



CHILDREN'S
HEALTH
COUNCIL

Well-Baby Care in HUSKY A

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Introduction

In the first year of life, babies undergo astonishing growth and development, laying the foundation for future physical and mental health. Parents and pediatric care providers share responsibility for ensuring that infants receive health supervision at regular and frequent intervals in order to monitor growth and development, detect and diagnosis emerging problems, and support the healthy growth and development of families and parenting skills.¹ Professional guidelines for well-baby care specify that each visit should include:

- Comprehensive health history and developmental assessment;
- Thorough physical examination, timely administration of immunizations;
- Age-appropriate risk assessment and screening;
- Nutritional assessment and education;
- Discussion of family adjustment, with observation of parent-infant interaction;
- Anticipatory guidance and health education.

The American Academy of Pediatrics and others recommend well-baby visits at 1 week of age, at 1 month, then at 2, 4, 6, 9, and 12 months of age. This intensive health supervision is particularly important for babies at risk for health problems and families at risk for problems adjusting to the demands of new parenthood.

In order to ensure that the most vulnerable children get comprehensive health care at regular intervals beginning at birth, Congress created the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program in Medicaid in 1967.² States are responsible for informing families about EPSDT and assisting them with appointment scheduling; providing comprehensive timely screening exams at regular intervals, in conformance with pediatric and dental professional guidelines for well-child care; ensuring diagnosis and treatment of conditions discovered during these health care encounters; and reporting on EPSDT participation.

In accordance with federal law, the Connecticut Department of Social Services (DSS) has established and maintained an EPSDT Periodicity Schedule that details the preventive health care children in Medicaid should receive from birth to late adolescence. Since 1995, responsibility for informing and for providing this care has been contracted to managed care organizations. Using federal guidelines for reporting EPSDT participation, health plans report quarterly to DSS and DSS reports annually to the Centers for Medicare and Medicaid Services (CMS; formerly the Health Care Financing Administration).³

The Children's Health Council studies well-child care in HUSKY A and reports on utilization rates and trends, sociodemographic and enrollment factors associated with utilization, and well-child care for children with special health care needs enrolled in Medicaid managed care.⁴ Focusing on utilization by selected groups of children, such as

adolescents or newly enrolled children, provides information used by the Council to inform recommendations and work with health plans, DSS, and others to improve access, utilization, and quality of care for children in HUSKY A.

The purpose of this study was 1) to describe well-baby care in HUSKY A in terms of adherence to screening guidelines and 2) to estimate the effect of well-baby care on the likelihood of babies having had emergency care or hospital care for ambulatory care-sensitive conditions.

Methods

Using longitudinal enrollment data for HUSKY A (Medicaid managed care), babies born in January, February or March 2000 who were enrolled at birth and continuously enrolled for 12 months were identified. According to the EPSDT periodicity schedule for HUSKY A, babies should be seen by pediatric care providers shortly after birth, at 2-4 days, at 2 weeks, then at 2, 4, 6, 9, and 12 months of age.⁵ Because of the frequency of well-baby visits recommended during the first year, the timing of these visits is important. HUSKY A encounter data were searched for records corresponding to timely well-baby visits that were likely to have occurred after the baby went home from the hospital, at 2 weeks and at 2, 4, 6, 9, and 12 months after birth (six visits).⁶ For the purpose of this study, babies with five or more visits were categorized as having had “all” the recommended well-baby care, since even a timely 12 month visit might have occurred just after the study period. The percentages of babies with “some” of the recommended well-baby care, that is, one to four visits) and “none” of the recommended well-baby care were also determined. The association between having had less than the recommended care and sociodemographic or enrollment factors that may have affected access was determined (X^2).

Further investigation examined the effects of timing and coding criteria by relaxing the parameters for classifying and counting visits during these 12 months. First, well-baby visits that occurred at any time during the year were tallied and the rates were compared to those for timely visits. Then, encounter data were searched for other office- or clinic-based care that may have occurred during the time period when babies were otherwise due for well-baby care; rates were compared to those for timely well-baby visits. Finally, babies who were enrolled in the thirteenth month after birth were identified and the number of well-baby visits counted in order to determine the effect of limiting the study period to twelve months.

