## **Report to the General Assembly**

January 2006

# Public Act 93-0536

State of Illinois Rod R. Blagojevich, Governor

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## **Executive Summary**

Over the past two years, Healthcare and Family Services has used the Report to the General Assembly, Public Act 93-0536, issued in 2004, as a guide in implementing initiatives aimed at improving birth outcomes in Illinois. Since the original report was issued, many new initiatives have been implemented and Illinois has seen improvement in birth outcomes. Other initiatives will be implemented over the next two years. The status of the priority recommendations from the initial report are summarized below.

#### **Planned Pregnancies**

- Two amendments to expand the *Illinois Healthy Women* (IHW) family planning waiver have been submitted to the federal government for approval.
- FamilyCare has been expanded incrementally to it's current standard of 185 percent of federal poverty on January 1, 2006.
- Work has begun on a new case management model, "Interconceptional Care," which targets women who have experienced a fetal or neonatal loss, or had a premature or low birth weight infant.
- Reimbursement for preconception care risk assessment will be implemented during 2006.

#### Mental Health During the Perinatal Period

- A statewide perinatal mental health consultation service has been operating since December 2004.
- Reimbursement for perinatal depression screening has been in place since December 2004 for prenatal screening and screening up to one year after birth.
- Local health departments and other providers have been trained on how to use the perinatal depression screening tool.
- A client brochure was developed and distributed to raise awareness of perinatal depression.
- The HFS Web site includes treatment and referral resources for clients and providers.
- The state's toll-free hotlines have been provided with information on perinatal depression, including referral resources.
- A Perinatal Depression Coordination project is in place with the objective of coordinating perinatal depression services statewide.

#### **Smoking Cessation**

- HFS has partnered with the Illinois Department of Public Health's (IDPH) Illinois Tobacco Quitline to provide counseling, support and motivational materials to pregnant women (and others) who are interested in quitting smoking.
- In February 2005, HFS enlisted the help of the Illinois Department of Human Services (IDHS) and its contracted Family Case Management (FCM) and Special Supplemental Nutrition for Women Infants and Children (WIC) agencies to encourage pregnant women to quit smoking.
- In October 2005, a client notice was mailed to all individuals enrolled in HFS' medical programs providing information about the Illinois Tobacco Quitline and encouraging smokers to quit.
- In December 2005, a provider notice was mailed to all enrolled Medicaid providers informing them about the Illinois Tobacco Quitline and providing a fax referral form for providers to refer patients to the Quitline, providing information on pharmacological

products to aid in smoking cessation, and encouraging providers to screen patients for smoking and encourage them to quit.

• In 2006, smoking cessation resources will be available on the HFS Web site.

#### **HIV Counseling**

- Pregnant women who test positive for HIV are routinely referred to one of the high-risk prenatal case management programs.
- HIV testing and counseling is covered by Medicaid.
- Provider information and resources on perinatal HIV are available on HFS' Web site.
- A provider notice regarding perinatal HIV testing and counseling will be mailed to Medicaid providers in early 2006 and will inform providers about reimbursement for rapid testing, encourage providers to perform HIV testing and counseling and to document results, and encourage providers to make results available to the labor and delivery hospital.
- In 2006, client information and resources will be developed for the HFS Web site

#### Nurse Midwifery

Certified Nurse Midwives are one of the four advance practice nurse (APN) specialties recognized under the Medical Assistance programs and previously were eligible for reimbursement at 70% of the physician rate. Effective January 1, 2006, all APNs (except psychiatric APNs) will be reimbursed at 100% of the physician rate and are eligible to receive the enhanced rate for MCH services. This may expand access to nurse midwifery across the state. This is particularly important in rural areas.

#### Lactation Counseling

- A client notice will be mailed in early 2006 to inform women of the benefits of breastfeeding, breastfeeding education, counseling and support services available from WIC, the availability of breast pumps, and a toll-free hotline number for peer-to-peer breastfeeding support and counseling.
- An informational provider notice was mailed in January 2006 to encourage providers to promote breastfeeding, including information on benefits of breastfeeding, discussion points, information on Medicaid reimbursement for breast pumps, services provided by WIC and a hotline number for peer counseling and advice.

#### **Case Management**

- Additional Targeted Intensive Prenatal Case Management (TIPS) sites have been funded and existing sites have been expanded based on data generated by this report.
- HFS and IDHS are partnering with private funders to develop a pilot in certain Chicago communities to test a more intensive performance-based outreach and case finding approach for hard-to-reach women.

#### **Perinatal Addiction**

According to the Illinois Department of Human Services (IDHS), Division of Alcohol and Substance Abuse (DASA), there continue to be gaps in the alcohol and substance abuse service system.

#### Data Highlights

- Unintended pregnancies continue to be a problem for low-income women, with an estimated 70 percent of Medicaid births unintended.
- Births paid for by HFS have increased by 4 percent each year from 2000 to 2004.
- The racial and ethnic distribution of Medicaid births is changing with a decrease in African American births (31 percent to 26 percent) and an increase in Hispanic births (33 percent to 35 percent) between 2000 and 2004.
- Births to teenagers have decreased from 22 percent to 19 percent, from 2001 to 2003, however, 95 percent of the births to teens are paid for by Medicaid.
- Sixty-six percent of births paid for by Medicaid were subsequent births (2<sup>nd</sup> or higher) in 2003.
- Prenatal care for Medicaid-enrolled women is improving with an increase from 71 percent to 77 percent in women receiving prenatal care in the first trimester from 2001 to 2003; a slight decrease in the percent of HSF-enrolled women receiving no prenatal care from 2000 to 2004 and a large increase in women receiving 14 or more prenatal services.
- There has been a dramatic increase in the percentage of Medicaid-enrolled women receiving postpartum care from 2000 to 2004, with the largest increase in the age groups of 19-20 and 21-30 (54 percent to 60 percent).
- The infant mortality rate for Medicaid-enrolled infants dropped sharply between 2000 and 2001 from 9.3 to 7.7.
- There has been a 12 percent reduction in Medicaid very low birth weight (VLBW) outcomes between 1997 and 2003.
- Medicaid-enrolled women who receive WIC and FCM services have better VLBW outcomes, almost 1/3 the rate of women who do not receive WIC and FCM services.

## Introduction

The Illinois Department of Healthcare and Family Services (HFS), formerly the Illinois Department of Public Aid, is the largest insurer in Illinois, providing health insurance for over two million Illinoisans through Medicaid and the State Children's Health Insurance Program (SCHIP). The Medicaid program, established in 1965 as Title XIX of the Social Security Act, provides health and long term care coverage to low-income families, the aged, blind and disabled and pregnant women. The SCHIP program, created by the Balanced Budget Act of 1997, as Title XXI of the Social Security Act, is a children's health insurance program that provides health insurance for children, up to age 19, who are not already insured. SCHIP is a state administered program and each state sets its own guidelines regarding eligibility and services. Here in Illinois, SCHIP has also been used to expand access to health care for working parents.

HFS is the single State agency responsible for the administration of Title XIX and Title XXI of the Social Security Act. In Illinois, Medicaid and SCHIP are known as KidCare for the enrolled population under age 19. The benefit package for children funded by SCHIP is almost identical to the Medicaid package of services for children. Children in families with income up to 200 percent of federal poverty level (approximately \$40,000 for a family of four) are eligible for coverage in KidCare. Additionally, pregnant women are eligible for covered benefits if their family income is at or below 200 percent of poverty. HFS covered over 1.2 million individuals under age 21 during federal fiscal year 2004 under its medical programs and paid for 74,000 births to pregnant Medicaid-eligible women in calendar year 2004.

Illinois has also implemented FamilyCare under the KidCare Parent Coverage Waiver. FamilyCare is a program to provide medical coverage to parents living with their children 18 years old or younger. FamilyCare also covers relatives who are caring for children in place of their parents. In January 2006, the eligibility for FamilyCare increased to 185 percent of poverty.

