

CONNECTICUT  
**VOICES**  
FOR CHILDREN



## **Emergency Care for New Mothers and Pregnant Women in HUSKY A**

**Mary Alice Lee, Ph.D.  
Karen M. Sautter, M.P.H.  
Amanda Learned, B.A**

**January 2009**

**New Haven Office**  
33 Whitney Ave.  
New Haven CT 06510  
Phone: 203.498.4240  
Fax: 203.498.4242

**Hartford Office**  
53 Oak St. Suite 15  
Hartford CT 06106  
Phone: 860.548.1661  
Fax: 860.548.1783

Web Site: [www.ctkidslink.org](http://www.ctkidslink.org)  
E-mail: [voices@ctkidslink.org](mailto:voices@ctkidslink.org)

# Emergency Care for New Mothers and Pregnant Women in HUSKY A

January 2009

## Key Findings

Emergency care utilization in Connecticut and nationwide is on the rise and is disproportionately high among Medicaid enrollees. HUSKY A (Medicaid managed care) provides care for a significant number of women of reproductive age, including pregnant women and new mothers. While improving access to primary care is one of the main goals of the HUSKY program, little is known about how women access primary care and other services. Disparities in primary care may drive higher utilization of acute care services such as emergency department visits. Improving access to primary care for women may reduce emergency department visitation for new mothers in HUSKY A.

This study describes emergency care utilization during pregnancy and the postpartum period for mothers who gave birth while enrolled in HUSKY A. This study found that:

- One of every two new mothers who was continuously enrolled in HUSKY A after giving birth in 2005 had emergency care, a rate similar to the rate for all women in HUSKY A that year.
- In contrast, just one-third of pregnant women had emergency care during the six months prior to delivery; furthermore, utilization of emergency care for ambulatory-care sensitive conditions was less than one-third the rate for new mothers.
- Injury and symptoms of ill-defined conditions were the leading diagnoses among new mothers, whereas pregnancy-related conditions were the predominant diagnosis for emergency care sought by pregnant women.

## INTRODUCTION

### Trends in Emergency Care Utilization

Increasing utilization of emergency department (ED) services is a significant problem in Connecticut. Between 1997 and 2006, ED visits increased in Connecticut from 337 to 420 ED visits per 1,000 residents (or a 25% increase).<sup>1</sup> The Connecticut Hospital Association reports that an overwhelming proportion of the increase in ED visits may be attributed to more frequent use (85% of the increase) as opposed to population growth (15% of the increase).<sup>2</sup> One quarter (24%) of all Connecticut ED patients in 2006 were treated for non-urgent conditions, higher than the national average (18.3%). The increasing trend in ED utilization is not unique to Connecticut. According to

the American Hospital Association's annual survey, the total number of ED visits in the United States increased by 30% between 1990 and 2004.<sup>3</sup>

Adults and children who are publicly insured utilize emergency departments at higher rates than individuals with private coverage. Nationally, the visit rate for patients with Medicaid or State Children's Health Insurance Program coverage (82 ED visits per 100 persons) is higher than the visit rate for the privately insured (21 ED visits) or the uninsured (48 ED visits).<sup>4</sup> In Connecticut, individuals enrolled in Medicaid managed care (HUSKY A) in 2006 had three more times as many ED visits as privately insured individuals, and five times as many non-urgent visits.<sup>5</sup> Monitoring ED utilization in the Medicaid population is important because high utilization of ED services may indicate problems in accessing effective, timely and less costly primary care.

## **Emergency Care During Pregnancy and the Postpartum Period**

There is very little published research describing women's utilization of ED services and its predictors, either for women in Medicaid or the general population. Results of a recent survey of pregnant women receiving prenatal care at a university-affiliated clinic—the only study examining health care utilization in this population—showed that women with the highest rates of “unscheduled care,” including ED visits, were young women and women with inadequate or excessive prenatal care.<sup>6</sup> In fact, the bulk of literature on maternal health and acute service use focuses on infant utilization in relation to maternal factors.<sup>7</sup> The predictors of ED utilization in the general population—male and female—are well described and include factors such as low income, insurance status,<sup>8-9</sup> substance abuse,<sup>10</sup> psychiatric conditions,<sup>11</sup> and chronic diseases such as asthma,<sup>12</sup> among others. To some extent, these predictors may be relevant on a population level to women's health, but fail to take into account the unique needs of women during the pregnancy and postpartum periods. There is also evidence that increased maternal ED utilization is significantly associated with higher childhood ED utilization, further widening gaps in access to primary care among Medicaid families.<sup>13</sup>

## **HUSKY Program Coverage for Pregnant Women**

About 80 percent of all adults enrolled in HUSKY A are women. Many women enroll in HUSKY A during pregnancy.<sup>14</sup> Others qualify for coverage as adolescents in low income families or as parents of children in the program.<sup>15</sup> One of the primary goals of the HUSKY A program is to reduce barriers to accessing high quality primary care, including prenatal care for pregnant women. However, only 75 percent of HUSKY A mothers initiate prenatal care during the first trimester, and only 73 percent have adequate or better prenatal care.<sup>16</sup> Gaps in access to and quality of prenatal care may lead to increased utilization of emergency care services during pregnancy or the postpartum period—services which are not only more costly but may not be adequate to address ongoing and chronic health care needs.