Encounter data were also searched for emergency visits and hospitalizations for selected ambulatory care-sensitive conditions.⁷ The effect of well-baby care on reducing emergency visits for ambulatory care-sensitive conditions was determined by comparing emergency visit rates for babies who had five or more well-baby visits to those with fewer visits (relative risk). Average number of emergency visits and leading diagnoses for emergency care were identified. The effect of well-baby care on reducing hospitalizations for treatment of ambulatory care-sensitive conditions was determined by comparing hospitalization rates for babies who had five or more well-baby visits to those with fewer visits (relative risk). Average number of hospitalizations and leading diagnoses were identified.

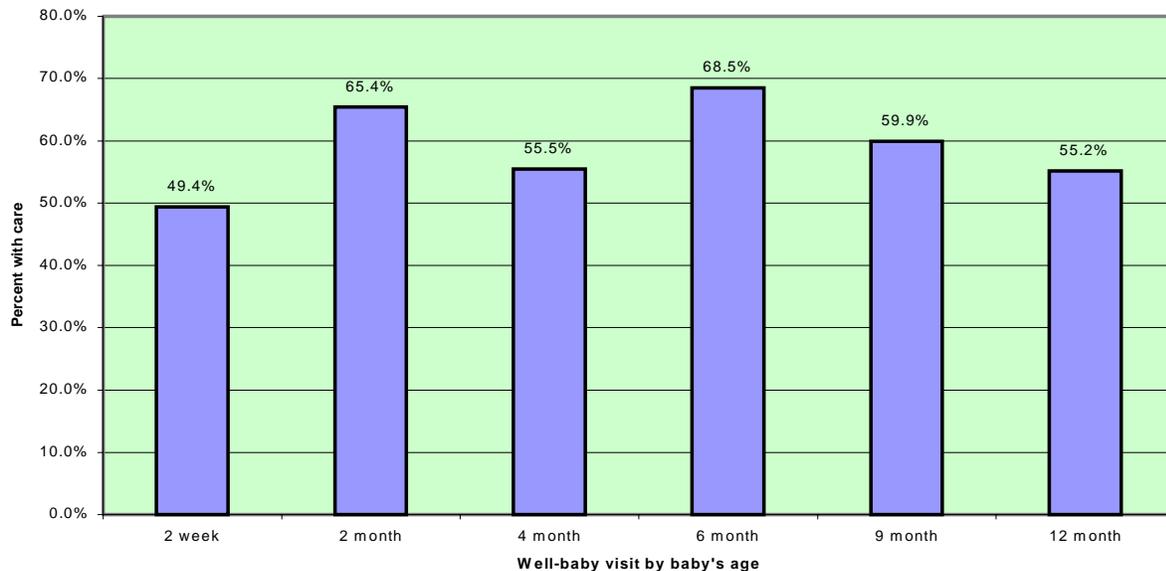
Results

There were 2,054 babies who were continuously enrolled in HUSKY A for 12 months following birth in the first quarter 2000. The sociodemographic and enrollment characteristics of these babies are described in Table 1.

Well-Baby Care

Overall, just 34% of babies received “all” the recommended well-baby care, that is, five or more timely visits during the first year of life (Table 1). Most babies (61%) were seen for some but not all the recommended care (1 to 4 visits). Just over 100 babies (5%) did not receive any timely well-baby care in HUSKY A. African American and Hispanic babies were less likely than White babies to have had the recommended number of well-baby visits.⁸ The percentage of babies with 5 or more timely well-baby visits varied by health plan from 41% of babies enrolled in Health Net to 3% of babies enrolled in Preferred One.⁹ Babies whose families changed plans during the monitoring period were less likely to have had the recommended care.¹⁰ Slightly more babies received well-baby care at 2 months and 6 months of age, but there does not appear to have been any one particular time during the first year of life when babies were notably more or less likely to have missed care (Figure 1).