Governor Rod R. Blagojevich's administration has focused on giving Illinois families the tools to prosper – building the economy, expanding health care and improving the quality of life. With health care as a priority of his administration, there are close to 400,000 more Illinoisans with health care coverage today as compared to December 2002 (accounting for health care coverage for approximately 185,000 more children, 182,000 more parents and 32,000 seniors and other. Approximately 85 percent of the parents are women).

Reducing infant mortality (death during the first year of life), low birth weight (infants born less than 2500 grams) and very low birth weight (infants born less than 1500 grams) is a health priority in the United States, as well as in Illinois. Progress has been made in health care and medical technology that has contributed to steady overall declines in infant mortality in the United States.<sup>1</sup> The proportion of mothers getting early prenatal care is at a record high. "Although the United States spends more resources than any other

<sup>&</sup>lt;sup>1</sup> 2002 data from the Centers for Disease Control National Center for Health Statistics show the first rise in the overall infant mortality rate in the Unites States in the last 45 years (from 6.8 to 7.0 infant deaths per 1,000 live births)

industrialized nation by a wide margin, between 1990 and 1995, the United States was 23 out of the 29 leading industrialized nations in terms of infant mortality..."<sup>2</sup>

In the United States, perinatal health disparities persist and are widening for African Americans.<sup>3</sup> The infant mortality rate among black children is more than double that for white children.<sup>4</sup> Black infants also have the highest preterm birth rates (17.6 percent versus 10.7 percent for whites), are more likely than all other racial and ethnic groups in the U.S. to be born low birth weight (13.2 percent versus 6.8 percent for white neonates) and more than three times as likely to be born at very low birth weight compared to white neonates – conditions that place them at higher risk for multiple health problems, disability and death. As a result, prematurity and low birth weight are the leading causes of death among African American infants, occurring at five times the rate of whites. While maternal mortality rates have decreased dramatically, maternal death is four times higher among African American women compared to white women, and is often preventable.<sup>5, 6</sup> Illinois mirrors the nation with its experience in perinatal disparities among African Americans.

This report will identify the steps HFS has taken with its partners (other state agencies, advocate groups, maternal and child health experts, local funding resources and others) to address the perinatal health care needs and racial health disparities in Illinois; detail the progress made on addressing the priority recommendations as outlined in the 2004 Report to the General Assembly as a result of Public Act 93-0536; review the available trend data on infant mortality, low birth weight and very low birth weight outcomes; and identify the progress made to address poor birth outcomes through analysis of trend data.

<sup>&</sup>lt;sup>2</sup> "U.S. Drops in Rank of Industrialized Nations for Infant Mortality, Life Expectancy," November 11, 1997, quotation from Gerald Anderson, Ph.D., professor on health policy and management at Johns Hopkins School of Public Health, with references from O.E.C.D. Health Data 98: A comparative analysis of 29 countries. Personal communication. Health Canada.

<sup>&</sup>lt;sup>3</sup> Association of Maternal and Child Health Programs, Building State Partnerships to Improve Birth Outcomes, January 2005

<sup>&</sup>lt;sup>4</sup> U.S. Department of Health and Human Services, "Preventing Infant Mortality," March 18, 2002.

<sup>&</sup>lt;sup>5</sup> Association of Maternal and Child Health Programs, Building State Partnerships to Improve Birth Outcomes, January 2005.

<sup>&</sup>lt;sup>6</sup> U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Child Health and Human Development, "Health Disparities – Bridging the Gap," September 2000

## **Legislative Mandate**

Public Act 93-0536 (305 ILCS 5/5 - 5.23) was passed with the aim of improving birth outcomes for over 80,000 babies whose births are covered by Illinois Medicaid every year. The law states that HFS may provide reimbursement for all prenatal and perinatal health care services that are provided for the purpose of preventing low birth weight infants, reducing the need for neonatal intensive care hospital services and promoting perinatal health. Additionally, HFS was required to develop a plan for prenatal and perinatal health care for presentation to the General Assembly by January 1, 2004. HFS is required to report to the General Assembly on or before January 1, 2006, and every 2 years thereafter, on the effectiveness of prenatal and perinatal health care services.

As required, this document is presented to the General Assembly in compliance with Public Act 93-0536 (305 ILCS 5/5 - 5/23) to report on the effectiveness of prenatal and perinatal health care services reimbursed by HFS in improving birth outcomes. As a reference document, the 2004 report is available on the HFS Web site at: < <u>http://www.hfs.illinois.gov/assets/041504pa93\_0536.pdf</u> >.

## HFS' Implementation of the Legislative Charge

Given the enormity and importance of the task required by Public Act 93-0536, HFS developed a strategic planning process to identify and develop strategies to promote "healthy births," based on data analysis and review of evidence-based practices. HFS performed extensive work through the Perinatal Health Care Task Force to analyze opportunities to improve birth outcomes. Extensive literature reviews in areas believed to impact birth outcomes were performed. National and state birth outcome and health indices data, including Illinois Medicaid-specific data (eligibility and paid claims) were analyzed. "Best practice strategies" for promoting a "healthy birth" were investigated. Medicaid agencies in other states were contacted for information about their initiatives, costs savings and improve health outcomes.

From the extensive reviews, expertise and vast experience of the participants, the task force made a variety of recommendations and also identified several interventions that showed promise in reducing poor birth outcomes. In some instances, there was a preponderance of evidence suggesting efficacy of these interventions. However, in many cases caveats were also present or there was a need to test the interventions in a setting similar to the medical settings utilized by Medicaid beneficiaries. Therefore, the development of research pilots to test some of the interventions with the most promise was deemed to be appropriate. Priority recommendations were established to improve birth outcomes.

This 2006 follow-up report outlines the progress made with implementation of the priority recommendations and discusses further plans and continued efforts to improve birth outcomes.

## **Planned Pregnancies**

#### 2004 Recommendations:

- Provide coverage for the Title XXI 19-year old population who are leaving the program due to age or female parents/relative caretakers under Illinois Family Care who no longer meet the income requirements for that program (high priority)
- Include folic acid and vitamin supplementation in the package of covered services under *Illinois Healthy Women* (high priority)
- Expand coverage under the Illinois Healthy Women program to all women who would otherwise be eligible for Medicaid maternity coverage and whose income is below 200 percent of the federal poverty level, irrespective of whether they were previously enrolled in Medicaid or SCHIP (high priority)
- Add coverage for a preconception visit (high priority)

#### Current Status:

HFS submitted an amendment request to the Centers for Medicare & Medicaid Services (CMS) to expand the Illinois Healthy Women program (a five-year federal family planning

demonstration waiver) to include the Title XXI 19-year olds who are leaving KidCare as they no longer meet the age requirements for that program. The amendment request was submitted to CMS in February 2004. HFS awaits formal approval, however, has received verbal approval to cover this population with the promise of federal matching dollars (90 percent for family planning services).

HFS has expanded health care coverage to low-income populations: FamilyCare, which provides comprehensive coverage including family planning services, expanded from 49 percent of poverty to 90 percent of poverty in July 2003, expanded to 133 percent of poverty in September 2004, and expanded again to 185 percent of poverty in January 2006. Women leaving the FamilyCare program will also be eligible for Illinois Healthy Women.

There are close to 4,000 babies each year who are born in the U.S. with spina bifida or die from anencephaly, both neural tube defects.<sup>7</sup> Of the children born with spina bifida, 80-90% live, but with serious disabilities.<sup>8</sup> For those children with spina bifida, the average lifetime cost to society is \$532,000, with some cases exceeding \$1,000,000. Medical and surgical costs for these individuals are estimated to exceed \$200 million annually.<sup>9</sup> Fifty to seventy-five percent of these birth defects are preventable with adequate intake of folic acid **before** and during pregnancy.<sup>10</sup> The cost of multivitamins and folic acid are insignificant compared to the tremendous costs associated with caring for individuals with neural tube defects.

