

Clearance #5422
HPP: Pregnant Women, Infants, and Children Report
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OHIO DEPARTMENT OF JOB AND FAMILY SERVICES

To: ALL CLEARANCE REVIEWERS
From: Robyn Colby, Chief, Bureau of Health Plan Policy
Date: March 1, 2004
Subject: Pregnant Women, Infants, and Children Report

This report was prepared by the Ohio Department of Job and Family Services (ODJFS) to fulfill the requirements of Section 5111.09 of the Ohio Revised Code (ORC). This section of the ORC requires ODJFS to submit an annual report to the legislature regarding the effectiveness of the aid to dependent children (formerly ADC) program, established under Chapter 5107 of the Ohio Revised Code, and the medical assistance program (Medicaid), established under Chapter 5111, in meeting the health care needs of low-income pregnant women, infants, and children. The ORC also requires a comparison with the general female childbearing and infant population in Ohio.

Attached is the Pregnant Women, Infants, and Children Report for Calendar Year 2002 being filed for clearance review.

Should you have any questions regarding this clearance please do not hesitate to contact Crystal Burnfield at 466-6420. Thank you.

Pregnant Women, Infants, and Children

**Ohio Department of Job and Family Services
Office of Ohio Health Plans
Bureau of Health Plan Policy**

February 2005



**Bob R. Taft
Governor**

**Barbara Riley
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EXECUTIVE SUMMARY

This report was prepared by the Ohio Department of Job and Family Services (ODJFS) to fulfill the requirements of Section 5111.09 of the Ohio Revised Code (ORC). This section of the ORC requires ODJFS to submit an annual report to the legislature regarding the effectiveness of the aid to dependent children (formerly ADC) program, established under Chapter 5107 of the Ohio Revised Code, and the medical assistance program (Medicaid), established under Chapter 5111, in meeting the health care needs of low-income pregnant women, infants, and children. The ORC also requires a comparison with the general female childbearing and infant population in Ohio.

The Ohio Medicaid program offers two delivery systems: the Fee-For-Service (FFS) and Managed Health Care System via the Managed Care Plans (MCP). In this report they will be referred to as MCP and FFS. The FFS system is a traditionally indemnity health care delivery system in which payment is made to a health care provider after a service is delivered. Medicaid MCPs operate in some Ohio counties for the Healthy Start and Healthy Families population.

The sources of data used in this report include the Medicaid eligibility file, FFS claims files, and MCP encounter files as well as the Ohio Department of Health (ODH) Vital Statistics birth certificate files for Calendar Year 2002. The data from the Medicaid databases was linked to the ODH VS database to facilitate a comparison of the Medicaid and non-Medicaid population.

This report is divided into several main sections detailing the risk factors for low birth weight (defined as a birth weight of 2,500 grams or 5.5 lbs or less) outcomes, prenatal and post partum utilization, Medicaid infant mortality and other health measures.

Highlights of the results found in this report are highlighted below.

- In Ohio, Medicaid paid for around 30% of all Ohio births in Calendar Year 2002. Although this percentage has decreased over the past few years, it is comparable to data published by the National Center for Health Care Statistics which found that on a national level, one out of three deliveries was paid for by Medicaid during 1991-1995.¹
- The risk factors for delivering a low birth weight infant remained consistent with previous year's data. The most prevalent risk factors for low birth weight births were for infants with gestational age less than 37 weeks and infants with unmarried mothers.
- The rate of low birth weight births was lower in the Medicaid population than in the non-Medicaid population (7.5% vs. 10%). However, infants born with low birth weight continue to consume more than half of Medicaid expenditures (53%) in the first year of life while only accounting for about 10% of Medicaid births.

- The socio-demographic differences between the Medicaid and non-Medicaid population reported in earlier versions of this report still remain. For example, a larger percentage of Medicaid mothers were unmarried (68% vs. 17%), non-white (29% vs. 12%), and reported less than 12 months of education than non-Medicaid mothers (33% vs. 9%).
- Consistent with previous years, the average self-reported number of prenatal care visits for the Medicaid population was lower than the non-Medicaid population (10.9 vs. 12.1) and fewer Medicaid women reported seeking care in the first trimester as compared to the non-Medicaid population (78% vs. 91%).

SECTION I: BACKGROUND AND METHODOLOGY

Background

The Ohio Department of Job and Family Services is the single state agency in Ohio with responsibility for administering the health care needs of Medicaid eligible persons, including the health care needs of certain low-income childbearing women, infants, and children as presented in this report.

As of July 1997, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (P.L. 104-193) broke the link between entitlement to Medicaid and cash assistance for Aid to Families with Dependent Children (ADC), food stamps, and other public support programs. This federal legislation replaces the ADC program with state block grants for a program called Temporary Assistance for Needy Families (TANF). Eligibility for the TANF program does not automatically bestow Medicaid eligibility on clients. In October 1997, Ohio implemented its TANF program (also known as Ohio Works First or OWF).

Medicaid eligibility can be grouped into two general categories: Covered Families and Children (CFC) and coverage for people who are Aged, Blind, or Disabled (ABD). When a family is determined to be eligible for cash assistance in Ohio, members of the family also receive Medicaid coverage. Many other families, pregnant women, and children can receive Medicaid coverage even if they are not receiving cash assistance. Two key decisions are made regarding the eligibility of these consumers: family composition and income guidelines.

Healthy Families and Related (HF and Related): HF and Related is largely comprised of single-parent families, but also includes some two-parent families and some children with independent eligibility. This sub-group includes Healthy Families, Transitional Medicaid, and Other Related Groups.

Healthy Families. Previously known as Low Income Families (LIF), provides health care coverage to families (parents and children). The majority of families receiving Healthy Families coverage are working families. A smaller group receives Ohio Works First (OWF) cash assistance. On July 1, 2000, Healthy Families coverage was expanded to families earning up to 100% of the Federal Poverty Level (FPL).

Transitional Medicaid. Transitional Medicaid provides Medicaid coverage for families who have received Healthy Families coverage (with or without associated OWF cash assistance) in at least three months of the prior six month period, and who have lost coverage due to: an increase in hours of, or income from, employment; or loss of time-limited income disregards. Transitional Medicaid is offered as an incentive for parents to return to or continue work. Under this program Medicaid eligibility is guaranteed for six months, and can be

extended an additional six months if monthly income is less than or equal to 185% FPL.

Other Related Groups. Includes children who receive Foster Care Maintenance or Adoption Assistance under federal Title IV-E provisions. These children automatically receive Medicaid coverage. Also covered are state-subsidized adoptive children who have special medical needs and foster care children. Individuals aged 19 and 20 whose family income does not exceed the OWF income standard and who would qualify for an OWF payment, except they are over age 18 and do not meet the definition of a dependent child, are also covered.

Healthy Start (HST): The second sub-group of the CFC category, Healthy Start, consists of pregnant women and children who are not eligible for other Medicaid programs but meet the income guidelines for Healthy Families. It can help pregnant women at any age, and infants, children and teens up to age 18.

Pregnant women. Provides time-limited coverage to low-income pregnant women with family incomes at or below 150% of poverty. Coverage begins following confirmation of pregnancy and ends 2 months following birth.

Infants and Children. Healthy Start provides health care coverage for children from birth through age 18 in families with incomes up to 200% FPL. Children in families with incomes at 151-200% FPL are eligible only if they do not have creditable health coverage. Children in families with incomes at or below 150% PFL are eligible regardless of other health coverage. Newborns are deemed eligible for 12 months if the mother was eligible for Medicaid at the time of birth, regardless of subsequent changes in the mother's income.

Ohio's State Health Insurance Plan for Children (SCHIP): As part of the Medicaid expansion of the Healthy Start program, Medicaid eligibility was increased for children up to 150% of FPL on January 1, 1998. In July 2000, Ohio further expanded Healthy Start under SCHIP. This expansion raised the income limit for eligibility up to 200% FPL. For this second SCHIP expansion, there was no complementary Medicaid expansion for the under-insured children, so children in this income range (151-200% FPL) are only eligible if they are uninsured.

Aged, Blind, and Disabled (ABD): This category includes persons, including children, with a wide variety of disabilities, such as blindness or mental retardation, and includes certain physical disabilities. Furthermore, it includes persons who are disabled because they have a mental illness. Not all Medicaid-covered persons with disabilities become eligible through the ABD category. Some individuals with disabilities are not substantially impaired by their conditions and do not qualify through this category, but instead qualify because of limited income through OWF and Related or Healthy Start.

Methodology

This report discusses the health care services utilized by Pregnant Women, Infants, and Children enrolled in the Ohio Medicaid program as well as the non-Medicaid population where information is available. The analysis presented in this report is based on services received in Calendar Year 2002 and is collected from two primary sources:

- 1) Ohio Medicaid claims and eligibility files
- 2) Ohio Department of Health's (ODH) Vital Statistics (VS) birth certificate file

In evaluating services for pregnant women and infants, data from the Medicaid database was merged with data from the VS birth certificate as neither database includes all variables of interest. Data were retrieved from the birth certificate when:

- a) the self-reported variables are not available in the Medicaid eligibility and claims files (such as marital status, education, and number of children)
- b) the variables are believed to be more accurate when retrieved from the birth certificate, particularly when the variables are of a clinical nature (such as birth weight and gestational weeks)
- c) comparisons are made between the Medicaid and non-Medicaid populations and among the various groups of the Medicaid populations.

Data were retrieved from the Medicaid files when:

- a) the variables are not available in the Vital Statistics files, and
- b) the data are specific to the Medicaid program (i.e. eligibility and expenditures)

A two step process was developed to match the data based on combinations of variables shared in both files. These variables include the mother and infant's date of birth, first and last name, mother's maiden name, infant's gender, street address, zip code, hospital provider, etc. The first step in the process identified Medicaid births and deliveries from the Medicaid claims files and then matched Medicaid mothers to their infants. In the second step, these matched Medicaid mothers and infants were matched to records in the birth certificate file. All information presented in this report for Medicaid pregnant women and infants is limited to cases where a Medicaid mother and infant matched to a VS birth certificate record. The non-Medicaid population in this report refers to all VS birth certificate records that did not match to a Medicaid mother and infant.

SECTION II: CHILDBEARING WOMEN AND BIRTH OUTCOMES

Profile of Births in Ohio

There were 42,759 Medicaid mothers and their infants that matched to a birth certificate record in Calendar Year 2002 (CY 2002), accounting for 30% of all Ohio births. The percentage of Medicaid mothers and infants that matched to a birth certificate was almost 78% which is also consistent with prior year's data.

Population Group	Ohio Births	Percent of Total Ohio Births
Medicaid FFS	32,093	22.6%
ABD	1,159	0.8%
Healthy Start	14,249	10.0%
Healthy Families	16,685	11.7%
Medicaid MCP	10,666	7.5%
Healthy Families	7,428	5.2%
Healthy Start	3,238	2.3%
MEDICAID TOTAL	42,759	30.1%
NON MEDICAID TOTAL	99,261	69.9%
TOTAL POPULATION	142,020	100.0%
% Matched Births		77.5%

Table II.2 illustrates differences between the Medicaid and Non-Medicaid population in terms of risk factors that the literature suggests are associated with low birth weight. The Medicaid population had a higher percentage of births with these risk factors than the Non-Medicaid population.

	Non Medicaid Births	Medicaid Births
No prenatal care	0.4%	1.0%
Teen pregnancy	5.0%	21.4%
Unmarried	17.0%	68.3%
Non-white	11.6%	28.6%
Less than 12 years of education	8.7%	33.1%
Birth spacing less than 12 months	3.2%	3.9%
Delivery of 4th or more child	9.7%	13.6%
Tobacco consumers	10.4%	32.5%
Alcohol consumers	0.6%	0.9%
Maternal weight gain (<23 lbs)	23.3%	26.7%
Gestational weeks (<37 weeks)	11.3%	13.0%
Low Birth Weight Births	9.9%	7.5%

Low Birth Weight

Low birth weight and especially very low birth weight are major predictors of infant morbidity and mortality. Among very low birth weight infants, the risk of dying in the first year of life is nearly 100 times that of normal birth weight infants. In addition, low birth weight and very low birth weight infants who do survive are more likely to suffer long-term disabilities.ⁱ For these reasons, infant birth weight is an important variable when considering infant health. Nationally, the percent of low birth weight children has risen fairly steadily since the mid-1980's.ⁱⁱ

The following definitions are used to describe infant birth weight:

NBW	- normal birth weight (2,500 grams or 5.5 lbs or greater)
LBW	- low birth weight (less than 2,500 grams or 5.5 lbs)
VLBW	- very low birth weight (less than 1,500 grams or 3lbs 4 oz)
MLBW	- moderately low birth weight (1,500 - 2,499 grams or between 3 lbs 4 oz to 5 lbs 8 oz)

For the purposes of this report, LBW, VLBW and MLBW were combined under the category of LBW. Certain risk factors such as race, age, smoking and alcohol use contribute to low birth weight. While some factors can be addressed through medical treatment, many others require social intervention. Selected risk factors that are most highly associated with low birth weight are discussed in this report. These factors are shown in Figure II.1.

Factors Related to Low Birth Weight

- No prenatal care
- Age of mother (19 years old or younger)
- Marital status (being unmarried)
- Race (Non-white)
- Low education level (less than 12 years of education)
- Short birth spacing (less than 12 months)
- Delivery of fourth or more child
- Cigarette smoking during pregnancy
- Consumers of alcohol during pregnancy
- Low maternal weight gain (22 lbs or less)
- Preterm delivery (gestational weeks less than 37 weeks)

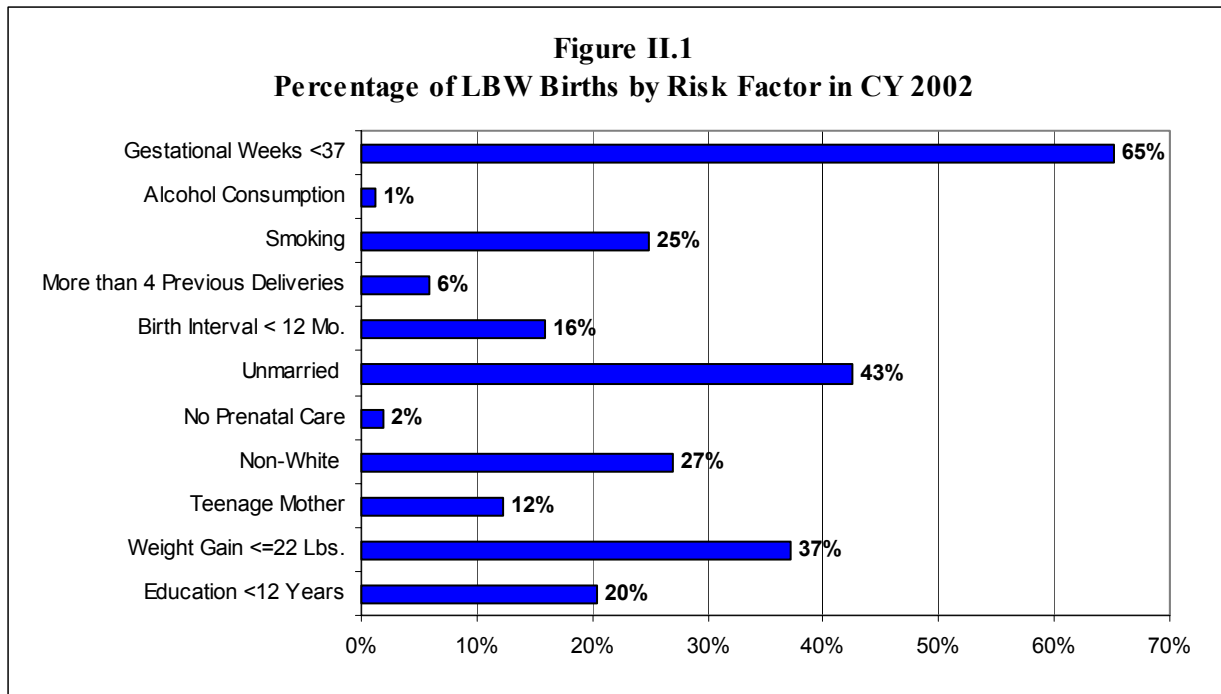


Figure I.1 illustrates the percentage of LBW births that occurred with each risk factor in CY 2002. These risk factors will be discussed in detail in the remainder of this section.