This study examines patterns in emergency care utilization for pregnant women and new mothers enrolled in HUSKY A who gave birth in 2005. This report is the second in a series on maternal health in the HUSKY Program, issued by Connecticut Voices for Children.

## PURPOSE

- To describe emergency care utilization among HUSKY A mothers who gave birth in 2005;
- To describe conditions for which HUSKY A mothers obtained emergency care.

## METHODS

For this study, we used a retrospective cohort design. Birth and Medicaid managed care data were linked to identify mothers with HUSKY A coverage, then searched for emergency care received during pregnancy and during the year after giving birth. Emergency care utilization rates for new mothers were compared to rates for all women enrolled in HUSKY A during the study period.

### Data

For ongoing performance monitoring, the 2005 birth data file was obtained from the Connecticut Department of Public Health with the approval of the agency's Human Investigations Committee. The birth data file contains identifying information for every mother and data on maternal health, prenatal care, and birth outcomes.

HUSKY Program enrollment and encounter data for 2005 and 2006 were obtained from the Connecticut Department of Social Services. Enrollment records contain identifying information and sociodemographic descriptors for each HUSKY Program enrollee. Health care encounter records include information about each health care encounter, including patient identifiers, diagnostic codes, and procedure codes for the care rendered.

### Study Sample

We conducted a three-way linkage of birth and HUSKY Program data. First, birth certificates and Medicaid managed care enrollment records were linked to identify mothers who gave birth in 2005 while enrolled in HUSKY A.<sup>17</sup> We searched enrollment records for 2005 and 2006 to identify and report on utilization for the following groups:

- 1) **“New mothers”**—that is, those women who gave birth in 2005 and were continuously enrolled for the 12 months following the birth; and
- 2) **“Pregnant women”**—that is, the subset of mothers who gave birth during the second half of 2005 and were continuously enrolled for at least 6 months prior to giving birth.

We compared their emergency care utilization to that of women 20 to 44 years who were continuously enrolled in HUSKY A for calendar year 2005.

### Data Analysis

We searched the encounter database for records corresponding to emergency services received during pregnancy and the postpartum year.<sup>18</sup> These emergency visits did not result in hospitalization.<sup>19</sup> We characterized each study group by whether they had (1) any emergency care and (2) emergency care for ambulatory-care sensitive conditions (i.e., non-urgent conditions such as asthma or otitis media).<sup>20</sup> We calculated the overall emergency department visitation rate for the

study groups and compared the rates to the rate for all women 20 to 44 who were enrolled in HUSKY A in roughly the same time period.

We report utilization rates by selected sociodemographic and pregnancy-related characteristics that may be associated with ED use. We also calculated the total number, average number, and range for ED visits made by new mothers and pregnant women. We compared these measures to estimates for women of reproductive age. For new mothers and the subset of pregnant women, we aggregated the diagnoses and reported the distribution by diagnostic categories.

## RESULTS

### Enrollment

In 2005, there were 11,007 babies born to 10,835 mothers who were enrolled in HUSKY A when they gave birth. Less than two out of three of these new mothers (63.2% or 6,851) were enrolled for the entire twelve months following the birth.<sup>21</sup> Mothers who were and were not enrolled for one year after the birth were similarly distributed across age and racial/ethnic groupings. Prenatal care initiation and adequacy were remarkably comparable. Low birthweight and preterm birth rates were also similar. Among those who gave birth in the latter half of 2005 (5,674 mothers), 58 percent (3,296) were continuously enrolled for at least 6 months prior to the birth.<sup>22</sup>

### Emergency Care Utilization

In the year following the birth of a baby, 51 percent of new mothers were seen for emergency care (Table 1), for an average of 2 to 3 visits in the 12-month period. Remarkably, their utilization was about the same as the emergency care rate and average number of visits for all women 20 to 44 who were continuously enrolled in the HUSKY Program in roughly the same time period. In contrast, the percentage of pregnant women with emergency care in the last 6 months of pregnancy (32%) was considerably lower, as was the average number of visits (2.0).

### Factors Associated With Emergency Care Utilization

Emergency care utilization rates varied across maternal sociodemographic and pregnancy-related characteristics for new mothers (Table 2) and the subset of pregnant women (Table 3).

**New mothers:** In the year following the birth, emergency care utilization rates were highest for younger mothers 24 and under, mothers who smoked during pregnancy, and mothers who had had very low birthweight babies. Rates were slightly higher for Hispanic and White mothers, compared with African American mothers. The emergency care utilization rates were lowest for older mothers 35 to 39, mothers of other racial/ethnic identity, and mothers who did not have prenatal care.