Also included in the amendment submitted to CMS in February 2004 was a request to cover folic acid and vitamin supplementation in the package of covered services under Illinois Healthy Women. CMS has informally denied this request. However, HFS is providing coverage for folic acid and vitamin supplementation at state expense to women covered by HFS, including Illinois Healthy Women participants since research demonstrates that folic acid prevents several neural tube birth defects and promotes healthy birth outcomes. Folic acid is an element included in vitamin supplementation.

In July 2005, HFS submitted a second waiver amendment request to CMS to allow expansion of the covered population under Illinois Healthy Women. Once approved, this expansion will allow additional women whose family income is at or below 200 percent of poverty to apply for family planning and related reproductive health coverage under Illinois Healthy Women, using a simplified application. It is estimated that approximately 44,000 additional women will receive family planning services with this expansion. The application will be made available at the point of service; to All Kids Application Agents; in the community at multiple locations frequented by the target population; and for downloading from HFS' Web site. We also hope to develop a web-based application, similar to the current KidCare/FamilyCare web-based application.

<sup>&</sup>lt;sup>7</sup> Centers for Disease Control and Prevention, *Folic Acid for Healthy Babies, A Primer,* http://www.cdc.gov/doc.do/id/0900f3ee8000d61c Date Last Reviewed: 09/19/2003

<sup>&</sup>lt;sup>8</sup> Centers for Disease Control and Prevention, Folic Acid, Frequently Asked Questions (FAQs), <u>http://www.cdc.gov/doc.do/id/0900f3ec8000d558</u> Date Last Reviewed: 09/25/2003

 <sup>&</sup>lt;sup>9</sup> Spina Bifida Association, Spina Bifida Statistics for the Media, <u>http://www.sbaa.org/docs/media/sb\_stats.pdf</u>
<sup>10</sup> Centers for Disease Control and Prevention, *Folic Acid for Healthy Babies, A Primer,*

http://www.cdc.gov/doc.do/id/0900f3ee8000d61c Date Last Reviewed: 09/19/2003

While approval has not yet been received, based on the communications between HFS and CMS, approval of this expansion of the Illinois Healthy Women program appears promising. An outreach campaign to inform the eligible population and providers is being developed.

HFS has conducted research relative to preconception coverage throughout the country. Materials on preconception care from thirteen states have been extensively reviewed. A panel of perinatal experts was convened to further recommend components necessary to address preconception care. The panel recommended that the content of a preconception visit and risk assessment be in accordance with the American College of Obstetricians and Gynecologists' (ACOG) "Guidelines for Perinatal Care." Preconception care allows for the identification of conditions that could affect a future pregnancy or fetus and that may be amenable to intervention.<sup>11</sup> It includes a wide range of screening; assessments, including risk assessment; and counseling and educational interventions to assure better birth outcomes.

HFS is working in partnership with IDHS and private funders to implement an "Interconceptional Care Model" in targeted Chicago communities. Approximately 67 percent of Medicaid births in Illinois are subsequent (second or higher) births with 19 percent having intervals of less than 24 months between births.<sup>12</sup> This means that the mothers were most likely previously known to Medicaid. This data illustrates why it is so important for women in the target communities to plan their pregnancies. Lengthening the time between pregnancies allows a woman's body to recover from the previous pregnancy permits her to address health and social risks before another pregnancy occurs. Often, when a woman experiences a fetal or infant death, she loses eligibility for continuing medical and case management services because she does not have a child. In other instances where a woman's eligibility may continue because she does have other children, she still may not access health care services. Such women often next present to the health care system when subsequently pregnant. Those women who have had a poor birth outcome are at significantly higher risk with respect to subsequent pregnancies. However, because such women are in fact known to the Medicaid health care system, there are opportunities for intervention and risk reduction during the interconceptional period. This model is currently operational at Grady Memorial Hospital in Atlanta. The area served by Grady Memorial is demographically similar to certain Chicago areas with the poorest birth outcomes.

HFS is also partnering with the state's Title X Program administered by the Illinois Department of Human Services to develop a risk assessment tool for preconception care for women contemplating pregnancy. The evaluation of medical conditions that may affect or be affected by pregnancy should be considered and education/anticipatory guidance provided as part of the risk assessment. Lifestyle or social behaviors such as use of tobacco and alcohol or other substance abuse, which will adversely affect the pregnancy can be evaluated and recommendations made or treatment initiated prior to attempting pregnancy. HFS plans to add coverage for preconception risk assessment in 2006.

#### Update on Illinois Healthy Women:

The IHW family planning program began operation in April 2004 with the goal of offering family planning services to over 96,000 women during the first year of the five (5) year

<sup>&</sup>lt;sup>11</sup> American College of Obstetricians and Gynecologists and American Academy of Pediatrics, "Guidelines for Perinatal Care", 2002

<sup>&</sup>lt;sup>12</sup> Vital Statistics, Birth File Match, 2003

federal waiver. This program provides family planning services to women who lose eligibility for HFS' medical programs, ensuring continued access to services that allow women to make personal choices about the number and spacing of their pregnancies.

The IHW program is currently in its second year of operation. Since the program's start in April 1, 2004 through December 31, 2005:

- 162,275 women were sent a 3-month IHW card, with approximately 10% of the cards being undeliverable
- 36,796 women have enrolled for an additional 9 months of coverage
- 3,401 women have enrolled for a second year of IHW coverage
- 17,656 women have utilized services under the IHW waiver
- 32,097 women are currently eligible to receive services under the IHW waiver

HFS will be conducting an evaluation of the program to assess the impact that expanding eligibility for family planning services has on increasing usage of family planning services and thus reducing state costs by decreasing the number of unplanned pregnancies and increasing the child spacing interval. Since IHW is just in its second year, it is too early for evaluation results.

## Mental Health During the Perinatal Period

#### 2004 Recommendations:

- Create a statewide Perinatal Mental Health Consultation Service for providers that includes a university-based Perinatal Mental Health Consultation Team charged with developing a model program template for addressing the specific needs of women of reproductive age, providing assistance to prenatal and primary care providers to help the clinics adapt and implement the model at their sites, and maintaining an ongoing telephone, fax or e-mail consultation service for primary care providers (high priority)
- Allow reimbursement for screening for depression, such as for the Edinburgh Postnatal Depression Scale during the prenatal and postpartum period (high priority)
- Provide information and training to providers on how to use the depression screening tool (medium priority)
- Identify a mechanism to provide mental health screening and treatment to women beyond the current 60 days postpartum eligibility period and work with other agencies, (e.g., Illinois Department of Human Services, Division of Mental Health) to provide mental health services to these women (requires further study)

#### Current Status:

Governor Rod R. Blagojevich and the Conference of Women Legislators (COWL) in the Illinois General Assembly organized a Perinatal Depression Initiative in 2004. The initiative included efforts to increase awareness and assure women receive the services they need. The efforts in Illinois included the implementation of a Peripartum Depression Awareness Campaign, and:

- Medicaid reimbursement for screening for perinatal depression
- The establishment of a Peripartum Mental Health Consultation Service to raise awareness about peripartum depression, train primary care providers, help them establish screening programs and provide ongoing expert assistance in managing women who are experiencing peripartum depression
- Distribution of a client brochure directed at women experiencing peripartum depression and others to raise awareness
- Increasing awareness of the availability of perinatal depression crisis intervention hotlines, such as the one operated by Evanston Northwestern Healthcare Jennifer Mudd Houghtaling Depression Program and the Postpartum Depression Illinois Alliance
- Training of local public health departments to screen for peripartum depression. These local health departments are required to identify community resources appropriate for referral and follow-up
- Providing the state's toll-free hotlines with information on referral resources for women's health care, including mental health issues, such as peripartum depression. Customer information lines to assist callers exist at HFS, IDPH and IDHS
- Providing information on HFS' Web site including treatment and referral resources, links for providers and customers; educational materials; Medicaid billing and reimbursement instruction; and the client brochure available for downloading and printing