Figure 1. Timely Well-Baby Visits



Effect of Methods on Estimates

To determine the effect of timeliness on the visits rates, timing criteria were relaxed. The overall findings did not change substantially (Table 2), nor did associations between visits and race/ethnicity, health plan, or plan change.

The effect of counting only those visits coded as well-baby care was determined (Table 2). The percentage of babies with five or more visits increased to 51.5% when any office- or clinic-based care was counted if the visits occurred when well-baby visits were due. The percentage of babies without care decreased to 3.4%.

The effect of the 12-month study period on the percentage of babies with “all” the recommended visits was determined by examining care for the subset of babies enrolled at least 13 months (n=1,749, 85.2%).¹¹ The percentage of babies with “all” the recommended visits increased just slightly, from 33.6% to 35.5%.

Emergency Care for Ambulatory Care-Sensitive Conditions

In the one-year monitoring period, 663 babies (32.3%) were seen for emergency care for ambulatory care-sensitive conditions (Table 3). Among babies who had any well-baby care (n=1,952), those with all the recommended visits were no less likely to have had emergency care than babies with less than the recommended number of visits.¹² Babies with any well-baby care were no less likely to have had emergency care than babies without well-baby care.¹³ Overall, emergency visit rates did not vary by health plan nor did the rate vary by health plan within visit categories. Among babies with any emergency care, the average number of visits was 1.5 (range: 1-10). The leading ambulatory care-sensitive conditions for which babies received emergency care were upper respiratory infections (45.5% of visits), injuries (23.2%), and lower respiratory infections (12.6%).

Hospitalization for Ambulatory Care-Sensitive Conditions

In the one-year monitoring period, 133 babies (6.5%) were hospitalized for ambulatory care-sensitive conditions (Table 3). Altogether, there were 166 hospitalizations (average 1.25 per infant; range: 1-4). Among babies who had any well-baby care (n=1,952), those with all the recommended visits were no less likely to have been hospitalized than babies with less than the recommended number of visits.¹⁴ Babies who had any well-baby care were no less likely to have been hospitalized than babies without care.¹⁵ The leading ambulatory care-sensitive conditions for which babies were hospitalized were lower respiratory infections (41.0%), gastroenteritis or dehydration (27.7%), and asthma or chronic bronchitis (16.0%).

Discussion

In the continuum of children’s health care from birth through adolescence, well-baby care is the first and, arguably, the most important opportunity for health promotion and disease or injury prevention. Each visit represents a chance to develop a “therapeutic alliance” between parents and providers, an opportunity to emphasize and establish the importance of routine preventive health care throughout childhood.¹⁶ The schedule of frequent, timely visits for well-baby care is designed for closely monitoring growth and development during a period of extraordinary change. Professional guidelines for well-baby care are widely accepted by practitioners in private and public health care settings and are used as a standard for health supervision in publicly funded children’s health insurance programs.

Despite federal and state standards for the EPSDT program, not all children in Medicaid receive the recommended care. In fact, relatively few children receive all the recommended care. Results of several studies show with some degree of consistency that at most, just one in three babies received all or nearly all the recommended care (Table 4). Even more alarming is the fact that African American and Hispanic babies were less likely than White babies to receive all the recommended care. This finding for African American babies is consistent with ambulatory care utilization reports for older children and adolescents in HUSKY A.¹⁷ African American children were less likely than White children to receive well-child care and more likely to have had no ambulatory care at all in a one-year period. They were also more likely to have been hospitalized for asthma, an ambulatory care-sensitive condition. Other studies have also shown that African American children are less likely to be up-to-date with well-baby care.^{18 19}

Some babies did not receive any well-baby care in HUSKY A. In fact, DSS reports to CMS indicate that in recent years, on average about 20% of babies in Medicaid did not receive even one initial or periodic screening exam during a period when six are required (Table 5). Child health advocates and policy makers typically recognize that screening rates are highest for infants and very young children, then focus efforts on the far lower rates in other age groups, particularly adolescents. Two factors argue for concentrating on improving screening rates for babies: 1) importance of preventive health care early in a child's life, during a period of rapid growth and development and 2) accountability for state dollars spent to provide care for Medicaid managed care enrollees under 1 (statewide average capitation rate in FFY 2001: \$523 per member per month).