**Pregnant women:** Among the subset of pregnant women who were enrolled in the 6 months prior to giving birth in 2005, the emergency care utilization rates during pregnancy were highest for younger mothers 24 and under, Hispanic mothers, and mothers who smoked during pregnancy. The emergency care utilization rate was relatively high for mothers who gave birth to preterm or low birthweight babies. The emergency care utilization rate for pregnant women without prenatal care was higher than the rates for mothers who had prenatal care.

**Table 1. Emergency Care Utilization: HUSKY A, 2005**

	<b>New mothers<sup>a</sup></b>	<b>Pregnant women<sup>b</sup></b>	<b>Women 20-44 in HUSKY A<sup>c</sup></b>
<b>Number of women</b>	6,851	3,296	47,668
<b>Emergency Care</b>			
Number with any emergency care	3,515	1,038	24,014
Percent with any emergency care	51%	32%	50%
Number of emergency visits	9,268	2,026	59,673
Average number of visits per woman with emergency care	2.6	2.0	2.5
Range of number of visits	1 - 57	1 - 14	1 - 85
<b>Emergency Care for ACS Conditions<sup>d</sup></b>			
Number with emergency care for ACS conditions	1,117	150	NA
Percent with emergency care for ACS conditions	16%	5%	NA
Percent of those with any emergency care who had emergency care for ACS conditions	32%	10%	NA
Number of emergency visits for ACS conditions	1,606	186	NA
Average number of visits per woman with emergency care	1.4	1.2	NA
Range of number of visits	1-8	1-4	NA

<sup>a</sup> Women who gave birth in 2005 who were continuously enrolled in HUSKY A for the following 12 months.

<sup>b</sup> Subset of women who gave birth between July and December 2005 (5,674) and were continuously enrolled in HUSKY A in 2005 for at least 6 months prior to the birth.

<sup>c</sup> Women 20 to 44 years who were continuously enrolled in HUSKY A during calendar year 2005.

<sup>d</sup> Ambulatory care-sensitive conditions are health problems such as severe ear, nose and throat infections or bacterial pneumonia or asthma that can be prevented or treated with timely primary care.

NA Data not available for this study.

**Source:** Connecticut Voices for Children analyses of birth data from the Connecticut Department of Public Health linked with HUSKY A enrollment and encounter data obtained from the Connecticut Department of Social Services for ongoing performance monitoring.

## Emergency Care for Ambulatory Care-Sensitive Conditions

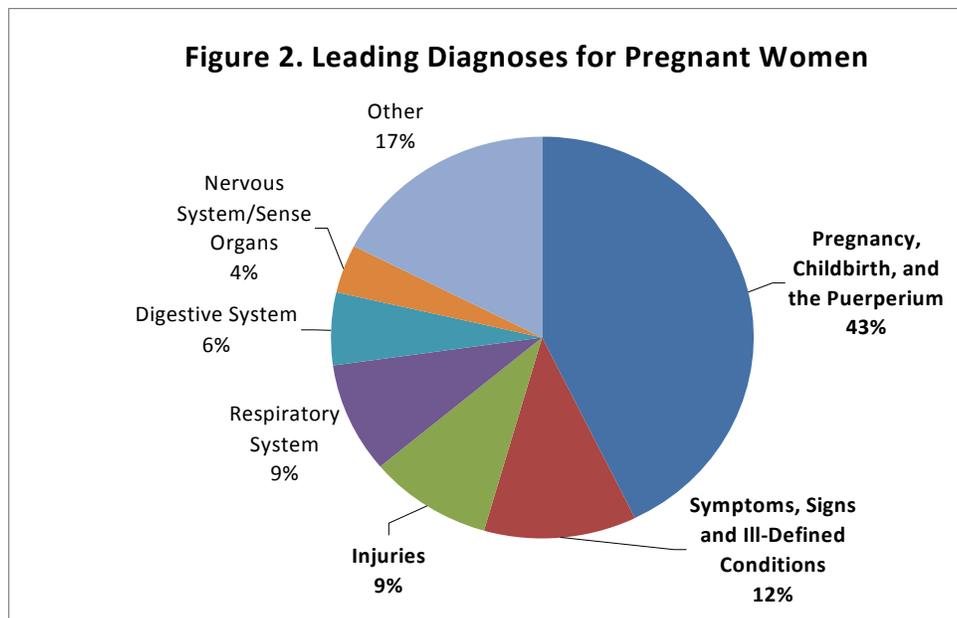
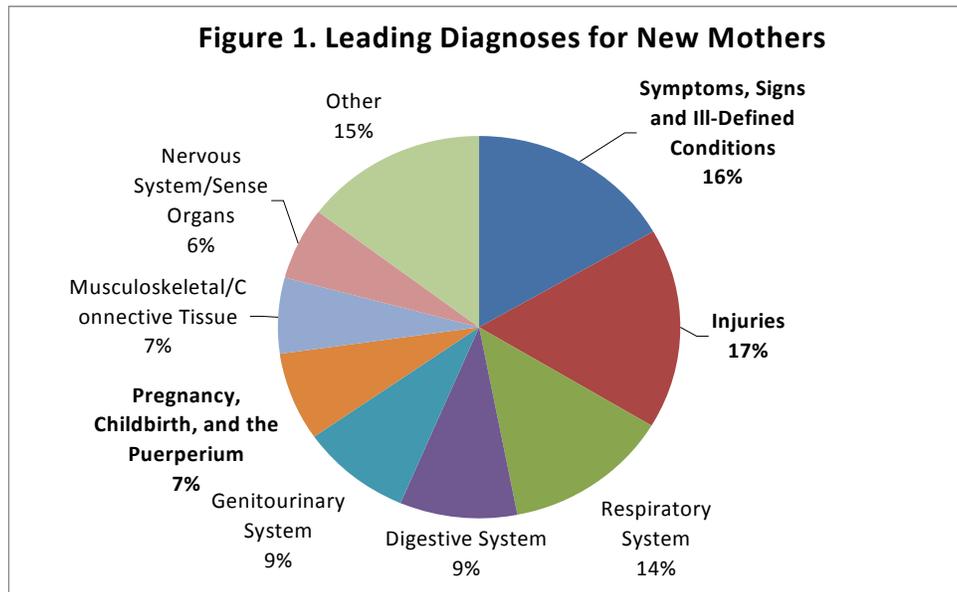
Among the 3,515 HUSKY A new mothers who had emergency care in the postpartum period, almost one in three mothers (31.8% or 1,117 mothers) had emergency care for treatment of an ambulatory care-sensitive (ACS) condition (Table 1). These new mothers made 1,606 emergency department visits for treatment of ACS conditions (average 1.4 per mother; range 1 to 8 visits). The utilization rates for emergency care of ACS conditions were highest for new mothers who were Hispanic and new mothers who were older teens 15 to 19. The rates did not vary much for other sociodemographic or maternal health factors.