As of November 30, 2005, the UIC Peripartum Mental Health Consultation Service has trained 1,964 providers at workshops and presentations and has completed 259 consults. A videotape of provider training has been completed for future use in training providers. HFS has identified high-volume provider clinics statewide that are not yet billing for depression screening and UIC is planning workshops to target those sites. UIC continues to establish linkages on a statewide and national basis with other perinatal depression initiatives and serves as a national model providing information and consultation to other states and organizations on perinatal depression and participating in the Surgeon General's workshop on women's mental health. Project Director, Laura Miller, M.D. provides a medical narrative in the recent documentary "Descent into Desperation: Postparum Depression and Psychosis" and UIC continues to work collaboratively with Digital Realm and the March of Dimes to conduct showings, making Dr. Miller available to answer questions and describe resources. UIC has developed a wealth of educational and training materials, including a list of prescription products to treat perinatal depression for HFS' Web site. The UIC Perinatal Depression Awareness Campaign Web site is available at:

http://www.psych.uic.edu/clinical/HRSA/index.htm

UIC's Peripartum Mental Health Consultation Service and the Evanston Northwestern Healthcare Jennifer Mudd-Houghtaling Postpartum Depression Program are currently operating in part with grant funding awarded to HFS from the Michael Reese Health Trust to address perinatal depression so as to improve birth outcomes. An evaluation of the effectiveness of the strategy is planned. Using paid claims data, monitoring will occur to determine the increase in the percentage of women being screened, diagnosed and treated for perinatal depression. Trend data will be analyzed over a number of fiscal years to further assess the impact.

HFS began reimbursement for screening for depression during the prenatal and postpartum period in December 2004. Billed as a "risk assessment" providers may bill a screening for depression using an instrument recognized by the industry as valid, reliable and appropriate for the prenatal and post partum period. Medicaid reimbursement is available for covered

pregnant and post partum women, up to a year after the infant's birth. HFS encourages providers to screen pregnant women during the prenatal visit, at the post partum visit, and at the well child visit or episodic care, for up to a year after the infant's birth.

HFS is involved with several initiatives to improve birth outcomes and assure the healthy mental development of young children. As part of those initiatives, HFS is partnering with provider groups, advocate groups and others to provide information and training to providers on how to use the depression screening tool, and make appropriate referrals. An Informational Notice to participating Medicaid providers, with the endorsement of American College of Obstetricians and Gynecologists, the Illinois Chapter of the American Academy of Pediatrics, and the Illinois Academy of Family Physicians, was distributed in November 2004, providing information on reimbursement, risk factors, prescription products to treat perinatal depression and instructions on completion of the Edinburgh Postnatal Depression Scale. This information is also available on HFS' Web site. The HFS Web site also contains referral information to assist providers in locating mental health services for patients experiencing perinatal depression.

Professional education with general Continuing Education Units (CEUs) was provided by satellite teleconference through IDHS. The training, "Perinatal Depression: Beyond the Blues", was presented in November 2004 and featured specialists in the field of perinatal depression and provided an overview of the illness; identified individuals most at risk; the signs and symptoms; current medications; available screening tools; and what health care providers can do to help someone experiencing depression.

Local health departments have received information through satellite training on use of the Edinburgh Postnatal Depression Scale. In addition, many other physicians and federally qualified health centers have been trained to screen for perinatal depression. The UIC Women's Mental Health Program and other provider organizations will continue to provide training on how to use the depression screening tool on an ongoing basis in 2006.

With the increase in eligibility to 185 percent of poverty for enrollment in the FamilyCare Program, many more mothers will receive ongoing health benefits after 60 days of post partum coverage. However, there will be some women who will not qualify after delivery. HFS implemented policy in December 2004 to allow for screening for maternal depression for up to one year after delivery, during a covered or enrolled infant's well child or episodic care visit. Providing mental health treatment services for the mother who does not qualify for ongoing benefits remains under study. There are efforts within Illinois, such as the Children's Mental Health Partnership, that has been charged with recommending strategies to increase needed mental health resources for children and to increase awareness and response to maternal depression with attention to prevention and early intervention efforts, and necessary follow-up assessment and treatment services.

## **Oral Health**

#### 2004 Recommendation:

• Expand Medicaid coverage for prevention and treatment of oral disease in pregnant women, including measures to reduce colonization of S. mutans and to control periodontal infections (high priority)

#### Current Status:

HFS studied the feasibility of implementing a pilot project to determine the efficacy of providing preventive periodontal services to pregnant women and its impact on improving birth outcomes. After conducting an extensive literature review and consulting with experts in dentistry, HFS was unable to determine the prevalence of periodontal disease in pregnant women. The only reference to prevalence found is in the article, "Measures for NCS Core Hypotheses." This article states that there is no true value for the prevalence of periodontal disease in pregnant women as of 2004, but it is presumed to be very low.<sup>13</sup>

After carefully considering implementation of the periodontal pilot project, HFS determined that it would have been very difficult to locate sufficient pregnant women with periodontal disease to participate in the study. Dentists would be the likely source of locating and referring pregnant women with periodontal disease to the project. Since Medicaid does not cover preventive dental care for adults, HFS had no feasible means of identifying appropriate subjects. In order to determine "power" sufficient for a statistically valid study (e.g., size of the intervention and control groups) to determine the effectiveness of the intervention, the current prevalence, as well as the desired or anticipated results from the intervention, must first be determined. Additionally, a federal waiver allowing piloting this project would be required as without one, the state would be required to provide comparable services to all pregnant women. No specific appropriation has been received allowing the expansion of coverage to include periodontal and preventive dental care for pregnant women.

HFS staff continue to research the literature to document periodontal services as an evidencebased strategy that will result in improved birth outcomes.

#### **Smoking Cessation**

#### 2004 Recommendations:

- Encourage providers to assess smoking status and update smoking status at each visit, providing advice to quit (high priority)
- Provide a booklet, which is motivational and includes self-help skills for quitting to providers for distribution (high priority)

<sup>&</sup>lt;sup>13</sup> Reiches, N.; Thomas, A.; Menkedick, J. and Strauss, W. "White Paper on Measures for NCS Core Hypotheses; Commissioned by the National Children's Study Program Office, National Institute for Child Health and Human Development, 2004.

- Provide reimbursement for a more intensive smoking cessation program that includes one-to-one counseling, telephone support and cessation classes or support groups for pregnant women who smoke (high priority)
- Provide smoking cessation intervention with women in the public delivery of care system who are not currently pregnant as quitting during pregnancy is often temporary (requires further study)

#### Current Status:

HFS has partnered with the Illinois Department of Public Health (IDPH), the Illinois Department of Human Services (IDHS) and the American Lung Association to promote the use of the Illinois Tobacco Quitline. The Illinois Tobacco Quitline is supported by Tobacco Settlement Funds and is a help line that offers free, confidential counseling provided to tobacco users through all stages of the quitting process including nutrition and weight management, information about cessation medications and management skills for dealing with withdrawal symptoms. The Quitline is staffed by Addiction Specialists, Respiratory Therapists and Registered Nurses trained at the Mayo Clinic. These specially trained staff can make appointments with callers for follow-up and provide ongoing support through the process of quitting. The Quitline hours are Monday through Friday, from 7 a.m. to 7 p.m., and translation services are available in 150 languages.

All individuals who call the Quitline are counseled and sent a packet of information tailored to each individual circumstance, e.g., teen, pregnant women. Each packet contains educational materials and individuals may choose whether they wish to call the hotline or be called by the Quitline staff for smoking cessation counseling and support services.

Based on a comprehensive literature review, a survey of 22 state Medicaid programs and discussions with local stakeholders, HFS has initiated a smoking cessation awareness campaign targeted to agencies providing Family Case Management (FCM) and WIC services, Medicaid enrollees and Medicaid providers.

In February 2005, HFS sent a letter on smoking cessation to all FCM and WIC agencies in collaboration with IDHS and IDPH. The letter includes information on the health risks of smoking, how to use the Five A's smoking cessation program, encourages referral to the Illinois Tobacco Quitline, identifies appropriate motivational/educational materials for use with Medicaid enrolled women, and informs the agencies of the pharmacological smoking cessation products reimbursed by Medicaid. It also provides Medicaid policy clarification for the local health departments in relation to prescribing over-the-counter covered pharmacy products, allowed with standing medical orders, health department policies and protocols and physician oversight.

