment to 87 percent approximately 28 months after enrollment.

Children were more likely to be covered by Medicaid than by private health insurance. Over time, as more parents became employed, Medicaid coverage declined and private insurance coverage increased. Reported Medicaid coverage declined from 79 percent about 7 months after enrollment to 62 percent about 28 months after enrollment. During the same period, reported private health insurance coverage rose from 24 percent to 33 percent. The rise in private health insurance did not fully compensate for the loss of Medicaid coverage over time. Children who were not covered by health insurance were much more likely than those who were covered to be Hispanic children with mothers who had not completed high school or a GED.

Children in home-based programs were more likely than children in other types of Early Head Start programs to have Medicaid coverage, while children in center-based programs were much more likely to be covered by private health insurance, consistent with differences in employment among families in the two types of programs. Approximately 28 months after enrollment, for example, 65 percent of children in home-based programs were reported to have Medicaid coverage, compared with 57 percent of those in center-based programs and 61 percent of those in mixed-approach programs. At the same time, 44 percent of children in center-based

TABLE 8  
EARLY HEAD START FAMILIES' HEALTH INSURANCE COVERAGE,  
BY TIME SINCE ENROLLMENT

	Months Since Enrollment		
	7 Months	16 Months	28 Months
Percentage of Children with Any Health Insurance Coverage <sup>a</sup>	91.3	86.8	86.7
Medicaid coverage	78.7	66.5	61.8
Private health insurance coverage	23.7	30.8	32.5
Percentage of Primary Caregivers with Any Health Insurance Coverage	70.1	71.1	70.4
Medicaid coverage	51.8	45.9	38.8
Private health insurance coverage	25.9	30.5	24.5
<b>Sample Size<sup>b</sup></b>	<b>957-963</b>	<b>950-951</b>	<b>1,075-1,076</b>

Source: Parent services follow-up interviews completed an average of 7, 16, and 28 months after enrollment for families who completed the 28-month follow-up interview.

<sup>a</sup> Some families reported having both Medicaid and private health insurance.

<sup>b</sup> Range reflects minimum and maximum sample sizes for items in table.

programs were reported to have private health insurance coverage, compared with 29 percent of those in home-based programs and 31 percent of those in mixed-approach programs.

Early Head Start parents were less likely than their children to be covered by health insurance. About 70 percent of parents reported that they were covered by Medicaid or private health insurance, and this level of coverage remained constant at each follow-up interview. This level of coverage is about the same as that for all low-income mothers with incomes under 200 percent of the federal poverty level in 2000 (Hoffman and Pohl 2002).

Over time, parents' health insurance coverage shifted from Medicaid to private health insurance, consistent with the increases in parents' employment over time (ACF 2002). Medicaid coverage of parents declined over the follow-up period, from 52 percent about 7 months after enrollment to 39 percent about 28 months after enrollment. At the same time, private health insurance coverage of parents increased from 26 to 35 percent. The drop in Medicaid coverage probably reflects, in part, the less generous Medicaid eligibility criteria for women who are not pregnant.

## **K. USUAL SOURCE OF HEALTH CARE**

Most, but not all, Early Head Start children were reported by their parents to have a regular health care provider at each followup (Table 9). The proportion of Early Head Start children reported to have a regular health care provider declined slightly over time, from 98 percent about 7 months after enrollment to 94 percent about 28 months after enrollment. Early Head Start children were slightly more likely than children nationally to have a usual source of health care. In 1998, 90 percent of children in low-income families (with incomes below \$20,000 per year) were reported to have a usual place for health care (DHHS 2002).

The predominant places that Early Head Start children were taken for regular health care were a private doctor's office (39 percent about 28 months after enrollment) or a clinic

TABLE 9

## EARLY HEAD START FAMILIES' USUAL SOURCES OF HEALTH CARE

	7 Months After Enrollment	16 Months After Enrollment	28 Months After Enrollment
Percentage of Children With a Regular Health Care Provider	97.5	95.4	94.2
Percentage of Children Whose Usual Places for Health Care Include: <sup>a</sup>			
A private doctor's office	30.2	32.9	39.3
A health clinic	40.6	41.2	36.1
A community health center	12.0	14.0	15.2
A hospital or walk-up clinic	16.2	14.0	11.8
An HMO	4.2	4.9	4.7
An emergency room	1.9	1.5	1.8
Other	3.1	0.8	0.5
Percentage of Primary Caregivers With a Regular Health Care Provider	81.6	81.5	80.4
Percentage of Primary Caregivers Whose Usual Places for Health Care Include: <sup>a</sup>			
A private doctor's office	25.7	26.9	33.0
A health clinic	41.6	41.8	36.9
A community health center	13.7	13.5	16.6
A hospital or walk-up clinic	15.7	15.0	12.1
An HMO	4.7	6.5	4.6
An emergency room	4.1	3.8	3.5
Other	3.8	0.8	0.7
<b>Sample Size<sup>b</sup></b>	<b>939-974</b>	<b>915-952</b>	<b>1,029-1,076</b>

Source: Parent services follow-up interviews completed an average of 7, 16, and 28 months after enrollment for families who completed the 28-month follow-up interview.

<sup>a</sup> Percentages sum to more than 100 percent because some children and primary caregivers reported having more than one usual place for health care.

<sup>b</sup> Range reflects minimum and maximum sample sizes for items in table.

(36 percent). Some children were taken to a community health center (15 percent) or hospital/walk-in outpatient clinic (12 percent) for regular health care. Only a few parents reported taking their children to an emergency room for regular health care (2 percent). In contrast, the usual places for health care for children under age 5 nationally in 1998 were much more likely to be doctors' offices (77 percent) and less likely to be other health care providers, such as clinics (21 percent), hospital outpatient clinics (1.5 percent), or emergency rooms (0.7 percent) (DHHS 2002).

Children in mixed-approach programs were more likely to visit a private doctor's office for regular health care (47 percent compared with 36 percent in both center- and home-based programs) and less likely to be taken to a clinic (25 compared with 42 percent in both). They were also more than twice as likely to be taken to a hospital emergency room for regular health care (3 percent compared with 1.4 and 1.0 percent), which possibly reflects their lower rates of health insurance coverage.

Approximately 28 months after enrollment, 80 percent of mothers in Early Head Start reported having a regular health care provider. The extent to which Early Head Start mothers had a regular source of health care is similar to what would be expected based on national statistics. In 1998, U.S. women were more likely than U.S. men to have a usual source of health care (90 compared with 81 percent), and poor adults were less likely than other adults to have a usual source of health care (78 percent compared with 81 percent of near-poor adults and 89 percent of non-poor adults) (DHHS 2002).

Primary caregivers tended to go to the same types of places for regular health care as their children. As was the case for their children, mothers were most likely to go to a private doctor's office or a clinic for regular health care (33 and 37 percent, respectively). Compared with their

children, however, mothers were twice as likely to go to a hospital emergency room for regular health care (4 percent compared with 2 percent of children).

Primary caregivers in mixed-approach programs were least likely to report a usual source of health care (approximately 28 months after enrollment, for example, 78 percent compared with 85 and 80 percent in center- and home-based programs, respectively). They were more than twice as likely to go the emergency room for regular health care (6 percent compared with 2 to 3 percent) and more likely to go to a hospital or walk-in clinic or a community health center. They were less likely to go to a clinic for regular health care.

#### **L. HEALTH CARE SERVICES**

All children received some health services (visited a health professional or dentist or emergency room or received immunizations or screening tests) by the time of the 28-month follow-up interview (Table 10). During each follow-up period, however, the parents of a small proportion of children reported that their child received no health services (3.2 to 6 percent). We found no large or consistent difference in overall levels of health care receipt among key subgroups of Early Head Start children. As described below, however, patterns of health care use varied among key subgroups.

In nearly all families (98 percent), other family members also received some health services (visited a health professional or dentist or emergency room or received immunizations or screening tests) at some time during the combined follow-up period. During each 6- to 11-month follow-up period, however, other members in 12 to 18 percent of families received no health services.