Among the subset of 1,038 pregnant women who were enrolled in HUSKY A for 6 months prior to giving birth, 14 percent (150 women) had emergency care for ACS conditions in the 6 month period. These women made 186 emergency department visits for ACS conditions (average 1.2 per pregnant woman; range 1 to 4 visits). During pregnancy, the utilization rates for emergency care of ACS conditions were highest for White women and for older women 35 and over. While there was some variation in rates associated with other sociodemographic or maternal health groups, the relatively small numbers of pregnant women associated with these rates makes it difficult to draw conclusions from the data.

## Leading Diagnoses for Emergency Care

The leading diagnoses associated with emergency care for new mothers in the year after giving birth were injury (17%), signs and symptoms of an ill-defined condition<sup>23</sup> (17%), and respiratory condition (13%) (Figure 1). Only 7 percent of mothers had emergency care for conditions related to the pregnancy, childbirth or puerperium (postpartum period).

The leading diagnoses associated with emergency care during pregnancy for the subset of pregnant women were pregnancy-related (43%) and symptoms of an ill-defined condition (12%) (Figure 2). Nine percent of mothers had an ED visit for an injury.



## DISCUSSION

Nationwide, the emergency care visit rate for persons with Medicaid or SCHIP coverage is considerably higher than the rates for persons with other types of coverage or no coverage at all.<sup>24</sup> This difference has been attributed to problems with access to primary care, as well as greater needs for care due to the relatively higher prevalence of certain health problems among low-income children and families.

There is little to no literature on emergency care utilization by pregnant women or new mothers with which to compare our results. However, several reports provide some findings that are useful for understanding the very high utilization rate we found:

- Results of a small study on utilization and predictors of unscheduled care showed that on average, pregnant women seen in an urban clinic made 5.3 unscheduled visits for care.<sup>25</sup> Nearly 50 percent of these women had one or more emergency room visits. Women with high symptom distress and those with inadequate prenatal care were more likely than others to have had emergency care.
- Results of a population-based study of pregnancy-associated injury morbidity showed that about 14 percent of women sought hospital care for an injury during pregnancy through one year postpartum.<sup>26</sup> Most of the treatment they received was delivered in the emergency department, including 84 percent of care for injuries during pregnancy and 97 percent of care for injuries in the postpartum period.
- Results from a study of emergency room use during pregnancy showed that 37 percent of pregnant women in North Carolina's Medicaid program had emergency care during pregnancy.<sup>27</sup> The leading diagnoses were pregnancy-associated conditions (42.8%).