In October 2005, HFS sent a client information notice to all enrollees encouraging them to use the Quitline, if they smoke and want to quit. It included information on the dangers of smoking while pregnant, and second hand smoke. It recommended the use of the Illinois Tobacco Quitline for help in quitting. Calls to the Quitline more than doubled during October and November 2005 as a result of this notice, from 25-50 calls a day to over 100 calls a day.

An informational notice was sent to Medicaid providers in December 2005. The provider notice contained information similar to that previously sent to the FCM and WIC agencies. It also included a fax referral form that can be used, with the patient's permission, to refer the patient to the Quitline for services.

The Illinois Tobacco Quitline provides a wide array of smoking cessation services, including motivational booklets, education, one-to-one counseling, telephone support and referral to smoking cessation classes or support groups. These services, coupled with HFS' reimbursement of pharmacological smoking cessation products and smoking cessation information to be available on the HFS Web site in the near future, provide a comprehensive package of smoking cessation services to enrollees in HFS' medical programs.

## **Perinatal Addiction**

#### 2004 Recommendations:

- Provide training for physicians and other health care professionals on the signs, symptoms and screenings for addictions (high priority)
- Convene a subcommittee on data and evaluation to recommend strategies to improve capturing birth outcomes of addicted women (high priority)
- Include a substance abuse specialist in the Targeted Intensive Prenatal Case Management and Healthy Start programs (high priority)
- Establish a formal network for consultation as needed by primary care providers (high priority)
- Identify existing resources needed to establish a Maternal Child Health team with a substance abuse treatment specialist (requires further study)
- Increase the number of outreach workers and treatment slots for pregnant women (requires further study)
- Fund a smoking cessation specialist position in DASA to review and recommend smoking cessation programs and provide smoking cessation training (requires further study)

#### Current Status:

IDHS administers services for alcoholism and substance abuse through the Division of Alcoholism and Substance Abuse (DASA). DASA also functions as the federal single state authority for the Substance Abuse Prevention and Treatment Block Grant (SAPT). DASA licenses all non-hospital based treatment and intervention services and purchases services for individuals using federal SAPT block grant, Medicaid, general revenue and discretionary grant funds. Services include intervention, outpatient, intensive outpatient, residential rehabilitation, residential extended care, recovery home and residential child care for children whose mother or father are in treatment. Pregnant and parenting women are given priority in admission to treatment and services providers are required to make available prenatal care for women in need of such services (directly or through referral agreements). The SAPT block grant mandates that a minimum of \$11,362,643 be spent each year on pregnant and parenting women. In state fiscal year 2005, DASA estimated expenditures for pregnant and parent women and their children at \$65,981,766 of which \$14,029,971 were Medicaid funds and \$3,083,013 were contract funds to support child care. Eighty-nine children were reported born drug free to women in treatment.

Women Serv	Women Served in DASA Supported Treatment and Recovery Services			
FY02	FY03	FY04	FY05	
26,679	31,330	32,300	34,329	

Women Served in DASA Supported Treatment and Recovery Service	Women	Served i	n DASA	<b>Supported</b>	Treatment	and Recovery	Services
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Children born drug free can result in significant savings for the state. According to a 1997 national study on recidivism of participants involved in drug courts, over 300 drug-free babies were born to women participating in drug court programs. The estimated savings attributable to the 300 drug-free babies is a minimum of \$250,000 per child during the first few years of life, and more than \$750,000 by age 18, including costs associated with hospital care, foster care and special education.<sup>14</sup> A 1998 study on drug exposed infants shows that these infants cost an additional \$7,700 in medical care before leaving the hospital and that women in residential substance abuse treatment had reduced rates of low birth weight, premature delivery and infant mortality rates.<sup>15</sup> Another study found that the hospital bills of babies born addicted to cocaine are 10 times higher than those born without cocaine.<sup>16</sup> Societal costs of drug addicted infants include infants abandoned at birth or placed in foster care, child abuse and neglect and special education. National child welfare spending attributable to substance abuse is estimated to be \$10 billion a year or 70 percent of child welfare spending.<sup>17</sup>

Even with the funds currently being expended for addiction services, there continue to be gaps in the alcohol and substance abuse service system, including:

- Some services are not available in all areas of the state
- Additional residential services for pregnant women and women with children are needed
- A need for improved and expanded training of health care providers and other professionals regarding the signs and symptoms of substance use and addiction including screening and referral to treatment as appropriate
- Expanded public education, prevention and intervention regarding the potential • effects of use of substances while pregnant are needed
- A need for studies to identify outcomes of prevention, intervention and treatment •

The effects of prenatal alcohol and drug exposure have been studied since the 1980's. Prenatal alcohol exposure is one of the leading causes of birth defects and developmental disabilities. Every year about 40,000 babies are born in the United States with symptoms of prenatal alcohol exposure. In Illinois, use of alcohol by women of reproductive age is

<sup>&</sup>lt;sup>14</sup> American University's Drug Court Clearinghouse and Technical Assistance Project, sponsored by the Office of Justice Programs, U.S. Department of Justice at: http://www.ojp.usdog.gov/ocom/Annual/97annual.txt

<sup>&</sup>lt;sup>15</sup> Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Substance Abuse Treatment (CSAT) "1993-2000 Residental Treatment Programs for Pregnant and Parenting Women"

<sup>&</sup>lt;sup>16</sup> Harwood, H., Fountain, D., Livermore, G., & The Lewin Group. (1998). The economic costs of alcohol and drug abuse in the United States, 1992. Washington, DC: U.S. Department of Health and Human Services. <sup>17</sup> National Center on Addication and Substance Abuse at Columbia University (CASA), No Safe Haven:

Children of Substance-Abusing Parents, January 1999.

common. Using 2003 data from Behavioral Risk Factor Surveillance System (BRFSS) sponsored by the Centers for Disease Control and Prevention, 49.9 percent of Illinois women drank alcohol in the past month, up from 47.2 percent in 1997.<sup>18</sup> According to data from the Pregnancy Risk Assessment Monitoring System (PRAMS) in 2002, 47.5 percent of women in Illinois drank alcohol in the three months before they became pregnant; 46.2 percent of women reported this behavior in 1998.<sup>19</sup> Symptoms associated with prenatal alcohol exposure vary in severity and may include physical defects, cognitive deficits and behavior problems. Many with prenatal alcohol exposure need special education services and many cannot live independently as adults. Some become involved with criminal activity and are incarcerated. It is estimated 12 percent of the Medicaid-enrolled population in Illinois may be in need of some type of treatment for alcohol or drug abuse.<sup>20</sup> In a study by Harwood and Napolitano,<sup>21</sup> estimated lifetime costs for an individual with Fetal Alcohol Syndrome (FAS) were \$596,000. Adjusted for inflation and medical care increases, these costs are estimated in 2002 to be \$2.0 million for services with \$1.6 for medical treatment, special education and residential care and \$0.4 million for lost productivity<sup>22</sup> for an individual with FAS. These cost estimates demonstrate the importance of education, prevention, intervention and treatment services.