TABLE 10

## EARLY HEAD START CHILDREN'S RECEIPT OF HEALTH SERVICES

	By 7 Months After Enrollment	7-16 Months After Enrollment	16-28 Months After Enrollment	By 28 Months After Enrollment
Percentage of Children with:				
Any doctor visits	70.7	88.6	89.8	99.0
For checkups	66.6	79.1	76.6	95.2
For illness or injury	47.4	61.5	61.1	82.4
Any dental visits	3.8	12.3	24.5	28.3
Any emergency room visits	23.2	31.8	30.2	54.6
For accident/injury	NA	8.1	10.6	NA
Average Number of :				
Doctor visits for checkups	2.2	2.5	2.0	6.7
Doctor visits for illness or injury	1.7	2.5	2.3	6.3
Emergency room visits	0.4	0.7	0.6	1.6
Emergency room visits for injury	NA	0.1	0.1	NA
Percentage of Children Who Received:				
Any immunizations	92.3	86.6	65.5	98.8
Any screening tests	26.9	44.4	42.1	66.7
Hearing testing	14.3	22.2	26.5	40.6
Lead testing	9.4	14.6	15.5	27.7
Percentage of Children Who Received Any Health Services				
	96.3	96.8	99.7	100.0
<b>Sample Size<sup>a</sup></b>	<b>979-1,063</b>	<b>1,030-1,073</b>	<b>1,040-1,075</b>	<b>966-1,075</b>

Source: Parent services follow-up interviews completed an average of 7, 16, and 28 months after enrollment for families who completed the 28-month interview.

NA = not available.

<sup>a</sup>Range reflects minimum and maximum sample sizes for items in table.

## **1. Visits to a Health Professional**

Most parents reported that their child visited a doctor or other health professional at least once in each follow-up period (Table 10). Virtually all reported that their child had visited a health professional at least once by the time of the 28-month follow-up interview (99 percent).

Nearly all Early Head Start children had been taken to a health professional for a well-child examination (check-up) at least once by 28 months after enrollment (95 percent of parents reported at least one check-up). In each 6- to 11-month follow-up period, two-thirds to three-fourths of children were reported to have had a check-up.<sup>11</sup>

Most children also had been taken to a health professional for treatment of a health problem at least once by 28 months after enrollment (82 percent). In each follow-up period, between half and two-thirds of children visited a health professional for treatment of an illness.

Children in home-based programs were less likely than children in other types of programs to have been taken to a health professional for treatment of an illness by the time of the 28-month follow-up interview (76 percent), while children in mixed-approach programs were more likely to have visited a health professional for treatment of an illness (90 percent). The lower rates of health care visits for illness among children in home-based programs may reflect, in part, the fact that these children probably spent less time in group settings with other children where they might have been exposed to illnesses (Johansen, Liebowitz, and Waite 1988; Hardy and Fowler 1993; and NICHD 2001).

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<sup>11</sup>The American Academy of Pediatrics recommends seven preventive visits before age 1, three preventive visits between ages 1 and 2, and annual visits starting at age 2 (American Academy of Pediatrics 2000).

## **2. Emergency Room Use**

About half of Early Head Start children had been taken to an emergency room for health care by 28 months after enrollment (55 percent). During each 6- to 11-month follow-up period, between one-fourth and one-third of children visited an emergency room (Table 10). This rate of emergency room use is comparable to annual rates of emergency room use among poor and near-poor U.S. children under age 6 in 1999–2000 (29 to 32 percent; DHHS 2002).

By the time of the 28-month follow-up interview, Early Head Start children were reported to have visited an emergency room an average of 1.6 times. About 9 percent of children were reported to have been taken to an emergency room for health care five or more times. In each follow-up period, children reported to be in fair or poor health were much more likely than children reported to be in better health to have visited an emergency room (53 compared with 28 percent during the third follow-up period, for example).

During the second and third follow-up periods, 8 to 10 percent of children were reported to have visited an emergency room for an accident or injury. In those two periods, 18 to 22 percent of all emergency room visits were for accidents and injuries.

Emergency room use was similar among other family members. Emergency room use by at least one other family member increased from 29 percent in the first follow-up period to 34 percent in the third follow-up period, and by the 28-month follow-up interview, at least one other family member in 56 percent of families had ever visited an emergency room.

## **3. Receipt of Mental Health Care**

At least one family member in 21 percent of program families received treatment for an emotional, personal, or mental problem (not including drug or alcohol treatment) during the follow-up period. In the great majority of these families, it was the child's primary caregiver

who received treatment. A small proportion of families reported that a family member received drug or alcohol treatment during the follow-up period (5 percent).

Considering both treatment for mental health problems and drug and alcohol problems, nearly one-fourth of program families received mental health services at some time during the follow-up period. The proportion reported to be receiving these services in any given follow-up period ranged from 11 to 12 percent. In sites where depressive symptoms were measured at enrollment, families in which the primary caregiver was at risk for depression at enrollment were more likely than other families to use mental health services (32 versus 22 percent).

#### **4. Visits to a Dentist**

Children's dental visits increased substantially over the combined follow-up period, from 4 percent about 7 months after enrollment (when children were, on average, 10 months old) to 25 percent about 28 months after enrollment (when children were 32 months old, on average).<sup>12</sup> Children in center-based programs and children enrolled in programs outside of urban areas were more likely than children in other types of programs to have visited a dentist.

In about half of families, at least one other member of the family visited a dentist during each follow-up period, and by 28 months after enrollment, other members in at least three-fourths of families had visited a dentist.

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<sup>12</sup>The American Academy of Pediatric Dentistry recommends that children receive their first preventive dental visit by age 1 and that they visit the dentist for preventive care every 6 months after that (American Academy of Pediatric Dentistry 2000).

## 5. Preventive Health Care and Safety Practices

Nearly all children had received some immunizations by 28 months after enrollment (99 percent). Children in urban programs were more likely to have received immunizations in the later follow-up periods.

Two-thirds of Early Head Start children were reported to have received some screening tests by 28 months after enrollment. Forty-one percent were reported to have had a hearing screening, and 28 percent had had a lead screening.<sup>13</sup> Children in center-based and mixed-approach programs were more likely to have had screening tests, while children in home-based programs were less likely to have had screening tests, including hearing and lead screenings. Children enrolled in urban programs were more likely to have had screening tests, including hearing and lead screenings.

Of the seven safety practices asked about in the parent interviews conducted when children were 14 and 24 months old, parents reported practicing five, on average (see Table 11). Almost all parents reported using guards for stairways (94 percent), and maintaining a working smoke detector (94 percent) at either the 14-month or 24-month interview. Many parents also reported using window guards (81 percent), covering electrical outlets (84 percent), and maintaining a safe play environment (86 percent).

Early Head Start parents are most in need of information on safety practices related to poison control. Nearly two-thirds of parents (62 percent) did not keep ipecac in the home, and

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<sup>13</sup>These screenings probably led to the discovery of health problems in some children. As reported earlier, parents reported that 3 percent of children had a diagnosed hearing problem and 6 percent had a high blood lead level.

TABLE 11  
PARENT REPORTS OF SAFETY PRACTICES

	Child's Age			
	14 Months	24 Months	36 Months	Ever by 24 Months
Percentage of Families Who:				
Keep ipecac in house	26.2	30.1.2	NA	37.7
Know poison control phone number	30.2	38.2	NA	52.3
Use stair guards/gates	84.7	79.3	NA	93.9
Use window guards	63.8	64.5	NA	81.3
Cover electrical outlets	69.4	60.2	NA	83.8
Have working smoke detector	82.6	86.3	NA	93.7
Have safe play environment	64.5	67.8	NA	86.1
Use car seat	95.7	81.3	70.6	98.5 <sup>a</sup>
Average Number of Safety Practices Implemented	5.1	5.1	NA	5.1
<b>Sample Size<sup>b</sup></b>	<b>696-950</b>	<b>829-942</b>	<b>1,036</b>	<b>868-1,036</b>

Source: Parent Services Follow-Up Interviews (PSIs) completed an average of 16 and 28 months after enrollment for families who completed the 28-month follow-up interview.

NA = not available.

<sup>a</sup> Percent reporting that they ever used a car seat for their child by age 3.

<sup>b</sup> Range reflects minimum and maximum sample sizes for items in table.

nearly half (48 percent) did not know how to find the number to call for poison control information.<sup>14</sup>

Car seat use declined as children grew older.<sup>15</sup> Almost all parents (96 percent) used car seats when children were 14 months of age. By the time they reached 24 months, 81 percent reported using car seats, and the proportion declined to 71 percent at 36 months. The decline in car seat use may reflect the fact that as children age, they don't like being restrained in a car seat and are more able to unbuckle themselves. It is also possible that as children grow, parents may not have resources to replace an infant car seat with a toddler seat.