Our findings are consistent with the scant literature on emergency care for pregnant and postpartum women. We found that over 50 percent of new mothers had emergency care, a rate that is similar to that for the general HUSKY population of women of comparable age and enrollment period. That rate is also similar to the rate for unscheduled emergency care reported by Magriples et al.<sup>28</sup> In contrast, the percentage of pregnant women who had emergency care during the last 6 months of pregnancy was considerably lower (32%), with a lower average number of emergency visits and narrower range. This finding is similar to that reported by Kotelchuck for pregnant women in North Carolina's Medicaid program.<sup>29</sup> In addition, the percentage of pregnant women with emergency visits for ACS conditions was just one-third that of the rate for new mothers. Based on the results of this study, those at greatest risk for emergency care are young mothers, Hispanic mothers, and smokers. Pregnant women with poor birth outcomes are more likely to have had emergency care during pregnancy, perhaps when seeking treatment for preterm labor or other complications of pregnancy that resulted in low birthweight babies. The association between smoking during pregnancy and increased emergency care utilization warrants further investigation to determine whether it is related to exacerbation of respiratory conditions needing treatment or whether it is indicative of poor health habits.

Certain limitations of the data and the methods should be kept in mind when interpreting these results. First, the findings are based on secondary analysis of HUSKY Program data collected for managing enrollment and claims. The accuracy and completeness of the data were not independently verified for this study. Second, certain aspects of the emergency care could not be

determined, such as patient acuity, mode of arrival, mechanism of injury (if any), and disposition. Third, the time of day for the visit could not be determined, so it was not possible to tell whether the emergency care occurred after regularly scheduled office hours for the clinics or private offices where these women received care. Fourth, encounter data on treatment of mental disorders and substance abuse were not available for this study. Despite these limitations, the findings suggest that differential access to care for women during pregnancy, compared with the year following the birth, may affect emergency care utilization.

The difference in emergency care utilization between pregnant women and new mothers or other women in the HUSKY program may be related to better access to care during pregnancy, with regular and frequent visits to a single provider or site for follow-up of health problems and complaints. Utilization of emergency services during the postpartum period should be viewed as an opportunity to link women to primary interconceptional care, much as it would be for emergency services provided during pregnancy.<sup>30</sup> The period of time after a pregnancy is a special window of opportunity for counseling women how and when to use health care and for promoting maternal health in anticipation of a subsequent pregnancy. Regularly scheduled visits during the first year postpartum should include risk assessment, health promotion, and interventions aimed at addressing medical, obstetrical and psychosocial risk factors. Utilization of emergency care, particularly for ACS conditions, in the postpartum period demonstrates difficulty in either accessing primary care or barriers to quality primary care. Increased parental emergency care utilization, especially for non-urgent care, is associated with increased utilization among children.<sup>31</sup> So interventions aimed at decreasing emergency care utilization during pregnancy and postpartum may also reduce children's use of emergency care.

There are several programmatic and policy changes that potentially could improve primary care for women and lower emergency care utilization. Connecticut could expand postpartum benefits from 60 days to a year or more. Six states extend Medicaid coverage beyond 60 days postpartum: 1 year in Missouri; 2 years in Arizona, Florida, Rhode Island, and Virginia; and 5 years in Maryland. However, expanding coverage alone will not address the high rates of emergency care observed for mothers in our study who were continuously enrolled for a year postpartum. Steps to improve access to care during the postpartum period could include emphasis on continuing care with the prenatal care provider, adopting a schedule of more frequent care during the interconceptional period, and incorporating guidance about maternal health and health care into pediatric visits. High quality prenatal and postpartum care may address discontinuity in primary care that results after women give birth and may reduce unnecessary trips to the emergency room. Ongoing monitoring of acute health care utilization, including emergency visits, is important for identifying where primary care fails and where coverage simply is not enough to overcome barriers to accessing high-quality routine and preventive services.

## CONCLUSIONS

- **One of every two new mothers who was continuously enrolled in HUSKY A after giving birth in 2005 had emergency care, a rate similar to the rate for all women in HUSKY A that year.**
- **In contrast, just one-third of pregnant women had emergency care during the six months prior to delivery; furthermore, utilization of emergency care for ambulatory-care sensitive conditions was less than one-third the rate for new mothers.**

- **Injury and symptoms of ill-defined conditions were the leading diagnoses among new mothers, whereas pregnancy-related conditions were the predominant diagnosis for emergency care sought by pregnant women.**

---

## SOURCE OF FUNDING

Connecticut Voices for Children is a non-profit organization that conducts research and policy analysis on children's issues. This report on emergency department care by mothers and women of reproductive age was prepared under a contract between the Connecticut Department of Social Services and the Hartford Foundation for Public Giving, with a grant from the Hartford Foundation to Connecticut Voices. Connecticut Voices for Children contracts with MAXIMUS, Inc. for data management and data analysis. This report was prepared by Mary Alice Lee, Ph.D., Karen M. Sautter, M.P.H., and Amanda Learned, B.A. This publication does not express the views of the Department or the State of Connecticut. The views and opinions expressed are those of the authors. This report and earlier reports are available online at [ctkidslink.org](http://ctkidslink.org).