Providers and parents might argue that an acute care visit around the time when a well-baby visit is due should suffice. Even allowing for that latitude, babies with five or more timely visits for well-child or acute care increased to just over 50%. While it is possible that providers used these visits to perform comprehensive screening exams, evidence suggests that these visits were more likely "missed opportunities" for well-baby care. According to results from one study of EPSDT in Medicaid managed care, most visits were sick visits and only rarely was the sick visit expanded to include comprehensive, preventive care as well as treatment of symptoms.²⁰ In a study of immunization and well-child care, children who were not fully immunized by 2 years of age had had an average of 5.8 "missed opportunities" for immunization, compared to 2.6 for fully immunized children.²¹ Even among the fully immunized children, just 30% had had the recommended number of well-child visits. Another study of well-baby care and immunization status showed that just 42% of white infants and 29% of black infants had had adequate well-baby care and were up-to-date with recommended immunizations.²² Children with Medicaid coverage were at the greatest risk for inadequate early preventive care. Well-child visits without attention to immunization status were characterized as "missed opportunities."

Results of this study failed to show that adequate well-baby care reduced emergency care or hospitalizations for ambulatory care-sensitive conditions. This effect has been shown in another study. Children in three fee-for-service Medicaid programs who were up-to-date with well baby care were less likely to be hospitalized for ambulatory care-sensitive

conditions.²³ Well-baby care was associated with a 26% reduced likelihood of hospitalization in Michigan, 46% in Georgia, and 48% in California.

One hundred two babies (5.0%) did not have encounter records for well-baby care, including sixty-nine who did not have encounter records for well-baby care or acute care visits while enrolled in HUSKY A for a year. The explanation for this finding is not entirely clear. One source of the problem is in data submitted by Preferred One. This health plan identified a problem capturing and reporting on care provided by capitated providers in the Preferred One network. In fact, babies in Preferred One were far more likely than other babies to have had no well-baby care (18.2%, compared to 4.0% for babies in other plans and plan changers). Another possibility is that these children were seen in municipal or VNA well-baby clinics that did not submit claims to HUSKY A health plans. A third possible explanation is that some unknown number of families had other insurance to cover well-baby care, emergency care or hospitalization and that claims or encounter records were submitted only to other carriers.²⁴ Finally, it is possible that some of these babies lived in families who were no longer residing in Connecticut but did not notify DSS. Whether families had third party coverage or moved, they apparently did not need or qualify for HUSKY A coverage even though the babies were enrolled. In fact, at the end of one year, babies without well-baby care were more than twice as likely to have dropped coverage in the thirteenth month than babies who had any well-baby care (32.3%, compared to 13.9%).²⁵

The results of this study suggest that a longitudinal approach to monitoring well-baby care will capture the adequacy of care more effectively than the federal reporting format. For example, the EPSDT participant ratio is a measure of the number of children that received at least one EPSDT screening exam, compared to the number that should have been screened. However, six screening exams are required during infancy. The measure does not distinguish between a baby enrolled just one month who had one well-baby visit and a baby enrolled for 11 months with just one well-baby visit; both are counted as having had at least one EPSDT screening exam, even though the care for the child enrolled 11 months is far less than adequate. In addition, this reporting format does not allow for monitoring differences in utilization associated with race/ethnicity and other factors that affect access to care. The information is far less useful for informing efforts to improve access and planning additional studies of care.

