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Births to Mothers with HUSKY Program Coverage (Medicaid and CHIP): 2012

Thirteenth in a Series of Reports
by Connecticut Voices for Children
for HUSKY Program Performance Monitoring

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This report is the *thirteenth* in a series of reports on maternal health and birth outcomes issued by Connecticut Voices for Children as part of state-funded HUSKY Program performance monitoring. Connecticut births in 2012 are described and compared with trends since 2000.

KEY FINDINGS

- **The HUSKY Program covers two out of every five births in Connecticut.** In 2012, the percentage of births to mothers on the HUSKY program and other Medicaid was 40.2 percent of all in-state births to Connecticut mothers. The HUSKY Program is arguably the most important maternal and infant health program in the state.

- **Mothers in the HUSKY Program and Medicaid are younger than other Connecticut mothers.** In 2012, the average maternal age for births to mothers with HUSKY or other Medicaid coverage was 26.3 years, compared with 31.6 years for other mothers. Nearly 87 percent of births to Connecticut teens were covered by the HUSKY program or other Medicaid.

- **Mothers in the HUSKY Program and Medicaid are less likely than other Connecticut mothers to get early prenatal care.** In 2012, only 81.4 percent of births covered by HUSKY and other Medicaid were babies born to mothers who had prenatal care beginning in the first trimester of pregnancy. In contrast, 91.3 percent of other mothers had prenatal care beginning in the first trimester.

- **Babies born to mothers in the HUSKY Program and Medicaid are more likely to be preterm and low birthweight.** In 2012, 9.4 percent of singleton births to mothers on the HUSKY program were preterm (less than 37 completed weeks gestation), as compared to 6.9 percent of births to other mothers. Singleton births to mothers in the HUSKY program were more likely to be low-birthweight (less than 2,500 grams) (7.9%, compared with 4.6% for births to other mothers).

- **Even though the rate has declined dramatically over the years, mothers in the HUSKY Program and Medicaid are far more likely to smoke during pregnancy.** Between 2000 and 2012, the rate of smoking among HUSKY mothers has declined from 19 percent of births to just over 9 percent. This trend is also evident in national data. However, mothers with HUSKY Program and Medicaid coverage are *more than seven times more likely* than other mothers to smoke while pregnant. Since October 2010, Medicaid benefits have included treatment for tobacco dependence, though the impact on smoking rates is not readily evident in the trend data.

- **After years of increase, the rate of caesarean deliveries began to level out for mothers with HUSKY coverage and for other mothers.** This trend is also evident in national data. As in previous years, the rate of caesarean birth in 2012 was lower for mothers with HUSKY Program or other Medicaid coverage (32.6%), compared with the rate for other mothers (36.6%).

INTRODUCTION

The purpose of this report is to describe births to Connecticut mothers with HUSKY Program or Medicaid coverage in 2012. Prenatal care indicators and birth outcomes for births to mothers with publicly-funded coverage were compared to all other in-state births to Connecticut residents. Trends based on data from successive birth cohorts since 2000 were analyzed. This report on births in 2012 is the thirteenth in a series of reports issued by Connecticut Voices for Children as a part of its HUSKY Program performance monitoring.[1]

Medicaid and CHIP Coverage for Pregnant Women and Infants in Connecticut

In order to promote maternal health and optimal birth outcomes, Connecticut provides Medicaid coverage for low-income pregnant women and infants in the HUSKY Program. During pregnancy, women are covered for pregnancy-related care and the full range of benefits available to other Medicaid beneficiaries.

In 2012, pregnant women in Connecticut were eligible for HUSKY A health insurance coverage during pregnancy and for 60 days postpartum if they lived in households with family income less than 250 percent of the federal poverty level (% FPL).[2] This coverage included legal immigrant women, including those who had been in the US fewer than 5 years. In 2012, HUSKY A (Medicaid for children and families) was converted from a risk-based managed care program to an administered fee-for-service program, with customer and provider support as well as intensive care management provided by Community Health Network of Connecticut. Some women were already enrolled in HUSKY A when they became pregnant, either as adolescents or

HUSKY PROGRAM AND MEDICAID COVERAGE FOR PREGNANT WOMEN IN 2012

ELIGIBILITY

--Resident of Connecticut
--US citizen or qualified legal immigrant (no 5 year residency requirement)
--Living in household with income under 185% FPL (family coverage for parent of HUSKY child or adolescent) or under 250% FPL (pregnancy coverage)
--Undocumented immigrant who presents to the hospital in labor (emergency Medicaid covering the hospital bill only for labor and delivery)

DELIVERY & FINANCING

--HUSKY Program administered fee-for-service program for all pregnant women in HUSKY A and B, as well as some women in HUSKY C (disabled and elderly adults) and D (low income childless adults)
--Emergency Medicaid (hospital bills only) for pregnant women who would be eligible (Connecticut residents, low income) but for immigration status (undocumented)

BENEFITS

--All pregnancy-related services
--All other medically necessary services covered under Medicaid or CHIP in Connecticut
--Treatment for tobacco dependence (pharmaceuticals, counseling), beginning October 1, 2010

[1] Connecticut Voices for Children is a non-profit organization that conducts research and policy analysis on children's issues. This report on births in 2012 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. Reports on births in 2000-02 were issued by the Children's Health Council, a state-funded project of the Hartford Foundation. This report was prepared by Mary Alice Lee, Ph.D, and Kenneth Feder. Amanda Learned, B.A. of MAXIMUS, Inc., performed the data linkage and conducted the data analyses. This publication does not express the views of the Department of Social Services or the State of Connecticut. The views and opinions expressed are those of the authors. This report is available online at www.ctvoices.org.

[2] In 2012, 250% FPL was $36,825 for a family of two and $57,625 for a family of four. For the purpose of eligibility determination in the Medicaid coverage group for pregnant women (v. coverage groups for low income parents or adolescents), a pregnant woman is counted as two persons. Prior to January 1, 2008, the income eligibility level for pregnant women was 185% FPL.

as parents in households with income less than 185% FPL.[3]

HUSKY B is Connecticut's Children's Health Insurance Program (CHIP). In 2012, children were eligible for CHIP if they were under 19, uninsured, and in families with income over 185% FPL. Coverage was partially subsidized for families with income under 300% FPL, and available at state-negotiated unsubsidized group rates for uninsured children in families with income over 300% FPL.[4]

In 2012, the HUSKY Program was operated as an administered fee-for service program, having been a Medicaid managed care program prior to January 1 that year. Most pregnant women were enrolled in HUSKY A (Medicaid for children and families), with a few others in HUSKY B (CHIP for uninsured children), HUSKY C (Medicaid for disabled or elderly adults), or HUSKY D (Medicaid for childless adults with income less than 56% FPL). Theoretically, if adolescents or adult women in HUSKY B, C or D reported their pregnancies to the Department of Social Services, they would be switched to HUSKY A if eligible when using family composition and income counting rules that apply during pregnancy; in actuality, this change in coverage may not have occurred in all cases. Emergency Medicaid (fee-for-service) covered hospital charges for care during labor and delivery for undocumented immigrant women who were otherwise eligible for Medicaid benefits (Connecticut resident, income-eligible).

Coverage for babies depends in part on the mother's coverage at the time of the birth:

- **HUSKY A:** Babies born to Medicaid-eligible mothers in HUSKY A are automatically eligible for Medicaid coverage during the first year of life. Eligibility determinations are processed in the first week after birth.

- **HUSKY B:** Babies born to mothers in HUSKY B are not automatically eligible for coverage; their families have to apply in the first 30 days for coverage dating back to the birth. Since 2008, HUSKY B premiums for babies born to mothers with income over 235% FPL have been waived for the first 4 months.[5]

- **HUSKY C or D:** Babies born to mothers with coverage in HUSKY C or D should also be eligible for the first year of life and automatically enrolled in HUSKY A; however, it is difficult to determine whether this happens in all cases.

- **Emergency Medicaid:** Babies born to undocumented pregnant women whose hospital charges were covered with emergency Medicaid are enrolled retroactive to birth once their applications for coverage are processed.

[3] In 2012, 185% FPL was $42,642 for a family of four.
[4] In 2012, 300% of federal poverty level was $69,150 for a family of four.
[5] Families in HUSKY B Band 1 (185% to 235% FPL) paid no premiums in 2011. Families in income Band 2 (235% to 300% FPL) paid a monthly premium of $30 for one child (family maximum: $50 for two or more children). Families in HUSKY B Band 3 (above 300% FPL) paid the entire monthly premium cost ($314 per child per month; no family maximum). See Connecticut Department of Social Services. HUSKY Health Program Parent Letter. November 2012. Available at http://www.huskyhealthct.org/members/member_postings/member_benefits/benefit_updates/HUSKY_B_2013_Rate_Band_Change.pdf.

Purpose of the Study

- To describe 2012 births to mothers with HUSKY Program or Medicaid coverage;
- To compare maternal health, prenatal care, and birth outcomes for mothers with HUSKY Program and Medicaid coverage to maternal health and birth outcomes for other Connecticut mothers;
- To describe trends in prenatal care, maternal health, smoking during pregnancy, mode of delivery, and birth outcomes for mothers with HUSKY Program or Medicaid coverage.

Methods

This study used a retrospective cohort design to describe maternal health, prenatal care, and birth outcomes for mothers with HUSKY Program (Medicaid and CHIP) coverage in Connecticut. Data presented in this report are based on analyses of records for live births provided by the Connecticut Department of Public Health and linked with enrollment records for the HUSKY Program for HUSKY A and B and additional records for births to mothers with other Medicaid coverage. This linked dataset provides the only reliable method of determining which mothers and newborns received care paid for by the State of Connecticut. It is the only source of information on maternal health and births to mothers with publicly-funded coverage by age, race/ethnicity, and other factors that can affect or contribute to birth outcomes. The methods used to link the records and analyze the data are described in detail in the Technical Notes that follow the report.

RESULTS

Number of Births by Coverage Type

Consistent with a nationwide trend, the overall number of births in Connecticut continued to decline in 2012, down from the high count in 2000 (Table 1). In 2012, there were 36,512 births to Connecticut residents, including 35,595 that occurred in-state (97.5%).

Births to mothers with publicly-funded coverage made up 39.2 percent of all births to Connecticut residents in 2012 and 40.2 percent of in-state births. In 2012, we identified 14,310 in-state births to Connecticut mothers with publicly-funded coverage, including 14,069 births to mothers enrolled in HUSKY A, 11 births to mothers enrolled in HUSKY B, and 230 births to mothers in other Medicaid coverage groups (HUSKY C, D or emergency Medicaid). While the number of births to mothers with public coverage has grown, the number of births to other mothers has dropped by about one-third since the year 2000.