#### **M. HEALTH GOALS AND UNMET HEALTH CARE NEEDS**

Good health and good health care are important to all Early Head Start families. Almost all parents agreed that better health or better health care was one of their goals (96 percent agreed this was a goal in at least one follow-up interview), although few volunteered this as a goal in response to a general question about their family goals (Table 12).

Getting help for a child with disabilities was a goal for a small proportion of families. About 9 percent of families reported getting help for a child with disabilities as a goal at the time

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<sup>14</sup>In a new policy statement, the American Academy of Pediatrics (AAP) recommends that “syrup of ipecac no longer be used routinely as a home treatment strategy. Until November 2003, the AAP advised that parents keep a 1-ounce bottle of syrup of ipecac in the home to induce vomiting if it was feared a child had swallowed a poisonous substance. Ipecac was recommended for use only on the advice of a doctor or poison control center. Although it seems to make sense to induce vomiting after the ingestion of a potentially poisonous substance, it was never proven to be effective in preventing poisoning. Recent research has failed to show benefit for children who were treated with ipecac. This is the key reason for this policy change” (<http://www.aap.org/advocacy/releases/novpoison.htm>).

<sup>15</sup>Car seat use was the only safety practice asked about in the parent interview conducted when children were 36 months old.

TABLE 12

## EARLY HEAD START FAMILIES' HEALTH-RELATED GOALS AND CONCERNS

	7 Months After Enrollment	16 Months After Enrollment	28 Months After Enrollment	By 28 Months After Enrollment
Percentage Who Had the Following Goals:				
Better health or health care	85.3	81.5	80.3	96.4
Get help for a child with a disability	NA	8.9	10.9	14.1
Percentage Who Reported That Following Resources Were Never or Seldom Adequate:				
Medical care	7.8	5.3	4.0	13.9
Dental care	26.3	17.9	14.2	36.2
Money to buy special equipment for child (among families with a child who needs special equipment)	26.4	31.6	28.7	NA
Disability assistance (among families with a member who has a disability)	31.2	16.6	14.9	NA
Help needed for child with special needs (among families with a child who has special needs)	23.0	13.3	24.2	NA
<b>Sample Size<sup>a</sup></b>	<b>144-941</b>	<b>112-926</b>	<b>131-1,051</b>	<b>1,016-1,053</b>

Source: Parent services follow-up interviews completed an average of 7, 16, and 28 months after enrollment for families who completed the 28-month follow-up interview.

NA = not available.

<sup>a</sup> Range reflects minimum and maximum sample sizes for items in table.

of the second two follow-up interviews, and 13 percent reported this goal at some time during the combined follow-up period.<sup>16</sup>

Some Early Head Start parents reported that their family seldom or never received the medical care it needed. During each follow-up period, 4 to 8 percent of parents reported this to be the case, and at some time during the combined follow-up period, 14 percent of parents reported that their family seldom or never received the medical care it needed.

Dental care needs were less likely than medical care needs to be met. During each follow-up period, 15 to 24 percent of parents reported that their family seldom or never received the dental care it needed. At some time during the combined follow-up period, 35 percent of parents reported that their family seldom or never received the dental care it needed.

Among families with a child with special needs<sup>17</sup> (such as a physical or emotional disability), approximately one-fourth reported that the assistance they received for that child was never or seldom adequate. At the time of the first follow-up interview, 24 percent reported that assistance was never or seldom adequate. This percentage fell to 17 percent in the second follow-up interview, and rose again to 26 percent at the time of the third follow-up interview. This pattern suggests that disabilities identified early were addressed and that unmet needs decreased in the second follow-up period, but as new disabilities emerged as children got older, services may not have been available or families may have left Early Head Start and were not able to access services for their child's special needs on their own.

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<sup>16</sup>The question about family goals asked about getting help for a disabled child and did not define "disabled" in relation to eligibility for early intervention services.

<sup>17</sup>Parents were asked whether their child had special needs, such as a physical or emotional disability.

## **N. VARIATIONS IN CHILDREN'S HEALTH AND HEALTH CARE AMONG EARLY HEAD START FAMILIES**

Information about variations in health status and health care receipt among Early Head Start children and families may be useful for identifying particular children and families at greater risk for health problems or inadequate health care and for targeting efforts to ensure that families receive the health care they need. Below, we highlight variations in the health and health care received by children in the Early Head Start research programs.

**Hispanic Children and Families.** As in the low-income population nationally, Hispanic families in the Early Head Start research programs were less likely than other families to report health insurance coverage, use of health care, and good health status. Some with no health insurance coverage may have been non-citizens ineligible for insurance under Medicaid or the State Children's Health Insurance Program (SCHIP). Thus, the health and health care needs of Hispanic families and children pose greater challenges for Early Head Start programs charged with linking them to health services and helping them work toward health goals.

According to parents, Hispanic children were much more likely to be uninsured than other children (27 percent, compared with 10 percent of white children and 8 percent of African American children approximately 28 months after enrollment) (Table 13). The percentage of Hispanic Early Head Start children who lacked health insurance is similar to that reported for Hispanic children nationally (26 percent; Hoffman and Pohl 2002).

Consistent with their lower rates of health insurance coverage, Hispanic children were somewhat less likely than other children to have a regular health care provider. According to parents approximately 28 months after enrollment, 88 percent of Hispanic children had a regular health care provider, compared with 96 percent of white and African American children. These differences are consistent with those among all U.S. children under age 6; 88 percent of Hispanic

## THE IMPACTS OF EARLY HEAD START ON HEALTH AND HEALTH CARE AMONG FAMILY SUBGROUPS

The impact evaluation described in the box on page 6 also examined the impacts of Early Head Start on the health and health care of key family subgroups. As was the case overall, Early Head Start had relatively few significant impacts on health service use and outcomes among subgroups of families. However, the evaluation findings suggest that the programs may have increased some aspects of health service use in different ways in particular subgroups:

**African American, White, and Hispanic Families.** The numbers of significant impacts on health and health care detected for white and Hispanic families were less than would be expected by chance. Among African American families, Early Head Start appears to have helped families obtain health services, especially immunizations and hearing screenings, sooner (in the first follow-up period). It also appears to have increased identification of disabilities and receipt of early intervention services by African American children.

**Families of Teenage and Older Mothers.** The Early Head Start programs appear to have helped teenage mothers obtain health insurance coverage, specifically Medicaid coverage, sooner than they otherwise would have (in the first follow-up period). The programs also increased the extent to which teenage mothers visited doctors with their children. When their children were 3 years old, teenage mothers were less likely to report that their child was in fair or poor health overall. Among older mothers, Early Head Start appears to have reduced emergency room use for injuries later in the follow-up period and reduced hospitalizations for accidents or injuries during their child's third year. Early Head Start also increased identification of disabilities and receipt of early intervention services by children of older mothers.

**Families Receiving Welfare Cash Assistance.** The number of significant impacts on health and health care detected for families not receiving welfare cash assistance when they enrolled were less than would be expected by chance. Among families who were receiving welfare cash assistance, however, Early Head Start appears to have increased the use of preventive health care services (checkups, immunizations, and screening tests (especially hearing tests)) early in the follow-up period and reduced emergency room use late in the follow-up period.

**Families of Mothers Without a High School Diploma or GED.** The Early Head Start programs appear to have helped mothers with less than a high school education obtain health insurance coverage, specifically Medicaid coverage, sooner than they otherwise would have (in the first follow-up period). In these families, Early Head Start also appears to have reduced emergency room use later in the follow-up period and reduced hospitalizations for accidents or injuries during their child's third year. In families of mothers with more education, fewer impacts were significant and no clear patterns were apparent.

**Families With Fewer Demographic Risks.** The numbers of significant impacts on health and health care detected for families with moderate or high numbers of demographic risk factors were less than would be expected by chance. Among lower-risk families, Early Head Start reduced emergency room use as well as hospitalizations for accidents or injuries during children's third year. Early Head Start also appears to have increased identification of disabilities and receipt of early intervention services among children in these families.