Analysis of Factors Associated with Low Birth Weight

Prenatal Care

Despite difficulties in defining what constitutes adequate prenatal care, many studies have established a link between the date of the first prenatal visit, the total number of prenatal visits, the length of pregnancy and low birth weight.ⁱⁱⁱ Prenatal care visits address modifiable behaviors such as smoking, alcohol abuse, poor nutrition and provide necessary medical care for pregnant women. For these reasons, it has been concluded that adequate prenatal care prevents low birth weight regardless of possible confounding variables such as socioeconomic status.^{iv} Data reported by the Centers for Disease Control and Prevention (CDC) show that nationally in 2002, the proportion of mothers beginning care in the first trimester was 83% with 3.6% of mothers receiving late or no prenatal care at all.^v

By using the matched Medicaid/VS file, comparison can be made between the Medicaid and non-Medicaid women in terms of prenatal care initiation. Prenatal care initiation was calculated utilizing the vital statistics reported numbers. For comparison purposes of Medicaid versus non-Medicaid this number was more useful.

	Began Care in 1st Trimester	Began Care in 3rd Trimester	No Prenatal Care
Population Group	Percent	Percent	Percent
Medicaid FFS	78.1%	3.3%	1.0%
ABD	75.0%	3.80%	1.73%
Healthy Start	76.2%	3.97%	1.31%
Healthy Families	80.5%	2.46%	0.53%
Medicaid MCP	79.1%	2.93%	0.98%
Healthy Families	77.1%	3.29%	1.25%
Healthy Start	83.6%	2.10%	0.34%
MEDICAID TOTAL	78.3%	3.20%	0.98%
NON MEDICAID TOTAL	91.1%	1.44%	0.45%
TOTAL POPULATION	84.0%	1.90%	0.58%

In order for prenatal care to prevent LBW and other morbidities, care must begin early in the pregnancy. Table II.3 illustrates that in Ohio during 2002, 91% of Non-Medicaid mothers received prenatal care in the first trimester of their pregnancy. This compares to Ohio Medicaid mothers, among whom 78% received prenatal care in the first trimester. Overall, the healthy start categories for both fee for service and managed care had the highest percentage of women receiving prenatal care in the first trimester. This may be due to the fact that under healthy start, pregnant women are eligible for services immediately after they become pregnant. Table II.3

also shows the number of mothers who did not begin prenatal care until their third trimester of pregnancy. The highest percentage of women who began prenatal care in the beginning of their third trimester was under the fee for service healthy families category.

Table II.3 indicates that very few mothers in Ohio did not receive any prenatal care during their pregnancy with the highest percentage in the ABD category for fee for service. Yet, as Table II.4 shows, among those who did not receive any prenatal care, the percentage of LBW was significantly higher (t-test, $p < .0001$) when compared to those who did receive care. Among all mothers in Ohio who did not receive any prenatal care, nearly one third gave birth to LBW babies. This figure was similar for Medicaid mothers. Thus, Table II.4 and II.6 demonstrate that while many mothers receive prenatal care, those that do not run the risk of giving birth to a LBW infant.

Table II.4		
LBW Births by Prenatal Care Status in 2002		
	No Prenatal Care	Prenatal Care
Population Group	Percent LBW	Percent LBW
Medicaid FFS	24.8%	9.5%
ABD	45.0%	13.2%
Healthy Start	23.3%	9.5%
Healthy Families	23.7%	9.3%
Medicaid MCP	26.9%	10.3%
Healthy Families	28.0%	10.7%
Healthy Start	18.2%	9.5%
MEDICAID TOTAL	32.2%	9.8%
NON MEDICAID TOTAL	25.6%	7.4%
TOTAL POPULATION	28.9%	8.9%

Age of Mother

A number of studies have noted that the incidence of low birth weight increases in the extremes of a women’s childbearing age.^{vi} For adolescent mothers, low birth weight may be associated with biological factors and/or socioeconomic status. For example, adolescent mothers are more likely to be single, have low income and inadequate prenatal care.^{vii} Fortunately, births to adolescent mothers in the nation have been declining since the early 1990’s. Nationally, births to women ages 15-19 years old has fallen 30% from 1991-2002.^{viii} In 2002, the average age of a first time mother was 25.1 years, an all-time high for the nation.^{ix}

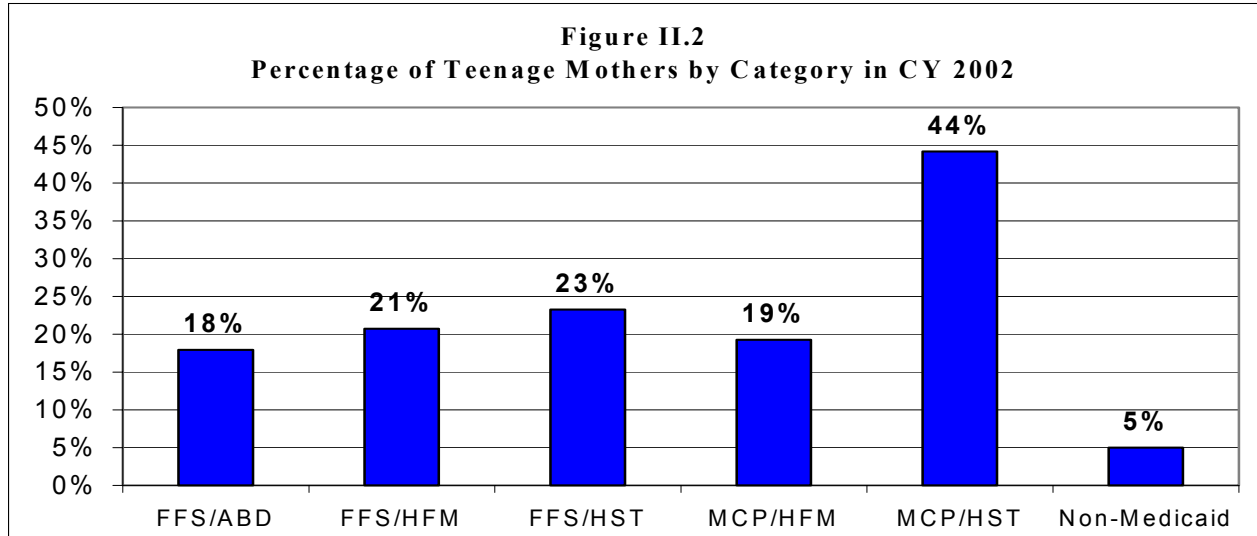


Figure II.2 illustrates the highest percentage of teenage mothers occurred in the managed care healthy start category. Yet, Table II.5 shows that overall; the percentage of teenage mothers in the Ohio Medicaid program who give birth to a LBW infant was very similar to the Non-Medicaid population. The rate of low birth births for teenage mothers was similar across Medicaid delivery systems.

Table II.5
LBW Births by Age of Mother CY 2002

Population Group	Age 19 or Younger	Over Age 19
	Percent LBW	Percent LBW
Medicaid FFS	9.9%	9.6%
ABD	10.1%	14.5%
Healthy Start	9.0%	9.9%
Healthy Families	10.8%	8.9%
Medicaid MCP	9.8%	10.6%
Healthy Families	10.6%	11.0%
Healthy Start	8.1%	9.9%
MEDICAID TOTAL	9.8%	10.0%
NON MEDICAID TOTAL	10.9%	7.3%
TOTAL POPULATION	10.2%	8.2%

Marital Status

Marital status is a risk factor for low birth weight as it is interrelated with other risk factors such as socioeconomic status, age, culture and race.^x Nationally, the birth rate for unmarried adolescents has been declining; however the birth rate for unmarried women ages 15-44 has remained steady around 4.4% since 1995.^{xi}

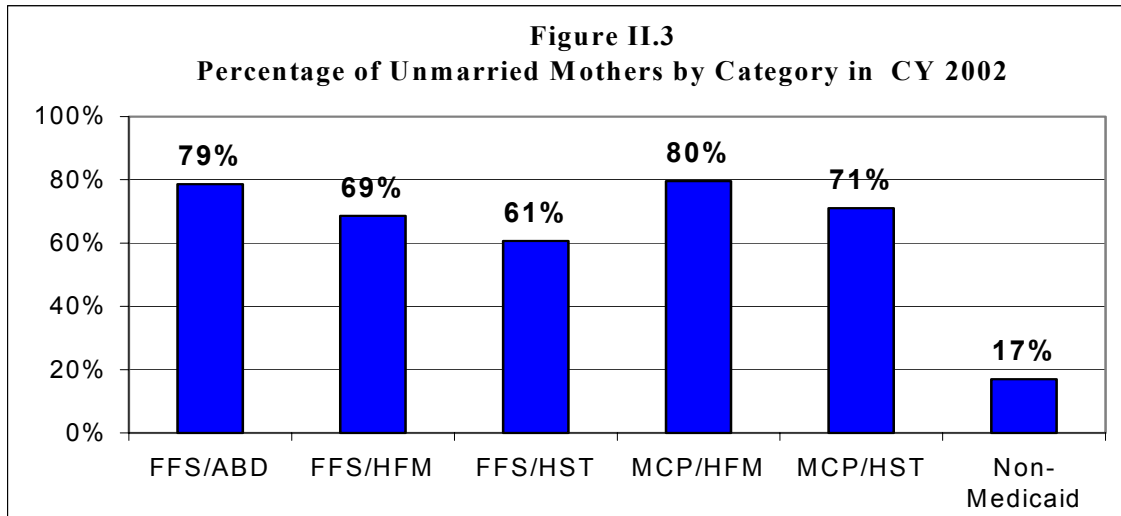


Figure II.3 demonstrates that the percentage of unmarried mothers across Medicaid programs to ranged from 60-80%. While Table II.6 shows that among these unmarried women in Medicaid, 11% gave birth to LBW babies compared to 8% of married women under Medicaid. The largest percentage of these LBW births occurred under the Fee for Service ABD category and managed care healthy families. Overall, the percentage of LBW babies born to unmarried mothers under Medicaid was similar to the state as a whole.

Table II.6		
LBW Births by Marital Status CY 2002		
	Unmarried	Married
Population Group	Percent LBW	Percent LBW
Medicaid FFS	10.5%	8.2%
ABD	13.4%	14.9%
Healthy Start	10.3%	8.4%
Healthy Families	10.4%	7.7%
Medicaid MCP	11.2%	7.9%
Healthy Families	11.7%	7.7%
Healthy Start	10.0%	8.3%
MEDICAID TOTAL	10.8%	8.1%
NON MEDICAID TOTAL	7.9%	7.4%
TOTAL POPULATION	9.9%	7.5%

Race

A high incidence of low birth weight has been well documented among African-American women when compared to Caucasian women. Studies have concluded that genetic and socioeconomic factors related to race have made it a risk factor for low birth weight infants. Nationally, the number of white low birth weight infants has increased in 2001-2002 from 6.8% to 6.9%.^{xii}

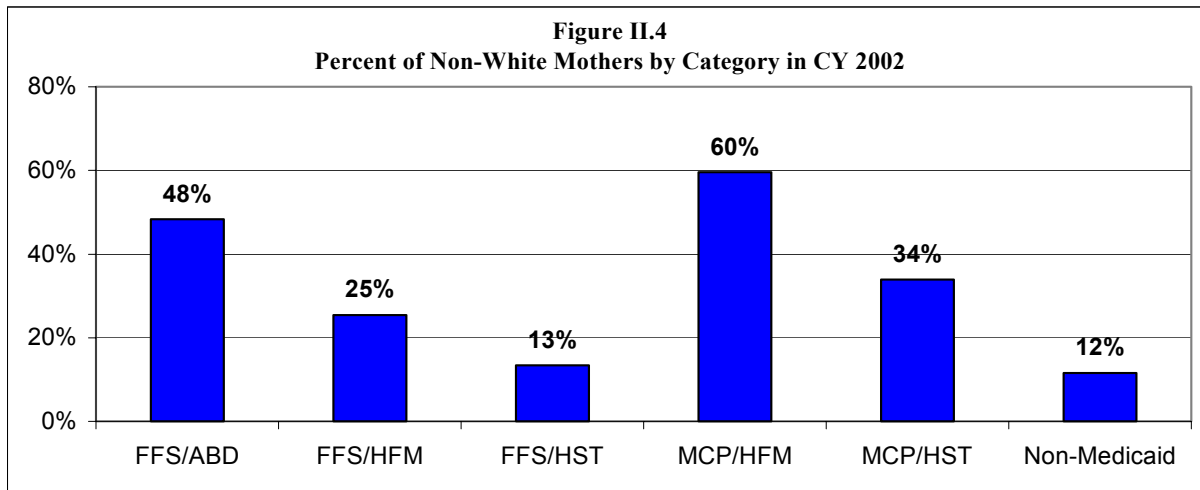


Figure II.4 shows the largest percentage of non-white mothers in the managed care healthy families category. Table II.7 shows a breakdown of LBW births by African-American, White and All Other racial categories. The highest percentages of LBW births were found among African-Americans especially in the fee for service categories of ABD and healthy start. Individuals in other races besides African-American and White (i.e.: Asian, Native American, Pacific Islander) in the fee for service ABD and healthy start categories also had higher percentages of LBW.