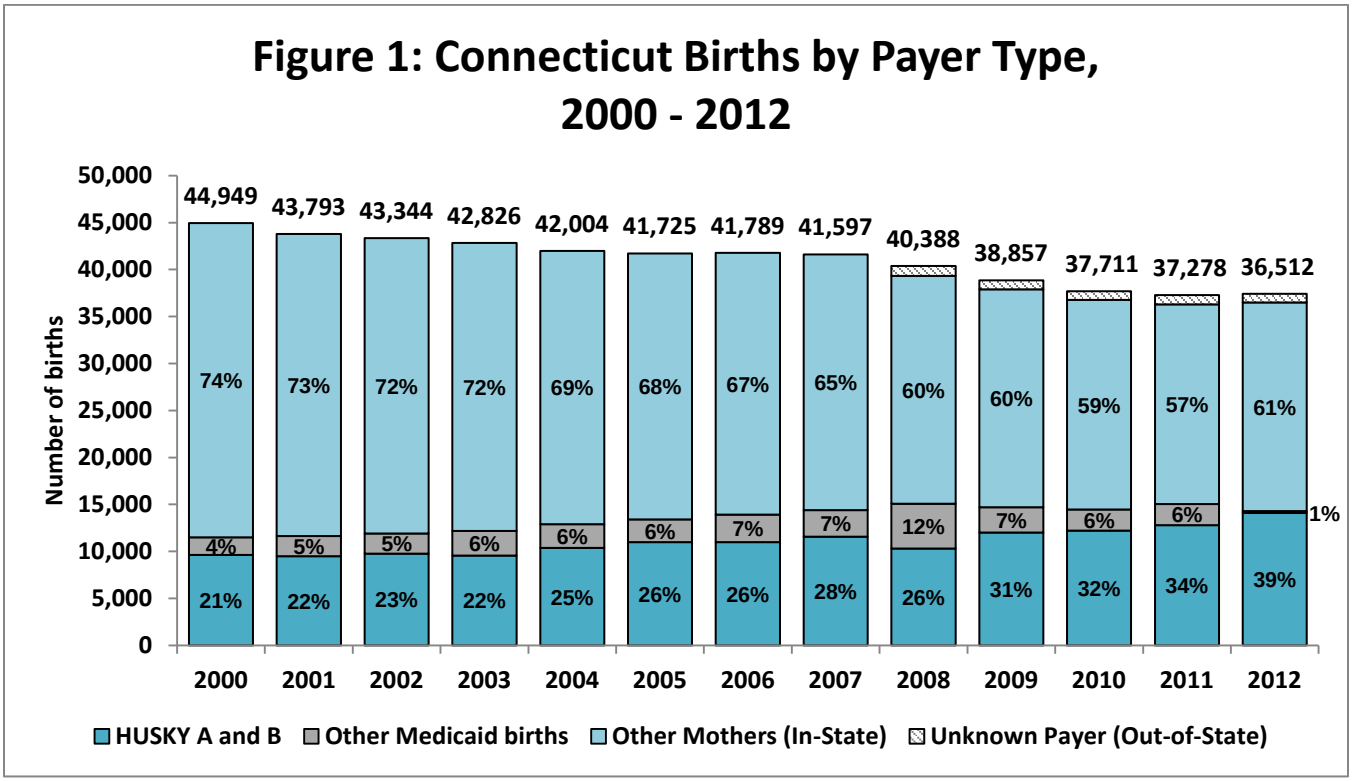
For the remainder of this report, we compare in-state births to mothers with HUSKY Program coverage (HUSKY A or B, C, D or emergency Medicaid) to in-state births to other mothers. Summary data for prenatal care indicators and birth outcomes for 2008 to 2012 are shown in Table 1 by coverage type.

Maternal Sociodemographic and Enrollment Characteristics

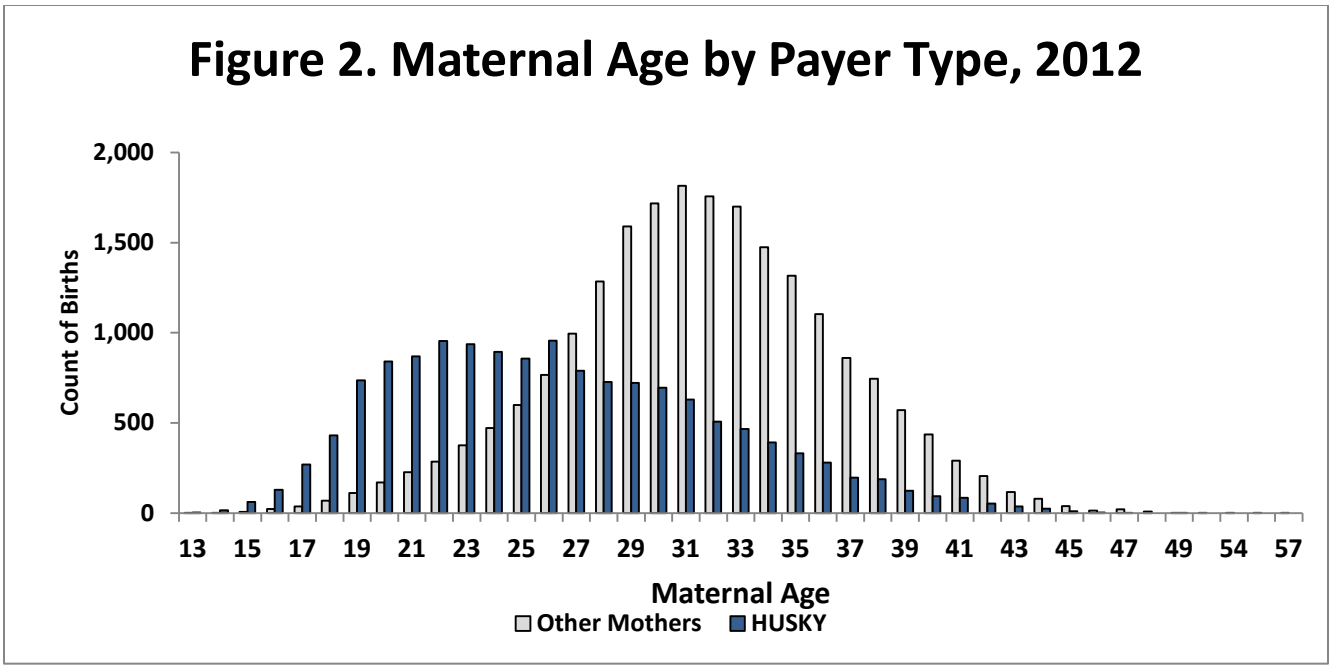
Maternal sociodemographic characteristics for 2012 births are shown in Tables 2 and 3. As in previous years, mothers with HUSKY Program or Medicaid coverage were on average younger, more likely to self-identify with racial/ethnic minority groups, unmarried, urban residents, and less educated than the other mothers who did not have publicly-funded coverage.

Age: In 2012, HUSKY mothers were on average 26.3 years of age, compared to other mothers who averaged 31.6 years (Figure 2). Nearly 87 percent of all births to Connecticut teens were covered by the HUSKY program.

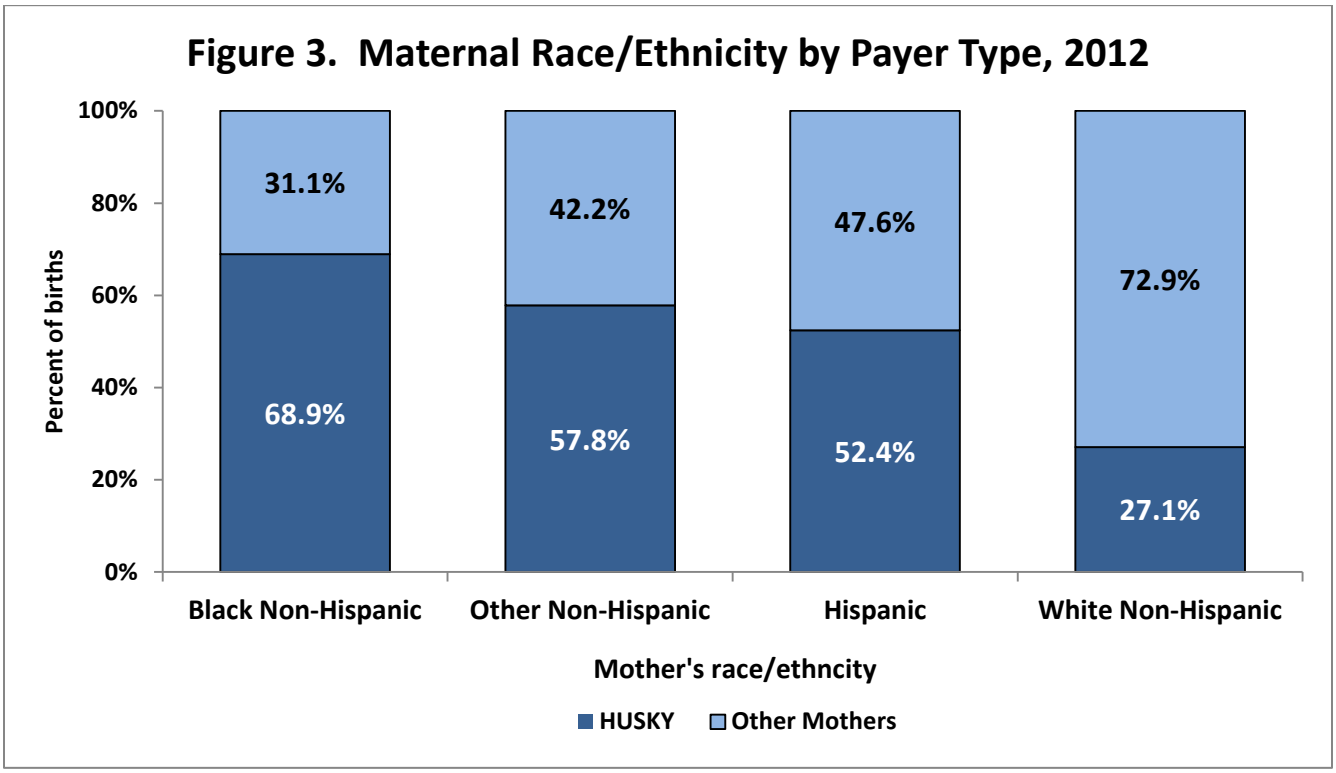
Race/ethnicity: The racial and ethnic distribution of births varied considerably by source of insurance coverage. In 2012, HUSKY and Medicaid covered 69 percent of all births to Black, non-Hispanic mothers and 52 percent of births to Hispanic mothers, compared with just 27 percent of births to White mothers (Figure 3).



Note: In 2012, there were 917 births (2.5% of all births to Connecticut residents) that occurred out-of-state and for which we could not determine the payer type through the data linkage.
Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records obtained from the Connecticut Department of Social Services.



Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records obtained from the Connecticut Department of Social Services.



Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records obtained from the Connecticut Department of Social Services.

Maternal Birth Place: In 2012, 20 percent of mothers with HUSKY Program coverage were foreign-born, compared with 29 percent of other mothers who gave birth that year.[6] Foreign-born women may be naturalized citizens or legal permanent residents or undocumented immigrant mothers who are not eligible for HUSKY Program coverage during pregnancy. Undocumented women may be eligible for emergency Medicaid to cover hospital charges for labor and delivery.