## **HIV Counseling**

#### 2004 Recommendations:

- Cover HIV counseling and testing under Illinois Healthy Women (family planning waiver) (high priority)
- Implement strategies (e.g., outreach and case finding of pregnant women) to ensure that pregnant women receive prenatal care and Family Case Management services (high priority)
- Refer pregnant women who are HIV-positive to Targeted Intensive Prenatal Case Management (high priority)
- Look for ways to assure compliance with the requirement that providers of prenatal health care services routinely provide HIV counseling to all pregnant women; routinely discuss the importance of HIV testing; and routinely offer HIV testing on a voluntary basis, as well as compliance with the requirement that every health care professional or facility that cares for a newborn, upon delivery or within 48 hours after the infant's birth, provide counseling and automatically perform HIV testing when the HIV status of the infant's mother is unknown, if the parent or guardian does not refuse (high priority)

<sup>&</sup>lt;sup>18</sup> Illinois Department of Human Services, FFY'06 Maternal and Child Health Block Grant Needs Assessment

 <sup>&</sup>lt;sup>19</sup> Illinois Department of Human Services, FFY'06 Maternal and Child Health Block Grant Needs Assessment
<sup>20</sup> Alcohol, Tobacco, and Other Drug Use by Medicaid Recipients in Illinois: Prevalence and Treatment Need,

<sup>1999</sup> Cho et al, Illinois Department of Human Services, Division of Alcoholism and Substance Abuse, Survey Research Laboratory University of Illinois at Chicago

<sup>&</sup>lt;sup>21</sup> The Financial Impact of Fetal Alcohol Syndrome SAMHSA Fetal Alcohol Spectrum Disorders Center for Excellence

<sup>&</sup>lt;sup>22</sup> The Financial Impact of Fetal Alcohol Syndrome SAMHSA Fetal Alcohol Spectrum Disorders Center for Excellence

- Collaborate and work in concert with other State agencies and provider groups to encourage providers to document HIV testing results and ensure that such documentation is available at the labor and delivery hospital (high priority)
- Educate providers on reimbursement for perinatal rapid testing, allowing payment for this laboratory procedure and office visit, which includes counseling (high priority)
- Provide separate Medicaid reimbursement for HIV counseling as a means to help reduce the transmission of HIV infection (medium priority)

#### Current Status:

Pregnant women who are positive for the HIV virus are automatically referred to one of the high-risk prenatal case management programs. HFS continues to participate in the Perinatal HIV Committee and with IDHS' case management initiative.

HIV testing and counseling is covered under all of HFS' medical programs, including *Illinois Healthy Women*. Counseling is included in the office visit and is not separately billable. An informational notice about rapid HIV testing will be sent to Medicaid providers in early 2006. The notice encourages HIV testing and counseling, documentation of test results and the need to make results available at the labor and delivery hospital. Resources for rapid HIV testing information and Perinatal HIV Hotlines are also provided in the notice.

Provider-oriented materials on perinatal HIV are available on HFS' Web site. Information for Medicaid beneficiaries is being developed.

Implementing rules for the Perinatal HIV Prevention Act, passed in 2003, are under review by the Joint Committee on Administrative Rules (JCAR). Approval and adoption of the rules is expected to take place in early 2006.

#### **Nurse Midwifery**

#### 2004 Recommendations:

- Increase the use of Certified Nurse Midwives as a cost-effective group of perinatal providers (medium priority)
- Base reimbursement rates on the services provided, rather than whether a physician or CNM provided the services (medium priority)
- Allow Certified Nurse Midwives to have MCH (enhanced rate) status (requires further study)

#### Current Status:

Certified Nurse Midwives are one of the four advance practice nurse (APN) specialties recognized under Medicaid and have been eligible for reimbursement at 70% of the physician rate. Effective January 1, 2006, all APNs (except psychiatric APNs) will be reimbursed at 100% of the physician rate and are eligible to receive the enhanced rate for MCH services. Data will be analyzed to assess the increase in access to care through

coverage by this provider group. This is particularly important in rural areas where access to obstetric care can be limited for the general population.

## **Lactation Counseling**

#### 2004 Recommendations:

- Use the task force model to develop an awareness and outreach campaign to more effectively utilize services across agencies (high priority)
- Provide updated breastfeeding information to physicians who serve Medicaid participants (requires further study)
- Provide reimbursement for lactation counseling/support for breastfeeding women during the first weeks after birth (requires further study)

#### Current Status:

HFS worked with IDHS' WIC program to educate Medicaid enrollees and providers on the breastfeeding and lactation counseling services available and to coordinate service utilization. A client notice was mailed to enrolled women in February 2006. The notice informs women of the benefits of breastfeeding for both the mother and the baby. The notice also includes information about breastfeeding education, counseling and support services available from WIC and the availability of breast pumps for women who return to work or school. A toll-free hotline number is provided for peer-to-peer breastfeeding support and counseling provided by the National Women's Health Information Center.

An informational notice will be mailed to Medicaid providers in early 2006 encouraging them to promote breastfeeding with Medicaid-enrolled women. The notice includes breastfeeding recommendations from ACOG, AAP and AAFP, provides information on the benefits of breastfeeding, includes discussion points for encouraging women to breastfeed, provides information on reimbursement for breast pumps, encourages providers to refer pregnant, postpartum and breastfeeding women to WIC for breastfeeding education, counseling and support and identifies a number of breastfeeding resources, including a toll-free hotline for breastfeeding women to obtain peer counseling and advice. Effective January 1, 2006, HFS removed the prior approval requirement for electric breast pumps, making them more accessible to breastfeeding women.

The WIC program promotes breastfeeding and provides education, classes, counseling and direct support for low-income pregnant and breastfeeding women. Lactation consultants who are trained in lactation management are available to help mothers achieve their breastfeeding goals. Lactation consultants provide education and support in both the prenatal and postpartum periods. These services, coupled with Medicaid reimbursement for breast pumps, provide a comprehensive package of lactation services to Medicaid enrollees. Information and links that encourage breastfeeding are maintained on HFS' Web site.

The WIC program works to positively impact attitudes and behaviors toward breastfeeding and is successful in promoting breastfeeding for low-income women. The most current information available shows that in 2003, over 60 percent of Illinois WIC mothers initiated breastfeeding and 29.6 percent of women continued breastfeeding at six months. Fourteen percent of mothers continued to breastfeed until their infant's first birthday.

## Labor Support During the Perinatal Period

#### 2004 Recommendation:

• Conduct research to determine the cost and benefits associated with continuous labor support provided through a doula or monitrice (low priority)

#### Current Status:

Since limited data exists suggesting there are demonstrated benefits in improving birth outcomes by providing high cost labor support, HFS has focused its efforts on other strategies that are demonstrated to improve birth outcomes.

The Ounce of Prevention Fund's Illinois Doula Project is in the process of measuring outcomes of its doula initiative. During Fiscal Year 2006, the Illinois Doula Project will examine the impact of Doula services on rates of maternal depression. IDHS is currently exploring the possibility of expanding the existing Doula program with the Ounce of Prevention Fund to add more capacity to the existing programs and initiate Doula programs in several locations.

## **Case Management and Home Visiting**

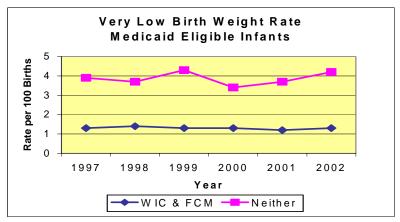
#### 2004 Recommendations:

- Expand the existing case management program to target high-risk areas, which is supported by HFS (high priority)
- Expand outreach efforts (especially in Chicago) to locate "hard-to-reach" pregnant women and get them into care (high priority)
- Pilot more intensive models of case management such as a program that covers six home visits during the prenatal period and 21 follow-up visits during the first 2 years of life (low priority)

#### Current Status:

Through an Interagency Agreement with HFS, IDHS administers the Family Case Management Program, with HFS claiming federal matching funds for this Medicaid administrative service. Case management has been designed to improve birth outcomes and thereby reduce infant mortality of births to Medicaid-enrolled pregnant women. Through integration of the FCM program and the WIC program, resources are maximized for case management services. Collaboratively these programs target services to women who have a greater chance of giving birth prematurely. IDHS also operates three targeted case management programs to reduce the infant mortality rate in high-risk communities. These programs are the Chicago Healthy Start program, Targeted Intensive Prenatal Case Management program and Closing the Gap. The FCM program and the WIC program's integrated delivery system is helping to reduce the state's infant mortality rate. While some studies are inconclusive with respect to the efficacy of case management for improving birth outcomes, several studies have demonstrated the effectiveness of Illinois' case management with respect to birth outcomes. The Reduction in Infant Mortality in Illinois FY 2004 Report illustrates that for six years in a row, infants born to Medicaid-enrolled pregnant women who participated in WIC or FCM demonstrated better birth outcomes than those born to Medicaid-enrolled women who did not participate in either program. The evaluation of these programs has yielded impressive data to support that the integrated delivery of these programs has resulted in a positive effect on improving birth outcomes among the Medicaid-enrolled population.<sup>23</sup> IDHS estimates that participation in WIC and FCM saves Illinois an average of \$200 million each year in Medicaid expenses with a Return on Investment of 7:1.<sup>24</sup> Using current FCM rates and the cost of non-normal births, it is estimated that \$7 in savings result from every \$1 spent on FCM.<sup>25</sup>