Table II.7
LBW Births by Race CY 2002

	African-American	White	All Other
Population Group	Percent LBW	Percent LBW	Percent LBW
Medicaid FFS			
ABD	14.4%	8.5%	10.0%
Healthy Start	15.8%	11.9%	12.5%
Healthy Families	14.0%	8.3%	8.6%
Medicaid MCP			
Healthy Families	15.0%	8.6%	10.8%
Healthy Start	13.5%	7.5%	3.4%
MEDICAID TOTAL	13.8%	8.2%	7.5%
NON MEDICAID TOTAL	14.0%	6.8%	8.8%
TOTAL POPULATION	13.9%	7.2%	8.5%

Education

Some studies have shown an increased risk of prematurity and low birth weight associated with decreasing educational level of the mother.^{xiii} While having fewer years of education itself may be related to low birth weight it is also associated with a lower socioeconomic level which may impact birth weight. Since 1970, the national proportion of mothers with 12 or more years of schooling has increased 14% while mothers with 16 or more years of schooling has nearly tripled. Yet despite these gains, national rates for educational attainment of mothers is highly variable by race and ethnicity.^{xiv}

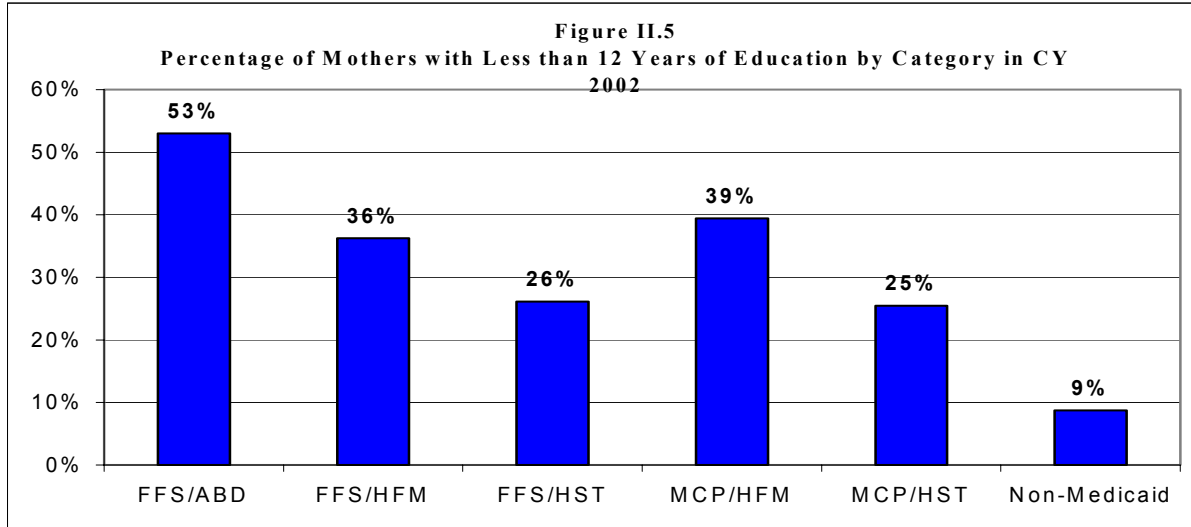


Figure II.5 shows a high percentage of mothers with less than 12 years of education in the fee for service ABD program. Table II.8 shows that among these mothers, 13% gave birth to LBW infants. The highest percentages for LBW births for both categories of education was under the fee for service category of ABD. Overall the percentage of LBW children born to mothers with less than 12 years of education was similar for the Medicaid and Non-Medicaid populations.

Table II.8		
LBW Births by Education CY 2002		
	Less than HS	More than HS
Population Group	Percent LBW	Percent LBW
Medicaid FFS	10.7%	9.2%
ABD	13.2%	14.3%
Healthy Start	10.2%	9.4%
Healthy Families	10.9%	8.8%
Medicaid MCP	10.5%	10.5%
Healthy Families	10.8%	11.0%
Healthy Start	9.2%	9.6%
MEDICAID TOTAL	10.6%	9.7%
NON MEDICAID TOTAL	10.3%	7.2%
TOTAL POPULATION	10.5%	7.9%

Birth Spacing

Although there is some debate as to which length of time between births is most detrimental, it is widely agreed upon that short time intervals between births is associated with low birth weight.^{xv} While this association has not been established medically, it is believed that short birth intervals are potential markers for women who are otherwise at high risk for adverse pregnancy outcomes.^{xvi} For the purposes of our analysis, women with a birth interval of 1 year or less are considered as having short birth spacing.

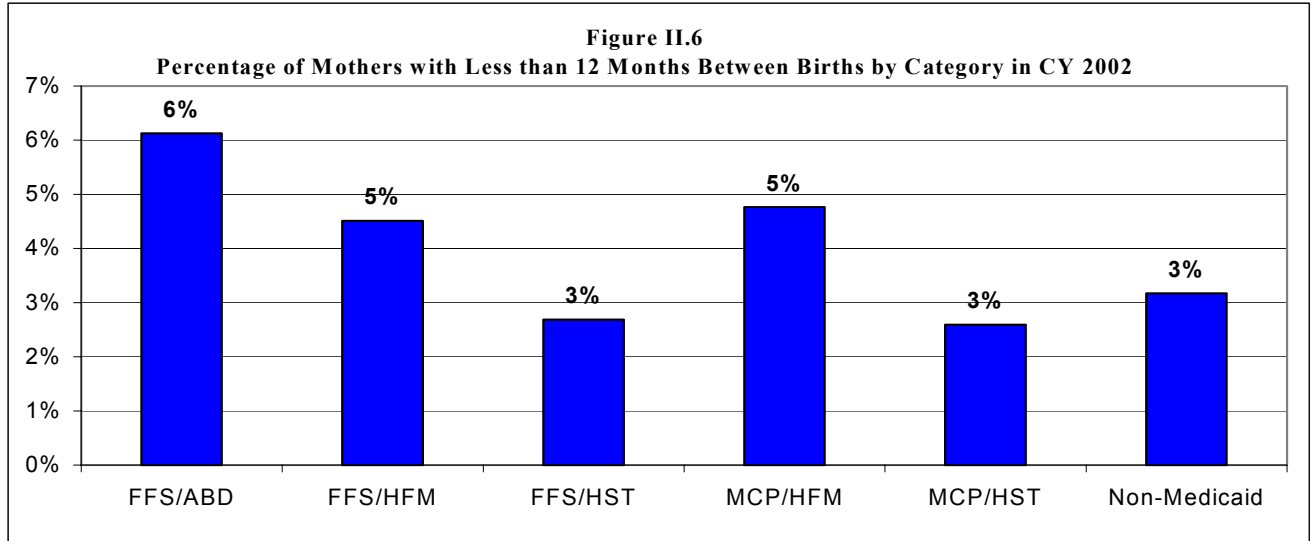


Figure II.6 shows relatively low percentages of mothers with less than 12 months between births. However, Table II.9 shows that among those women who do give birth within one year of having a child had a high risk of giving birth to a LBW infant. Within the Medicaid population, the highest percentages of LBW births occurred in the healthy start programs for both managed care and fee for service.

Table II.9		
LBW Births by Birth Spacing CY 2002		
	Less than 12 Mo.	More than 12 Mo.
Population Group	Percent LBW	Percent LBW
Medicaid FFS	30.6%	8.9%
ABD	25.4%	13.0%
Healthy Start	27.8%	8.8%
Healthy Families	37.1%	8.6%
Medicaid MCP	34.5%	9.4%
Healthy Families	33.3%	9.8%
Healthy Start	39.3%	8.7%
MEDICAID TOTAL	32.2%	9.1%
NON MEDICAID TOTAL	42.4%	6.4%
TOTAL POPULATION	38.4%	7.3%

Number of previous deliveries

The number of previous deliveries increases the risk for a low birth weight infant. Studies have documented that the risk of low birth weight increases with the fourth and subsequent children.^{xvii} Additionally, in some high risk populations previous miscarriage doubles the risk of low birth weight.^{xviii} Nationally in 2002, the number of fourth- and sixth- and higher order births remained unchanged from 2001 while the number of fifth-order births decreased slightly from 1.6% to 1.5%.

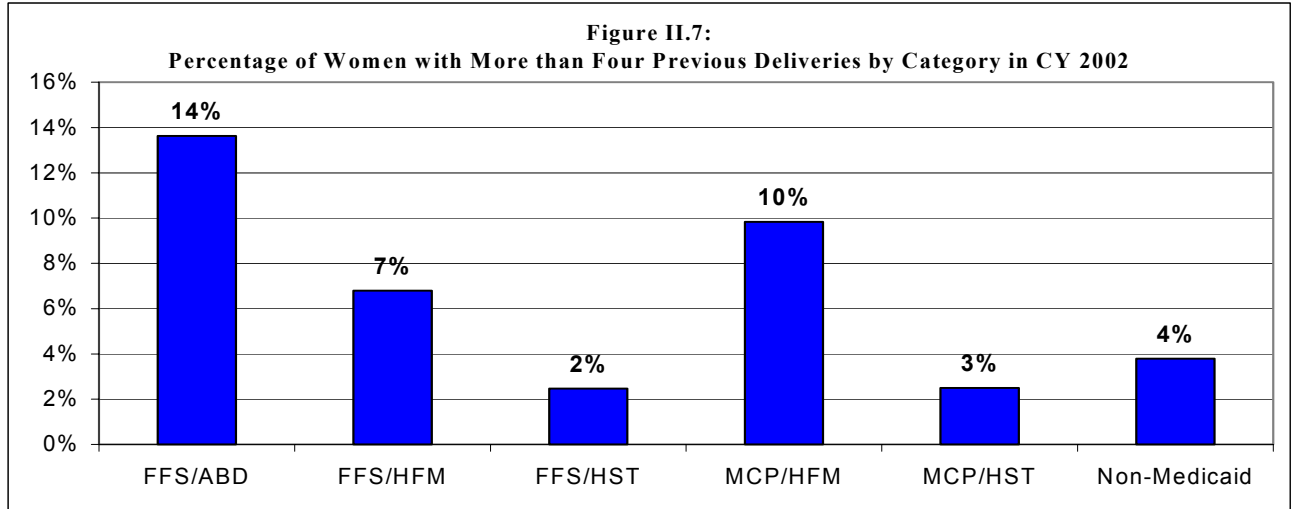


Figure II.7 shows a relatively larger percentage of women with four or more previous deliveries for fee for service ABD and managed care healthy start. Table II.10 shows that among the Medicaid population, the highest percentage of LBW births among women with four or more children occurred under the fee for service ABD program. Likewise, the percentage of LBW births for Medicaid mothers with four or more children was 13% compared to 11% among the non Medicaid population.

Table II.10
LBW Births by Number of Previous Deliveries CY 2002

	More than Four	Less than Four
Population Group	Percent LBW	Percent LBW
Medicaid FFS		
ABD	14.8%	9.4%
Healthy Start	13.7%	9.4%
Healthy Families	16.0%	9.2%
Medicaid MCP	11.7%	10.4%
Healthy Families	11.6%	10.8%
Healthy Start	12.3%	9.4%
MEDICAID TOTAL	13.3%	9.8%
NON MEDICAID TOTAL	9.2%	7.4%
TOTAL POPULATION	11.1%	8.2%

Cigarette Smoking

Perhaps due to widespread public health awareness efforts, national rates of smoking during pregnancy have decreased 42% since 1989.^{xix} Although there is still some disagreement as to how tobacco use leads to decreased fetal weight, it is known that smoking reduces the amount of blood and oxygen transported to the fetus. Studies estimate that women who smoke a pack of cigarettes a day lose an average of .5 kg in infant weight. The risk of low birth weight also exists for passive smokers.^{xx} Although smoking during pregnancy has decreased overall nationally, older teenagers (ages 18-19) tend to smoke the most often and the most heavily with 20% smoking half a pack or more per day.^{xxi}

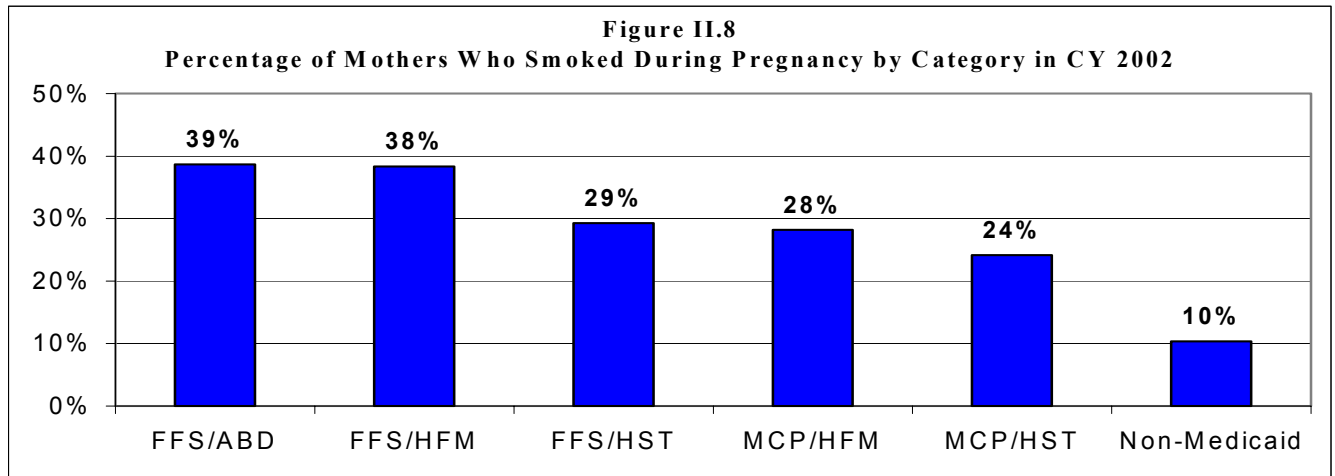


Figure II.8 shows that although smoking during pregnancy is believed to be heavily underreported, those who did admit to smoking in each Medicaid category ranged from 24-40% with the highest percentages in the fee for service ABD and Healthy Families categories. Table II.11 shows that these two categories also had the highest percentages of LBW births among mothers who smoke.