Conclusions drawn from results of this study are limited by the quality of the underlying data and several other factors. First, some babies may have been retroactively enrolled into Medicaid managed care health plans if for some reason eligibility and enrollment were not processed immediately following the birth. In the meantime, mothers and the providers may be uncertain about whether these babies are covered. Although bills incurred during the period of retroactive coverage would be paid, uncertainty about coverage may affect utilization. Second, the completeness and accuracy of the encounter data could not be assessed. Regular monitoring of encounter data submissions led to identification of major data problems in one health plan that have not yet been fully corrected. Third, it was not possible to determine whether any acute care visits also included components of comprehensive well-baby care or whether these visits truly represent “missed opportunities” for well-baby care. Even with every acute care visit

counted, however, just 50% of babies had five or more timely visits throughout the first year of life. Fourth, data on providers could not be used to investigate continuity of care and its effect on well-baby care. Despite these limitations, the results of this study shed light on the adequacy of well-baby care in HUSKY A.

Conclusions

- **Despite professional guidelines for well-baby care and federal and state standards for the EPSDT program, most babies in HUSKY A do not get timely well-baby care throughout their first years of life.**
- **African American babies and Hispanic babies were less likely than White babies to have had all the recommended care.**
- **While 50% of babies had timely well-baby visits or acute care visits, the sick visits were most likely “missed opportunities” for providing the comprehensive preventive health care that babies need.**
- **Well-baby care was not associated with reduced risk of emergency care or hospitalization for ambulatory care-sensitive conditions.**
- **A longitudinal approach to monitoring well-baby care is more effective for capturing the adequacy of care, assessing differences in utilization, and informing efforts to improve access to care.**

¹ Green M (Ed). Bright futures: guidelines for health supervision of infants, children, and adolescents. Arlington, VA: National Center for Education in Maternal and Child Health, 1994.

² 1967 amendment to Social Security Act (PL 90-248).

³ These reports follow guidelines issued by CMS for the HCFA 416 report. The measures of EPSDT participation, reported by age, are 1) participant ratio, that is, number of children who received at least one EPSDT screening exam, adjusted for the expected frequency of the exam and the average period of eligibility, compared to the number ever eligible during the reporting period; and 2) screening ratio, that is, the actual number of EPSDT screening exams, compared to the expected number of screening exams, based on the expected frequency of exams and adjusted for average period of eligibility. These measure cannot be used to identify factors associated with EPSDT participation, or to make comparisons between subgroups of interest.

⁴ The Children’s Health Council was created by the Connecticut General Assembly in 1995 and charged with evaluating the impact of Medicaid managed care on children’s health services under the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program. The Children’s Health Council monitors children’s health services under a contract with the Connecticut Department of Social Services and with support from the Hartford Foundation for Public Giving. The Connecticut Children’s Health Project is the operational arm of the Children’s Health Council.

⁵ This schedule is slightly different than the APA schedule that calls for the first visits at birth, one week, and one month of age.

⁶ **Well-baby care:** CPT-4 codes 99381-99386, 9938R, 9938T, 99391-99396, 9939R, 9939T, 99431, 9943R, 9943T; and hospital revenue codes 092, 093, 094; and CPT-4 codes 99201-99205, 99211-99215, 99432, or clinic codes 510, 515 *when accompanied by a well-child diagnosis* (V20 series, V70, V70.0, V70.3-V70.9). Visits were assessed for timeliness and were considered on time if visit occurred at 2 weeks \pm 5 days, 2 months \pm 15 days, 4 months \pm 15 days, 6 months \pm 30 days, 9 months \pm 30 days, and up to 30 days prior to 12 months. Encounter data were not searched for records corresponding to the very

earliest recommended visits just after birth and at 2 days because of the greater likelihood that these records might be missing.

⁷ **Ambulatory care-sensitive conditions with following ICD-9-CM diagnosis codes:** upper respiratory infections (460, 461, 462, 463, 464, 465) lower respiratory infections (466, 481, 482, 483, 485, 486), gastroenteritis and dehydration (009, 276.0, 276.1, 276.5, 558.9, 775.5), asthma and chronic bronchitis (491.21, 491.9, 493), and acute injuries and poisoning (521.1, 360.5-360.6, 376.6, 388.11, 800-994.9, 995.5-995.9, E800-E928.9, E950-E958.9, E960-E968.9, E980-E999, V71.4, V71.6, excluding 855-859, 888-889, 898). These diagnoses are exactly those used by Hakim and Bye (2001) to study the effectiveness of well-child care in reducing avoidable hospitalizations.