Maternal residence: As in previous years, HUSKY covered most births in Connecticut's three largest cities, including 77 percent of all births to Hartford residents, 63 percent of all births to Bridgeport residents, and 61 percent of all births to New Haven residents (Tables 2 and 3). Additionally, more than half of all births to residents in the following towns with 100 or more births were covered by the HUSKY Program: Ansonia (61.2%), East Hartford (58.0%), Griswold (51.4%), Killingly (59.4%), Meriden (51.3%), New Britain (71.7%), New London (69.8%), Norwich (66.1%), Plainfield (56.3%), Putnam (61.9%), Torrington (55.8%), Waterbury (71.2%), West Haven (50.2%), and Windsor (62.0%).

Marital Status: Mothers in HUSKY who gave birth in 2012 were far more likely to be unmarried (70.3%) than other mothers (17.2%).

Maternal Education: Mothers with HUSKY coverage who gave birth in 2012 were less educated than other mothers. Only 40 percent of babies were born to HUSKY mothers with more than a high school education, compared with 81 percent of births to other mothers. Some of this difference is likely due to the relatively high number of births to teen mothers in the HUSKY group, some of whom may not have completed their schooling.

Maternal Health and Pregnancy Characteristics

Maternal health and pregnancy characteristics are shown in Table 4.

Parity: In 2012, births to mothers with HUSKY coverage were more likely to be third births or greater (28.7%), compared with other mothers (19.4%).

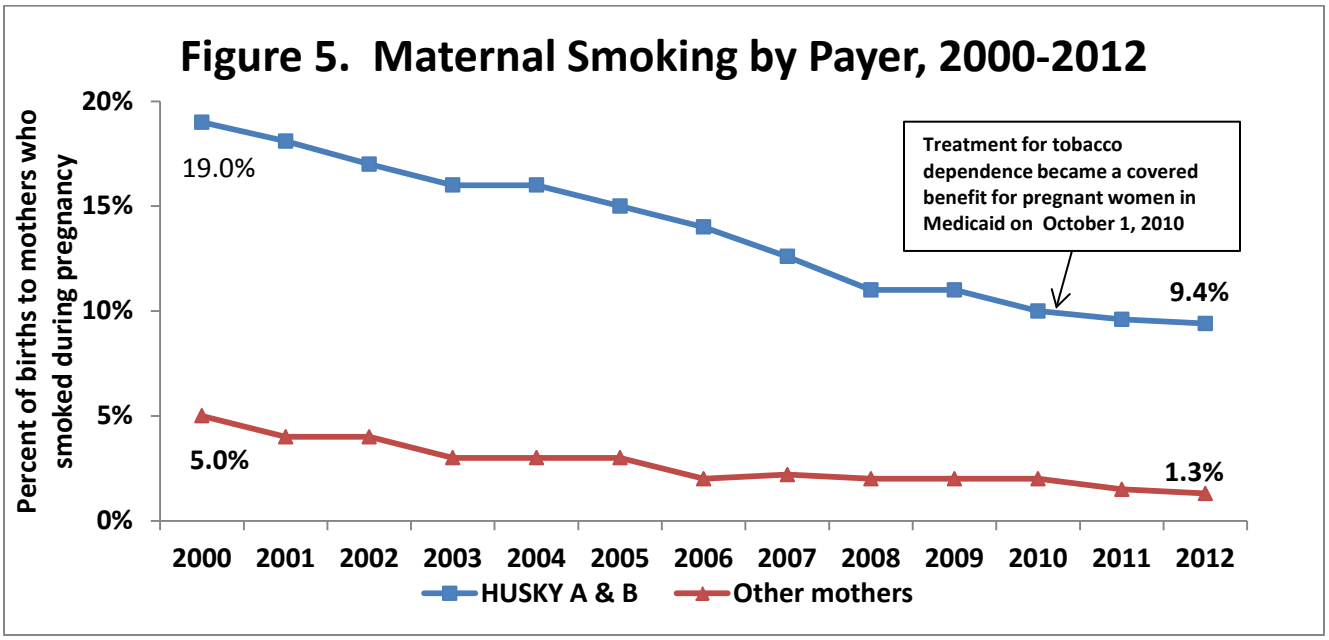
Plurality: In 2012, about 96 percent of all Connecticut births were singletons. As in previous years, the percentage of multiple births was lower among mothers with HUSKY Program or other Medicaid coverage (3.1%), compared with births to other mothers (4.8%).

Maternal weight gain: In 2012, mothers with HUSKY and other Medicaid coverage were more likely than other mothers to have lost weight or gained fewer than 16 pounds during pregnancy (16.9% of

[6] We were unable to determine whether emergency Medicaid-covered births to undocumented immigrant mothers were included in the 230 non-A and non-B records obtained from DSS. In past years, the numbers of births to foreign-born mothers were considerably higher. In 2011, for example, there were 3,770 births in Medicaid to foreign-born mothers, of which 72% were in HUSKY A or B. In 2012, there were 2,806 births to foreign-born mothers, of which 99% were in HUSKY A or B. Just 19% of births in 2011 were to foreign born mothers with valid social security numbers, compared with 100% of births to foreign-born mothers with Medicaid coverage in 2012. Undocumented immigrant mothers are not eligible for HUSKY A or B during pregnancy or afterwards; they are eligible only for emergency Medicaid to cover hospital charges for labor and delivery.

HUSKY births, compared with 10.3% of births to other mothers). They were less likely to have gained weight in the range recommended for healthy pregnancies (65.5%) than other mothers (74.8%).

Smoking during pregnancy: Over nine percent of births in 2012 were to women with HUSKY Program coverage who reported that they smoked during pregnancy. This rate is *more than seven times higher* than the rate for other mothers (1.3%). The rate of smoking during pregnancy among HUSKY Program mothers has dropped dramatically since 2000 when almost 20 percent of births were to mothers in HUSKY A who smoked (Figure 5). Treatment for tobacco dependence has been a covered benefit in the HUSKY program since October 1, 2010, when mandated by the Affordable Care Act; however, trend data do not yet show any notable effect on smoking rates.



Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records obtained from the Connecticut Department of Social Services.

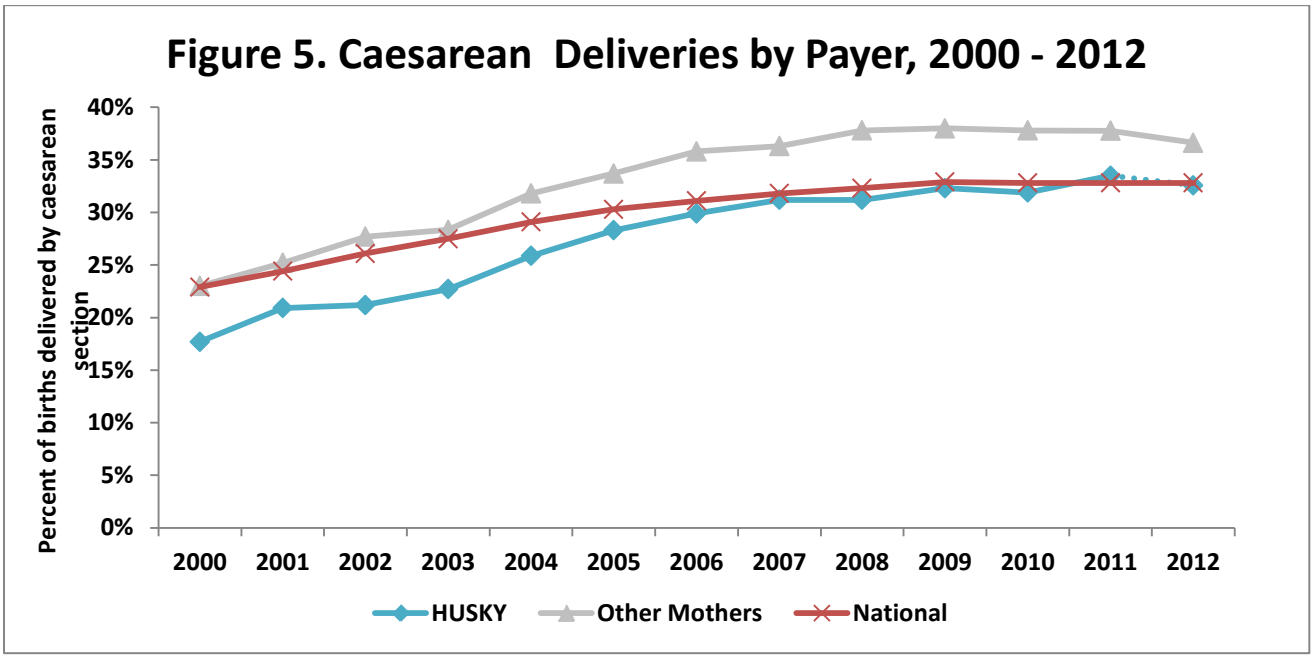
Medical and pregnancy risk factors: The leading risk factors for mothers reported on birth certificates in 2012 are shown by coverage type in Table 5. Over half of HUSKY births (57.5%) were not complicated by medical or pregnancy risk factors. As in previous years, the most prevalent medical and pregnancy risk factors uniformly reported by clinicians for births to mothers with HUSKY Program or Medicaid coverage were anemia, gestational diabetes, and pregnancy-associated hypertension. The rate for anemia was much higher than the rate for births to other mothers. Despite younger maternal age on average, the rate for gestational diabetes among births to mothers with HUSKY or other Medicaid coverage was similar to the rate for other mothers who were on average older. Other conditions entered by clinicians into the free-text field included positive Group B beta strep, advanced maternal age, anxiety, asthma, depression and hypothyroidism.

Complications: Complications of labor and delivery, as uniformly reported on birth certificates for 2012, are shown in Table 6. For 70 percent of births, no complications were reported. Nearly 20 percent of births with any complications were complicated by meconium-stained fluid. Other

complications reported by providers on the birth certificate check list included malpresentation, fetal distress, and premature rupture of the membranes.[7] Other complications reported non-standard format included failure to progress and other indications of dysfunctional labor, macrosomia, shoulder dystocia, nuchal cord, and preterm labor.

Obstetrical Procedures: Obstetrical procedures performed during the prenatal and intrapartum periods and uniformly reported by clinicians are shown in Table 7. Nearly all mothers had electronic fetal monitoring. Two of every three mothers had an ultrasound (indication and timing for the sonogram is not specified on birth certificates). Other procedures reported by clinicians in non-standard format included artificial rupture of the membranes, epidural anesthesia and non-stress test.

Method of Delivery: After years of steady increase, the rate of cesarean deliveries has leveled out (Figure 5). Over time, the rates for Connecticut mothers with HUSKY Program or other Medicaid coverage have been consistently lower than the rate for other mothers. In 2012, the cesarean delivery rate was 33 percent for births to mothers in the HUSKY Program, and 37 percent for all other mothers (Table 7). Caesarean births to mothers with HUSKY Program or other Medicaid coverage were slightly more likely to be repeat surgical deliveries, perhaps because the mothers were more likely multiparous than other mothers.



Note: Caesarean delivery rate for births to mothers with fee-for-service Medicaid, as reported for 2007 to 2011 but not shown, were slightly lower than rates for births to mothers with HUSKY A and B.
Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records obtained from the Connecticut Department of Social Services.