Table II.11
LBW Births by Smoking Status During Pregnancy CY 2002

Population Group	Smokers	Non-Smokers
	Percent LBW	Percent LBW
Medicaid FFS		
ABD	12.0%	8.5%
Healthy Start	17.0%	11.7%
Healthy Families	11.9%	8.3%
Medicaid MCP		
Healthy Families	11.4%	8.5%
Healthy Start	12.2%	9.8%
MEDICAID TOTAL	12.1%	9.1%
NON MEDICAID TOTAL	12.0%	7.0%
TOTAL POPULATION	12.0%	7.6%

Alcohol Consumption

While tobacco smoking and alcohol have been shown to have a detrimental synergistic effect on birth weight, alcohol itself has also shown to be a risk factor for low birth weight both before and during pregnancy.^{xxii} Ingestion of an average of one ounce of alcohol daily before pregnancy has been associated with an average decrease in birth weight of 91 grams; the same amount ingested in late pregnancy has been associated with a decrease of 160 grams.^{xxiii} Accurate statistics on the number of women who consume alcohol during pregnancy are difficult to calculate because it is often underreported on state birth certificates. Nationally in 2002, only .8% of women indicated consuming alcohol during pregnancy and this figure is assumed to be highly unrepresentative.^{xxiv}

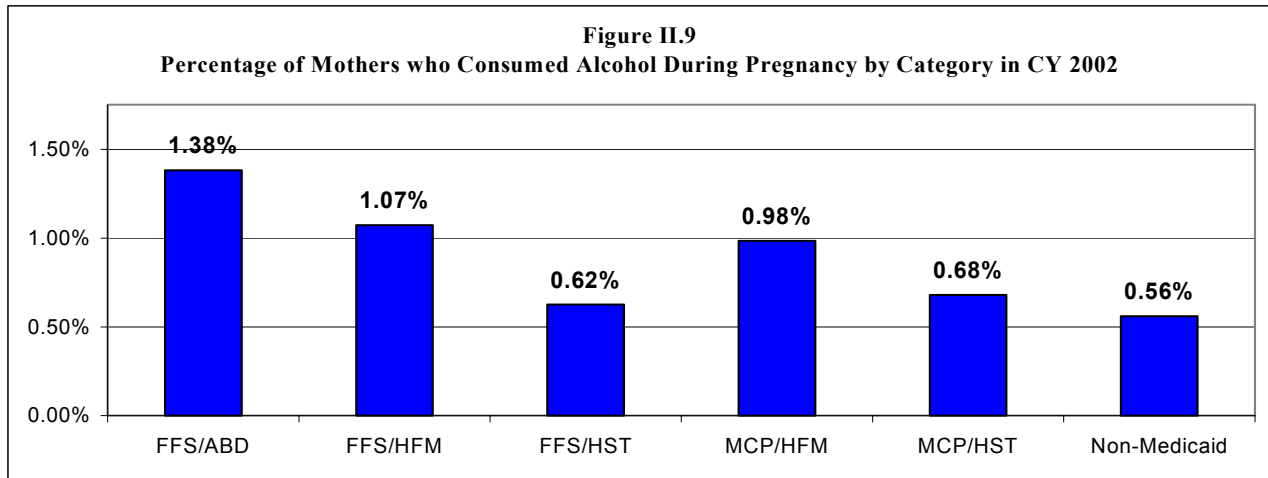


Figure II.9 illustrates the percentages of mothers who consumed alcohol during pregnancy for each category. While alcohol consumption during pregnancy is heavily underreported, those that did report fall more heavily into the fee for service ABD and healthy families categories. As shown in Table II.12, the ABD category also had the highest number of LBW infants among women who consumed alcohol during pregnancy.

Table II.12		
LBW Births by Alcohol Use During Pregnancy CY 2002		
	Consumed Alcohol	No Alcohol
Population Group	Percent LBW	Percent LBW
Medicaid FFS	16.5%	9.6%
ABD	25.0%	13.6%
Healthy Start	14.5%	9.6%
Healthy Families	19.1%	9.3%
Medicaid MCP	16.8%	10.4%
Healthy Families	16.4%	10.8%
Healthy Start	18.2%	9.5%
MEDICAID TOTAL	16.7%	9.9%
NON MEDICAID TOTAL	12.6%	7.5%
TOTAL POPULATION	14.5%	8.3%

Maternal weight gain

Maternal weight gain is one of the components in the complex relationship between lifestyle characteristics of the mother and the development of the fetus. Maternal weight gain during the first and second trimesters in pregnancy is mostly due to maternal components (blood, extra cellular liquid, tissues and fat reserves) and the placenta. Weight gain in the third trimester is due to fetal tissue, thus maternal weight gain is a factor that predicts infant birth weight.^{xxv} The Institute of Medicine's and the Centers for Disease Control and Prevention's recommendations for maternal weight gain vary from 15 to 40 pounds depending on a woman's pre-pregnancy weight.^{xxvi} In 2002, the median weight gain for US women was 30.5 pounds. This figure has varied only by one-tenth of a pound since 1990.^{xxvii} Research has shown that both excessive and insufficient weight gain may be detrimental to the health of the infant as low birth weight is attributed to insufficient weight gain.^{xxviii} For the purposes of this analysis, low maternal weight gain will be defined as under 22lbs.

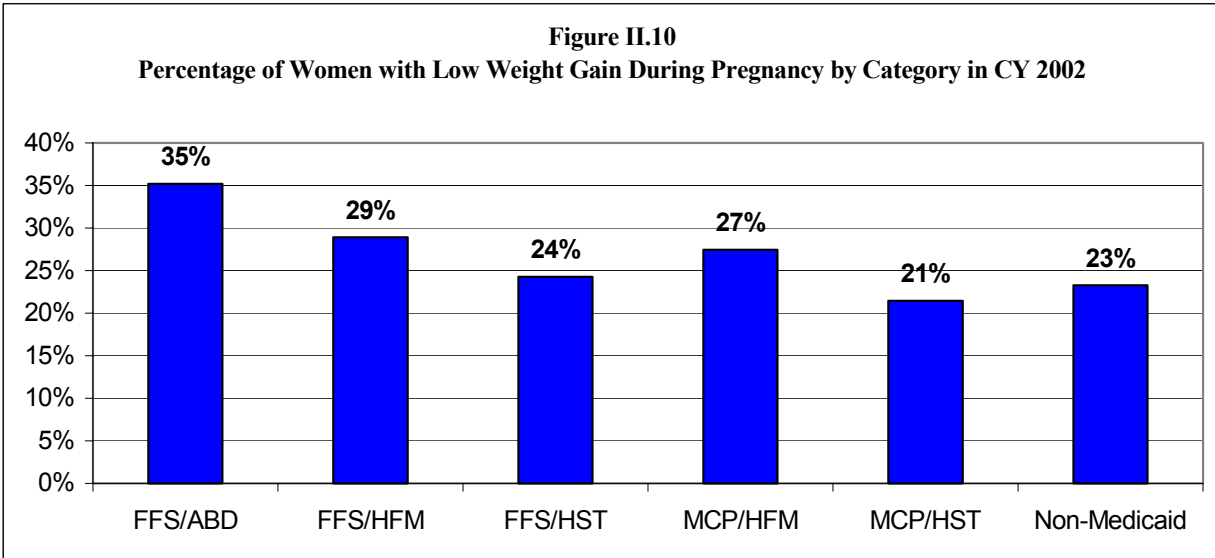


Figure II.10 shows that the number of women with low maternal weight gain ranges from 21-35% among Medicaid categories. Table II.13 demonstrates that among Medicaid mothers who have low maternal weight gain, 15% gave birth to LBW babies. This is a stark comparison to the Non-Medicaid population which among mothers with low maternal weight gain, 7% had LBW babies. The highest percentage of Medicaid mothers with low maternal weight gain fell into the fee for service ABD and managed care healthy families categories, however the percentages were very similar across categories.

Table II.13		
LBW Births by Maternal Weight Gain CY 2002		
	Low Weight Gain	Weight Gain >22lbs
Population Group	Percent LBW	Percent LBW
Medicaid FFS	14.3%	8.0%
ABD	18.9%	10.9%
Healthy Start	14.3%	7.8%
Healthy Families	13.6%	8.0%
Medicaid MCP	16.4%	8.4%
Healthy Families	16.9%	8.6%
Healthy Start	14.7%	8.1%
MEDICAID TOTAL	15.1%	8.2%
NON MEDICAID TOTAL	3.9%	8.6%
TOTAL POPULATION	8.1%	8.5%

Preterm Births

Low birth weight is strongly related to the number of gestational weeks prior to delivery. Gestational age lower than 37 weeks is considered to be preterm and is associated with an increased risk of low birth weight. Preterm birth is among the leading causes of infant death and is associated with nearly half of all congenital neurological defects. The national preterm birth rate increased in both 2002 and 2003 from 11.9% in 2001 to 12.3% in 2003. From 1989 to 2002, the national preterm birth rate has risen 29%.^{xxix} Some of these preterm births may be due to women having multiple births such as twins or triplets. Multiple births are also associated with the use of fertility treatments, which have grown in popularity especially among older women. So it is possible that the increase in preterm births may be partially due to fertility drugs producing multiple births which are more often born preterm compared to singletons.

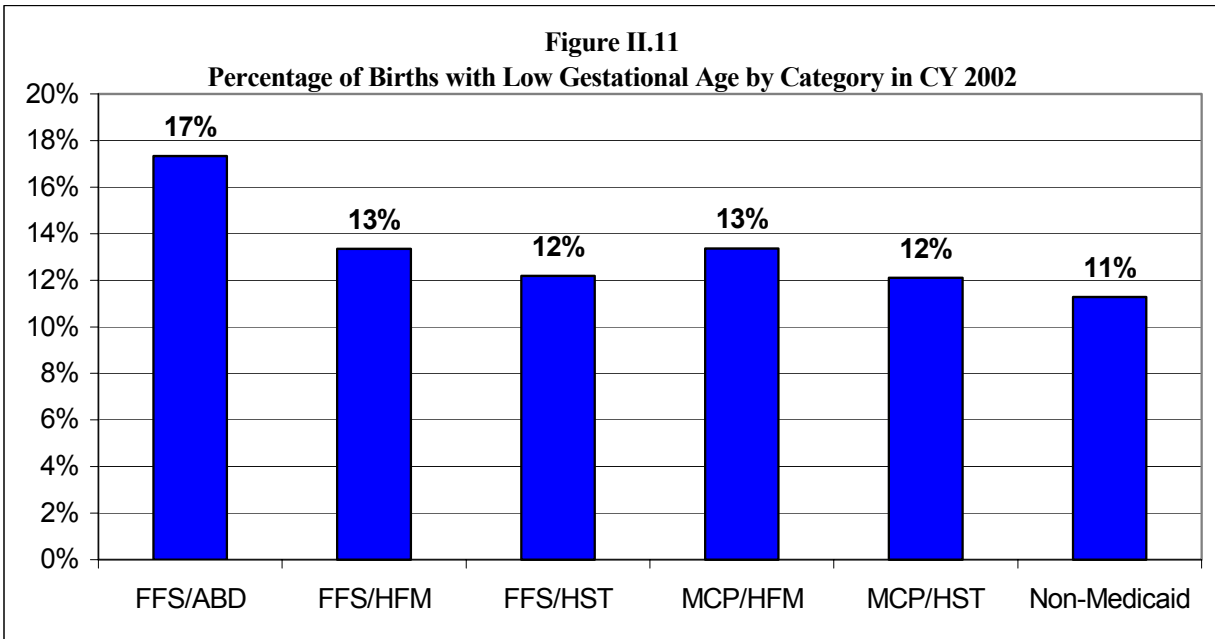


Figure II.11 shows that with the exception of ABD, the number of mothers who give birth to children with low gestational age was similar even when compared to Non-Medicaid mothers. Table II.14 demonstrates that among infants with low gestational age, nearly 50% were LBW. This figure stands for both the Medicaid and Non-Medicaid populations.

Table II.14		
LBW Births by Gestational Age CY 2002		
	Weeks <37	Weeks >= 37
Population Group	Percent LBW	Percent LBW
Medicaid FFS	44.1%	4.6%
ABD	49.3%	6.3%
Healthy Start	42.1%	4.7%
Healthy Families	46.1%	4.2%
Medicaid MCP	48.6%	4.8%
Healthy Families	48.7%	5.1%
Healthy Start	48.5%	4.1%
MEDICAID TOTAL	45.9%	4.6%
NON MEDICAID TOTAL	45.4%	2.7%
TOTAL POPULATION	45.6%	3.4%

Low Birth Weight by Medicaid Delivery Status and County Type

The matched Medicaid/VS files used in Section II was also utilized to compare low birth weight by delivery system and county type. The mother’s Medicaid delivery system at the time of delivery was used to designate a birth at either a FFS birth or MCP birth. For example, if the mother was enrolled in a managed care plan at the time of delivery, then the infant was classified as MCP regardless of the infant’s enrollment status in their first year of life.

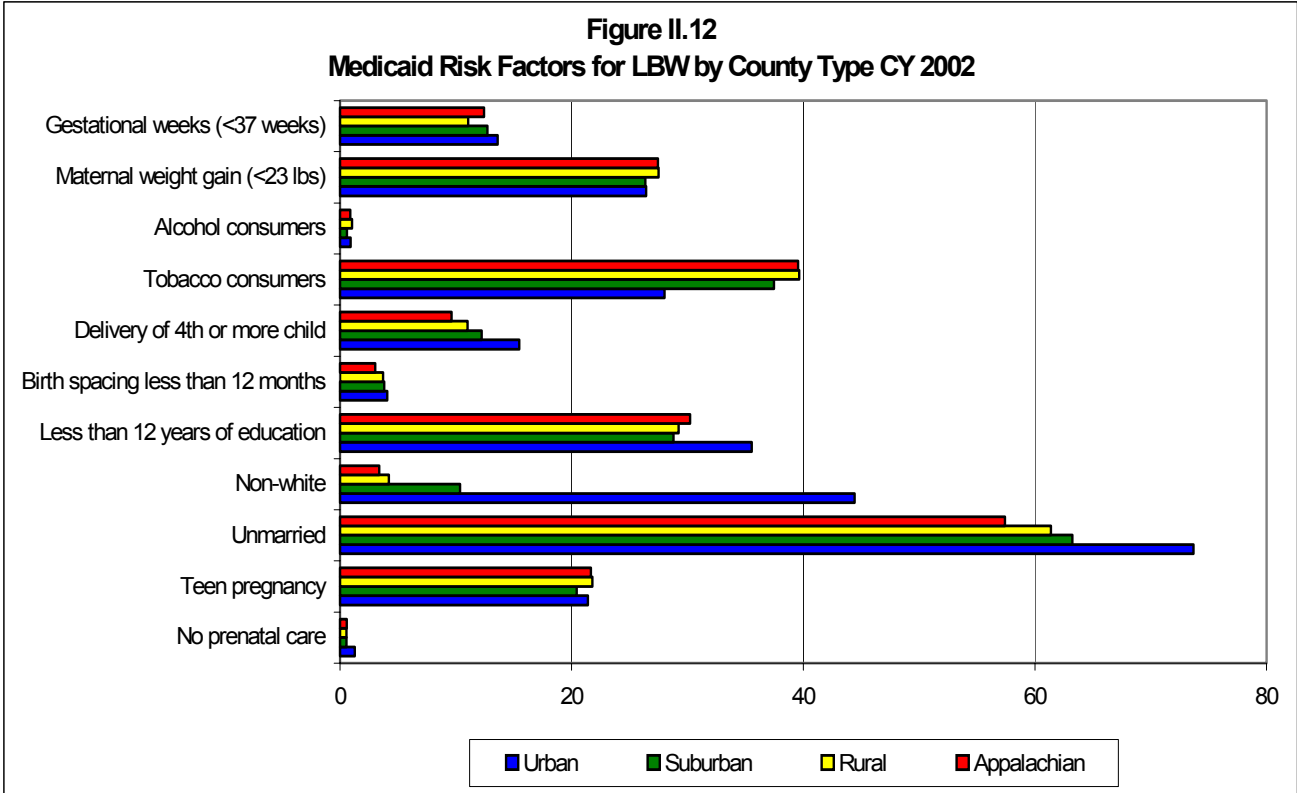
Table II.15 shows a comparison of risk factors and low birth weight for the FFS and MCP population. The prevalence of low birth weight births in CY 2002 was essentially the same across delivery systems (9.7 FFS vs. 10.5 MCP). Women in the MCP population had a higher prevalence of some of the risk factors for low birth weight: being unmarried, non-white, and having three or more children already born. Women in the FFS population had a higher rate of tobacco use and slightly higher rate of teenage pregnancy.