TABLE 13

## CHILDREN'S HEALTH AND HEALTH CARE, BY RACE/ETHNICITY

	Race/Ethnicity			
	African American	Hispanic	White	Other
Percentage of Children With Health Insurance Approximately 28 Months After Enrollment				
Medicaid***	69.9	53.2	59.8	61.3
Private insurance***	29.5	22.1	42.1	36.4
Medicaid or private insurance***	92.4	72.6	90.3	89.2
Percentage of Children With a Regular Health Care Provider				
7 months after enrollment***	98.0	93.8	99.1	100.0
16 months after enrollment*	97.2	92.5	95.5	93.8
28 months after enrollment***	96.3	88.3	96.4	90.3
Percentage of Children Whose Usual Places for Health Care 28 Months After Enrollment Included:				
Doctor's office***	41.4	23.6	48.3	31.7
Health clinic***	28.3	46.9	35.4	47.7
Community health center*	16.6	14.7	15.5	2.1
Hospital clinic***	18.0	13.0	6.3	8.4
HMO	3.5	6.6	4.8	5.1
Emergency room	1.8	2.2	1.4	5.1
Other	0.3	0.4	0.8	0.0
Percentage of Children Who by 28 Months After Enrollment Had Received Any:				
Health check-ups**	93.8	95.1	97.1	88.6
Treatment of health problem***	74.8	81.6	89.8	79.5
Emergency room care for any reason***	53.7	45.1	62.0	53.8
Emergency room care for accident/injury (16 to 28 months after enrollment)***	7.0	4.1	16.8	21.2
Average Number of Safety Practices Reported***	4.9	4.9	5.4	4.9
Percentage of Children Who:				
Received prenatal care in first trimester**	76.8	82.8	85.2	89.2
Were hospitalized at birth for medical problem	15.4	16.3	19.1	16.2
Had low birthweight	9.8	5.5	8.6	2.7
Percentage of Children Reported in Fair or Poor Health at Age:				
14 Months***	15.8	26.5	17.2	22.7
24 Months***	11.5	19.7	9.7	7.7
36 Months*	7.1	11.7	6.9	12.5

TABLE 13 (continued)

	Race/Ethnicity			
	African American	Hispanic	White	Other
Percentage of Children with Diagnosed Conditions During 28-Month Follow-Up Period				
Recurrent ear infections***	45.2	49.0	58.2	42.1
Asthma or respiratory problem***	35.9	18.8	28.8	15.4
Cognitive delay <sup>b*</sup>	15.8	23.0	13.8	26.7
Speech problem	4.1	4.7	6.8	0.0
Mobility problem***	1.3	0.0	4.1	0.0
During 28-Month Follow-Up Period, Percentage of Children Who Had:				
Suspected or diagnosed hearing problem***	0.5	0.0	3.2	0.0
Suspected or diagnosed sight problem	1.0	1.0	2.5	3.0
Trouble communicating**	13.0	17.1	21.0	16.6
Difficulty being understood***	27.2	41.8	42.3	37.8
Trouble using arms	0.5	1.1	1.3	0.0
Trouble using legs	0.2	2.0	3.0	0.0
Condition limiting normal childhood activities	7.6	6.5	8.8	3.0
By 28 Months After Enrollment, Percentage of Children Who:				
Were ever reported eligible for early intervention services***	5.4	5.0	11.5	0.0
Ever received early intervention services***	3.6	2.1	8.1	0.0
<b>Sample Size<sup>c</sup></b>	<b>309-373</b>	<b>204-259</b>	<b>333-431</b>	<b>36-45</b>

Source: Parent interviews conducted when children were approximately 14, 24, and 36 months of age and parent services follow-up interviews conducted an average of 7, 16, and 28 months after enrollment.

<sup>a</sup> Primary caregivers were asked to rate the overall health of their child as poor (1), fair (2), good (3), very good (4), or excellent (5).

<sup>b</sup> Doctor told parent that child had a developmental delay or child received a score below 70 on the Bayley MDI conducted at 14, 24, or 36 months of age.

<sup>c</sup> Range reflects minimum and maximum sample sizes for items in table.

\* Differences among groups are statistically significant at the .10 level.

\*\* Differences among groups are statistically significant at the .05 level.

\*\*\* Differences among groups are statistically significant at the .01 level.

Hispanic children and about 94 percent of white and African American children under 6 had a regular health care provider in 1999–2000 (DHHS 2002b).

Hispanic children were more likely than other children to receive regular health care at a clinic (47 compared with 28 and 35 percent of African American and white children, respectively) and less likely to receive regular health care in a private doctor's office (24 compared with 41 and 48 percent of African American and white children, respectively). Hispanic children were less likely to visit an emergency room during the 28-month follow-up period, and they were less likely to visit an emergency room for accidents or injuries between the 16- and 28-month follow-up interviews (4 compared with 7 and 17 percent of African American and white children, respectively).

Hispanic parents were more likely than other parents to implement some safety practices and less likely to implement others. The average number of safety precautions reported by Hispanic parents was similar to the average number reported by other minority parents (4.9) and less than the average number reported by white parents (5.4). Hispanic parents were more likely than other parents to practice stair safety (98 percent compared to range of 90 to 95 percent among other races) and more likely to use window guards (90 percent compared to range of 76 to 84 percent among other parents). Hispanic parents were also more likely than white and African American parents to use car seats on a regular basis (92 compared with 86 and 84 percent). Hispanic families were less likely to use smoke detectors and implement poison control practices (have ipecac to treat poisoning and know the poison control number). These particular practices are important for responding to accidents, but do not necessarily prevent injuries.

Consistent with their lower rates of health insurance coverage and lower likelihood of having a regular health care provider, Hispanic children were less likely than other infants and toddlers in Early Head Start to receive some preventive health care. Virtually all Hispanic

children had received immunizations by 28 months after enrollment (99.6 percent). Hispanic children, however, were significantly less likely than other children to have had screening tests (59 compared with 77 and 63 percent of African American and white children).

On average, Hispanic mothers' ratings of their children's overall health status were lower than those of other mothers' ratings at all three ages, although the absolute difference became smaller by the time children reached age 3. At 14 months of age, Hispanic infants were more likely than African American and white infants to be reported in fair or poor health (27 compared with 16 and 17 percent). By age 3, 12 percent of Hispanic children were reported to be in fair or poor health compared with 7 percent of white and African American toddlers.

Hispanic children were more likely than other children to have a diagnosed condition or low test scores indicating a potential disability. According to parents' reports of diagnosed cognitive delays and low Bayley scores, Hispanic children were more likely than white and African American children to have potential cognitive delays (23 compared with 16 and 14 percent of African American and white children), although they were less likely than white children to exhibit other indicators of disabilities.<sup>18</sup> Overall, Hispanic children were less likely to have received early intervention services (2 compared with 8 percent).

Consistent with their children's poorer health status and greater lack of health insurance coverage, Hispanic parents and non-English-speaking parents were significantly more likely to report at some time during the follow-up period that their medical and dental care seldom or never met their needs (not shown). Among families with children with special needs (such as a

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<sup>18</sup>The greater incidence of potential cognitive delays could reflect limitations of the tests for monolingual and bilingual Spanish-speaking children. The Bayley Scales of Infant Development were translated into Spanish, but the norms used to score the test were developed with English-speaking children. Bilingual children might receive lower scores on tests in either language during their preschool years, when they are learning two languages, but they may catch up later.

physical or emotional disability), Hispanic families were more likely than other families to report at some time during the follow-up period that they seldom or never received the help they needed for a child with a special need (86 percent compared with 58 percent of white families and 82 percent of African American families).

As with reports of their children's health status, Hispanic parents were also more likely than other parents to rate their own health lower. Fifty-six percent of Hispanic parents rated their own health as fair or poor, compared to 35 percent of white and African American parents. However, Hispanic parents were less likely to report that health problems limited their participation in any level of activity (30 percent compared with 39 to 44 percent among other parents) by 28 months after enrollment.