⁸ Risk of African American babies having had the recommended number of visits, compared to White babies: RR = 0.78 (95% CI: 0.73, 0.85). Risk of Hispanic babies having had the recommended number of visits, compared to White babies: RR = 0.81 (95% CI: 0.75, 0.88).

⁹ Preferred One has been working with CCHP, DSS, and DSS' data vendor to address problems with completeness of encounter data submitted to the data vendor since October 2000; this data problem may have affected the rate. If babies enrolled in Preferred One were not included, the overall rates would increase slightly, to 35.9% with five or more visits, 60.2% with one to four visits, and 4.0% with no visits at all. Without babies enrolled in Preferred One, rates for the health plans still varied somewhat ($\chi^2 = 11.39, p < .01$).

¹⁰ Risk of less-than-recommended care for babies that changed plans, compared to babies that did not change plans: RR = 1.18 (95% CI: 1.09, 1.28).

¹¹ More than 90% of babies in Spanish-speaking households were enrolled in the thirteenth month, compared to babies in families that spoke English (85%) or other languages (78%). All of the babies in state custody (n=26) remained enrolled after the first year. Other factors were not associated with enrollment in the thirteenth month.

¹² Risk of ER visit for those with all recommended visits, compared to those with some visits: RR=0.99; 95% CI: 0.86, 1.13

¹³ Risk of ER visit for those with any recommended visits, compared to those with no visits: RR=1.39; 95% CI: 0.97, 1.99).

¹⁴ Risk of hospitalization for those with all recommended visits, compared to those with some visits: RR=1.02; 95% CI: 1.00, 1.04)

¹⁵ Risk of hospitalization for those with any well-baby care, compared to those with no visits: RR=0.95; 95% CI: 0.92, 0.98).

¹⁶ Green M (Ed). Bright futures: guidelines for health supervision of infants, children, and adolescents. Arlington, VA: National Center for Education in Maternal and Child Health, 1994.

¹⁷ Children's Health Council. Health and health care disparities associated with race/ethnicity in HUSKY A: Evidence of a problem. Hartford, CT: CHC, 2001.

¹⁸ Mustin HD, Holt VL, Connell FA. Adequacy of well-child care and immunizations in US infants born in 1988. Journal of American Medical Association, 1994; 272 (14): 1111-1115.

¹⁹ Hakim RB, Bye BV. Effectiveness of compliance with pediatric preventive care guidelines among Medicaid beneficiaries. Pediatrics, 2001; 108 (1): 90-97.

²⁰ DHHS Office of Inspector General. Medicaid managed care and EPSDT (OEI-05-93-00290). Washington, DC: OIG, 1997.

²¹ Ball TM, Serwint JR. Missed opportunities for vaccination and the delivery of preventive care. Archives of Pediatric and Adolescent Medicine 1996; 150(8): 858-861.

²² Mustin HD, Holt VL, Connell FA. Adequacy of well-child care and immunizations in US infants born in 1988. Journal of American Medical Association, 1994; 272 (14): 1111-1115.

²³ Hakim RB, Bye BV. Effectiveness of compliance with pediatric preventive care guidelines among Medicaid beneficiaries. Pediatrics, 2001; 108 (1): 90-97.

²⁴ According to a source at DSS, 10% of HUSKY A enrollees (adults and children) had third party coverage in the 3Q2001.

²⁵ Risk of babies without care not being enrolled in the thirteenth month, compared to babies with any care: RR=2.32 (95% CI: 1.72, 3.14).