Risk Factors	FFS		MCP	
	All FFS Births	LBW Births	All MCP Births	LBW Births
No prenatal care	1.0	2.5	1.0	2.5
Teen pregnancy	21.7	22.2	20.2	18.9
Unmarried	65.4	70.7	77.0	82.5
Non-white	20.9	30.5	51.8	65.3
Less than 12 years of education	32.4	35.6	35.2	35.1
Birth spacing less than 12 months	3.8	11.9	4.1	13.5
Delivery of 4th or more child	12.3	15.6	17.5	21.6
Tobacco consumers	34.3	42.4	27.0	31.5
Alcohol consumers	0.9	1.5	0.9	1.4
Maternal weight gain (<23 lbs)	27.1	39.9	25.6	40.0
Gestational weeks (<37 weeks)	13.0	59.1	13.0	60.3
Prevalence of Low Birth Weight Births		9.7		10.5

These risk factors may be more closely related to the county of residence than differences between delivery systems as managed care plans are primarily located in urban counties. Ohio has four distinct population sub-groups based on county of residence: Urban, Suburban, Rural, and Appalachian. The populations in these sub-groups typically have different socio-demographic profiles. Table II.16 shows risk factors by county type for Ohio Medicaid Births. County type was determined based on the Ohio Department of Health’s Health Care Professional Shortage Area classification system. Women in Urban counties had a much higher prevalence of being unmarried and non-white than women in other counties. They also had a higher prevalence of delivering a low birth weight infant.

Risk Factors	Urban		Suburban		Rural		Appalachian	
	All Medicaid Births	LBW Births	All Medicaid Births	LBW Births	All Medicaid Births	LBW Births	All Medicaid Births	LBW Births
No prenatal care	1.3	3.0	0.6	2.8	0.6	0.9	0.6	1.1
Teen pregnancy	21.4	21.2	20.4	22.0	21.8	20.6	21.7	22.0
Unmarried	73.7	80.2	63.2	64.9	61.4	66.7	57.4	56.0
Non-white	44.4	56.1	10.4	16.8	4.2	6.7	3.4	4.5
Less than 12 years of education	35.6	37.2	28.8	32.5	29.2	31.2	30.2	32.7
Birth spacing less than 12 months	4.1	12.8	3.8	13.0	3.7	11.1	3.0	10.2
Delivery of 4th or more child	15.5	19.1	12.2	15.0	11.0	15.2	9.6	11.3
Tobacco consumers	28.0	34.0	37.5	47.9	39.6	48.0	39.5	52.4
Alcohol consumers	0.9	1.7	0.6	1.4	1.0	1.6	0.9	0.4
Maternal weight gain (<23 lbs)	26.4	40.1	26.3	39.3	27.5	38.8	27.5	40.4
Gestational weeks (<37 weeks)	13.6	61.9	12.7	57.5	11.1	54.7	12.4	52.4
Prevalence of Low Birth Weight Births		10.9		8.9		7.5		8.9

Figure II.12 graphically depicts the prevalence of risk factors by county type. Please note, the graph shows the percentage of all Medicaid Births with the risk factor, not just LBW births.



SECTION III: UTILIZATION OF PREGNANCY RELATED SERVICES

Prenatal Visits

Studies have shown that the absence of any prenatal care has more of a detrimental effect on most birth outcomes than if some prenatal care is received. The effect of lack of prenatal care on low birth weight outcomes was highlighted in Section II.

In this section, data on prenatal visits were collected from the self reported birth certificate data to allow comparison between the Medicaid and Non-Medicaid population. This information does not report on visits reimbursed by Medicaid. The birth certificate data indicates that the non-Medicaid population had the highest average number of prenatal care visits followed closely by the Medicaid Healthy Start population.

Table III.1				
Prenatal Visit Utilization CY 2002				
Population Group	Births	Average Number of Prenatal Care Visits	Average Months of Eligibility Prior to Delivery	Percent Medicaid Eligible in First Trimester
Medicaid FFS	32,093	10.9	7.0	69.9%
ABD	1,159	10.0	8.5	90.7%
Healthy Start	16,685	10.7	7.4	74.1%
Healthy Families	14,249	11.2	6.5	63.2%
Medicaid MCP	10,666	10.9	8.0	82.7%
Healthy Families	7,428	10.6	8.2	86.3%
Healthy Start	3,238	11.5	7.4	74.3%
NON MEDICAID TOTAL	99,261	12.1		
TOTAL POPULATION	142,020	11.8		

In examining the utilization of prenatal visits among the various sub-groups, one factor that could be considered is the length of eligibility for Medicaid pregnant women. Women who do not obtain Medicaid coverage early enough in their pregnancy may delay seeking prenatal care services. Table III.1 also demonstrates that Medicaid pregnant women began eligibility, on average, 7.4 months prior to delivery. Women enrolled in a MCP at the time of delivery began their Medicaid eligibility earlier than FFS women (8 months prior to delivery for MCP vs. 7 months prior to delivery for FFS). The Healthy Families and ABD population also began eligibility earlier than the Healthy Start population. This is expected as the Healthy Start population most likely gained eligibility due to the condition of being pregnant.

One method of measuring the adequacy of prenatal care is the adequacy of prenatal care utilization index developed by Dr. Milton Kotelchuck. The Kotelchuck index uses birth certificate data to calculate an index for the adequacy of initiation of prenatal care index, the adequacy of received prenatal care services index, and the adequacy of prenatal care utilization index which is a summary measure of the first two indexes. Inputs into the calculation include: the number of reported prenatal visits, the month prenatal care visits began, and the infants gender, gestational age, and birth weight. The adequacy of received prenatal care services index is a ratio of the observed to the expected number of prenatal care visits. The adequacy of initiation of prenatal care index and the summary adequacy of prenatal care utilization index are scaled from 0 to 4 which correspond to the following values:

- 1 = Inadequate
- 2 = Intermediate
- 3 = Adequate
- 4 = Adequate plus
- 0 = Missing information

Table III.2 shows the percentage of births with adequate or adequate plus scores for the Kotelchuck indexes by population group. The Medicaid population had a lower percentage of births scoring adequate or higher for the summary index, adequacy of prenatal care utilization. This appears to be driven by the lower Medicaid percentages for adequacy of prenatal care initiation index. From the birth certificate record, only 78% of Medicaid women reported beginning prenatal care in the first trimester versus 91% of the Non-Medicaid population.

Table III.2			
Adequacy of Prenatal Care Utilization			
Population Group	Percent with Adequate Prenatal Care Initiation	Percent with Adequate Receipt of Prenatal Care Services	Percent with Adequate Prenatal Care Utilization Index
Medicaid FFS	84.4%	76.7%	69.1%
ABD	80.8%	68.2%	60.8%
Healthy Families	83.0%	74.8%	66.4%
Healthy Start	86.4%	79.6%	73.0%
Medicaid MCP	84.6%	73.9%	67.2%
Healthy Families	82.6%	71.6%	64.3%
Healthy Start	89.1%	79.1%	74.0%
MEDICAID TOTAL	84.5%	76.0%	68.7%
NON MEDICAID TOTAL	93.1%	83.3%	80.6%

Post Partum Visits

Data regarding post partum visits are not available from the birth certificates. The numbers summarized here are calculated from the Medicaid claims files. Visits for the MCP population is based on the National Committee for Quality Assurance HEDIS measure. Visits for the FFS population are counted based on having a visit with a pregnancy related procedure or diagnosis code up to 61 days after delivery.

Approximately 39% of FFS women received at least one post partum visit and 52% of MCP women received a post partum visit. Two postpartum visits are recommended by most professionals to address health care services for the mother, including preventive services and birth control counseling and education. Women receiving postpartum services may also be encouraged to have longer birth spacing and counseled on how to improve future birth outcomes.

Table III.3			
Medicaid Post Partum Visit Utilization CY 2002			
	Births	Percent who were not eligible in 3rd month after Delivery	% With at least one Post Partum Visit
Medicaid FFS	32,093	20.2%	39.3%
ABD	1,159	5.0%	31.8%
Healthy Families	16,685	8.7%	38.9%
Healthy Start	14,249	34.9%	40.3%
Medicaid MCP	10,666	9.5%	52.3%
Healthy Families	7,428	5.0%	49.8%
Healthy Start	3,238	19.8%	58.2%
MEDICAID TOTAL	42,759	17.6%	42.5%

SECTION IV: EXPENDITURES

This section presents Medicaid expenditures for childbearing women and infants who matched to a birth certificate record and obtained their care through the FFS system. This section is limited to the Medicaid population as expenditure information is not collected on the birth certificate. Expenditures for Prenatal services include costs incurred 280 days before the date of delivery, expenditures for Post partum services include costs incurred up to 61 days after delivery, and expenditures for delivery services include both inpatient hospital costs and physician expenditures. The greatest percentage of expenditures for childbearing women was delivery services. The average cost women for the entire period of pregnancy related services was \$4,468.

Table IV.1		
Expenditures for Medicaid FFS Childbearing Women CY 2002		
	Expenditures	Percent of Total
Prenatal Office Visits	\$14,907,215	10.4%
Prenatal Admissions	\$2,934,750	2.0%
Other Prenatal Services	\$13,286,118	9.3%
Delivery Services	\$105,862,377	73.8%
Post Partum Office Visits	\$2,894,514	2.0%
Post Partum Admissions	\$383,643	0.3%
Other Post Partum Services	\$3,127,965	2.2%
Total Expenditures	\$143,396,582	100.0%
Number of Deliveries	32,093	
Average Expenditures	\$4,468	

Medicaid Birth Expenditures

Medicaid birth expenditures for infants receiving their care through the FFS system are presented in Table V.2. Birth expenditures include all inpatient and physician expenditures incurred by the infant from birth to final discharge. While VLBW infants only account for 1.7% of FFS Medicaid births, the average birth expenditures for VLBW infants is much higher than MBLW and NBW infants. However, birth expenditures for this population may be easily skewed by extreme cases. Expenditures for low birth weight babies accounted for about 53% of FFS birth expenditures, but only 10% of births as shown below.

**Table V.2
Medicaid FFS Birth Expenditures by Birth Weight CY 2002**

	Births	Birth Expenditures	Average Birth Expenditures	Percent of Expenditures	Percent of Births
NBW	28,984	\$36,964,067	\$1,275.33	47.0%	90.3%
MLBW	2,564	\$15,519,078	\$6,052.68	19.7%	8.0%
VLBW	545	\$26,199,958	\$48,073.32	33.3%	1.7%
Total	32,093	\$78,683,104	\$2,451.72	100.0%	100.0%

Infant Expenditures in the First Year of Life

Expenditures for FFS infants in their first year of life are higher for infants with low birth weight. Low birth weight is an important determinant of morbidity and mortality during infancy, with smaller infants having a greater risk for mortality and morbidity. In this section, expenditures do not include costs incurred during the birth episode. Average expenditures for MLBW infants are more than twice as high as NBW infants, and average expenditures for VLBW infants is more than ten times higher. Most of the expenditures for MLBW and VLBW infants are incurred for inpatient hospitalizations.

Table IV.3							
Fee For Service Expenditures in the First Year of Life CY 2002							
	Births	Average Number of FFS Member Months	Office Visits Payment	Inpatient Payments	Expenditures in first year of life	Average Expenditures per person	Average Expenditures Per Member Month
NBW	28,984	10.8	\$26,167,824	\$23,970,295	\$55,285,772	\$1,907.46	\$176
MLBW	2,564	10.3	\$3,877,475	\$7,497,685	\$13,898,492	\$5,420.63	\$526
VLBW	545	9.2	\$2,319,165	\$8,606,919	\$11,837,472	\$21,720.13	\$2,366
Total	32,093	10.8	\$32,364,464	\$40,074,899	\$81,021,736	\$2,524.59	\$234

SECTION V: ALCOHOL AND DRUG EXPOSED NEWBORNS

Fetal Alcohol Spectrum Disorders (FASD) is an umbrella term describing the range of effects that can occur in an individual whose mother consumed alcohol during pregnancy. These effects may include physical, mental, behavioral, and/or learning disabilities with possible lifelong implications. The term FASD is not intended for use as a clinical diagnosis. ⁱ

FASD is one of the leading causes of birth defects and developmental disorders. It is also 100% preventable. FAS occurs when there prenatal exposure to alcohol. If a woman drinks alcohol during her pregnancy, her baby can be born with FASD. Characteristics of FASD include a) (1) abnormal facial features, (2) growth deficiencies, and (3) central nervous system problems. ⁱⁱ

The medical literature documents the effects of fetal exposure to alcohol and drugs and the resulting birth defects and developmental disorders. The CDC suggests that although the exact nature of learning disabilities or behavioral abnormalities caused by fetal exposure to alcohol is unknown, children affected by FASD may experience significant cognitive and behavioral impairment due to fetal exposure to alcohol.

Risk factors for having a FASD birth include having little or no prenatal care, being unemployment, socially transient, and having children removed from the home. These factors are more likely to contribute to high alcohol use patterns that could affect the pregnancy. According to the CDC, approximately 10% of pregnant women (ages 18-44) used alcohol, and around 2% engaged in binge drinking. ⁱⁱⁱ

There is a wide range in the reporting rates for fetal alcohol spectrum disorders (FASD) CDC studies show FASD rates ranging from 0.2 to 1.5 per 1,000 live births in different areas of the United States. Other studies have FAS rates as high as 1 in 100 live births. Some variation in reporting rates is due to the lack of reliable information about alcohol use reported on the birth certificate and unreported diagnosis in the medical claims data.

Individuals with FASD can incur lifetime health costs of over \$ 800,000. In 2003, costs associated with FASD. were more than \$5 billion. ^{iv}

Drug use during pregnancy also has a detrimental affect on the newborn. The effects of prenatal drug exposure are well documented and can include intrauterine growth retardation, prematurity and low birth weight, central nervous system damage, and congenital physical malformations. ^v According to the National Household Survey (1997), 2.5 percent of pregnant women were drug users during pregnancy. For women who recently gave birth, 5.5% reported drug use habits after delivery. ^{vi}

Data from the birth certificate and Medicaid claims were used to investigate the prevalence of FASD and drug exposed newborns. The following ICD-9 codes were used to identify the population from inpatient FFS and MCP encounter claims. The primary diagnosis as well as all four secondary diagnosis were used in extracting these claims.

Code	Description
760.71	Alcohol (FAS indicator)
760.72	Narcotics
760.73	Hallucinogenic Agents
760.75	Cocaine
779.4	Drug reactions and intoxications specific to newborns
779.5	Drug withdrawal syndrome in newborn

Of the 54,144 Medicaid births (matched and unmatched births) in CY 2002, 21 infants were diagnosed with FASD and 155 were diagnosed with a condition indicating that their mother had abused drugs while pregnant, with cocaine usage being the highest.