[7] **Meconium-stained fluid:** Amniotic fluid mixed with fetal meconium (stool), indicating that there may be/may have been fetal distress. If the baby inhales the meconium-stained fluid at birth, respiratory problems may occur. **Premature rupture of the membranes:** Leakage of amniotic fluid prior to the onset of labor. **Breech or other malpresentation:** Fetal position in utero is not head down (coming first); may result in dysfunctional labor or risk of injury at birth. **Fetal distress:** Non-reassuring fetal status, often evident with electronic fetal monitoring and often associated with inadequate oxygen levels.

Attendant at birth: Most births (89.1%) were attended by physicians (doctors of medicine and doctors of osteopathy). Certified nurse-midwives attended 10.7 percent of births, including 12.5 percent of births to mothers with HUSKY and other Medicaid coverage and 9.6 percent of births to other mothers.

Abnormal conditions of the newborn: Most newborns (95.7%) were born without abnormal conditions reported on the birth certificate (Table 8). Among those with any abnormal conditions, births to mothers with public insurance were about equally likely as births to other mothers to have needed assisted ventilation for any length of time after birth. Babies born to mothers with HUSKY Program or other Medicaid coverage were far more likely to be subject to the effects of maternal chemical dependency. Other conditions noted by clinicians were neonatal jaundice, meconium-stained amniotic fluid and respiratory distress.

Prenatal Care

Rates for prenatal care initiation and prenatal care adequacy by type of coverage are shown in Table 9.

Early and adequate prenatal care: In 2012, births to mothers who had HUSKY Program or other Medicaid coverage were less likely to have occurred after pregnancies with early prenatal care that began in the first trimester of pregnancy (81.4% of HUSKY mothers, compared with 91.3% of other mothers) (Table 9). Mothers with HUSKY Program and other Medicaid coverage were less likely than other mothers to have had adequate or intensive prenatal care (73.3% as compared to 78.4%).

Birth Outcomes

Birth outcomes in 2012 are described in terms of plurality, gestational age and birthweight in Table 10. About 96 percent of all Connecticut births were singletons. As in previous years, the percentage of multiple births was lower among mothers with HUSKY Program and other Medicaid coverage (3.1%), compared with births to other mothers (4.8%).

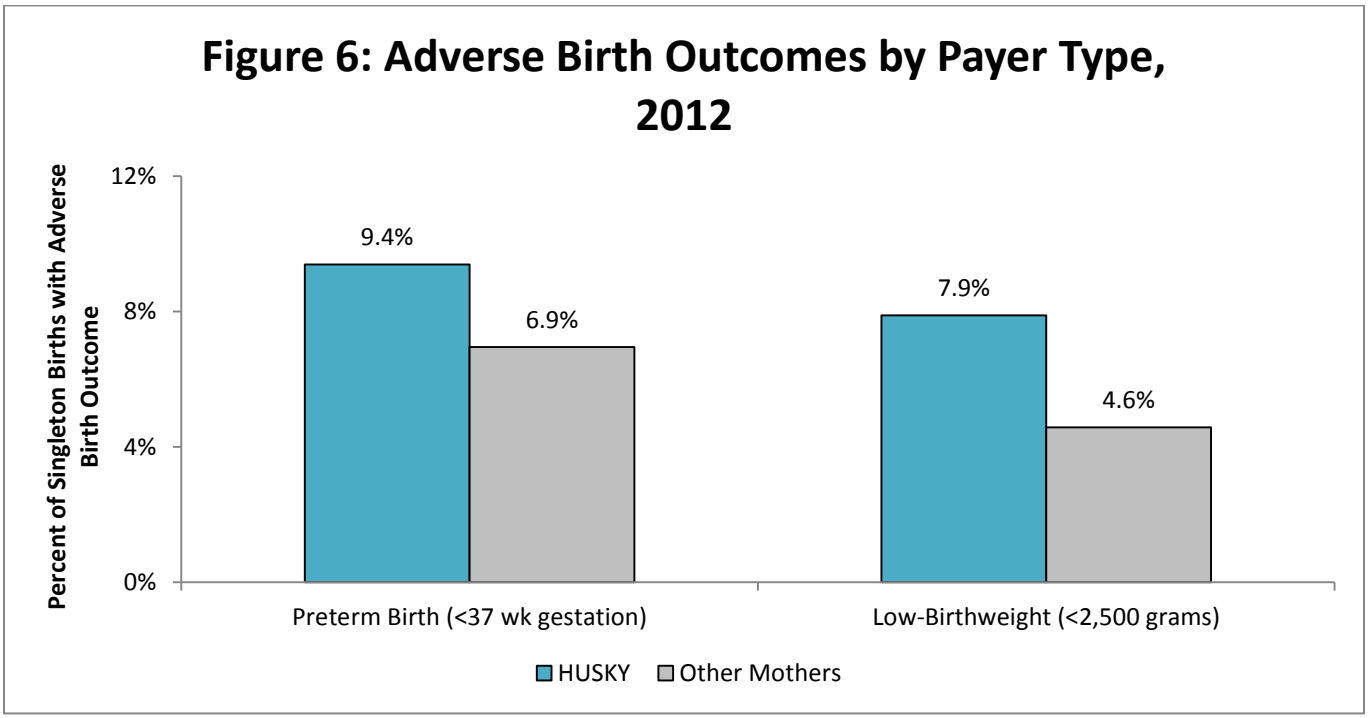
The risk of preterm birth and low birthweight is increased for multiple births, so singleton births only are used for comparison of preterm birth and low birthweight indicators.

Low birthweight: Overall, 5.7 percent of singleton babies born to Connecticut mothers in 2012 were low birthweight (weighing less than 2,500 grams). The low birthweight rate was higher for singletons born to mothers with HUSKY Program and other Medicaid coverage (7.9%), compared with babies born to other mothers (4.6%).

Preterm birth: In 2012, 7.6 percent of singleton babies were born preterm (prior to 37 completed weeks gestation). The percentage of preterm singleton births to mothers with HUSKY Program and other Medicaid coverage (9.4%) was higher than the rate for other mothers (6.9%).

Smoking and Birth Outcomes: Smoking during pregnancy has declined dramatically over the last decade nationwide and among mothers in the HUSKY program, but rates of smoking are still more than

six times higher for births to HUSKY and Medicaid mothers, compared to births to other mothers. Smoking in pregnancy is an important risk factor for preterm delivery and low birthweight. In 2012 among singleton babies born to smokers with HUSKY Program and other Medicaid coverage, 12 percent were born preterm, compared with about 9 percent of babies born to non-smokers (Table 11). Over 12 percent of babies born to HUSKY Program mothers who smoked were low birthweight, compared to 13 percent born to non-smokers.



Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records from the Connecticut Department of Social Services.

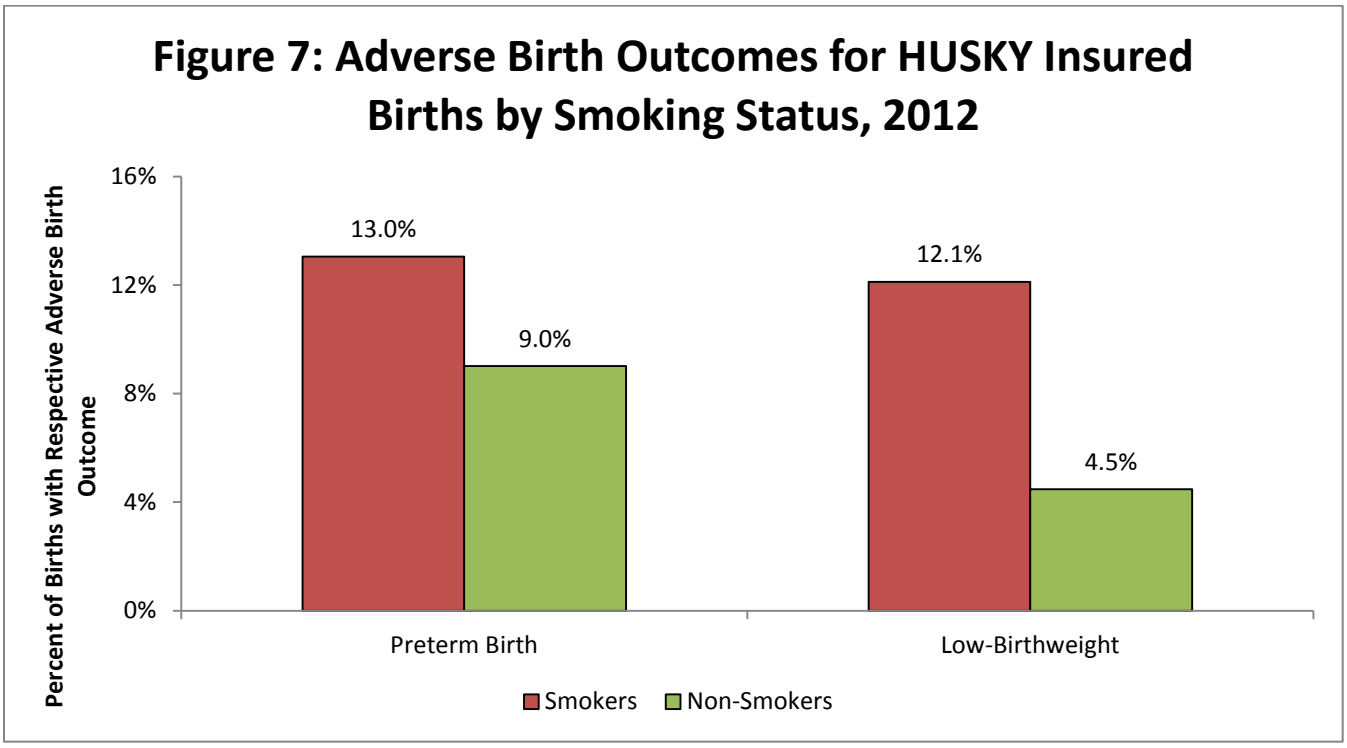
NATIONAL DATA AND TRENDS

National data are useful for comparison to identify areas of concern that should be closely monitored in the HUSKY Program. Trends observed in state and national birth data are reported annually by the National Center for Health Statistics:[8]

- **Number of births:** The number of births in 2012 (3,952,841), just slightly fewer than in 2011 following declines from the all-time record high in the number of births registered in the United States in 2007 (4,316,233). The general fertility rate (63.0 births per 1,000 US women 15-44) reached an historic low.

  Nationwide, most births (91.8%) were attended by physicians (doctors of medicine and doctors of osteopathy). Certified nurse-midwives attended 7.6 percent of births, a six percent increase over 2005.

[8] Martin JA, Hamilton BE, Osterman MJK, Curtin SC, Mathews TJ. Births: Final data for 2012 (DHHS Pub. No. 2014-1120). Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_09.pdf.



Source: 2012 birth data, obtained from the Connecticut Department of Public Health, and linked by Connecticut Voices for Children with HUSKY Program/Medicaid enrollment records from the Connecticut Department of Social Services.

- **Teen births**: Nationally, the teen birth rate has fallen to an historic low (29.4 per 1,000 women ages 15-19). This trend was evident among younger and older teens and among nearly all racial/ethnic groups of teens.

- **Low birthweight:** Low birthweight infants, especially those with very low birthweight, are at increased risk of morbidity and death in the early days, weeks, and months of life. Nationally, the low birthweight rate in 2012 was 7.99 percent, down 3 percent from the historical high (8.26% in 2006).