**White Children and Families.** Parents in white families who enrolled in the Early Head Start research programs reported higher levels of some specific health problems among their children than other parents. For example, parents of white children were more likely than African American and Hispanic children to have diagnosed or suspected hearing problems (3 compared with 1 and 0 percent), and they were more likely to report that their children had recurrent ear infections (58 compared with 45 and 49 percent) (Table 13). Consistent with the higher parent reports of recurrent ear infections, white children were more likely than African American children or Hispanic children to be exposed to household smoking (66 compared with 58 and 42 percent). White parents were also more likely to report that their child had trouble using his or her legs or feet, and 4 percent ever reported that their child had a diagnosed mobility problem (compared with 1 percent of African American and 0 percent of Hispanic parents). Twelve percent of white children, compared with 9 percent of Hispanic children and 6 percent of African American children, had a behavior problem (either their parent reported that a physician told them their child had a behavior problem or the child scored above 18 on the Child Behavior

Checklist). White parents were more likely than African American and Hispanic parents to report that their child received early intervention services (8 compared with 4 and 2 percent).

The higher incidence of specific health problems and potential disabilities among white Early Head Start children may reflect problems that began prenatally. White mothers were more likely than African American, Hispanic, and other mothers to report prenatal complications. Among the mothers who were pregnant at the time of enrollment, 38 percent of the white mothers, 18 percent of African American mothers, and 31 percent of the Hispanic mothers reported some prenatal complications. Among the mothers of infants born prior to enrollment, 69 percent of the white mothers, 54 percent of the African American mothers, and 52 percent of the Hispanic mothers reported prenatal complications.<sup>19</sup>

White families were more likely than Hispanic and African American families to report having private health insurance coverage. Their children were somewhat more likely than children in other families to receive regular health care from a private doctor's office and less likely to receive it from a hospital clinic. Parents of white children were more likely than African American and Hispanic parents to report that their children visited a doctor for treatment of a health problem (90 compared with 75 and 82 percent) and visited an emergency room (62 compared with 54 and 45 percent) by 28 months after enrollment.

**African American Children and Families.** In general, the African American families and children who enrolled in the Early Head Start research programs reported health and health care use intermediate to that reported by white and Hispanic families. Consistent with national statistics, however, African American children were more likely than other children to have

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<sup>19</sup>The different levels of prenatal complications reported before and after enrollment reflect differences in the way the question about prenatal complications was asked in the enrollment application and follow-up surveys.

diagnosed asthma or respiratory problems (Table 13) (DHHS 2002b). By age 3, one-third of the African American children (36 percent) were reported to have been diagnosed with asthma or respiratory problems. In comparison, 29 percent of white children, 19 percent of Hispanic children, and 15 percent of children from other backgrounds were reported to have asthma or other respiratory disorders.

Fewer African American than white, Hispanic, and other mothers began prenatal care in their first trimester (76 compared with 85, 83, and 89 percent, respectively). After birth, African American children received health care similar to that of other children, except that they were somewhat more likely than white and Hispanic children to receive regular health care from a hospital clinic (18 compared with 6 and 13 percent) and less likely to receive it from a clinic in the community (28 compared with 35 and 47 percent). African American children also were more likely than other children to have had screening tests, including those for hearing and lead.

African American parents whose children had special needs were most likely to report that they seldom or never received the help they needed for a child with a special need. Similarly, African American families were significantly more likely than other families to report that they seldom or never had the money they needed to buy special equipment their children needed.

**Teenage Mothers and Their Children.** In the Early Head Start research programs, families with younger mothers—those who were teenagers (under 20) when their child was born—were significantly less likely to report that they implemented important safety practices, and they made greater use of hospital emergency rooms for their children. Fewer teenage than older mothers began prenatal care in their first trimester (75 compared with 86 percent). Teenage parents also reported fewer health problems in their children than older mothers. While the children of younger mothers (the vast majority of whom were firstborn children) may have been healthier and may have had fewer health problems, these findings also suggest that teenage

parents may have been less aware of the need for preventive health care and safety practices and may have been less aware of their children's health problems.

Teenage mothers were less likely than mothers over 20 years of age to report that their children were in fair or poor health. When their children were 14 months old, 16 percent of teenage mothers, compared to 21 percent of older mothers, described their child's overall health as fair or poor. This difference remained at age 3, when 6 percent of teenage mothers, compared with 10 percent of older mothers, reported their children to be in fair or poor health (Table 14).

Teenage mothers were also less likely than older mothers to report that their child received early intervention services (1 compared with 7 percent) or had confirmed eligibility for early intervention services (3 compared with 11 percent). Teenage mothers were less likely than older mothers to report that their child had trouble communicating and that their child was hard for others to understand. They were also less likely to report that their child ever had a diagnosed speech problem (3 compared with 7 percent). These differences do not appear to be the result of less testing to identify potential problems. Children of teenage mothers were more likely than other children to have received screening tests, including those for hearing and lead.

The children of teenage mothers were more likely to be exposed to household smoking (66 compared with 54 percent) and may have been exposed to greater risk of accidents. Teenage mothers reported implementing significantly fewer safety practices than older mothers (4.8 compared to 5.2, on average). Consistent with the greater safety risks, children of teenage mothers were more likely to visit an emergency room (59 compared with 52 percent). Teenage mothers were also more likely to report that their child received regular health care at a hospital emergency room (3 compared with 1 percent).

**Families Receiving Cash Assistance.** The Early Head Start families who were receiving welfare cash assistance at enrollment (welfare families) were more likely than those who were

TABLE 14

## CHILDREN'S HEALTH AND HEALTH CARE, BY AGE OF MOTHER AT CHILD'S BIRTH

	Teenage Mothers (Under 20)	Older Mothers (20 or Older)
Percentage of Children With Health Insurance Approximately 28 Months After Enrollment		
Medicaid*	65.2	59.7
Private insurance***	25.6	36.5
Medicaid or private insurance	84.4	87.8
Percentage of Children With a Regular Source of Health Care		
7 months after enrollment	98.6	97.0
16 months after enrollment	94.4	95.8
28 months after enrollment	93.8	94.5
Percentage of Children Whose Usual Places for Health Care 28 Months After Enrollment Included:		
Doctor's office	41.5	37.8
Health clinic	34.4	37.1
Community health center	15.1	15.2
Hospital clinic	11.5	12.1
HMO*	3.3	5.8
Emergency room**	3.2	1.0
Other*	0.0	0.8
Percentage of Children Who by 28 Months After Enrollment Had Received Any:		
Health check-ups*	93.7	96.2
Treatment of health problem	80.4	83.4
Emergency room care for any reason**	58.8	52.2
Emergency room care for accident/injury (16 to 28 months after enrollment)	11.0	10.6
Average Number of Safety Practices Reported***	4.8	5.2
Percentage of Children Who:		
Received prenatal care in first trimester***	74.6	85.7
Were hospitalized at birth for medical problem	17.4	16.3
Had low birthweight	8.1	8.7
Percentage of Children Reported in Fair or Poor Health		
14 Months*	16.3	20.7
24 Months***	9.7	13.9
36 Months***	6.0	9.8
Percentage of Children With Diagnosed Conditions During 28-Month Follow-Up Period		
Recurrent ear infections	48.8	53.1
Asthma or respiratory problem	31.7	26.7
Cognitive delay <sup>b</sup>	16.4	18.3
Speech problem***	2.7	6.8
Mobility problem*	1.0	2.7

TABLE 14 (continued)

	Teenage Mothers (Under 20)	Older Mothers (20 or Older)
During 28-Month Follow-Up Period, Percentage of Children Who Had:		
Suspected or diagnosed hearing problem	0.7	1.9
Suspected or diagnosed sight problem	1.3	1.9
Trouble communicating**	13.8	19.5
Difficulty being understood***	29.9	41.4
Trouble using arms	0.4	1.4
Trouble using legs*	0.9	2.5
Condition limiting normal childhood activities	7.2	8.0
By 28 Months After Enrollment, Percentage of Children Who:		
Were ever reported eligible for early intervention services***	2.9	10.5
Ever received early intervention services***	1.3	7.3
<b>Sample Size<sup>c</sup></b>	<b>346-407</b>	<b>560-666</b>

Source: Parent interviews conducted when children were approximately 14, 24, and 36 months of age and parent services follow-up interviews conducted an average of 7, 16, and 28 months after enrollment.

<sup>a</sup> Primary caregivers were asked to rate the overall health of their child as poor (1), fair (2), good (3), very good (4), or excellent (5).

<sup>b</sup> Doctor told parent that child had a developmental delay or child received a score below 70 on the Bayley MDI conducted at 14, 24, or 36 months of age.

<sup>c</sup> Range reflects minimum and maximum sample sizes for items in table.