The information collected from the claims data was compared to the information reported on the birth certificate. Only eleven matched infants were diagnosed with FASD based on the medical claims, and only 2 of their mothers reported consuming alcohol on the birth certificate. This raises questions as to the validity of the reporting of this indicator on the birth certificate. The National Vital Statistics Report states that this indicator is substantially underreported.

Risk Factors	Matched Medicaid	
	All Matched Births	Substance Abuse Births
No prenatal care	1.0%	5.2%
Teen pregnancy	21.7%	100.0%
Unmarried	65.4%	75.0%
Non-white	20.9%	39.7%
Less than 12 years of education	32.4%	36.2%
Birth spacing less than 12 months	3.8%	1.7%
Delivery of 4th or more child	12.3%	24.1%
Tobacco consumers	34.3%	69.0%
Alcohol consumers	0.9%	6.9%
Maternal weight gain (<23 lbs)	27.1%	33.6%
Gestational weeks (<37 weeks)	13.0%	19.8%
Prevalence of Low Birth Weight Births	9.7%	19.8%

¹ http://www.cdc.gov/ncbddd/fas/documents/FAS_guidelines_accessible

² <http://www.cdc.gov/ncbddd/fas/fasask.htm>

³ <http://www.cdc.gov/>

⁴ <http://www.nofas.org/faqs.aspx?ID=5>

SECTION VI: INFANT MORTALITY

Infant mortality data are presented here for the Medicaid population. Consistent with the definition stated in Section II, the matched Medicaid population represents those births where both the mother and infant matched with a birth certificate record. The unmatched category below includes infants that did not match up with a mother. They are included in this section because they consistently represent a significant proportion of the population being discussed in this section. Infant mortality is defined as infants with a date of death in the Medicaid file within one year of birth. There is no current matched Medicaid data available that would include information regarding the non-Medicaid population. The CDC indicates that the national infant mortality rate in CY 2002 was 7.0 infant deaths per 1000 births, slightly higher than the 6.8 rate reported in CY 2001. In Ohio, the CDC reported an infant mortality rate of 7.7 for CY 2002. The following table presents the Medicaid infant mortality rate.

Table VI.1			
Medicaid Infant Mortality CY 2002			
Group	Number of Births	Number of recorded infant deaths	Infant Mortality rate per 1,000 live births
UNMATCHED	12,381	70	5.7
Medicaid FFS	32,093	199	6.2
ABD	1,159	8	6.9
Healthy Families	16,685	105	6.3
Healthy Start	14,249	86	6.0
Medicaid MCP	10,666	90	8.4
Healthy Families	7,428	76	10.2
Healthy Start	3,238	14	4.3
MATCHED MEDICAID TOTAL	42,759	289	6.8

According to the National Center for Health Statistics, data on birth outcomes, levels of low birth weight and preterm birth should be monitored because it is these variables that are important predictors of infant mortality and morbidity.

Further gaps in infant mortality among these subgroups are heightened when breakdowns by race, age, tobaccos use and other factors are examined. The following table shows differences in infant mortality rates by these factors. Infant mortality rate was the highest among Medicaid women who reported no utilization of prenatal care.

Table VI.2			
Matched Medicaid Infant Mortality Rates by Risk Factor CY 2002			
Risk Factors	Number of Births	Number of Recorded Infant Deaths	Infant Mortality Rate per 1,000 Live Births
No prenatal care	419	15	3.58
Teen	9,132	64	0.70
Unmarried	29,209	201	0.69
Non-white	12,240	113	0.92
Less than 12 years of education	14,133	113	0.80
Birth spacing less than 12 months	1,647	29	1.76
Delivery of 4th or more child	5,818	59	1.01
Tobacco consumers	13,887	117	0.84
Alcohol consumers	379	5	1.32
Maternal weight gain (<23 lbs)	11,421	120	1.05
Gestational weeks (<37 weeks)	5,551	134	2.41
Prevalence of Low Birth Weight Births	4,226	143	3.38

SECTION VIII: CHILD HEALTH

This section presents an overview of spending and utilization patterns for children served by Medicaid as well as access to care for this population. The following information is discussed:

- a) Child Physician Visits – It is very important for children, especially during infancy and early childhood, to have regular interaction with their physician. Preventive medicine is extremely important in infant and childhood because it sets the stage for improved health and reduced disease risk as an adult.
- b) Top 10 Episodes by Frequency and Dollar Amount illustrates the kind of health care services that are heavily used by the Medicaid Child population. We see that episodes in this list include typical childhood illnesses like Otitis Media, ear nose and throat infections as well as preventive health care services.
- c) Dental Utilization – There has been a vast improvement in the oral health of children in the past few decades. The main reasons for these include better nutrition, better oral hygiene, fluoridation and access to better oral health care. The 1996 Medical Expenditures Panel Survey (MEPS) indicate that children in lower income families are worse off in terms of oral health status and dental services utilization than children in higher income families. In general, Medicaid children have a low utilization rate of dental services. Some reasons for low utilization include lack of access to dental providers and transportation problems. For the Ohio Medicaid population, it is encouraging to see that there has been a steady increase in the number of providers and utilization since SFY 2000.
- d) Under Access to Care, regional differences in access to care for Medicaid children was examined. Dental and medical providers are usually concentrated in the urban regions while rural areas are underrepresented. As a result of limited availability of providers in certain regions (Rural, Appalachian, Suburban), consumers may have to travel to other regions (Urban) to seek care. The literature suggests that consumers may delay or forgo needed medical care when access to care is limited.

Physician Visits

The data source for this section is the CY 2002 ODJS Medicaid fee for service claims. For purposes of this section, children are defined as male and female individuals 18 years of age or less.

TABLE VIII.1						
OHIO MEDICAID FFS OFFICE VISITS CY 2002						
Age Categories	Physician Visits	Members	Patients	Net Pay	Avg.Net Pay Per Patient	Members with at least one visit
0 to 2	1,307,445	214,931	165,256	\$63,888,230.79	\$386.60	76.9%
3 to 6	632,102	210,888	137,316	\$29,552,655.63	\$215.22	65.1%
7 to 18	1,456,491	459,617	279,329	\$73,130,116.44	\$261.81	60.8%

Table VIII.1 illustrates the number of physician visits by age group along with the expenditures associated with these visits. For the Ohio Medicaid Fee for Service program, children between the ages of 0 to 2 had the highest percent of members with at least one visit (76.89%). Younger children were more likely than older children to have a provider visit. The average payment per patient was highest for the 0-2 age category (\$386).

Episodes

This section presents a brief look at spending and utilization of the Medicaid child population by looking at the

- Top 10 FFS episodes by number of episodes
- Top 10 FFS episodes by total net payments

An episode of care summarizes "a series of temporally contiguous healthcare services related to treatment of a given spell of illness or provided in response to a specific request by the patient or other relevant entity".⁶ Episodes can comprise of inpatient admissions, outpatient services, and prescription drugs. In addition to tracking health care cost and utilization, episodes can be used to track disease prevention, health promotion, and disease management.

The data source for this section is the CY 2002 ODJS Medicaid fee for service episodes. For purposes of this section, children are defined as male and female individuals 18 years or less. Table VIII.2 looks at the utilization of services by Ohio's child Medicaid population for CY 2002. It lists the top 10 episodes by number of episodes per episode group for the fee for service population.

Table VIII.2		
TOP 10 FFS EPISODES BY NUMBER OF EPISODES CY 2002		
Rank	Episode Group (FEE FOR SERVICE)	Number of Patient Episodes
1	Encounter for Preventive Health Services	324,224
2	Other Ear, Nose, and Throat Infections ¹	123,447
3	Otitis Media	116,961
4	Other Eye Disorders ²	99,045
5	Pharyngitis, Non-Streptococcal	87,420
6	Other General Signs, Symptoms, and Conditions ³	79,481
7	Mental Retardation	76,932
8	Croup	71,627
9	Other Inflammations and Infections of Skin and Subcutaneous Tissue ⁴	61,455
10	Other Neuroses ⁵	60,134

The FFS Medicaid child population had more than 2.2 million episodes in CY 2002. The largest chunk of this comprised of Preventive health services, which was almost 15% of the total. Preventive health services provide vaccination, examinations, or screening for disease conditions. Otitis media is among the most frequent diagnosis recorded for children who visit physicians for illness. It is also the most common cause of hearing loss in children. There were 116,961 patient episodes for Otitis Media for CY 2002.

Table VIII.3 lists the top 10 episodes by Total Net Payments. Total Net Payments of more than \$1.1 billion for the Medicaid FFS child population were made in 2002. Mental Retardation episodes comprised more than 9 % of the cost with \$ 107 million paid in 2002. Average cost per mental retardation episode was \$ 1,394. Among the top 10 episodes, extremely low birth weight episodes had the highest average costs, (\$40,866 per episode). Costs of cerebral palsy episodes were also very high at \$ 9182 per episode.

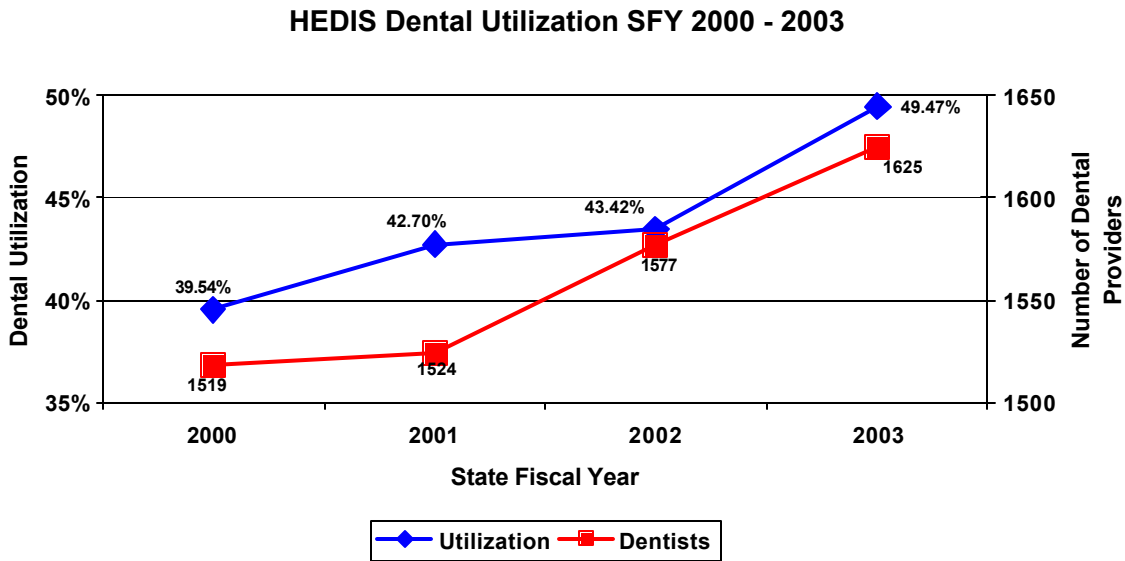
Table VIII.3				
TOP 10 FFS EPISODES BY TOTAL NET PAYMENTS CY 2002				
Rank	Episode Group (FEE FOR SERVICE)	Patients Episodes	Total Net Payments	Avg Payment Per Episode
1	Mental Retardation	76,932	\$107,245,032	\$1,394
2	Other Neuroses	60,134	\$94,795,082	\$1,576
3	Other Neonatal Conditions ⁷	42,993	\$42,900,002	\$998
4	Encounter for Preventive Health Services	324,224	\$42,057,602	\$130
5	Prematurity, Low Birthweight	5,986	\$33,878,762	\$5,660
6	Cerebral Palsy	3,655	\$33,561,131	\$9,182
7	Other General Signs, Symptoms, and Conditions	79,481	\$32,605,300	\$410
8	Depression	20,891	\$31,716,099	\$1,518
9	Otitis Media	116,961	\$29,467,408	\$252
10	Prematurity, Extremely Low Birthweight	681	\$27,843,742	\$40,887

Notes for Episodes:

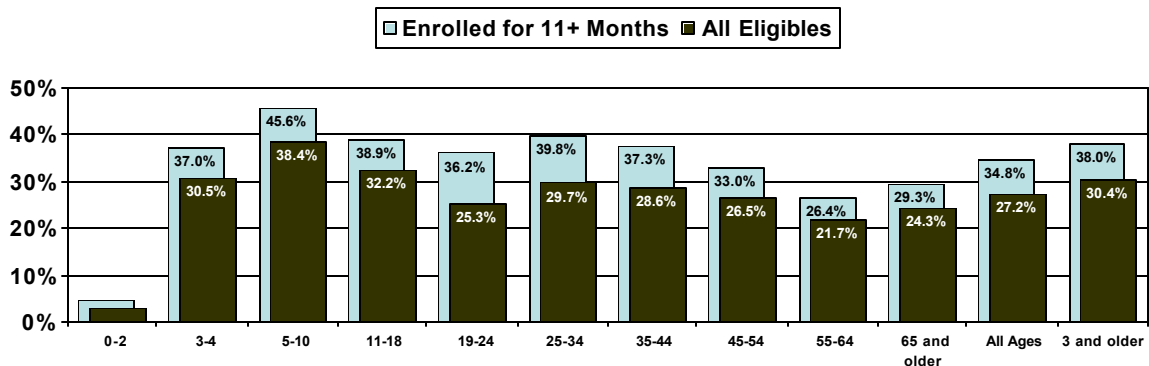
- 1 Other Ear, Nose, and Throat Infections include other ear, nose and throat infections include Laryngitis, upper respiratory infections without or without obstruction.
- 2 Other Eye Conditions include minor disorders of globe, cysts, foreign body in eye, and other visual problems.
- 3 Other General, Symptoms, and Conditions”, include sleep disturbances , fever, malaise, nervousness, edema, jaundice, anorexia, weight changes.
- 4 Other Inflammations and Infections of Skin and Subcutaneous Tissue include local skin infections, dermatitis, pruritis, scars, ingrown nails, alopecia...
- 5 Other neuroses include personality disorders and psychogenic disorders
- 6 Hornbrook MC, Hurtado AV, Johnson RE. Healthcare episodes: definition, measurement and use
- 7 Other Neonatal Conditions include newborn with blood loss, cutaneous hemorrhage, hypoglycemia, diabetes, thyrotoxicosis, anemia, hypothermia, integumentary conditions

Dental Utilization

The graph below illustrates the steady increase in the number of dentists as well as an increase in utilization since SFY 2000.



Generally speaking, children that were Medicaid eligible were more likely than adults that were Medicaid eligible to have visited a dentist in SFY 2002. This might be attributed to parental concerns over proper dental care and development. Children ages 5-10 are more likely to have visited the dentist than any other age group. Ages 0-2 have a low percentage due to the lack of tooth development.



Access to Care

While providing adequate health care services to children is important, access to these resources poses several challenges. Health insurance is one determinant of access to care, yet having a regular medical provider can also effect an individual's access to care.¹ For some individuals in remote areas, finding a medical provider within reasonable proximity to the home is difficult. Thus, children living in certain areas may be less likely to receive regular preventative care services such as physicals, increasing their risk of potentially avoidable hospitalizations.