- **Preterm birth:** Compared with full-term infants, babies born preterm (<37 weeks gestation) are far more likely to die in the first year of life and more likely to suffer significant neurological and developmental problems. Nationally, the preterm birth rate declined to 11.55 percent of births in 2012, down 10 percent from the historical high (12.80% in 2006).

- **Caesarean delivery:** In 2012, the national caesarean delivery rate was 32.8 percent, unchanged from 2010 and 2011, but still down slightly from the highest rate ever reported in the US (32.9% in 2009). This rate represents an increase of over 60 percent since 1996 (from 20.7%) and was observed in all age, racial, and ethnic groups.

IMPACT OF NATIONAL HEALTH REFORM IN CONNECTICUT

Since 2014, the Affordable Care Act (ACA) has mandated that all Americans have health insurance and requires that health insurers cover "essential health benefits," including maternity and newborn coverage. Since this report examines births through 2012, it is too soon to determine whether the ACA health insurance expansion had any impact on birth outcomes, publicly-funded or otherwise. The ACA requires Medicaid coverage of smoking cessation for pregnant women, effective October 1, 2010, though there is no readily discernible effect evident in smoking trend data.

IMPROVING MATERNAL HEALTH AND BIRTH OUTCOMES

Medicaid covers an increasing percentage of all births to Connecticut mothers, especially in Connecticut's most economically-challenged cities and towns. However, health insurance coverage alone and care during the prenatal period cannot offset significant socioeconomic differences and health differences that contribute to greater risk for poor birth outcomes prior to and during pregnancy. These conditions, many of which pre-date the pregnancy, include smoking and substance abuse, infection, chronic disease, chronic stress or mental illness, and unintended pregnancy. Even in the face of significant state budget deficits, it is important to maintain the social supports and services that disadvantaged families need before, during, and after pregnancy.

- **Medicaid coverage for adults and parents and pregnant women:** One of the most effective ways of promoting optimal maternal health and birth outcomes is making sure that women who become pregnant are healthy. This approach to maternal health means making health care accessible and affordable before and after pregnancy, as well as during the prenatal period.

  In 2012, Connecticut covered parents of HUSKY–enrolled children in families up to 201% FPL, a good strategy for promoting pre-conception health and ensuring children's coverage. Effective in August 2015, the income eligibility level for parents in the HUSKY Program was reduced from 201% FPL ($48,843 for a family of four) to $155% FPL ($37,665 for a family of four). This change affected eligibility for almost 19,000 parents. Most of them remained on HUSKY coverage for one year of transitional medical assistance available to those with earnings that put them over the reduced income eligibility level. Almost 18,000 parents are due to lose coverage August 1, 2016. The Department of Social Services and its community partners are working with Access Health CT to make sure that these parents know about and opt for the coverage options available to them, without significant gaps in coverage. However, coverage through Access Health CT's qualified health plans may be unaffordable, with reduced benefits (no coverage for dental care, for example) compared to Medicaid.[9]

  In 2012, Connecticut also covered childless adults with income less than 56% FPL, thus affording them access to care for maintaining good health before pregnancy and access to family planning

[9] Langer SD, Lee MA, Gomes A. HUSKY Program Coverage for Parents: Most Families will feel the full impact of income eligibility cut later in 2016. New Haven, CT: Connecticut Voices for Children, April 2016. Available at: www.ctvoices.org.

for intended pregnancy. In January 2014, Connecticut adopted the Medicaid expansion option available under the Affordable Care Act. Income eligibility for low income adults increased to 138% FPL ($16,393 in 2015).

Pregnancy is not a qualifying event for obtaining health insurance from Access Health CT; newly pregnant women with income over 263% FPL (using ACA income counting rules) are eligible to obtain coverage for qualified health plans only during open enrollment periods. However, since there is no open enrollment period for Medicaid coverage, *pregnant women who qualify may enroll at any time during the year* through the call center at Access Health CT.

- **Medicaid family planning waiver**: Since April 2012, women and men with household income less than 250% FPL (currently 263% FPL) who are otherwise ineligible for Medicaid can obtain family planning services. At the present time, fewer than 1,000 individuals are enrolled for this limited Medicaid benefit, down from a high of nearly 2,400 in December 2013 just before far more comprehensive coverage through Access Health CT became available.

- **Treatment for tobacco dependence**: Beginning in January 2012, treatment of tobacco dependence (pharmacotherapeutics, counseling) became a covered benefit for all persons in Connecticut's Medicaid program. This coverage has been available to pregnant women since October 1, 2010. Coverage of treatment for tobacco dependence may go a long way towards reducing the risk associated with smoking *before* pregnancy, *during* pregnancy, and *after* pregnancy.

- **Improving oral health during pregnancy:** Since 2010, the Connecticut Dental Health Partnership, the Department's dental services administrator, has conducted a community-based pregnancy outreach initiative. In 2013, Connecticut was selected as one of three states for a federal grant from the HHS Human Resources and Services Administration for design and operation of a perinatal and infant oral health quality improvement project. This grant has allowed for statewide expansion of an earlier pilot project, targeted outreach to pregnant women, and intensified outreach to "trusted persons," i.e., maternity care providers and community-based organizations that care for women during pregnancy.

- **Monitoring maternal health and birth outcomes:** Ongoing linkage of birth data and HUSKY Program/Medicaid data produces information for program oversight, for surveillance, and for informing health policy development in areas such as ensuring coverage continuity, reducing teen pregnancy rates, providing prenatal care case management, and promoting smoking cessation during pregnancy. Since 1995, the Connecticut General Assembly has provided funding for independent performance monitoring in the HUSKY Program, including linkage of birth and HUSKY Program/Medicaid enrollment data for thirteen consecutive years. These data provide a valuable baseline for assessing the effects of recent program and policy changes, including expansion of Medicaid eligibility for pregnant women (2008), implementation of Medicaid coverage for smoking cessation (2010, 2012), conversion from managed medical care to fee-for-service with administrative support for beneficiaries and providers (2012), and expansion of Medicaid to low-income childless adults (2014). The Department of Public Health uses the linked dataset to support request for federal funding for the Title V program. Finally, data on maternal health and birth

outcomes are important for understanding the lingering effects of the recession in Connecticut on maternal health and birth outcomes.

RECOMMENDATIONS

- **Monitor enrollment changes associated with reducing Medicaid coverage for HUSKY parents.**
- **Ensure that teens and low income adults have access to family planning services when they wish to avoid pregnancy.**
- **Continue state funding for ongoing linkage of birth records with HUSKY A and B and other Medicaid records so that data are readily available for HUSKY Program oversight, public health surveillance, program evaluation, federally-funded initiatives, and health policy development.**

TECHNICAL NOTES

Methods

This study used a retrospective cohort design to describe maternal health, prenatal care, and birth outcomes for mothers with HUSKY Program (Medicaid and CHIP) coverage in Connecticut. Data presented in this report are based on analyses of records for live births provided by the Connecticut Department of Public Health and linked with enrollment records for the HUSKY Program for HUSKY A and B and additional records for births to mothers with other Medicaid coverage. Records were linked using the methodology described below. *This linked dataset provides the only reliable method of determining which mothers and newborns received care paid for by the State of Connecticut. It is the only source of information on maternal health and births to mothers with publicly-funded coverage by age, race/ethnicity, and other factors that can affect or contribute to birth outcomes.*

Data Linkage

With approval from the Connecticut Department of Public Health (DPH) Human Investigations Committee, we obtained the 2012 birth data for the purpose of linking the birth data to HUSKY Program enrollment and Medicaid eligibility data.[10] The linked dataset is used to describe maternal health and birth outcomes for births to mothers with publicly-funded care as part of a larger project to monitor HUSKY Program performance.[11] Under the provisions of the HUSKY performance monitoring

[10] Protocol #793 approved by the Connecticut Department of Public Health Human Investigations Committee, July 10, 2014. The birth data for performing the data linkage were obtained from the Department of Public Health seven months later.
[11] Personal Service Agreement (#64-HPF-HUO-03/10DSS1001ME A1)between Connecticut Department of Social Services and the Hartford Foundation for Public Giving (4/1/10-6/30/13), with a grant from the Hartford Foundation to Connecticut Voices for conduct of the performance monitoring.

contract, the approval from the Human Investigations Committee, and an interagency data-sharing agreement, we provide copies of the linked dataset with personal identifiers to both agencies for use in program administration.[12]

Birth data for 2012 were linked with HUSKY Program enrollment data and Medicaid eligibility data.[13] These data were linked using a deterministic algorithm that was developed and evaluated for 2000 births by the Children's Health Council, with consultation from Connecticut Department of Public Health (DPH)staff and national experts (see graphic description of linkage on the next page).[14] Enrollment data and birth data for 2000-2012 birth cohorts were linked in one of two ways:

1. Records with *an exact match on social security number* were linked; mother's enrollment in the month of the birth was verified.
2. Records that did not match on Social Security Number value were linked with a match on *mother's exact first and last name (married or maiden name) plus exact date of birth;* enrollment in the month of birth was verified.

Beginning with births in 2008, DPH no longer provides unencrypted social security numbers for data linkage. This change was due to departmental implementation of existing federal restrictions on access to social security numbers in vital records data. DPH developed and implemented a work-around that involves constructing a unique 10-digit character text string to replace the numeric social security number for the purpose of matching records. The encrypted identifier bears no resemblance to a numeric social security number. Using the same encryption protocol and data provided by Connecticut Voices (with the permission of the Department of Social Services), DPH created a corresponding unique value for social security numbers for all persons who were ever enrolled in HUSKY A and B in 2012 and for women whose births were covered by other Medicaid (HUSKY C, D, emergency Medicaid) in 2012. We then linked the 2012 records using the encrypted values that were unique to each mother in the datasets. In 2012, 95 percent of HUSKY A, B and D records were linked using encrypted social security numbers.

Also, beginning with births in 2008, DPH no longer provides birth records for births to Connecticut residents that occurred out-of-state. DPH determined that these records are the property of the state in which the birth occurred and cannot be released for research purposes. In 2012, as would be expected, 97.5 percent of births to Connecticut residents occurred in in-state hospitals. In previous years, we were able to determine that a higher proportion (99.7% on average) of births to HUSKY Program- and Medicaid-covered births occurred in-state.[15] Data were not available in 2012 for

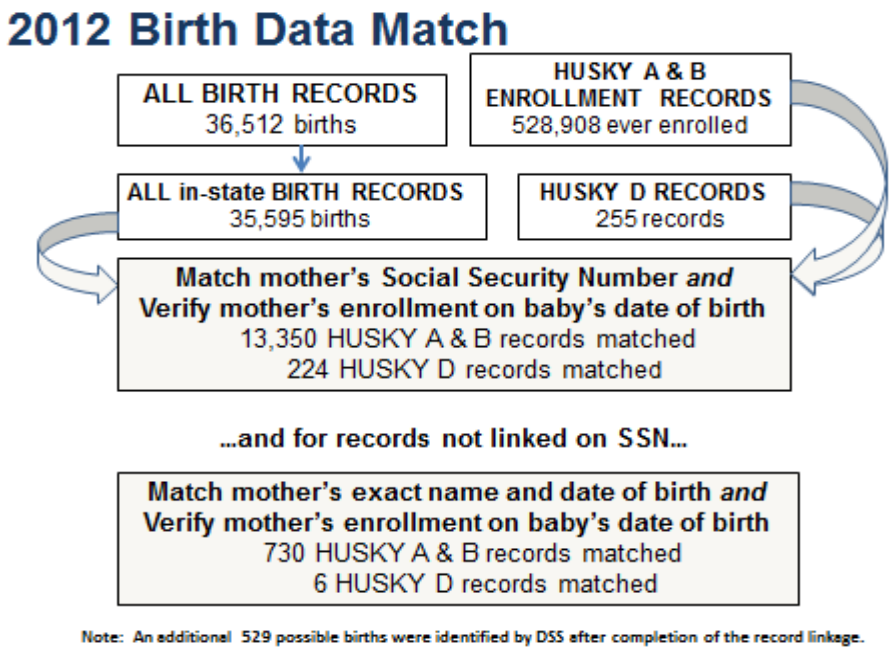
[12] State of Connecticut Memoranda of Agreement between the Department of Public Health and the Department of Social Services (DPH LOG #2011-0306-3) for May 1, 2011 to April 30, 2017.