---

<sup>1</sup> Kaiser State Health Facts. Connecticut: Hospital Emergency Room Visits per 1,000 Population. For more information, visit: <http://www.statehealthfacts.org>.

<sup>2</sup> Connecticut Hospital Association. Emergency Department Utilization in Connecticut. October 2007. Available from: <http://www.cha.org>.

<sup>3</sup> American Hospital Association. Annual Hospital Survey, 1990-2004.

<sup>4</sup> Pitts SR, Niska RW, Xu J, Burt CW. National Hospital Ambulatory Medical Care Survey: 2006 emergency department summary. *Natl Health Stat Report*, 2008; 7: 1-31.

<sup>5</sup> Connecticut Hospital Association. Emergency Department Utilization in Connecticut. October 2007. Available from: <http://www.cha.org>.

<sup>6</sup> Magriples U, Kershaw TS, Rising SS, Massey Z, Ickovics JR. 2008. Prenatal health care beyond the obstetrics service: utilization and predictors of unscheduled care. *Am J Obstet Gynecol*. 198(1):75.e1-7.

<sup>7</sup> For example, Minkovitz CS, Strobino D, Scharfstein D, Hou W, Miller T, Mistry KB, Swartz K. 2005. Maternal depressive symptoms and children's receipt of health care in the first 3 years of life. *Pediatrics* 115(2): 306-14.

<sup>8</sup> Zuckerman S, Shen YC. 2004. Characteristics of occasional and frequent emergency department users: do insurance coverage and access to care matter? *Med Care* 42:176-182.

<sup>9</sup> Weber EJ, Showstack JA, Hunt KA, et al. 2005. Does lack of a usual source of care or health insurance increase the likelihood of an emergency department visit? Results of a national population-based study. *Ann Emerg Med* 45: 4-12.

<sup>10</sup> McGeary KA, French MT: Illicit Drug Use and Emergency Room Utilization. *Health Services Research* 2000, 35:153-169; and D'Onofrio G, Becker B, Woolard RH. 2006. The impact of alcohol, tobacco, and other drug use and abuse in the emergency department. *Emergency Medicine Clinics of North America* 24: 925-967.

<sup>11</sup> Hackman AL, Goldberg RW, Brown CH, Fang LJ, Dickerson FB, Wohlheiter K, Medoff DR, Kreyenbuhl JA, Dixon L. 2006. Use of emergency department services for somatic reasons by people with serious mental illness. *Psychiatr Serv* 57(4): 563-6.

<sup>12</sup> Ginde AA, Espinola JA, Camargo CA Jr. 2008. Improved overall trends but persistent racial disparities in emergency department visits for acute asthma, 1993-2005. *J Allergy Clin Immunol* 122(2): 313-8.

<sup>13</sup> Mistry RD, et al. 2005. Association Between Parental and Childhood Emergency Department Utilization. *Pediatrics* 115: e147-e151.

<sup>14</sup> In 2005-2006, pregnant women in Connecticut were eligible for Medicaid coverage during pregnancy and for 60 days postpartum if they live in households with family income lower than 185 percent of the federal poverty level (FPL). Coverage includes access to all benefits accessible to other Medicaid beneficiaries,

---

including pregnancy-related care. The income eligibility level for pregnant women was increased to 250% FPL, effective January 1, 2008. Both these changes occurred after the study period.

<sup>15</sup> In 2005-2006, adolescents were eligible in families with income up to 185% FPL. Parents and caretaker relatives were eligible in families with income up to 150% FPL. The income eligibility level for parents was increased to 185% FPL, effective July 1, 2007, a change that occurred after the study period.

<sup>16</sup> Lee MA, Sautter K, Learned A. Births to Mothers with HUSKY Program and Medicaid Coverage: 2006.

<sup>17</sup> The birth-HUSKY A enrollment data linkage algorithm is described elsewhere. See Connecticut Voices for Children. Births to mothers with Medicaid: 2005. New Haven, CT: Connecticut Voices, 2007.

<sup>18</sup> Emergency department care was defined by the following codes: CPT-4 codes (99281, 99282, 99283, 99284, 99285), and UB-92 revenue codes (450, 456, 459). Ambulatory-care sensitive conditions were defined based on a review of the literature.

<sup>19</sup> No separate claim is generated for emergency visits that result in hospitalization.

<sup>20</sup> Ambulatory care sensitive conditions: immunization preventable conditions (diagnosis codes 037, 033); grand mal and other epileptic convulsions (345, 780.3); severe ear, nose, and throat infections (382, 462m 463, 465, 472.1, 020,01); bacterial pneumonia (481,482.2,482.3, 482.9, 483, 485, 486); asthma (493); tuberculosis (011, 012, 013, 014, 015, 016, 017, 018), cellulites (681, 682, 683, 686); diabetes A, B, C (250.0, 250.1, 250.2, 250.3, 250,8, 250.9); hypoglycemia (251.2); gastroenteritis (558.9); kidney or urinary infection (590, 599.0); dehydration (276.5); ifon deficiency anemia (280.1, 280.8, 280.9); nutritional deficiencies (260, 261, 262, 268.0, 268.1).