\* Differences among groups are statistically significant at the .10 level.

\*\* Differences among groups are statistically significant at the .05 level.

\*\*\* Differences among groups are statistically significant at the .01 level.

not receiving it (nonwelfare families) to have health insurance for their children throughout the follow-up period (90 compared with 85 percent approximately 28 months after enrollment). Probably as a result, they were less likely to rely on a hospital emergency room for regular health care for their child (0.6 compared with 2.1 percent). Children in welfare families were more likely than those in nonwelfare families to be covered by Medicaid (76 compared with 52 percent) and less likely to be covered by private health insurance (22 compared with 41 percent) (Table 15).

The regular places that parents took their children for health care were similar among welfare and nonwelfare families. Children in welfare families, however, were somewhat more likely to receive regular health care from a hospital clinic, while children in nonwelfare families were more likely to receive regular health care at a private doctor's office.

Early Head Start children in welfare families were more likely than those in nonwelfare families to have been exposed to household smoking (66 compared with 51 percent) and to have diagnosed asthma or respiratory problems (33 compared with 26 percent). Parents in welfare families were more likely than parents in nonwelfare families to report that their child was in fair or poor health at 24 and 36 months of age (17 and 11 percent compared with 12 and 7 percent, respectively).

Parents in families receiving welfare were more likely than parents in families not receiving it to report that their own health was fair or poor (46 compared with 38 percent). They were also more likely to report that health problems limited their participation in activities (48 percent compared to 35 percent) at some time between enrollment and the 28-month interview. Thus, poorer health status and activity limitations may have interfered with parenting in a higher proportion of welfare families.

TABLE 15

## CHILDREN'S HEALTH AND HEALTH CARE, BY WELFARE RECEIPT AT ENROLLMENT

	Receiving Welfare Cash Assistance	Not Receiving Welfare Cash Assistance
Percentage of Children with Health Insurance Approximately 28 Months After Enrollment		
Medicaid***	75.6	52.4
Private insurance***	21.5	41.2
Medicaid or private insurance**	90.0	84.6
Percentage of Children with a Regular Source of Health Care		
7 months after enrollment	97.9	96.7
16 months after enrollment***	98.2	93.7
28 months after enrollment	95.3	93.9
Percentage of Children Whose Usual Places for Health Care 28 Months After Enrollment Included:		
Doctor's office**	33.2	42.2
Health clinic	34.2	37.6
Community health center	18.4	14.1
Hospital clinic**	15.6	10.1
HMO	5.1	4.5
Emergency room*	0.6	2.1
Other	0.4	0.4
Percentage of Children Who by 28 Months After Enrollment Had Received Any:		
Health check-ups	96.3	94.2
Treatment of health problem	78.3	83.0
Emergency room care for any reason	53.3	52.7
Emergency room care for accident/injury (16 to 28 months after enrollment)	12.2	9.4
Average Number of Safety Practices Reported	5.0	5.1
Percentage of Children Who:		
Received prenatal care in first trimester	77.7	81.9
Were hospitalized at birth for medical problem	18.1	17.7
Had low birthweight	10.3	7.5
Percentage of Children Reported in Fair or Poor Health		
14 Months	20.4	20.0
24 Months	16.6	11.9
36 Months	11.2	7.1
Percentage of Children with Diagnosed Conditions During 28-Month Follow-Up Period		
Recurrent ear infections	52.2	53.3
Asthma or respiratory problem**	33.7	25.7
Cognitive delay <sup>b</sup>	18.5	18.3

TABLE 15 (continued)

	Receiving Welfare Cash Assistance	Not Receiving Welfare Cash Assistance
Percentage of Children With Diagnosed Conditions During 28-Month Follow-Up Period		
Recurrent ear infections	52.2	53.3
Asthma or respiratory problem**	33.7	25.7
Cognitive delay <sup>b</sup>	18.5	18.3
Speech problem***	5.0	6.2
Mobility problem*	1.7	2.1
During 28-Month Follow-Up Period, Percentage of Children Who Had:		
Suspected or diagnosed hearing problem	1.3	1.6
Suspected or diagnosed sight problem	1.2	2.1
Trouble communicating*	14.3	19.3
Difficulty being understood	31.2	36.4
Trouble using arms*	0	1.2
Trouble using legs	1.1	1.9
Condition limiting normal childhood activities	7.8	7.3
By 28 Months After Enrollment, Percentage of Children Who:		
Were ever reported eligible for early intervention services	8.3	8.5
Ever received early intervention services	5.4	6.1
<b>Sample Size<sup>c</sup></b>	<b>242-292</b>	<b>511-604</b>

Source: Parent interviews and child assessments conducted when children were approximately 14, 24, and 36 months of age and parent services follow-up interviews conducted an average of 7, 16, and 28 months after enrollment.

<sup>a</sup> Primary caregivers were asked to rate the overall health of their child as poor (1), fair (2), good (3), very good (4), or excellent (5).

<sup>b</sup> Doctor told parent that child had a developmental delay or child received a score below 70 on the Bayley MDI conducted at 14, 24, or 36 months of age.

<sup>c</sup> Range reflects minimum and maximum sample sizes for items in table.

\* Differences among groups are statistically significant at the .10 level.

\*\* Differences among groups are statistically significant at the .05 level.

\*\*\* Differences among groups are statistically significant at the .01 level.

**Children of Less-Educated Mothers.** Mothers who lacked a high school diploma or GED when they enrolled in Early Head Start, one-third of whom were Hispanic and 59 percent of whom were teenage mothers, were less likely to report having health insurance, less likely to report having a regular health care provider, and less likely to use health services for their children than mothers with more education (Table 16). Children of less-educated mothers were less likely than other children to be covered by some kind of health insurance (83 compared with 91 percent approximately 28 months after enrollment). They were more likely to be covered by Medicaid (70 percent compared with 60 and 48 percent of children whose parents had completed high school or had completed more education) but much less likely to be covered by private health insurance (19 percent compared with 42 and 50 percent), which reflects their lower likelihood of being employed during the follow-up period.

Mothers who had not completed high school or obtained a GED were less likely than mothers with a diploma or GED and mothers with more education to receive prenatal care during their first trimester (76 compared with 85 and 88 percent), more likely to report their own health as fair or poor (50 compared to 32 and 33 percent). Their children were somewhat less likely to have a regular health care provider 28 months after enrollment (92 compared with 97 percent). Children of mothers who had not completed high school or obtained a GED were more likely than children of more educated mothers to receive regular health care from a community health center (18 compared with 14 and 11 percent of children whose mothers had completed high school or more education, respectively) or a hospital emergency room (2.7 compared with 2.0 and 0.3 percent of children whose mothers had completed high school or more education, respectively).

Mothers who had not received a high school diploma or GED were less likely than mothers who had completed high school or more education to report that their children received treatment

TABLE 16

CHILDREN'S HEALTH AND HEALTH CARE, BY EDUCATIONAL  
ATTAINMENT OF MOTHER AT ENROLLMENT

	No High School Diploma or GED	High School Diploma or GED	Education Beyond High School Diploma or GED
Percentage of Children with Health Insurance Approximately 28 Months After Enrollment			
Medicaid***	70.2	59.5	47.9
Private insurance***	18.8	41.6	49.7
Medicaid or private insurance***	82.8	90.7	90.8
Percentage of Children with a Regular Source of Health Care			
7 months after enrollment	96.4	98.8	98.4
16 months after enrollment	94.7	96.2	95.0
28 months after enrollment***	91.6	96.6	96.6
Percentage of Children Whose Usual Places for Health Care 28 Months After Enrollment Included:			
Doctor's office	37.2	38.6	44.8
Health clinic	37.3	36.8	33.1
Community health center**	18.3	13.6	10.5
Hospital clinic	12.1	9.2	14.6
HMO**	2.7	7.2	6.1
Emergency room*	2.7	2.0	0.3
Other	0.2	0.3	1.2
Percentage of Children Who by 28 Months After Enrollment Had Received Any:			
Health check-ups	93.7	96.7	96.2
Treatment of health problem***	77.4	87.8	86.4
Emergency room care for any reason	51.8	57.8	56.6
Emergency room care for accident/injury (16 to 28 months after enrollment)***	7.8	12.3	14.8
Average Number of Safety Practices Reported***	4.7	5.2	5.5
Percentage of Children Who:			
Received prenatal care in first trimester***	76.1	85.4	88.7
Were hospitalized at birth for medical problem	15.3	16.1	19.3
Had low birthweight	7.2	8.8	9.1
Percentage of Children Reported in Fair or Poor Health at Age:			
14 Months	20.1	16.7	20.8
24 Months	13.9	10.6	12.2
36 Months	9.7	6.7	7.5