[13] HUSKY A and B Program enrollment data and other Medicaid eligibility data for mothers who gave birth in 2012 were available for data linking under the performance monitoring contract referenced earlier. *After* the data linkage, an additional 529 "possible births were identified by DSS;" however, we were unable to determine the logic and methods used by DSS to identify these cases.

[14] For more information about the data linkage, contact Mary Alice Lee at Connecticut Voices for Children (malee@ctvoices.org).

[15] In 2007: 40,562 of 41,597 births to Connecticut residents occurred in-state (97.5%); 14,348 of 14,391 births to HUSKY and Medicaid mothers occurred in-state (99.7%). In 2008: 39,346 of 40,388 births to Connecticut residents occurred in-state

determining the percentage of HUSKY or Medicaid births that occurred out-of-state. In this report, we report a count of the total number of births to Connecticut residents, including those that occurred out-of-state; however, because, birth records for out-of-state births were unavailable for linkage, all subsequent analyses by payer source (e.g., maternal age, birth outcomes, etc.) are based on in-state births only (97.5% of all births to Connecticut residents).



Data Analysis

This report describes births in Connecticut to Connecticut resident mothers with HUSKY Program or other Medicaid coverage and compares maternal health and birth outcomes to all other Connecticut births that occurred in-state in 2012. Since the number of births to mothers with HUSKY B (11) and other Medicaid (HUSKY C or D or emergency Medicaid) (230) were small relative to the number in HUSKY A (14,069), we reported on births to mothers with HUSKY Program coverage and other Medicaid as a group, i.e., "births to mothers with HUSKY Program coverage." "Possible births," identified by the Department *after* the data linkage was complete, are reported as part of "births to other mothers" (see Limitations).

(97.4%); 15,066 of 15,106 births to HUSKY and Medicaid mothers occurred in-state (99.7%). In 2009: 37,894 of 38,857 births to Connecticut residents occurred in-state (97.5%); the in-state birth rate for HUSKY and Medicaid mothers could not be determined. The percentage of births that occurred out-of-state may in fact be higher because it is difficult for the Department of Public Health to match out-of-state records without social security numbers. If we indeed had records for out-of-state births, we would link these records with HUSKY enrollment records using exact spelling of the mother's first and last name plus exact date of birth. In this way, we match many of the FFS Medicaid births because many of the mothers do not have social security numbers, most likely due to immigration status. In previous years, births to mothers with HUSKY Program or Medicaid coverage were less likely than other births to have occurred out-of-state, compared with other births to Connecticut resident mothers.

The following factors, as reported on birth certificates or based on calculated variables obtained from the Department of Public Health, were used to describe births by coverage type:

- **Maternal socio-demographic characteristics:**
  - Age (<19, 20-29, 30-39, 40+; mean age)
  - Race/ethnicity (White non-Hispanic, Black non-Hispanic, Hispanic, Other non-Hispanic racial and ethnic groups)
  - Maternal residence (by town)
  - Maternal birthplace (domestic, foreign)
  - Marital status (married, unmarried)
  - Maternal education (less than 12 years, 12 years (high school), more than 12 years)
- **Pregnancy characteristics and risk factors:**
  - Parity (first pregnancy, second pregnancy, third or higher birth order)
  - Plurality (singleton, multiple birth)
  - Maternal weight gain (lost weight or gained, less than 16 pounds, 16 to 40 pounds, over 40 pounds)[16]
  - Smoking during pregnancy (yes or no; self-reported and recorded on birth certificate)
  - Medical risk factors[17]
- **Intrapartum characteristics:**
  - Complications of labor and delivery[11]
  - Obstetric procedures[11]
  - Method of delivery (percent cesarean delivery)
- **Prenatal care**
  - When prenatal care began (first trimester, second trimester, third trimester; no prenatal care)[18]
  - Prenatal care adequacy (intensive, adequate, intermediate, inadequate, according to the Adequacy of Prenatal Care Index) [12, 19]
- **Birth outcomes**
  - Gestational age (full term, preterm)[12]
  - Low birthweight (normal $\geq$2500 grams, low <2,500 grams; very low <1,500 grams)[12]

All data analyses were performed in ACCESS and Excel. Frequency counts and rates are reported by coverage type.

[16] In 2009, the Institute of Medicine published revised gestational weight gain guidelines based on pre-pregnancy body mass index (BMI). For underweight women (BMI<18.5), the recommended range for weight gain is 28-40 pounds; for normal weight women (BMI=18.5-24.9), 25-35 pounds; for overweight women (BMI=25-29.9), 15-25; and for obese women (BMI $\geq$30), 11-20 pounds. For the purpose of making comparisons with data from previous years, we have continued to use previous ranges recommended by the Institute of Medicine, without adjustments for prepregnancy weight weight gain to be

[17] Expressed as number of conditions or occurrences or procedures per 1,000 births, as uniformly reported by providers using the check list on the birth certificate. Information recorded in free text format on the birth certificate was not counted.

[18] Based on recodes calculated by Department of Public Health for reporting vital statistics.

[19] Kotelchuck M. An evaluation of the Kessner adequacy of prenatal care index and a proposed Adequacy of Prenatal Care Utilization Index. American Journal of Public Health, 1994; 84(9): 1414-1420.

Measures

The following measures were used to make comparisons between births to mothers in the HUSKY Program or Medicaid FFS and all other mothers who gave birth in 2011 and to examine trends over time:

- **Early prenatal care**: Percent of births to mothers who began prenatal care in the first trimester;
- **Adequate prenatal care**: Percent of births to mothers who had adequate or intensive prenatal care during pregnancy;
- **Smoking during pregnancy:** Percent of births to mothers who smoked during pregnancy;
- **Preterm birth:** Percent of births prior to 37 completed weeks of pregnancy;
- **Low birthweight**: Percent of births with birthweight less than 2500 grams (low birthweight) and percent less than 1500 grams (very low birthweight).

Limitations

After we completed the birth-HUSKY data linkage, Department of Social Services staff identified an additional 529 "possible births" that were not subjected to the matching algorithm. We were unable to determine the logic or methods used to identify these births. We searched HUSKY A and B enrollment records for the 529 "possible births" and found that 379 of the mothers had been enrolled in HUSKY A or B at some point but *were not enrolled in HUSKY A or B in the month of the birth*. We were unable to locate any enrollment records for the mothers of 150 babies. Without any enrollment data for HUSKY C or D (not available to us for performance monitoring) or any further information about the logic or methods used to identify these birth, we have to guess that these "possible births" were to mothers with HUSKY C or D or emergency Medicaid. Further analyses showed that the count of births to mothers with non-A and non-B Medicaid coverage was very low in 2012 (just 230 linked records) compared to previous years when the non-A and non-B births averaged about 2,500 per year. There have been no recent changes in HUSKY Program policies or procedures that would have affected eligibility and coverage. We were unable to re-run the data linkage, so data on the maternal health and birth outcomes for 529 "possible births" is included with 21,285 in-state births to other mothers (just 2.5% of "other births," that is births to mothers for which we did not find matching birth records among HUSKY enrollment records.

Conclusions drawn from comparisons with births to other mothers should be interpreted with caution for the following reasons:

- The count of births to those that had HUSKY Program or Medicaid coverage includes only those births that occurred in-state (97.5% of all births to Connecticut residents in 2011, based on historical data and likely 99 percent or more of births to Connecticut resident mothers with HUSKY Program or Medicaid coverage);

- The insurance status of mothers who did not have HUSKY Program or other Medicaid coverage at the time they gave birth could not be determined;
- The count of births to mothers with other Medicaid coverage, including emergency Medicaid, is based on records identified by the Department of Social Services, using methods that could not determined;
- Data derived from self-report on either the birth certificate or the enrollment/eligibility data were not independently validated;
- Medical risk factors, complications of labor and delivery, and obstetric procedures reported in free-text format by clinicians were not included in the estimates of condition- or procedure-or complication-specific rates by coverage type.[20]

ACKNOWLEDGEMENTS

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[20] For example, clinicians write in risk factors such as advanced maternal age or mental disorders, including depression. To the extent that there are changes in rates from year to year, those differences could be due to changes in the way clinicians do or do not use the check boxes on birth certificates.

APPENDED TABLES

Table 1. Connecticut Births by Payer Source: Summary data for 2008-2012					
	2008	2009	2010	2011	2012
All Births					
Births to Connecticut residents	**40,388**	**38,857**	**37,711**	**37,278**	**36,512**
In-state births to residents[a]	**39,346**	**37,894**	**36,784**	**36,308**	**35,595**
Prenatal Care:					
Early prenatal care[b]	87.6%	88.1%	87.5%	87.0%	86.6%
Adequate or better prenatal care[c]	79.5%	80.2%	79.9%	77.7%	76.4%
Birth Outcomes:					**Singletons only:**
Low birthweight[d]	8.0%	8.0%	7.9%	7.7%	5.7%
Preterm birth[e]	10.9%	10.2%	10.3%	10.1%	7.6%
Births to Mothers with HUSKY A (Medicaid for children and families), HUSKY B (CHIP) or Other Medicaid (HUSKY C, D, or emergency Medicaid)					
Number of in-state births	**15,066**	**14,693**	**14,477**	**15,050**	**14,310**
Percent of in-state births	**38.3%**	**38.7%**	**39.3%**	**41.5%**	**40.2%**
Births to mothers in HUSKY A	10,298	11,995	12,213	12,794	14,069
Births to mothers in HUSKY B	22	29	8	11	11
Births to mothers with other Medicaid[f]	4,746	2,669	2,256	2,245	230
Prenatal Care:					
Early prenatal care	78.6%	80.3%	80.4%	80.0%	81.4%
Adequate or better prenatal care	72.8%	75.0%	74.5%	73.3%	73.3%
Birth Outcomes:					**Singletons only:**
Low birthweight	9.2%	9.0%	8.6%	8.5%	7.9%
Preterm birth	11.8%	10.8%	11.1%	10.8%	9.4%
Births to Other Mothers					
Number of in-state births	**24,280**	**23,201**	**22,307**	**21,258**	**21,285**
Percent of in-state births	**61.7%**	**61.2%**	**60.6%**	**58.5%**	**59.8%**
Prenatal Care:					
Early prenatal care	93.2%	93.1%	92.0%	91.1%	91.3%
Adequate or better prenatal care	83.6%	83.5%	83.4%	80.9%	78.4%
Birth Outcomes:					**Singletons only:**
Low birthweight	7.2%	7.3%	7.5%	7.1%	4.6%
Preterm birth	10.3%	9.8%	9.8%	9.5%	6.9%

Note: Summary data for births by payer source, 2000-2007, are shown in an earlier report: Lee MA, Feder K, Learned A. Births to mothers with HUSKY Program (Medicaid and CHIP) coverage: 2011. June 2015. Available at: www.ctvoices.org.