<sup>21</sup> In 2005, 10,835 mothers gave birth while enrolled in HUSKY A. After the birth, 4.7% were enrolled 2 months or less, 32.1% were enrolled at least 3 months but less than twelve months, and 63.2% were continuously enrolled for a one-year period. About 60% of births in 2005 (6,633 of 11,007 births) were babies born to mothers with Medicaid family coverage (F07) for families with income <150% FPL.

<sup>22</sup> The average length of enrollment prior to the birth was 5.1 months for the 5,674 mothers who gave birth between July 1 and December 31, 2005.

<sup>23</sup> Symptoms, signs and ill-defined conditions (ICD-9-CM codes 780-799) includes cases for which no more specific diagnosis can be made; signs or symptoms proved to be transient and of indeterminate cause; provisional diagnoses in a patient who failed to return for further investigation or care; cases referred elsewhere for investigation or treatment before diagnosis; and other cases for which no diagnosis classifiable elsewhere is recorded.

<sup>24</sup> Pitts SR, Niska RW, Xu J, Burt CW. National Hospital Ambulatory Medical Care Survey: 2006 emergency department summary. National Health Statistics Reports, 2008; 7: 1-38.

<sup>25</sup> Magriples U, Kershaw TS, Rising SS, Massey Z, Ickovics JR. 2008. Prenatal health care beyond the obstetrics service: utilization and predictors of unscheduled care. Am J Obstet Gynecol. 198(1):75.e1-7.

<sup>26</sup> Nannini A, Lazar J, Berg C, Tomashek K, Cabral H, Barger M, Barfield W, Kotelchuck M. Infjry: a major cause of pregnancy-associated morbidity in Massachusetts. Journal of Midwifery & Women's Health, 2008; 53(1): 3-10.

<sup>27</sup> Kotelchuck M. Unpublished data on emergency room rate for 41,554 women in North Carolina's Medicaid program in 1992. Obtained from the author.

<sup>28</sup> Magriples U, Kershaw TS, Rising SS, Massey Z, Ickovics JR. 2008. Prenatal health care beyond the obstetrics service: utilization and predictors of unscheduled care. Am J Obstet Gynecol. 198(1):75.e1-7.

<sup>29</sup> Kotelchuck M. Unpublished data on emergency room rate for 41,554 women in North Carolina's Medicaid program in 1992. Obtained from the author.

<sup>30</sup> Lu MD, Kotelchuck M, Cluhane JF, Hobel CJ, Klerman LV, Thorp JM. Preconception care between pregnancies: the content of internatal care. Maternal Child Health Journal, 2006; 10: S107-S122.

<sup>31</sup> Mistry RD, et al. 2005. Association Between Parental and Childhood Emergency Department Utilization. Pediatrics 115: e147-e151.

**Table 2. Emergency Care for New Mothers: Maternal Sociodemographic and Pregnancy Characteristics, 2005**

	Total	Had any emergency care		Had emergency care for ACS condition <sup>a</sup>		
		N	n	% all mothers	n	% all mothers
<b>Total</b>	6,851	3,515	51.3%	1,117	16.3%	31.8%
<b>Sociodemographic characteristics:</b>						
<b>Race/ethnicity</b>						
Black Non-Hispanic	1,753	855	48.8%	243	13.9%	28.4%
Hispanic	2,556	1,347	52.7%	459	18.0%	34.1%
Other Non-Hispanic	249	96	38.6%	26	10.4%	27.1%
White Non-Hispanic	2,293	1,217	53.1%	389	17.0%	32.0%
<b>Age</b>						
Under 15	17	10	58.8%	2	11.8%	20.0%
15 - 19	1,332	764	57.4%	260	19.5%	34.0%
20 - 24	2,521	1,425	56.5%	468	18.6%	32.8%
25 - 29	1,582	754	47.7%	235	14.9%	31.2%
30 - 34	921	376	40.8%	105	11.4%	27.9%
35 - 39	389	150	38.6%	37	9.5%	24.7%
40 And Over	89	36	40.4%	10	11.2%	27.8%
<b>Maternal health:</b>						
<b>Parity</b>						
0	2,526	1,352	53.5%	440	17.4%	32.5%
1	2,133	1,106	51.9%	361	16.9%	32.6%
2 - 4	2,051	985	48.0%	292	14.2%	29.6%
5+	141	72	51.1%	24	17.0%	33.3%
<b>Smoking during pregnancy</b>						
Yes	1,063	629	59.2%	209	19.7%	33.2%
No	5,784	2,883	49.8%	906	15.7%	31.4%
<b>Plurality</b>						
Multiple	115	63	54.8%	17	14.8%	27.0%
Singleton	6,736	3,452	51.2%	1,100	16.3%	31.9%
<b>Prenatal care:</b>						
<b>Prenatal care timing</b>						
First trimester	5,231	2,716	51.9%	867	16.6%	31.9%
Second trimester	1,388	686	49.4%	210	15.1%	30.6%
Third trimester	152	72	47.4%	23	15.1%	31.9%
No prenatal care	25	10	40.0%	3	12.0%	30.0%
<b>Prenatal care adequacy</b>						
Adequate or better	4,958	2,572	51.9%	820	16.5%	31.9%
Intermediate	950	476	50.1%	146	15.4%	30.7%
Inadequate	850	415	48.8%	130	15.3%	31.3%
<b>Birth outcomes:</b>						
<b>Gestational age</b>						
Pre-term (<37 weeks)	714	382	53.5%	109	15.3%	28.5%
Full-term (≥37 weeks)	6,100	3,111	51.0%	997	16.3%	32.0%
<b>Birthweight</b>						
Normal (≥2,500 grams)	6,237	3,189	51.1%	1,020	16.4%	32.0%
Low birthweight (<2,500 grams)	611	324	53.0%	95	15.5%	29.3%
Very low birthweight (<1,500 grams)	118	66	55.9%	19	16.1%	28.8%