Table 1. Timely Well-Baby Care in HUSKY A

		Babies in HUSKY A ^a	Babies with Timely Well-Baby Care		
			≥ 5 visits	1 to 4 visits	No visits
Total		2,054 (100.0%)	691 (33.6%)	1,261 (61.4%)	102 (5.0%)
			Percent with Timely Well-Baby Care ^b		
Gender:	Female	1,016 (49.5%)	33.4%	62.8%	3.8%
	Male	1,038 (50.5%)	33.9%	60.0%	6.1%
Race/ethnicity:	Black/African American	549 (26.7%)	26.4%	67.9%	5.6%
	Hispanic/Latino	626 (30.5%)	28.8%	67.3%	4.0%
	White	826 (40.2%)	42.1%	53.0%	4.8%
	Other racial/ethnic groups	53 (2.6%)	34.0%	54.7%	11.3%
Family's primary language:	English	1,880 (91.5%)	34.1%	60.6%	5.3%
	Not English	174 (8.5%)	28.7%	70.1%	1.1%
Residence:	Bridgeport/Hartford/New Haven	702 (34.2%)	30.3%	65.2%	4.4%
	Other towns	1,352 (65.8%)	35.4%	59.4%	5.3%
In DCF custody		26 (1.3%)	26.9%	73.1%	---
Enrolled in:	BlueCare Family Plan	738 (35.9%)	36.9%	58.9%	4.2%
	Community Health Network	279 (13.6%)	29.4%	65.9%	4.7%
	Health Net	707 (34.4%)	40.9%	56.2%	3.0%
	Preferred One^c	138 (6.7%)	2.9%	78.4%	18.8%
	Changed plans	192 (9.3%)	22.9%	71.4%	5.7%

^a Babies born in January-March 2000 and continuously enrolled in HUSKY A for first 12 months of life.

^b Well-baby care at 2 weeks, 2 months, 4 months, 6 months, 9 months, and 12 months (6 visits total) during the first year of life; considered timely if visit occurred at 2 weeks ± 5 days, 2 months ± 15 days, 4 months ± 15 days, 6 months ± 30 days, 9 months ± 30 days, and up to 30 days prior to 12 months.

^c Preferred One has identified problems with completeness of data submissions during this reporting period. Without data for Preferred One, 35.9% of babies had 5 or more visits, 60.2% of babies had 1 to 4 visits, and 4.0% had no well-baby care.

Note: Associations between child characteristics and well-baby care that were statistically significant (p<.001) are shown in bold.

Table 2. Effect of Coding and Timing Criteria on Visit Rates

	<i>Timely Well-Baby Visits</i>			<i>Any Timely Visits</i>			<i>Well-Baby Visits Any Time</i>		
	≥ 5	1-4	None	≥ 5	1-4	None	≥ 5	1-4	None
Well-baby visit	33.6%	61.4%	5.0%	---	---	---	36.5%	58.5%	5.0%
Any visit	---	---	---	51.5%	45.1%	3.4%	---	---	---

Table 3. Emergency Care And Hospitalization For Ambulatory Care-Sensitive Conditions

	Babies in HUSKY A ^a	Babies with Timely Well-Baby Care		
		5 or more visits	1 to 4 visits	No visits
Total	2,054 (100.0%)	691 (33.6%)	1,261	102
Emergency care for ACSC^b	663 (32.3%)	32.4%	32.9%	23.5%
Hospitalized for ACSC^b	133 (6.5%)	5.5%	7.4%	2.0%

^a Babies born in January-March 2000 and continuously enrolled in HUSKY A for first 12 months of life.

^b Emergency care or hospitalization for upper respiratory infections, lower respiratory infections, gastroenteritis and dehydration, asthma and chronic bronchitis, and injuries.