TABLE 16 (continued)

	No High School Diploma or GED	High School Diploma or GED	Education Beyond High School Diploma or GED
Percentage of Children with Diagnosed Conditions During 28-Month Follow-Up Period			
Recurrent ear infections	51.7	53.2	48.8
Asthma or respiratory problem	29.3	29.2	26.1
Cognitive delay <sup>b***</sup>	25.0	12.2	11.1
Speech problem**	4.0	4.2	8.1
Mobility problem	1.4	2.1	2.9
During 28-Month Follow-Up Period, Percentage of Children Who Had:			
Suspected or diagnosed hearing problem**	0.8	1.1	3.1
Suspected or diagnosed sight problem	1.2	2.5	1.9
Trouble communicating	18.3	14.5	18.0
Difficulty being understood	36.8	37.2	36.0
Trouble using arms	0.9	0.3	1.7
Trouble using legs	2.1	0.6	2.6
Condition limiting normal childhood activities	6.7	7.7	9.1
By 28 Months After Enrollment, Percentage of Children Who:			
Were ever reported eligible for early intervention services***	5.2	7.7	11.7
Ever received early intervention services***	2.8	5.9	7.7
<b>Sample Size<sup>c</sup></b>	<b>396-483</b>	<b>252-311</b>	<b>233-271</b>

Source: Parent interviews and child assessment conducted when children were approximately 14, 24, and 36 months of age and parent services follow-up interviews conducted an average of 7, 16, and 28 months after enrollment for families who completed the 28-month interview.

<sup>a</sup> Primary caregivers were asked to rate the overall health of their child as poor (1), fair (2), good (3), very good (4), or excellent (5).

<sup>b</sup> Doctor told parent that child had a cognitive delay or child received a score below 70 on the Bayley MDI conducted at 14, 24, or 36 months of age.

<sup>c</sup> Range reflects minimum and maximum sample sizes for items in table.

\* Differences among groups are statistically significant at the .10 level.

\*\* Differences among groups are statistically significant at the .05 level.

\*\*\* Differences among groups are statistically significant at the .01 level.

for a health problem (77 compared with 88 and 86 percent, respectively) and less likely to report that their children had visited an emergency room for an accident or injury (8 compared with 12 and 15 percent). Their lower use of emergency room services for accidents and injuries occurred despite less awareness of the importance of safety measures, a fact reflected in their reports of significantly fewer safety practices (4.7 compared to 5.2 and 5.5).

Children of mothers with education beyond high school were less likely than children of mothers with less education to be exposed to household smoking (44 compared with 62 percent). This difference was not, however, reflected in a difference in the incidence of ear infections or asthma/respiratory problems among children of more- and less-educated mothers.

The children of Early Head Start mothers who lacked a high school diploma or GED were more likely to receive a very low score on at least one developmental assessment or to have diagnosed cognitive delays (25 compared with 12 percent). However, children of mothers with education beyond high school were more likely to have a suspected or diagnosed hearing problem (3 compared with 1 percent of children of less-educated mothers) and to have a diagnosed speech problem (8 compared with 4 percent of children of less-educated mothers).

Despite the greater indications of cognitive delays among children of mothers who lacked a high school diploma or GED when they enrolled, mothers who lacked a high school diploma or GED were half as likely to report that their child received early intervention services (3 compared with 6 and 8 percent). This disparity in the receipt of early intervention services might reflect differences in mothers' awareness of early intervention services that their child received, differences in their ability or willingness to acknowledge their child's disability and accept early intervention services, or both.

**Demographic Risk Factors.** All families who enrolled in Early Head Start were at risk for poor child outcomes due to low income. Some families and children were at greater risk than

others, however. To examine differences in health and health care among families with differing levels of risk, we counted the number of demographic risk factors for each family. Five factors were counted: (1) teenage mother; (2) single parent; (3) receiving public assistance; (4) neither in school or job training nor employed; and (5) lacking a high school diploma or GED. Families with two or fewer of these risk factors were considered lower-risk families; families with three risk factors were considered moderate-risk; and families with four or five risk factors were considered higher-risk.

Health insurance coverage did not differ significantly among families according to their demographic risk factors (Table 17). Higher-risk families, however, were more likely than lower- and moderate-risk families to be covered by Medicaid, while lower-risk families were most likely to report private health insurance coverage for their children.

Higher-risk families were less likely than lower- and moderate-risk families to receive health care during the 28-month follow-up period. Higher-risk mothers were significantly less likely to report that they received prenatal care during their first trimester (73 compared to 81 and 87 percent of moderate- and lower-risk mothers). Over time, higher-risk families were less likely than families with fewer demographic risk factors to report that their child had a regular source of health care. Approximately 28 months after enrollment, 92 percent of higher-risk families reported their child had a usual place for health care, compared with 96 percent of lower-risk families. Higher-risk families were more likely than other Early Head Start families to report that their child received regular health care from a community health center or hospital clinic. Children in higher-risk families were less likely than children in families with fewer risk factors to have received treatment for a health problem by 28 months after enrollment (78 compared with 82 and 86 percent of moderate- and lower-risk families). Finally, children in higher-risk families were also less likely than other children to have visited a dentist, and their

TABLE 17

CHILDREN'S HEALTH AND HEALTH CARE, BY NUMBER  
OF FAMILY DEMOGRAPHIC RISK FACTORS

	Lower-Risk Families (0-2 Risks <sup>a</sup> )	Moderate-Risk Families (3 Risks <sup>a</sup> )	Higher-Risk Families (4-5 Risks <sup>a</sup> )
Percentage of Children with Health Insurance Approximately 28 Months After Enrollment			
Medicaid***	49.6	64.7	76.3
Private insurance***	48.1	27.2	15.8
Medicaid or private insurance	87.7	85.4	86.6
Percentage of Children With a Regular Source of Health Care			
7 months after enrollment	97.4	97.5	97.5
16 months after enrollment	95.1	93.9	97.0
28 months after enrollment**	96.4	93.5	91.8
Percentage of Children Whose Usual Places for Health Care 28 Months After Enrollment Included:			
Doctor's office*	43.3	34.6	37.9
Health clinic	36.9	41.1	29.8
Community health center**	11.3	15.9	18.9
Hospital clinic**	10.0	12.5	14.9
HMO	5.5	5.9	3.3
Emergency room	1.9	1.7	2.2
Other	0.5	0.4	0.4
Percentage of Children Who by 28 Months After Enrollment Had Received Any:			
Health check-ups	95.2	94.9	95.4
Treatment of health problem**	85.8	82.3	78.2
Emergency room care for any reason	52.5	55.8	56.6
Emergency room care for accident/injury (16 to 28 months after enrollment)	11.2	13.9	8.1
Average Number of Safety Practices Reported***	5.3	4.9	4.8
Percentage of Children Who:			
Received prenatal care in first trimester***	86.5	80.9	72.8
Were hospitalized at birth for medical problem	17.1	17.7	15.9
Had low birthweight	9.0	5.8	9.5
Percentage of Children Reported in Fair or Poor Health <sup>b</sup> at Age:			
14 Months	20.7	17.1	20.6
24 Months	11.4	12.8	13.4
36 Months	7.3	7.3	10.8

TABLE 17 (continued)

	Lower-Risk Families (0-2 Risks <sup>a</sup> )	Moderate-Risk Families (3 Risks <sup>a</sup> )	Higher-Risk Families (4-5 Risks <sup>a</sup> )
Percentage of Children With Diagnosed Conditions During 28-Month Follow-Up Period			
Recurrent ear infections	52.4	51.3	49.8
Asthma or respiratory problem**	23.7	31.0	33.3
Cognitive delay <sup>c***</sup>	15.0	14.6	25.7
Speech problem***	7.9	2.3	4.8
Mobility problem	2.6	1.2	1.7
During 28-Month Follow-Up Period, Percentage of Children Who Had:			
Suspected or diagnosed hearing problem	2.0	0.8	1.1
Suspected or diagnosed sight problem	1.9	2.1	0.7
Trouble communicating	19.1	15.1	17.1
Difficulty being understood**	42.0	33.9	31.0
Trouble using arms	1.2	1.3	0
Trouble using legs	1.7	1.5	1.2
Condition limiting normal childhood activities	8.5	6.0	7.1
By 28 Months After Enrollment, Percentage of Children Who:			
Were ever reported eligible for early intervention services***	11.3	4.7	5.1
Ever received early intervention services***	8.3	3.3	2.1
<b>Sample Size<sup>d</sup></b>	<b>372-444</b>	<b>243-302</b>	<b>198-246</b>

Source: Parent interviews and child assessments conducted when children were approximately 14, 24, and 36 months of age and parent services follow-up interviews conducted on average 7, 16, and 28 months after enrollment for families who completed the 28-month interview.