<sup>a</sup>ACS: ambulatory care-sensitive conditions that might have been prevented or treated in the primary care setting.

**Source:** Analysis of birth data from the Connecticut Department of Public Health and HUSKY A enrollment and encounter data from the Connecticut Department of Social Services.

**Table 3. Emergency Care for Pregnant Women: Maternal Sociodemographic and Pregnancy Characteristics, 2005**

	Total N	Had emergency care during pregnancy		Had emergency care for ACS condition during pregnancy <sup>a</sup>		
		n	% all pregnant women	n	% all pregnant women	% all pregnant women with ED care
<b>Total</b>	3,296	1,038	31.5%	150	4.6%	14.5%
<b>Sociodemographic characteristics</b>						
<b>Race/ethnicity</b>						
Black Non-Hispanic	797	240	30.1%	30	3.8%	12.5%
Hispanic	1,242	425	34.2%	61	4.9%	14.4%
Other Non-Hispanic	111	21	18.9%	1	0.9%	4.8%
White Non-Hispanic	1,146	352	30.7%	58	5.1%	16.5%
<b>Age</b>						
Under 15	10	4	40.0%	3	30.0%	75.0%
15 - 19	617	213	34.5%	34	5.5%	16.0%
20 - 24	1,121	382	34.1%	52	4.6%	13.6%
25 - 29	854	253	29.6%	34	4.0%	13.4%
30 - 34	462	124	26.8%	15	3.2%	12.1%
35 - 39	181	51	28.2%	10	5.5%	19.6%
40 And Over	51	11	21.6%	2	3.9%	18.2%
<b>Maternal health:</b>						
<b>Parity</b>						
0	966	312	32.3%	52	5.4%	16.7%
1	1,140	348	30.5%	51	4.5%	14.7%
2 - 4	1,106	355	32.1%	40	3.6%	11.3%
5+	84	23	27.4%	7	8.3%	30.4%
<b>Smoking during pregnancy</b>						
Yes	495	187	37.8%	27	5.5%	14.4%
No	2,800	850	30.4%	123	4.4%	14.5%
<b>Plurality</b>						
Multiple	44	17	38.6%	3	6.8%	17.6%
Singleton	3,252	1,021	31.4%	147	4.5%	14.4%
<b>Prenatal care:</b>						
<b>Prenatal care timing</b>						
First trimester	2,593	809	31.2%	118	4.6%	14.6%
Second trimester	606	196	32.3%	28	4.6%	14.3%
Third trimester	52	13	25.0%	2	3.8%	15.4%
No prenatal care	19	7	36.8%	2	10.5%	28.6%
<b>Prenatal care adequacy</b>						
Adequate or better	2,423	768	31.7%	113	4.7%	14.7%
Intermediate	468	131	28.0%	16	3.4%	12.2%
Inadequate	364	121	33.2%	21	5.8%	17.4%
<b>Birth outcomes:</b>						
<b>Gestational age</b>						
Pre-term (<37 weeks)	306	127	41.5%	16	5.2%	12.6%
Full-term (≥37 weeks)	2,969	896	30.2%	133	4.5%	14.8%
<b>Birthweight</b>						
Normal (≥2,500 grams)	3,040	926	30.5%	141	4.6%	15.2%
Low birthweight (<2,500 grams)	256	112	43.8%	9	3.5%	8.0%
Very low birthweight (<1,500 grams)	55	31	56.4%	3	5.5%	9.7%

<sup>a</sup> ACS: ambulatory care-sensitive conditions that might have been prevented or treated in the primary care setting.

**Source:** Analysis of birth data from the Connecticut Department of Public Health and HUSKY A enrollment and encounter data from the Connecticut Department of Social Services.