Table 4. Well-Baby Care in Medicaid Managed Care: Comparing results

Source (year)	Children's Health Council (2002)	Children's Health Council (1997)	Hakim & Bye (2001)	HHS Office of Inspector General (1997)
Methods	Review of encounter data for babies continuously enrolled in HUSKY A (Medicaid managed care) for one year	Review of encounter data for babies continuously enrolled in Medicaid managed care for one year	Review of 3 years of Medicaid claims data for 1990 birth cohort in California, Georgia, Michigan	Review of medical records from 12 Medicaid managed care programs in 10 states
Sample	2,054 babies birth - 12 months	587 babies 6-18 months	308,131 babies birth to 2 years of age	338 children birth – 20 years (number who were birth to 5 years was not specified)
Expected visits	≥ 5 timely well-baby visits	≥ 5 well-baby visits any time	9 timely well visits in first 24 months of age	Not specified for birth to 5 years
Babies received the recommended visits?				
All	33.6%	24.4%	≥5 well visits: 30% in California 15% in Georgia 22% in Michigan	30% ^a
Some	61.4%	61.8%	2-4 well visits: 40% in California 34% in Georgia 43% in Michigan	22% ^a
None	5.0%	13.8%	0-1 well visit: 30% in California 51% in Georgia 35% in Michigan	48% ^a

Sources:

Children's Health Council. Frequency and timeliness of EPSDT services: A longitudinal analysis. Hartford, CT: CHC, 1997.
 Hakim RB, Bye BV. Effectiveness of compliance with pediatric preventive care guidelines among Medicaid beneficiaries. Pediatrics, 2001; 108(1): 90-97.
 HHS Office of the Inspector General. Medicaid managed care and EPSDT (OEI-05-93-00290). Washington, DC: OIG, 1997.

Table 5. Connecticut Annual EPSDT Participation Report (HCFA-416): Children under one

	FFY1997	FFY1998	FFY 1999^a	FFY 2000	FFY 2001
NUMBER OF INDIVIDUALS ELIGIBLE FOR EPSDT	20,116	20,652	13,324	12,328	14,766
STATE PERIODICITY SCHEDULE^b	6	6	6	6	6
AVERAGE PERIOD OF ELIGIBILITY	0.630	0.620	0.548	0.545	0.495
EXPECTED NUMBER OF SCREENINGS PER ELIGIBLE	3.78	3.72	3.29	3.27	2.97
EXPECTED NUMBER OF SCREENINGS	75,963	76,845	43,809	40,336	43,885
TOTAL SCREENS RECEIVED	43,630	51,898	33,893	34,881	35,333
SCREENING RATIO^c	0.57	0.68	0.77	0.86	0.81
TOTAL ELIGIBLES WHO SHOULD RECEIVE AT LEAST ONE INITIAL OR PERIODIC SCREEN	20,116	20,652	13,324	12,328	14,766
TOTAL ELIGIBLES RECEIVING AT LEAST ONE INITIAL OR PERIODIC SCREEN	14,877	16,421	10,605	11,101	10,925
PARTICIPANT RATIO^d	0.74	0.80	0.80	0.90	0.74

^a For FFY 1999, HCFA issued revised reporting specifications for Form HCFA-416. Changes included use of each state's periodicity schedule to determine participation and screening ratios, and use of specific CPT codes to count EPSDT screens (HCFA. Letter to State Medicaid Directors, July 19, 1999). In addition, the method for grouping children by age was changed from age at midpoint (March 31) to age at endpoint of the federal fiscal year (September 30). The effect of this change is to shift most infants into the next age group with less frequent screening requirements, resulting in higher screening rates. The age change also results in a decreased period of eligibility and lower expectations for numbers of screens. (See Perkins J, Olson K. Medicaid services for children: Federal revisions to reporting form raise many questions. Los Angeles, CA: National Health Law Program, 1999.

^b Number of EPSDT screenings for the age group under Connecticut's EPSDT Periodicity Schedule.

^c Screening ratio = total screens received/expected number of screens

^d Participant ratio = total eligibles receiving at least one initial or periodic screen/ total eligibles who should receive at least one initial or periodic screen

Source: Connecticut Department of Social Services. Annual EPSDT participation report (Form HCFA-416), FFY 1997-2001. Hartford, CT: DSS, 1998-2002