<sup>a</sup> Five demographic risk factors were counted: (1) being a teenage mother; (2) receiving public assistance; (3) being neither employed nor in school or training; (4) being a single parent; and (5) having neither a high school diploma or GED.

<sup>b</sup> Primary caregivers were asked to rate the overall health of their child on a scale from 1 (poor) to 5 (excellent).

<sup>c</sup> Doctor told parent that child had a cognitive delay or child received a score below 70 on the Bayley MDI conducted at 14, 24, or 36 months of age.

<sup>d</sup> Range reflects minimum and maximum sample sizes for items in table.

\* Differences among groups are statistically significant at the .10 level.

\*\* Differences among groups are statistically significant at the .05 level.

\*\*\* Differences among groups are statistically significant at the .01 level.

families were more likely to report at some time during the follow-up period that their dental care seldom or never met their needs.

Parents in lower-risk families were less likely to report their own health as fair or poor (32 percent) than parents in moderate- and higher-risk families (46 and 47 percent). Parents in lower-risk families were also less likely than parents in moderate- and higher-risk families to report activity limitations due to health by 28 months after enrollment (35 percent compared to 40 and 48 percent).

Children in higher-risk families may have faced greater health and safety risks. Parents with more demographic risk factors reported significantly fewer safety practices (4.9, on average, compared with 5.3 in lower-risk families). Children in higher-risk families were more likely than children in moderate- and lower-risk families to be exposed to household smoking (71 percent compared with 63 and 47 percent, respectively) and were more likely to have asthma/respiratory problems (33 percent compared with 30 percent and 24 percent, respectively).

Children in lower-risk families were more likely than children in moderate- and higher-risk families to have speech difficulties. Parents of 8 percent of children in lower-risk families, compared with 2 percent in moderate-risk families and 5 percent in higher-risk families, ever reported that their child had a diagnosed speech problem. In addition, 42 percent of lower-risk parents, compared with 34 percent of moderate-risk parents and 31 percent of higher-risk parents, reported that their child was difficult for others to understand. Children in higher-risk families, however, were more likely than those in lower- and moderate-risk families to have potential cognitive delays (26 compared with 15 percent). Children in lower-risk families were more likely than children in moderate- and higher-risk families to receive early intervention services (11 percent compared with 5 percent of children in moderate- and higher-risk families). Lower-risk families may have been more sensitive to developmental problems and may have

enrolled in Early Head Start in part to obtain services to address their children's problems. Their better access to health care may also have led to greater identification of and access to early intervention services.

## **O. CONCLUSIONS AND IMPLICATIONS**

In many respects, the health status and incidence of health problems among Early Head Start children are similar to the health status and problems of young children in low-income families nationally. These families and children are at greater risk for health problems and experience greater needs for health care than those in higher-income families.

More children were reported by their parents to be in fair or poor health at 14 months than at the two older ages. Even though Early Head Start parents reported improvements in their children's overall health status as children grew, ongoing monitoring of health status is important. As children develop, different problems can emerge. For example, speech and language delays may not be observable until the second year of life; problems with walking may not be detected until the child is 18 months or older.

Disabilities are difficult to identify when children are very young. According to parents, small proportions of children in the Early Head Start research programs may have had sight, hearing, or mobility problems, and a few had diagnosed cognitive delays or behavior problems. More may have been experiencing developmental delays or behavior problems, however, as indicated by the assessments conducted for the research. The disparity between parent reports and the child assessment results may reflect parents' lack of awareness or understanding of things they had been told by medical professionals or program staff, reluctance to report these kinds of problems because of the stigma associated with them, or research assessment results that did not adequately represent children's ongoing abilities or functioning.

According to their parents, children in the Early Head Start research programs experienced high rates of asthma and respiratory problems. The data suggest that this may reflect, in part, the high levels of cigarette smoking in their homes. Early Head Start parents may need more education and support to help them stop smoking, for the benefit of their own health and that of their children. Other family members may also need help with smoking cessation, and parents may need help with minimizing their children's exposure to household smoking when other family members smoke.

The research also suggests that Early Head Start parents need more education and support to improve some safety practices, including those related to poison control and car seat use as children get older. A significant proportion of Early Head Start families were not prepared for a poison emergency, and more than a quarter of all Early Head Start families did not report regular car seat use when their child was 3.

Like other low-income mothers of young children, the Early Head Start mothers in the research programs were at high risk for depression. As many as half the mothers may have been depressed when they enrolled in Early Head Start, and in subsequent interviews about one-third reported symptoms indicating it was likely they were clinically depressed. Because depression and mental health problems can interfere with healthy parent-child relationships, Early Head Start programs need to find ways to help parents gain access to mental health services and overcome these problems. This is no small challenge. Staff in many of the Early Head Start research programs reported that their communities did not have sufficient mental health services to which they could refer families, and efforts to obtain additional resources and work with community members to improve mental health services were required (ACF 2002b).

Because Early Head Start programs are charged with making sure that families have regular health care providers and access to the health care they need, but do not provide most health

services directly, they must work with community health care providers to help families gain access to the care they need. In the Early Head Start research programs, most families and children reported being covered by health insurance, having a source of health care, and receiving health services during the 28 months after they enrolled. A small proportion of families, however, did not, and a small proportion of parents also reported that their family seldom or never received the health care it needed. Many of the research programs recruited families at health centers and WIC offices, where connections to health care services may already have been made. In Early Head Start programs implementing other recruitment strategies, the proportion of families lacking health insurance or access to health care that meets their needs may be higher. It is important for programs to identify families with unmet health care needs and work with them to address these needs. This may require working collaboratively with health care providers in their communities to address gaps in available health services or to find resources to pay for the needed services.

Consistent with trends among low-income families nationally, Hispanic families who enrolled in the Early Head Start research programs were less likely to report having health insurance or a regular health care provider for themselves or their children and more likely to report health problems. Some may have been non-citizens ineligible for public health insurance. Early Head Start programs that served them may have faced limited options in their communities for linking these families to needed health care services. Staff in programs serving these families need to work with health care providers in their communities to find ways of improving health care for Hispanic families who may otherwise fall through the cracks.

The youngest mothers may need special help from Early Head Start with protecting and promoting good health in their children. In the research programs, the mothers who were teenagers when their child was born were less likely to report implementing important safety

practices and more likely to report using hospital emergency rooms for their children. This suggests that more education and support specifically designed for teenage mothers is needed to encourage them to adopt important safety practices, help them reduce the need for emergency medical services, and enable them to use preventive and primary health care services appropriately.

Early Head Start mothers who lacked a high school diploma or GED when they enrolled, many of whom were teenage mothers or Hispanic, were more likely to have children who received a low score on at least one of the developmental assessments conducted for the research. Despite this, their children were less likely to have received early intervention services. While this may simply reflect less awareness of early intervention services received among these mothers or differences in the types of delays their children experienced, it may also indicate that mothers with less education need more support from Early Head Start staff in accepting the need for and going through the process of arranging early intervention services. These parents may also need help in understanding normal development and observing children more closely.

The experiences of the research programs suggest that the health problems and health care needs of families who enroll in Early Head Start generally reflect those of low-income families across the nation. Several problems and needs appear to be more prevalent in these families, however, and indicate areas in which programs may be able to improve health-related services. These include promoting greater implementation of important safety practices, especially among younger mothers; reducing smoking by household members; offering asthma education; improving availability and access to mental health services; and promoting more developmental screening and referrals by primary care providers, especially for children in families with more demographic risks.



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