	# Billing Providers (MD)	# Billing Providers (Dental)	Patients per Provider (MD)	Patients per Provider (Dental)	Patients MD	Patients Dental
Appalachian	4,358	16	27.6	3218.9	120,170	51,502
Metro	7,932	62	29.7	1322.3	235,440	81,985
Rural	4,355	24	19.9	1266.7	86,692	30,401
Suburban	4,861	30	20.5	1266.5	99,553	37,996
Total	21,506	132	25.2	1529.4	541,855	201,884

Table VIII.3 shows that many medical and dental providers are located in metropolitan areas. While metropolitan areas have larger populations to serve and require more medical and dental professionals, the lack of these professionals in Appalachian areas makes obtaining medical services difficult. For example, the ratio of patients to dental professionals in Appalachian areas is nearly 2.5 times that of metro, rural and suburban areas. Thus, in areas where the ratio of patients to providers is high, it may be difficult for patients to get appointments.

Table VIII.4 shows the percentage of inpatient hospital and physician services children received outside their county of residence for the Fee for Service population.

Table VII.5			
Percentages of Medicaid FFS Children Receiving Care Outside County of Residence in CY 2002			
County	Region	% Receiving Physician Services Outside County	% Receiving Inpatient Hospital Services Outside County
Adams	Appalachian	64%	93%
Allen	Metro	35%	10%
Ashland	Rural	53%	52%
Ashtabula	Rural	30%	43%
Athens	Appalachian	47%	42%
Auglaize	Suburban	61%	62%
Belmont	Appalachian	59%	54%
Brown	Appalachian	73%	69%
Butler	Metro	52%	47%
Carroll	Appalachian	80%	100%
Champaign	Rural	83%	100%
Clark	Suburban	43%	24%
Clermont	Appalachian	78%	94%
Clinton	Rural	60%	41%
Columbiana	Appalachian	43%	33%
Coshocton	Appalachian	50%	38%
Crawford	Rural	52%	48%
Cuyahoga	Metro	17%	6%
Darke	Rural	67%	46%
Defiance	Suburban	46%	34%
Delaware	Suburban	69%	61%
Erie	Rural	44%	32%
Fairfield	Suburban	59%	36%
Fayette	Rural	63%	44%
Franklin	Metro	16%	3%
Fulton	Suburban	64%	58%
Gallia	Appalachian	30%	30%
Geauga	Suburban	76%	59%
Greene	Suburban	64%	82%
Guernsey	Appalachian	48%	37%
Hamilton	Metro	15%	3%
Hancock	Rural	46%	30%
Hardin	Rural	73%	80%
Harrison	Appalachian	84%	95%
Henry	Rural	79%	67%
Highland	Appalachian	70%	63%
Hocking	Appalachian	74%	68%
Holmes	Appalachian	63%	53%
Huron	Rural	46%	26%
Jackson	Appalachian	91%	98%
Jefferson	Appalachian	45%	44%
Knox	Rural	63%	47%
Lake	Suburban	63%	46%
Lawrence	Appalachian	69%	100%
Licking	Suburban	53%	50%

Table VII.5			
Percentages of Medicaid FFS Children Receiving Care Outside			
County	Region	% Receiving Physician Services Outside County	% Receiving Inpatient Hospital Services Outside County
Logan	Rural	54%	44%
Lorain	Metro	51%	34%
Lucas	Metro	19%	4%
Madison	Suburban	57%	62%
Mahoning	Metro	32%	15%
Marion	Rural	34%	19%
Medina	Suburban	62%	50%
Meigs	Appalachian	95%	100%
Mercer	Rural	51%	49%
Miami	Suburban	52%	35%
Monroe	Appalachian	77%	100%
Montgomery	Metro	13%	7%
Morgan	Appalachian	76%	100%
Morrow	Rural	72%	98%
Muskingum	Appalachian	31%	18%
Noble	Appalachian	62%	100%
Ottawa	Rural	65%	93%
Paulding	Rural	74%	66%
Perry	Appalachian	79%	100%
Pickaway	Suburban	62%	58%
Pike	Appalachian	85%	95%
Portage	Suburban	56%	58%
Preble	Rural	70%	100%
Putnam	Rural	75%	100%
Richland	Metro	40%	32%
Ross	Appalachian	53%	47%
Sandusky	Rural	62%	57%
Scioto	Appalachian	35%	31%
Seneca	Rural	47%	44%
Shelby	Rural	54%	39%
Stark	Metro	28%	17%
Summit	Metro	28%	11%
Trumbull	Suburban	44%	36%
Tuscarawas	Appalachian	58%	36%
Union	Suburban	49%	50%
VanWert	Rural	61%	45%
Vinton	Appalachian	89%	100%
Warren	Rural	80%	100%
Washington	Appalachian	50%	41%
Wayne	Rural	47%	45%
Williams	Rural	38%	39%
Wood	Suburban	67%	63%
Wyandot	Rural	68%	63%

County Summary of Births for CY 2002

County	Non Medicaid Births			Medicaid Births						
	Total Non Medicaid Births	% LBW	% No Prenatal Care	Total Medicaid Births	% FFS	% MCP	% LBW	% No Prenatal Care	Average Months of Eligibility in First Year of Life	Average Expenditures in First Year of Life (FFS & MCP)
Urban	56,760	8%	0%	25,238	0%	0%	11%	1%	12	\$7,167
Suburban	17,771	7%	0%	5,584	0%	0%	9%	1%	12	\$5,227
Rural	14,431	6%	0%	5,748	0%	0%	8%	1%	12	\$4,597
Appalachian	10,299	7%	0%	6,189	0%	0%	9%	1%	12	\$4,787
Statewide	99,261	8%	0%	42,759	0%	0%	10%	1%	12	\$6,224
Adams County	173	11%	0%	189	0%	0%	10%	1%	12	\$5,902
Allen County	899	7%	0%	497	0%	0%	10%	1%	12	\$3,943
Ashland County	470	6%	0%	192	0%	0%	7%	1%	12	\$4,050
Ashtabula County	701	8%	1%	477	0%	0%	8%	0%	12	\$5,166
Athens County	308	6%	1%	282	0%	0%	8%	0%	12	\$5,124
Auglaize County	408	8%	0%	120	0%	0%	8%	0%	12	\$5,426
Belmont County	171	7%	1%	163	0%	0%	9%	1%	12	\$2,850
Brown County	325	6%	1%	192	0%	0%	7%	1%	12	\$3,832
Butler County	3,356	6%	0%	1,094	0%	0%	9%	1%	12	\$5,884
Carroll County	202	6%	1%	114	0%	0%	11%	0%	12	\$3,812
Champaign County	321	6%	0%	162	0%	0%	9%	0%	12	\$4,320
Clark County	1,005	7%	0%	684	0%	0%	10%	1%	12	\$5,843
Clermont County	1,891	7%	0%	610	0%	0%	8%	1%	12	\$3,953
Clinton County	374	8%	0%	183	0%	0%	9%	0%	12	\$2,968
Columbiana County	634	8%	1%	506	0%	0%	9%	0%	12	\$6,853
Coshocton County	279	7%	0%	140	0%	0%	9%	0%	12	\$3,913
Crawford County	319	8%	0%	215	0%	0%	8%	0%	12	\$3,510
Cuyahoga County	11,697	9%	1%	4,737	0%	0%	12%	2%	12	\$8,329
Darke County	488	7%	0%	161	0%	0%	10%	1%	12	\$3,786
Defiance County	297	7%	1%	171	0%	0%	7%	1%	12	\$3,584
Delaware County	1,825	6%	0%	219	0%	0%	11%	0%	12	\$4,334
Erie County	577	7%	1%	267	0%	0%	7%	1%	12	\$3,407

County Summary of Births for CY 2002										
County	Non Medicaid Births			Medicaid Births						
	Total Non Medicaid Births	% LBW	% No Prenatal Care	Total Medicaid Births	% FFS	% MCP	% LBW	% No Prenatal Care	Average Months of Eligibility in First Year of Life	Average Expenditures in First Year of Llife (FFS & MCP)
Fairfield County	1,215	8%	0%	369	0%	0%	9%	0%	12	\$3,447
Fayette County	284	6%	0%	161	0%	0%	7%	1%	12	\$4,956
Franklin County	11,391	8%	0%	5,230	0%	0%	11%	1%	12	\$6,610
Fulton County	367	7%	0%	113	0%	0%	8%	0%	12	\$5,979
Gallia County	258	8%	0%	146	0%	0%	4%	0%	12	\$3,841
Geauga County	977	6%	0%	101	0%	0%	9%	1%	12	\$5,745
Greene County	1,283	7%	0%	433	0%	0%	12%	0%	12	\$6,294
Guernsey County	243	6%	0%	184	0%	0%	9%	1%	12	\$3,630
Hamilton County	8,577	9%	0%	3,484	0%	0%	12%	2%	12	\$8,237
Hancock County	793	5%	0%	197	0%	0%	8%	1%	12	\$9,641
Hardin County	241	7%	2%	123	0%	0%	4%	1%	12	\$2,662
Harrison County	68	7%	1%	64	0%	0%	2%	2%	12	\$2,548
Henry County	261	8%	0%	92	0%	0%	8%	0%	12	\$4,012
Highland County	320	7%	0%	255	0%	0%	11%	1%	12	\$4,422
Hocking County	186	9%	0%	154	0%	0%	10%	1%	12	\$6,704
Holmes County	788	6%	1%	78	0%	0%	9%	0%	12	\$4,598
Huron County	541	6%	1%	266	0%	0%	5%	0%	12	\$4,861
Jackson County	236	10%	0%	201	0%	0%	12%	0%	12	\$4,830
Jefferson County	224	6%	1%	216	0%	0%	6%	1%	12	\$3,795
Knox County	479	5%	0%	199	0%	0%	8%	1%	12	\$4,264
Lake County	1,982	6%	0%	482	0%	0%	9%	0%	12	\$4,747
Lawrence County	38	18%	0%	8	0%	0%	25%	0%	10	\$6,140
Licking County	1,412	7%	0%	500	0%	0%	9%	1%	12	\$4,816
Logan County	416	7%	1%	176	0%	0%	8%	1%	12	\$10,434
Lorain County	2,358	8%	0%	1,043	0%	0%	10%	1%	12	\$6,033
Lucas County	3,790	9%	1%	2,103	0%	0%	10%	1%	12	\$8,203
Madison County	339	6%	0%	135	0%	0%	6%	1%	12	\$5,861
Mahoning County	1,427	8%	0%	943	0%	0%	11%	1%	12	\$6,730
Marion County	446	8%	1%	301	0%	0%	10%	1%	12	\$5,093
Medina County	1,717	6%	0%	280	0%	0%	5%	0%	12	\$3,045

County Summary of Births for CY 2002										
County	Non Medicaid Births			Medicaid Births						
	Total Non Medicaid Births	% LBW	% No Prenatal Care	Total Medicaid Births	% FFS	% MCP	% LBW	% No Prenatal Care	Average Months of Eligibility in First Year of Life	Average Expenditures in First Year of Llife (FFS & MCP)
Meigs County	89	4%	0%	136	0%	0%	15%	0%	12	\$7,616
Mercer County	455	7%	0%	116	0%	0%	3%	1%	12	\$2,679
Miami County	839	5%	0%	313	0%	0%	8%	0%	12	\$5,398
Monroe County	629	9%	0%	49	0%	0%	12%	0%	11	\$2,909
Montgomery County	4,582	7%	1%	2,383	0%	0%	10%	1%	12	\$7,472
Morgan County	84	11%	0%	88	0%	0%	8%	0%	12	\$9,559
Morrow County	293	6%	1%	122	0%	0%	7%	0%	12	\$3,022
Muskingum County	550	8%	1%	445	0%	0%	11%	0%	12	\$4,854
Noble County	93	6%	0%	51	0%	0%	6%	2%	12	\$5,927
Ottawa County	301	7%	0%	133	0%	0%	3%	0%	12	\$3,938
Paulding County	105	10%	1%	87	0%	0%	8%	1%	12	\$5,493
Perry County	237	6%	0%	188	0%	0%	11%	1%	12	\$4,634
Pickaway County	339	10%	1%	167	0%	0%	8%	1%	12	\$5,188
Pike County	152	8%	1%	195	0%	0%	7%	0%	12	\$3,774
Portage County	1,125	9%	0%	425	0%	0%	6%	1%	12	\$5,693
Preble County	340	5%	1%	125	0%	0%	12%	2%	11	\$3,487
Putnam County	372	6%	0%	67	0%	0%	10%	1%	11	\$2,433
Richland County	896	7%	0%	581	0%	0%	8%	1%	12	\$5,022
Ross County	468	8%	1%	388	0%	0%	10%	1%	12	\$5,744
Sandusky County	507	8%	1%	297	0%	0%	6%	1%	12	\$3,680
Scioto County	518	8%	0%	473	0%	0%	5%	0%	12	\$3,597
Seneca County	415	6%	0%	284	0%	0%	7%	0%	12	\$3,079
Shelby County	456	6%	1%	168	0%	0%	11%	0%	12	\$5,765
Stark County	2,816	8%	0%	1,517	0%	0%	8%	1%	12	\$4,541
Summit County	4,971	8%	0%	1,626	0%	0%	12%	1%	12	\$7,543
Trumbull County	1,339	7%	1%	847	0%	0%	11%	1%	12	\$5,816
Tuscarawas County	775	7%	1%	399	0%	0%	11%	1%	12	\$4,811
Union County	550	7%	0%	110	0%	0%	5%	0%	12	\$4,508
Van Wert County	198	4%	1%	114	0%	0%	8%	0%	12	\$5,779
Vinton County	77	6%	0%	90	0%	0%	9%	0%	12	\$2,900
Warren County	2,188	6%	0%	305	0%	0%	8%	1%	11	\$3,922

County Summary of Births for CY 2002										
County	Non Medicaid Births			Medicaid Births						
	Total Non Medicaid Births	% LBW	% No Prenatal Care	Total Medicaid Births	% FFS	% MCP	% LBW	% No Prenatal Care	Average Months of Eligibility in First Year of Life	Average Expenditures in First Year of Life (FFS & MCP)
Wayne County	1,324	4%	1%	360	0%	0%	6%	1%	12	\$5,198
Williams County	274	7%	1%	146	0%	0%	8%	0%	12	\$6,827
Wood County	1,049	6%	1%	286	0%	0%	8%	0%	11	\$5,584
Wyandot County	195	6%	0%	81	0%	0%	11%	0%	12	\$2,550
Urban	56,760	8%	0%	25,238	0%	0%	11%	1%	12	\$7,167
Suburban	17,771	7%	0%	5,584	0%	0%	9%	1%	12	\$5,227
Rural	14,431	6%	0%	5,748	0%	0%	8%	1%	12	\$4,597
Appalachian	10,299	7%	0%	6,189	0%	0%	9%	1%	12	\$4,787
Statewide	99,261	8%	0%	42,759	0%	0%	10%	1%	12	\$6,224