[a] Beginning in 2008, the Department of Public Health approved release of data for in-state births only. The summary data shown in this table are based on in-state births unless otherwise specified.

[b] Prenatal care began prior to 13 weeks gestation. Excludes births for which timing of prenatal care was unknown.

[c] Prenatal care began in first or second trimester, with at least 80% of recommended number of visits. Excludes births for which prenatal care adequacy could not be determined.

[d] Birthweight less than 2500 grams.

[e] Birth prior to 37 completed weeks gestation.

[f] Other Medicaid coverage includes HUSKY C, D or emergency Medicaid. In the absence of information from the Department of Social Services, we could not determine what type of program or coverage these mothers had during pregnancy or at the time of the birth.

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 2. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012

		Births by Payer			
	All CT Births	*HUSKY A & B and other Medicaid births*		*All Other Births*	
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
		Number	**Percent**	**Number**	**Percent**
Maternal age					
19 and under	1,893	1,644	11.5%	249	1.2%
20 - 29	15,309	8,545	59.7%	6,764	31.8%
30 - 39	16,873	3,813	26.6%	13,060	61.4%
40 and over	1,520	308	2.2%	1,212	5.7%
Mean age (years)	29.4	26.3		31.6	
Maternal race/ethnicity					
White Non-Hispanic	20,154	5,463	38.2%	14,691	69.0%
Black Non-Hispanic	4,551	3,137	29.1%	1,414	6.6%
Hispanic	10,807	5,662	39.6%	5,145	24.2%
Other Non-Hispanic	83	48	0.3%	35	0.2%
Maternal birthplace [a]					
US-Born	26,527	11,434	80.3%	15,093	71.1%
Foreign-Born	8,963	2,818	19.7%	6,145	28.9%
Unknown	105	58		47	
Maternal residence					
Bridgeport	2,108	1,321	62.7%	787	37.3%
Hartford	1,962	1,508	76.9%	454	23.1%
New Haven	1,904	1,156	60.7%	748	39.3%
Other towns	29,621	10,325	34.9%	19,296	65.1%
Marital Status					
Married	21,883	4,252	29.7%	17,631	82.8%
Unmarried	13,706	10,054	70.3%	3,653	17.2%
Unknown	6	4			
Maternal education					
Less than 12 years	4,106	2,803	19.7%	1,303	6.1%
High school	8,398	5,721	40.2%	2,677	12.6%
More than 12 years	22,968	5,715	40.1%	17,253	81.3%
Unknown	123	71		52	

[a] Mothers were considered US-born if the mother's birthplace reported on the birth certificate was one of the 50 states, the District of Columbia, Pue4rto Rico, Guam or other US Territory, or US military installation. Foreign-born mothers may be naturalize citizens, legal residents, or undocumented residents of the US. Citizenship and immigration status is not recorded on the birth certificates or HUSKY enrollment records. Undocumented residents of Connecticut are not eligible for HUSKY A or B but may be eligible, depending on income, for emergency Medicaid when they present to the hospital in labor. The Department of Social Services was not able to tell us who had emergency Medicaid coverage at the time of the birth.

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

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Table 3. Connecticut Births To Mothers with HUSKY Program or Medicaid Coverage, 2012: Maternal residence

	All CT Births	*HUSKY A & B and Other Medicaid*		*All Other Births*	
	Total	***Total***	***% all births***	***Total***	***% all births***
CONNECTICUT	35,595	14,310	40.2%	21,285	59.8%
BRIDGEPORT	2,108	1,321	62.7%	787	37.3%
HARTFORD	1,962	1,508	76.9%	454	23.1%
NEW HAVEN	1,904	1,156	60.7%	748	39.3%
ALL OTHER TOWNS	29,621	10,325	34.9%	19,296	65.1%
ANDOVER	16	5	31.3%	11	68.8%
ANSONIA	219	134	61.2%	85	38.8%
ASHFORD	44	19	43.2%	25	56.8%
AVON	122	8	6.6%	114	93.4%
BARKHAMSTED	24	7	29.2%	17	70.8%
BEACON FALLS	43	15	34.9%	28	65.1%
BERLIN	145	31	21.4%	114	78.6%
BETHANY	34	5	14.7%	29	85.3%
BETHEL	145	27	18.6%	118	81.4%
BETHLEHEM	16	7	43.8%	9	56.3%
BLOOMFIELD	179	77	43.0%	102	57.0%
BOLTON	44	10	22.7%	34	77.3%
BOZRAH	19	8	42.1%	11	57.9%
BRANFORD	235	64	27.2%	171	72.8%
BRIDGEPORT	2,108	1,321	62.7%	787	37.3%
BRISTOL	653	287	44.0%	366	56.0%
BROOKFIELD	110	21	19.1%	89	80.9%
BROOKLYN	53	30	56.6%	23	43.4%
BURLINGTON	87	7	8.0%	80	92.0%
CANTERBURY	44	17	38.6%	27	61.4%
CANTON	77	12	15.6%	65	84.4%
CHAPLIN	11	6	54.5%	5	45.5%
CHESHIRE	164	21	12.8%	143	87.2%
CHESTER	25	9	36.0%	16	64.0%
CLINTON	99	24	24.2%	75	75.8%
COLCHESTER	142	31	21.8%	111	78.2%
COLUMBIA	39	9	23.1%	30	76.9%
COVENTRY	109	24	22.0%	85	78.0%
CROMWELL	155	33	21.3%	122	78.7%
DANBURY	1,052	336	31.9%	716	68.1%
DARIEN	176	4	2.3%	172	97.7%
DEEP RIVER	34	8	23.5%	26	76.5%
DERBY	127	63	49.6%	64	50.4%
DURHAM	47	5	10.6%	42	89.4%
EAST GRANBY	42	9	21.4%	33	78.6%
EAST HADDAM	65	14	21.5%	51	78.5%
EAST HAMPTON	107	21	19.6%	86	80.4%
EAST HARTFORD	686	398	58.0%	288	42.0%
EAST HAVEN	240	83	34.6%	157	65.4%

Table 3. Connecticut Births To Mothers with HUSKY Program or Medicaid Coverage, 2012: Maternal residence

	All CT Births	*HUSKY A & B and Other Medicaid*		*All Other Births*	
	Total	***Total***	***% all births***	***Total***	***% all births***
EAST LYME	118	29	24.6%	89	75.4%
EAST WINDSOR	127	48	37.8%	79	62.2%
ELLINGTON	136	25	18.4%	111	81.6%
ENFIELD	316	138	43.7%	178	56.3%
FAIRFIELD	462	46	10.0%	416	90.0%
FARMINGTON	202	27	13.4%	175	86.6%
FRANKLIN	13	7	53.8%	6	46.2%
GLASTONBURY	228	33	14.5%	195	85.5%
GOSHEN	19	7	36.8%	12	63.2%
GRANBY	75	11	14.7%	64	85.3%
GREENWICH	616	80	13.0%	536	87.0%
GRISWOLD	109	56	51.4%	53	48.6%
GROTON	600	183	30.5%	417	69.5%
GUILFORD	128	12	9.4%	116	90.6%
HADDAM	60	14	23.3%	46	76.7%
HAMDEN	608	201	33.1%	407	66.9%
HARTFORD	1,962	1508	76.9%	454	23.1%
HEBRON	62	9	14.5%	53	85.5%
KILLINGLY	160	95	59.4%	65	40.6%
LEBANON	62	17	27.4%	45	72.6%
LEDYARD	113	30	26.5%	83	73.5%
LISBON	26	14	53.8%	12	46.2%
LITCHFIELD	43	10	23.3%	33	76.7%
MADISON	84	13	15.5%	71	84.5%
MANCHESTER	745	273	36.6%	472	63.4%
MANSFIELD	77	21	27.3%	56	72.7%
MARLBOROUGH	47	14	29.8%	33	70.2%
MERIDEN	785	403	51.3%	382	48.7%
MIDDLEFIELD	19	5	26.3%	14	73.7%
MIDDLETOWN	550	225	40.9%	325	59.1%
MILFORD	439	87	19.8%	352	80.2%
MONROE	126	17	13.5%	109	86.5%
MONTVILLE	172	80	46.5%	92	53.5%
MORRIS	16	7	43.8%	9	56.3%
NAUGATUCK	358	167	46.6%	191	53.4%
NEW BRITAIN	1,041	746	71.7%	295	28.3%
NEW CANAAN	127	5	3.9%	122	96.1%
NEW FAIRFIELD	83	18	21.7%	65	78.3%
NEW HARTFORD	50	8	16.0%	42	84.0%
NEW HAVEN	1,904	1156	60.7%	748	39.3%
NEW LONDON	331	231	69.8%	100	30.2%
NEW MILFORD	231	76	32.9%	155	67.1%
NEWINGTON	250	54	21.6%	196	78.4%
NEWTOWN	165	19	11.5%	146	88.5%
NORTH BRANFORD	101	16	15.8%	85	84.2%
NORTH CANAAN	23	11	47.8%	12	52.2%

Table 3. Connecticut Births To Mothers with HUSKY Program or Medicaid Coverage, 2012: Maternal residence