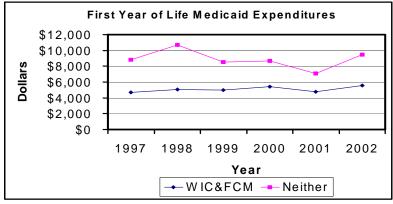
The tables below depict the impact that enrollment in FCM and WIC have on assisting in improving birth outcomes. HFS works closely with IDHS on the FCM program and targeted case management programs to reduce infant mortality in high-need communities. Targeted Intensive Prenatal Case Management Services (TIPS) and Chicago Healthy Start are more intensive models of case management targeted to high-risk women. The more intensive case management programs are still too new to be evaluated for efficacy and cost-effectiveness but will be evaluated when outcome data becomes available.



Illinois Department of Human Services, "The Reduction in Infant Mortality in Illinois", February 2005

<sup>&</sup>lt;sup>23</sup> Illinois Department of Human Services, "The Reduction in Infant Mortality in Illinois", February 2005

 <sup>&</sup>lt;sup>24</sup> Illinois Department of Human Services, "The Reduction in Infant Mortality in Illinois", February 2005
<sup>25</sup> Illinois Medicaid Paid Claims Data, 2004



Illinois Department of Human Services, "The Reduction in Infant Mortality in Illinois", February 2005

IDHS recently completed a more in-depth analysis of the difference that participation in WIC and FCM made in reducing very low birth weight. A simple examination of the difference in very low birth weight rates between infants born to program participants and infants whose mothers did not participate in WIC or FCM does not take into account several factors that may exaggerate the results. Therefore, IDHS enlisted the assistance of epidemiologists with the U.S. Centers for Disease Control and Prevention to conduct a more sophisticated analysis.

The study controlled for differences in age, education, race, ethnicity, marital status, smoking, use of alcohol, parity and medical complications between women who did and did not participate in WIC and FCM during pregnancy. The study also excluded women who entered prenatal medical care after their fifth month of pregnancy to control for bias. The study showed a 24 percent reduction in the very low birth weight rate of Medicaid-eligible women who participated in WIC and FCM. The result was statistically significant. Participation in WIC, FCM and medical prenatal care has a greater effect on reducing premature births than medical prenatal care alone.

Odds Ratios and 95 Percent Confidence Intervals for Early Preterm Birth (5 <sup>th</sup> or 6 <sup>th</sup> month of gestation) Comparing WIC and FCM Participants to Non-Participants: Illinois, 2000 - 2002					
Participation	Odds Ratio	95% Confidence Interval			
WIC & FCM	0.76	0.69 - 0.83			
Neither	1.00	Reference			

In calendar year 2004, the WIC and FCM programs served about 85 percent of the Medicaidenrolled births/pregnant in the state. In 2003, there were 85,697 Medicaid births (based on 2003 Birth File Match); WIC and FCM served approximately 72,000 of those families.

During 2004, TIPS served 1,741 high-risk pregnant women. For State Fiscal Year 2006, IDHS received an increase in appropriation of \$1.8 million for expansion of the TIPS case management program to target high-risk areas. HFS worked closely with IDHS to identify the highest-risk areas for additional sites and to determine whether existing sites should be expanded. The analysis performed was based on average neonatal costs to Medicaid, number of births, very low birth weight (VLBW) rate, unmet need, and current TIPS and Healthy Start resources. For SFY 2006, three new TIPS sites will be added – two in Chicago and one

in Will County. The five existing sites downstate will be expanded – Peoria County, Macon County, Vermilion County, St. Clair County and East Side Health District. With the new sites and expansion of existing sites planned for fiscal year 2006, capacity is increased to serve an additional 416 new high-risk pregnant women. As additional resources become available, HFS recommends TIPS be expanded to high-risk areas downstate (e.g., southern counties, Sangamon county and others).

TIPS is supported by Illinois General Revenue funds appropriated specifically for this purpose. Additionally, through an interagency agreement, HFS claims TIPS expenditures for federal matching purposes. Illinois receives approximately \$1.5 million annually in matching funds for program activities conducted for women enrolled in Medicaid.

In an effort to maximize funding for FCM, HFS entered into Intergovernmental Agreements with FCM agencies that are governmental entities (local health departments). The Intergovernmental Agreements allow claiming of federal match on the local tax dollars used to provide otherwise uncompensated case management services to the Medicaid-enrolled population. Federal match dollars received are forwarded to the respective local health department on a quarterly basis. The federal match dollars forwarded to the participating local health departments averages about \$1.9 million per quarter, with 70 local health departments participating.

Even with the resources committed by Illinois to implement the FCM and TIPS programs, there continues to be an unmet need that requires performance-based reimbursed outreach efforts to locate hard-to-reach women and more targeted and intensive models of case management. Incentives, if applied appropriately and cautiously, have proven to be effective in efforts such as increasing enrollment in Medicaid (through the All Kids Application Agents). Since approximately 15 percent of the women whose births were covered by Medicaid did not access either WIC or FCM in calendar year 2003,<sup>26</sup> this suggests the need for expanded outreach and case finding.

To address this issue, HFS is partnering with IDHS and the private funders to develop a more intensive performance-based outreach and case finding approach designed to engage "hard-to-reach" women in existing case management programs. Additional information on this initiative is provided herein, under Future Directions: Priorities for 2006 and 2007.

## **Other Priority Recommendations**

#### 2004 Recommendations:

- Disseminate information to the provider community concerning standards of care
- Work with the provider community to educate their colleagues about the standards of care
- Consider performing a focused quality study that assesses the extent to which providers are performing medical services according to ACOG guidelines

<sup>&</sup>lt;sup>26</sup> Cornerstone Data Match, CY 2003

- Provide an educational campaign to encourage pregnant women to be active in their reproductive health care
- Compare the cost and outcomes of care provided by MCH and non-MCH enrolled physicians and also look at outcomes in different care settings, e.g., community health centers and private physician setting
- Analyze birth outcomes utilizing predictive analytics to better understand factors affecting the health of births
- Look at the effects of nutritional support from WIC and food stamp participation on birth outcomes

#### Current Status:

HFS is partnering with IDHS on the "Closing the Gap in Racial Health Disparities" initiative. Closing the Gap specifically addresses racial disparities in infant mortality in four Chicago community areas (Austin, Englewood, West Englewood and Auburn-Gresham). These communities were targeted due to high numbers and rates of African American infant deaths in the state.

HFS, through its Quality Improvement Organization (QIO) is responsible for conducting a focused quality study to determine if prenatal care is being provided in accordance with ACOG standards in the target communities. The QIO has developed a medical record abstraction tool to be used to abstract information from prenatal records in the target communities. The tool was developed based on input from perinatal experts. The tool will be used to assess risk for preterm birth, and determine whether pre-existing conditions such as diabetes or hypertension, or conditions that emerge during pregnancy were managed appropriately, including whether consultation with a regional perinatal center was initiated when indicated.

HFS entered into an Interagency Grant Agreement with the University of Illinois at Chicago (UIC) School of Public Health to perform an evaluation of the medical record reviews. The UIC has developed a sampling methodology and the sample is being used by the QIO to conduct the medical record reviews. The results of the medical record reviews will be analyzed by UIC. Information from the analysis will be used to develop provider education on standards of prenatal care. The education will be developed and administered by provider organizations in partnership with IDHS and HFS.