County Summary of Deliveries for CY 2002							
County	Matched Medicaid Deliveries						
	Average Months of Eligibility Before Delivery	Percent Eligible 7 to 9 Months Before Delivery	Percent Eligible 3 Months After Delivery	Percent with No Prenatal Care	Total FFS Expenditures in the Prenatal Period	Total FFS Expenditures in the Post Partum Period	Total Delivery Expenditures
Urban	7.2	70.9%	85.1%	1.3%	\$18,124,263	\$8,209,235	\$52,980,971
Suburban	7.2	71.9%	80.0%	0.6%	\$7,018,406	\$3,094,253	\$17,976,181
Rural	7.4	74.5%	74.1%	0.6%	\$7,391,968	\$3,247,277	\$16,613,739
Appalachian	7.8	81.6%	81.5%	0.6%	\$8,608,169	\$3,706,321	\$18,354,220
Statewide	7.3	73.1%	82.4%	1.0%	\$41,142,806	\$18,257,086	\$105,925,110
Adams County	8.0	86.8%	80.4%	0.5%	\$301,837	\$128,074	\$569,283
Allen County	7.3	75.1%	68.2%	1.2%	\$676,231	\$299,513	\$1,420,956
Ashland County	7.4	74.0%	78.6%	0.5%	\$533,984	\$175,247	\$583,800
Ashtabula County	7.5	77.4%	81.6%	0.2%	\$556,238	\$276,596	\$1,562,673
Athens County	8.0	83.7%	86.5%	0.4%	\$401,681	\$205,754	\$818,271
Auglaize County	7.8	80.8%	68.3%	0.0%	\$121,918	\$55,127	\$336,534
Belmont County	7.9	83.4%	84.0%	1.2%	\$317,304	\$113,240	\$568,557
Brown County	7.6	82.3%	76.6%	0.5%	\$262,242	\$124,650	\$583,465
Butler County	6.9	67.3%	76.0%	1.3%	\$774,402	\$390,059	\$2,489,440
Carroll County	7.7	84.2%	79.8%	0.0%	\$157,803	\$60,589	\$352,961
Champaign County	7.3	77.8%	67.9%	0.0%	\$173,530	\$72,584	\$492,740
Clark County	7.4	74.3%	84.2%	0.9%	\$831,237	\$414,679	\$2,104,880
Clermont County	7.3	72.5%	72.0%	1.1%	\$762,802	\$386,404	\$2,056,944
Clinton County	7.4	76.0%	89.6%	0.0%	\$332,569	\$132,029	\$480,306
Columbiana County	7.8	82.0%	90.1%	0.2%	\$623,448	\$269,514	\$1,443,313
Coshocton County	8.1	85.0%	70.7%	0.0%	\$203,918	\$86,416	\$409,601
Crawford County	7.8	84.2%	85.6%	0.0%	\$271,108	\$93,432	\$564,926
Cuyahoga County	7.4	73.3%	91.1%	1.6%	\$2,307,642	\$1,100,124	\$7,116,812
Darke County	7.2	70.2%	65.8%	1.2%	\$231,051	\$106,600	\$528,930
Defiance County	7.1	70.8%	73.7%	0.6%	\$159,620	\$75,862	\$459,073
Delaware County	6.9	67.1%	78.1%	0.5%	\$247,544	\$102,525	\$629,034
Erie County	7.1	69.7%	85.4%	0.7%	\$323,080	\$164,087	\$779,311

County Summary of Deliveries for CY 2002							
County	Matched Medicaid Deliveries						
	Average Months of Eligibility Before Delivery	Percent Eligible 7 to 9 Months Before Delivery	Percent Eligible 3 Months After Delivery	Percent with No Prenatal Care	Total FFS Expenditures in the Prenatal Period	Total FFS Expenditures in the Post Partum Period	Total Delivery Expenditures
Fairfield County	7.3	72.9%	80.5%	0.3%	\$534,182	\$239,712	\$1,124,302
Fayette County	7.6	77.6%	73.3%	0.6%	\$252,054	\$112,915	\$453,330
Franklin County	6.6	62.9%	81.7%	1.2%	\$3,403,086	\$1,592,751	\$12,212,369
Fulton County	6.8	67.3%	77.0%	0.0%	\$145,211	\$64,561	\$387,218
Gallia County	8.2	87.7%	91.8%	0.0%	\$190,130	\$82,225	\$452,384
Geauga County	6.8	69.3%	75.2%	1.0%	\$119,481	\$61,249	\$331,737
Greene County	7.5	76.4%	88.5%	0.5%	\$603,735	\$257,711	\$1,572,076
Guernsey County	8.0	84.8%	82.6%	0.5%	\$230,985	\$97,302	\$494,512
Hamilton County	7.2	71.6%	85.9%	1.9%	\$3,053,297	\$1,441,941	\$9,586,499
Hancock County	7.5	77.2%	72.6%	0.5%	\$244,824	\$123,906	\$550,877
Hardin County	7.7	78.0%	65.9%	0.8%	\$181,509	\$75,372	\$336,456
Harrison County	7.7	75.0%	85.9%	1.6%	\$66,301	\$28,843	\$193,543
Henry County	7.6	80.4%	60.9%	0.0%	\$122,704	\$47,984	\$239,647
Highland County	7.4	76.1%	67.5%	1.2%	\$353,064	\$143,642	\$735,616
Hocking County	7.7	82.5%	85.1%	0.6%	\$224,324	\$110,004	\$449,498
Holmes County	6.9	70.5%	73.1%	0.0%	\$84,516	\$45,365	\$216,200
Huron County	7.0	69.9%	68.8%	0.4%	\$217,192	\$126,308	\$661,043
Jackson County	7.8	82.1%	88.1%	0.5%	\$252,099	\$127,965	\$621,893
Jefferson County	8.1	85.6%	86.1%	1.4%	\$284,788	\$108,562	\$626,037
Knox County	7.2	68.3%	78.4%	1.0%	\$224,058	\$116,692	\$526,194
Lake County	6.5	64.7%	63.7%	0.0%	\$450,854	\$250,625	\$1,693,526
Lawrence County	8.0	87.5%	75.0%	0.0%	\$9,993	\$6,737	\$22,467
Licking County	7.3	73.2%	81.2%	0.6%	\$632,569	\$277,878	\$1,486,416
Logan County	7.8	80.7%	78.4%	1.1%	\$239,060	\$98,972	\$486,241
Lorain County	7.3	73.3%	85.7%	0.8%	\$742,423	\$390,040	\$2,422,444
Lucas County	7.3	71.1%	89.8%	1.2%	\$544,632	\$278,605	\$2,087,116
Madison County	7.2	70.4%	82.2%	0.7%	\$148,731	\$72,339	\$422,960
Mahoning County	7.6	77.2%	89.1%	0.5%	\$1,420,456	\$531,246	\$3,103,934
Marion County	7.5	75.7%	83.4%	1.0%	\$376,971	\$172,847	\$908,337
Medina County	7.2	67.1%	78.9%	0.0%	\$399,429	\$177,896	\$875,298

County Summary of Deliveries for CY 2002							
County	Matched Medicaid Deliveries						
	Average Months of Eligibility Before Delivery	Percent Eligible 7 to 9 Months Before Delivery	Percent Eligible 3 Months After Delivery	Percent with No Prenatal Care	Total FFS Expenditures in the Prenatal Period	Total FFS Expenditures in the Post Partum Period	Total Delivery Expenditures
Meigs County	8.1	85.3%	86.8%	0.0%	\$212,804	\$99,989	\$399,429
Mercer County	7.5	75.0%	71.6%	0.9%	\$145,275	\$54,744	\$262,638
Miami County	7.3	70.9%	77.0%	0.3%	\$400,204	\$178,581	\$1,053,167
Monroe County	7.4	79.6%	67.3%	0.0%	\$96,494	\$24,899	\$132,580
Montgomery County	7.1	69.9%	85.9%	1.3%	\$1,914,963	\$774,535	\$4,880,822
Morgan County	8.3	92.0%	83.0%	0.0%	\$144,611	\$60,566	\$266,614
Morrow County	7.7	79.5%	88.5%	0.0%	\$167,499	\$83,553	\$363,951
Muskingum County	7.9	82.0%	83.4%	0.4%	\$661,757	\$235,286	\$1,331,898
Noble County	7.8	82.4%	74.5%	2.0%	\$60,325	\$41,430	\$154,990
Ottawa County	7.3	75.2%	77.4%	0.0%	\$125,679	\$69,877	\$376,217
Paulding County	7.5	77.0%	70.1%	1.1%	\$129,567	\$52,105	\$232,392
Perry County	7.7	81.4%	82.4%	1.1%	\$276,257	\$112,267	\$572,362
Pickaway County	7.0	71.3%	71.3%	1.2%	\$182,360	\$82,560	\$508,771
Pike County	8.0	85.6%	84.6%	0.0%	\$343,766	\$126,523	\$591,757
Portage County	7.3	70.4%	84.0%	0.7%	\$588,766	\$263,102	\$1,460,137
Preble County	7.2	68.8%	72.0%	1.6%	\$175,166	\$71,656	\$459,847
Putnam County	6.7	68.7%	77.6%	1.5%	\$62,026	\$23,557	\$179,054
Richland County	7.4	74.9%	69.0%	1.0%	\$675,733	\$338,957	\$1,719,728
Ross County	7.8	81.4%	83.8%	0.8%	\$568,850	\$243,252	\$1,205,336
Sandusky County	7.1	74.7%	69.4%	1.0%	\$344,313	\$169,522	\$824,084
Scioto County	7.9	82.2%	87.1%	0.4%	\$630,898	\$283,822	\$1,262,670
Seneca County	7.6	75.7%	68.7%	0.0%	\$285,901	\$114,086	\$712,852
Shelby County	7.0	69.6%	59.5%	0.0%	\$242,473	\$94,985	\$450,188
Stark County	7.7	78.7%	84.8%	0.7%	\$2,268,206	\$919,406	\$4,674,456
Summit County	7.5	76.0%	84.6%	0.6%	\$343,192	\$152,056	\$1,266,394
Trumbull County	7.4	75.6%	87.4%	1.1%	\$1,233,429	\$417,282	\$2,831,302
Tuscarawas County	7.6	79.9%	73.2%	0.8%	\$497,677	\$208,379	\$1,017,652
Union County	7.2	71.8%	80.0%	0.0%	\$122,644	\$58,435	\$312,217
Van Wert County	7.7	78.1%	73.7%	0.0%	\$139,216	\$62,254	\$315,840
Vinton County	8.2	88.9%	90.0%	0.0%	\$128,502	\$37,644	\$246,677
Warren County	6.7	63.9%	61.3%	0.7%	\$369,150	\$159,562	\$1,054,750

County Summary of Deliveries for CY 2002							
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	Average Months of Eligibility Before Delivery	Percent Eligible 7 to 9 Months Before Delivery	Percent Eligible 3 Months After Delivery	Percent with No Prenatal Care	Total FFS Expenditures in the Prenatal Period	Total FFS Expenditures in the Post Partum Period	Total Delivery Expenditures
Washington County	7.8	83.8%	77.8%	0.0%	\$258,991	\$106,978	\$557,709
Wayne County	7.5	75.8%	76.9%	1.1%	\$503,195	\$199,396	\$1,152,358
Williams County	7.4	76.7%	65.8%	0.0%	\$175,815	\$81,549	\$384,280
Wood County	7.1	69.2%	71.0%	0.3%	\$256,113	\$119,991	\$846,607
Wyandot County	7.4	76.5%	42.0%	0.0%	\$87,142	\$38,996	\$231,403
Urban	7.2	70.9%	85.1%	1.3%	\$18,124,263	\$8,209,235	\$52,980,971
Suburban	7.2	71.9%	80.0%	0.6%	\$7,018,406	\$3,094,253	\$17,976,181
Rural	7.4	74.5%	74.1%	0.6%	\$7,391,968	\$3,247,277	\$16,613,739
Appalachian	7.8	81.6%	81.5%	0.6%	\$8,608,169	\$3,706,321	\$18,354,220
Statewide	7.3	73.1%	82.4%	1.0%	\$41,142,806	\$18,257,086	\$105,925,110

REFERENCES

SECTION II

- ⁱ National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg. 17-18
- ⁱⁱ National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg. 17-18
- ⁱⁱⁱ de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{iv} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-
- ^v National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003
- ^{vi} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{vii} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{viii} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 2
- ^{ix} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 6
- ^x de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{xi} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 2
- ^{xii} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 2
- ^{xiii} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{xiv} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 11
- ^{xv} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15

- ^{xvi} Klebanoff MA. Short interpregnancy interval and the risk of low birthweight. *American Journal of Public Health*. 1988 Jun;78(6):667-70.
- ^{xvii} Silva AA. Et al. Trends in low birth weight: a comparison of two birth cohorts separated by a 15 year interval in Riberirao Preto Brazil. *World Health Organization Bulletin*. 1998;76(1) pgs 73-84
- ^{xviii} Sharma, R, Et al. Intermediate variables as determinants of adverse pregnancy outcome in high risk inner city populations. *Journal of the National Medical Association*. 1994; 86(11) pg 857-860
- ^{xix} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 12
- ^{xx} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{xxi} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 12
- ^{xxii} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{xxiii} Little. RE. Moderate alcohol use during pregnancy and decreased infant birth weight. *American Journal of Public Health*. 1977 Dec;67(12):1154-6
- ^{xxiv} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 13
- ^{xxv} de Bernabe, et al. "Risk Factors for Low Birth Weight: A Review". *European Journal of Obstetrics, Gynecology and Reproductive Biology*. Sept. 10, 2004 116(1) p. 3-15
- ^{xxvi} American Academy of Pediatrics and American College of Obstetricians and Gynecologists. *Guidelines for Perinatal Care (4th Edition)* 1997
- ^{xxvii} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 11
- ^{xxviii} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 11
- ^{xix} American Academy of Pediatrics and American College of Obstetricians and Gynecologists. *Guidelines for Perinatal Care (4th Edition)* 1997
- ^{xxx} National Vital Statistics Report. *Births: Final Data for 2002* Vol. 52, No. 10 U.S. Department of Health and Human Services. December 17, 2003 pg 17

SECTION VI

- ⁱ http://www.cdc.gov/ncbddd/fas/documents/FAS_guidelines_accessible
- ⁱⁱ <http://www.cdc.gov/ncbddd/fas/fasask.htm>
- ⁱⁱⁱ <http://www.cdc.gov/>
- ^{iv} <http://www.nofas.org/faqs.aspx?ID=5>
- ^v Pregnant, Substance-Using Women, Treatment Improvement Protocol, DHHS Publication No. (SMA) 95-3056, reprinted 1995, foreward.
- ^{vi} Preliminary Results from the 1997 National Household Survey, Section 9 Women of Childbearing Age.

SECTION VII

- ⁱ Hornbrook MC, Hurtado AV, Johnson RE. Healthcare episodes: definition, measurement and use
- ⁱⁱ “NCHS Data on Health Insurance and Access to Care”. National Center for Health Statistics. June 7, 2004