	All CT Births	*HUSKY A & B and Other Medicaid*		*All Other Births*	
	Total	***Total***	***% all births***	***Total***	***% all births***
NORTH HAVEN	184	35	19.0%	149	81.0%
NORTH STONINGTON	33	6	18.2%	27	81.8%
NORWALK	1,152	284	24.7%	868	75.3%
NORWICH	513	339	66.1%	174	33.9%
OLD LYME	51	14	27.5%	37	72.5%
OLD SAYBROOK	59	19	32.2%	40	67.8%
ORANGE	93	13	14.0%	80	86.0%
OXFORD	87	12	13.8%	75	86.2%
PLAINFIELD	158	89	56.3%	69	43.7%
PLAINVILLE	164	52	31.7%	112	68.3%
PLYMOUTH	99	38	38.4%	61	61.6%
POMFRET	23	12	52.2%	11	47.8%
PORTLAND	100	24	24.0%	76	76.0%
PRESTON	36	15	41.7%	21	58.3%
PROSPECT	78	12	15.4%	66	84.6%
PUTNAM	118	73	61.9%	45	38.1%
REDDING	42	6	14.3%	36	85.7%
RIDGEFIELD	137	7	5.1%	130	94.9%
ROCKY HILL	180	32	17.8%	148	82.2%
SALEM	38	10	26.3%	28	73.7%
SCOTLAND	14	8	57.1%	6	42.9%
SEYMOUR	144	40	27.8%	104	72.2%
SHELTON	303	69	22.8%	234	77.2%
SIMSBURY	159	25	15.7%	134	84.3%
SOMERS	46	12	26.1%	34	73.9%
SOUTH WINDSOR	216	46	21.3%	170	78.7%
SOUTHBURY	98	20	20.4%	78	79.6%
SOUTHINGTON	319	80	25.1%	239	74.9%
SPRAGUE	34	22	64.7%	12	35.3%
STAFFORD	85	42	49.4%	43	50.6%
STAMFORD	1,759	414	23.5%	1345	76.5%
STERLING	24	15	62.5%	9	37.5%
STONINGTON	53	18	34.0%	35	66.0%
STRATFORD	511	186	36.4%	325	63.6%
SUFFIELD	53	11	20.8%	42	79.2%
THOMASTON	54	13	24.1%	41	75.9%
THOMPSON	49	25	51.0%	24	49.0%
TOLLAND	114	15	13.2%	99	86.8%
TORRINGTON	371	207	55.8%	164	44.2%
TRUMBULL	266	27	10.2%	239	89.8%
VERNON	348	159	45.7%	189	54.3%
WALLINGFORD	352	89	25.3%	263	74.7%
WATERBURY	1,521	1083	71.2%	438	28.8%
WATERFORD	137	45	32.8%	92	67.2%
WATERTOWN	163	44	27.0%	119	73.0%
WEST HARTFORD	584	115	19.7%	469	80.3%

Table 3. Connecticut Births To Mothers with HUSKY Program or Medicaid Coverage, 2012: Maternal residence

	All CT Births	*HUSKY A & B and Other Medicaid*		*All Other Births*	
	Total	***Total***	***% all births***	***Total***	***% all births***
WEST HAVEN	663	333	50.2%	330	49.8%
WESTBROOK	40	14	35.0%	26	65.0%
WESTPORT	175	9	5.1%	166	94.9%
WETHERSFIELD	267	59	22.1%	208	77.9%
WILLINGTON	48	10	20.8%	38	79.2%
WINDHAM	103	5	4.9%	98	95.1%
WINDSOR	300	186	62.0%	114	38.0%
WINDSOR LOCKS	256	82	32.0%	174	68.0%
WINSTED	108	35	32.4%	73	67.6%
WOLCOTT	92	45	48.9%	47	51.1%
WOODBRIDGE	112	39	34.8%	73	65.2%
WOODBURY	58	5	8.6%	53	91.4%
WOODSTOCK	66	17	25.8%	49	74.2%

Note: In the following towns, the number of births in 2012 was less than 5 for the town or payer source, so counts are not shown: Bridgewater, Canaan, Colebrook, Cornwall, Eastford, Easton, Essex, Hampton, Hartland, Harwinton, Kent, Killingworth, Lyme, Middlebury, Norfolk, Roxbury, Salisbury, Sharon, Sherman, Union, Voluntown, Warren, Washington, and Weston.
Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 4. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Pregnancy characteristics

		Births by Payer			
		HUSKY A & B and Other Medicaid		All Other births	
	All Connecticut Births	Total	%	Total	%
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
Parity					
First pregnancy	**15,382**	5,930	41.4%	9,452	44.4%
Second pregnancy	**11,969**	4,268	29.8%	7,701	36.2%
Third or higher pregnancy	**8,244**	4,112	28.7%	4,133	19.4%
Plurality					
Singleton	**34,122**	13,862	96.9%	20,260	95.2%
Multiple	**1,473**	448	3.1%	1,025	4.8%
Maternal weight gain					
Lost weight	**195**	119	0.8%	76	0.4%
Gained less than 16 lbs.	**4,382**	2,284	16.1%	2,098	9.9%
Gained 16 to 40 lbs.	**25,081**	9,268	65.5%	15,813	74.8%
Gained over 40 lbs.	**5,648**	2,484	17.5%	3,164	15.0%
Unknown	**289**	155		134	
Smoked during pregnancy					
Yes	**1,616**	1346	9.4%	270	1.3%
No	**33,957**	12951	90.6%	21006	98.7%
Unknown	**22**	13		9	

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 5. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Leading risk factors

		Births by Payer			
	All Connecticut Births	HUSKY A & B and Other Medicaid		All Other births	
		Total	%	Total	%
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
No medical or obstetrical risk factors[a]	**13,913**	8,235	57.5%	13,447	63.3%
Among those with risk factors:					
Anemia	**1,344**	780	9.5%	564	4.2%
Gestational diabetes	**2,023**	751	9.1%	1,272	9.5%
Pregnancy-associated hypertension	**1,099**	460	5.8%	639	4.8%
Genital herpes	**663**	336	4.1%	327	2.4%
Chronic hypertension	**578**	251	3.0%	327	2.4%
Other unspecified conditions[b]	**9,319**	4,074	49.5%	5,245	39.1%

[a] Diagnoses and conditions were indicated by providers who used the standardized birth certificate checklist for reporting risk factors.
[b] Leading conditions entered in free-text field, with and without co-morbid conditions, included: positive Group B beta strep, advanced maternal age, anxiety, asthma, depression, and hypothyroidism. These diagnoses and conditions were reported in non-uniform fashion (for example, +GBS, (+)GBS, GBS+, Group B strp, Group B pos).

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 6. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Leading complications of labor and delivery [a]

		Births by Payer			
	All Connecticut Births	HUSKY A & B and Other Medicaid		All Other births	
		Total	%	Total	%
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
No complications of labor and delivery[a]	**25,188**	10,079	70.4%	15,109	71.0%
Among those with complications:					
Meconium-stained fluid	**1,219**	842	19.9%	1,219	19.7%
Breech / malpresentation	**1,335**	439	10.4%	896	14.5%
Fetal distress	**835**	356	8.4%	479	7.8%
Premature rupture of membranes	**802**	306	7.2%	496	8.0%
Febrile	**349**	276	6.5%	349	5.7%
Other unspecified complications[b]	**4206**	1,859	43.9%	2,347	38.0%

[a] Conditions were indicated by providers who used the standardized birth certificate checklist for reporting complications.

[b] Leading complications entered in free-text field, with and without co-morbid conditions, included: failure to progress and other indications of dysfunctional labor, macrosomia, shoulder dystocia, nuchal cord, and preterm labor. These conditions were reported in non-uniform fashion (for example, FTP, failed induction, arrest of dilatation, failure to descend).

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 7. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Procedures and method of delivery

	Births by Payer				
	All Connecticut Births	HUSKY A & B and Other Medicaid		All Other births	
		Total	%	Total	%
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
No obstetrical procedures[a]	**1,826**	1,247	8.7%	1,826	8.6%
Among those with procedures:					
Electronic fetal monitoring	**30,658**	12,477	95.5%	18,181	93.4%
Ultrasound	**21,808**	12,934	66.5%	8,874	67.9%
Induction of labor	**6,853**	3,953	20.3%	2,900	22.2%
Stimulation of labor	**4,779**	2,723	14.0%	2,056	15.7%
Other unspecified procedures[b]	**1,261**	861	4.4%	400	3.1%
Method of delivery = caesarean	**12,457**	4,661	32.6%	7,796	36.6%
Primary	**7,236**	2,597	55.7%	4,639	59.5%
Repeat	**5,221**	2,064	44.3%	3,157	40.5%

[a] Procedures were indicated by providers who used the standardized birth certificate checklist for reporting procedures performed during labor and delivery.

[b] Leading procedures entered in free-text field, with and without other procedures, included: artificial rupture of the membranes, epidural anesthesia, non-stress test, and sterile vaginal exam. Other methods of delivery and procedures included: vacuum-assisted vaginal delivery and bilateral tubal ligation.

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 8. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Abnormal conditions of the newborn

	Births by Payer				
	All Connecticut Births	HUSKY A & B and Other Medicaid		All Other births	
		Total	%	Total	%
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
No abnormal conditions[a]	**34,086**	789	94.5%	720	96.6%
Among those with abnormal conditions:					
Assisted ventilation < 30 minutes	**162**	95	12.0%	67	9.3%
Assisted ventilation > 30 minutes	**158**	74	9.4%	84	11.7%
Chemical dependency	**50**	41	5.2%	9	1.3%
Birth injury	**39**	24	3.0%	15	2.1%
Other unspecified conditions[b]	**950**	471	59.7%	479	66.5%

[a] Abnormal conditions were indicated by providers who used the standardized birth certificate checklist for reporting condition of the newborn.

[b] Abnormal conditions entered in free-text field, with and without co-morbid conditions, included: neonatal jaundice, meconium-stained amniotic fluid, and respiratory distress.

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 9. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Prenatal care

		Births by Payer			
	All Connecticut Births	HUSKY A & B and Other Medicaid		All Other births	
		Total	%	Total	%
Total	**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
When prenatal care began					
First trimester	**30,823**	11,534	81.4%	19,289	91.3%
Second trimester	**3,937**	2,320	16.4%	1,617	7.7%
Third trimester	**434**	252	1.8%	182	0.9%
No prenatal care	**117**	68	0.5%	49	0.2%
Unknown	**284**	136			
Prenatal care adequacy					
Adequate or intensive	**26,833**	10,332	73.3%	16,501	78.4%
Less-than-adequate or no care	**8,293**	3,757	26.7%	4,536	21.6%
Unknown	**469**	221		248	

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 10. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Birth outcomes

		Births by Payer				
		All Connecticut Births	*HUSKY A & B and Other Medicaid*		*All Other births*	
			Total	*%*	*Total*	*%*
Total		**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
Plurality						
	Singleton	**34,122**	13,862	96.9%	20,260	95.2%
	Multiple	**1,473**	448	3.1%	1,025	4.8%
Among singleton births only:						
	Low birthweight[a]	**2,021**	1,093	7.9%	928	4.6%
	Preterm birth[b]	**2,710**	1302	9.4%	1,408	6.9%

[a] Birthweight less than 2500 grams.

[b] Gestational age less than 37 completed weeks

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.

Table 11. Connecticut Births to Mothers with HUSKY Program or Medicaid Coverage, 2012: Birth outcomes by maternal smoking status (singleton births only)

		Births by Payer				
		All Connecticut Births	*HUSKY A & B and Other Medicaid*		*All Other births*	
			Total	*%*	*Total*	*%*
Total		**35,595**	**14,310**	**40.2%**	**21,285**	**59.8%**
Total singleton births		**34,122**	**13,862**	**96.9%**	**20,260**	**95.2%**
Low birthweight births[a]						
	Smokers	**201**	32	12.1%	169	13.0%
	Non-smokers	**1,818**	895	4.5%	923	7.4%
	Unknown	**2**	1		1	
Preterm births[b]						
	Smokers	**204**	170	13.0%	34	12.9%
	Non-smokers	**2,504**	1,131	9.0%	229	1.1%
	Unknown	**2**	1		1	

[a] Birthweight less than 2500 grams.

[b] Gestational age less than 37 completed weeks

Source: Birth records for in-state births in 2012 were obtained with approval from the Connecticut Department of Public Health's Human Investigations Committee and HUSKY Program enrollment data were obtained from the Connecticut Department of Social Services. The records were linked by Connecticut Voices for Children for HUSKY Program performance monitoring.