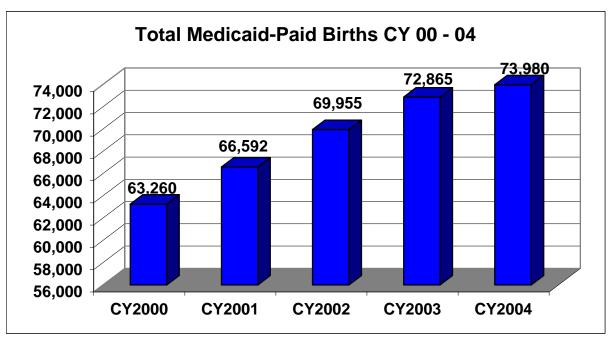
## **Current Status of Perinatal Health in Illinois Medicaid**

#### **Birth Demographics**

Based state Medicaid data (Medicaid paid claims matched with shared data from IDHS' Cornerstone system), the data presented below shows what is currently known about Medicaid birth outcomes and costs of services.

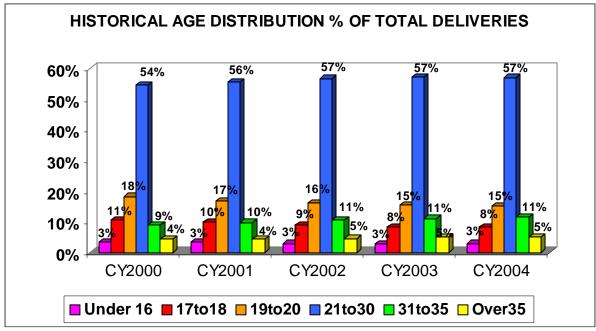
Medicaid covers approximately 47 percent of the live births each year. Illinois Medicaid paid for 72,685 births in calendar year 2003, although according to the Birth File Match performed by IDHS, there were 85,697 births covered by Medicaid during that year. (The primary difference in the numbers is due to the difference in data sources, one derived from paid claims and Cornerstone match data and the other derived from the Birth File Match with Medicaid eligibility data. Paid claims information does not account for multiple births or those not claimed by hospitals for reimbursement.)

The number and percent of births covered by Medicaid continues to rise. In calendar year 2004, there were 180,665 live births in Illinois. There has been a steady and consistent increase in the number of Medicaid births since calendar year 2000 (approximately a four percent (4%) growth rate per year). The percentage of the state's births paid by Medicaid has shown a steady increase from 34 percent in calendar year 2000 to 41 percent in calendar year 2004.

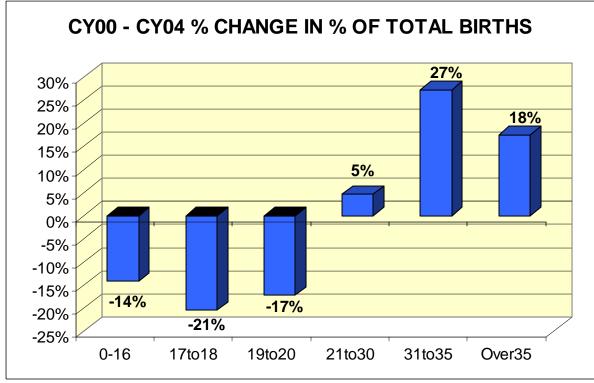


Healthcare and Family Services, Bureau of Rate Development and Analysis

Most women eligible for Medicaid who give birth each year are between 20 and 30 years of age. The overall distribution of Medicaid births has changed slightly between calendar year 2000 and calendar year 2004. There has been a slight decrease in the proportion of teenagers giving birth and an increase in the proportion of women over 30 years of age who are delivering babies.

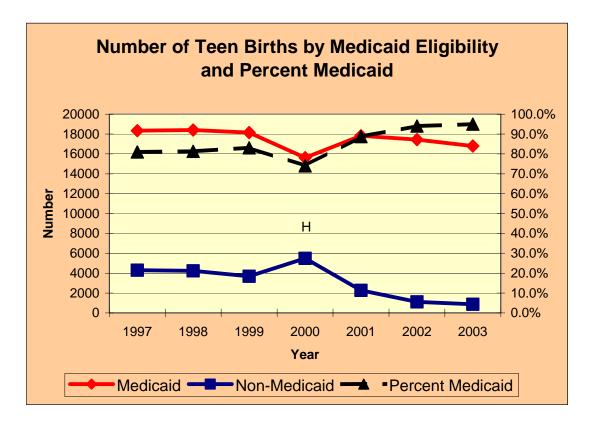


Healthcare and Family Services, Bureau of Rate Development and Analysis

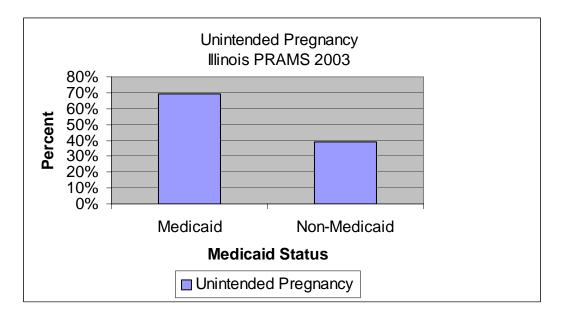


Healthcare and Family Services, Bureau of Rate Development and Analysis

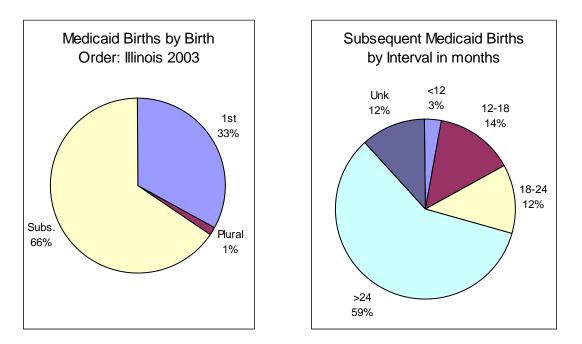
Teenagers make up about 10 percent of all births in Illinois although the number of teenage births in the State is on the decline. From 2001 to 2003, teen births covered Medicaid decreased from 22 percent to 19 percent. Medicaid covers about 17,000 births to teens each year. In 2003, this number represented 95% of the total teen births. (2003 Birth File Match Data)



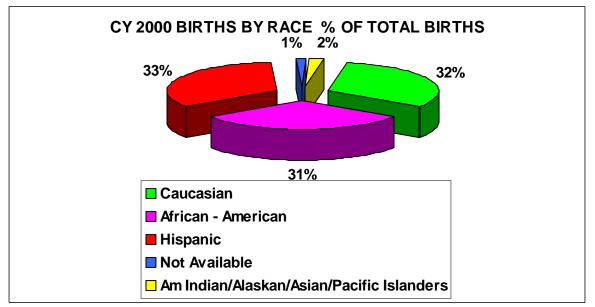
According to the 2003 PRAMS data, approximately 70 percent of Medicaid births were unintended. Women eligible for Medicaid are more likely to have an unintended birth than women not eligible for Medicaid.



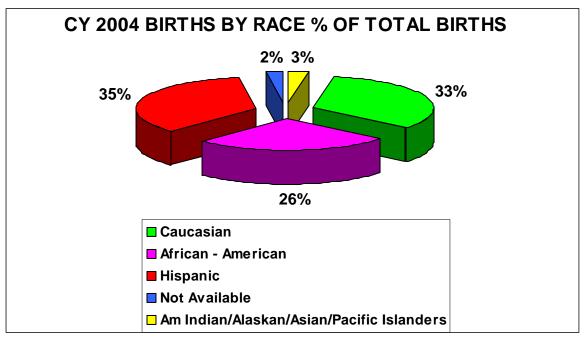
Sixty-six percent of Medicaid births were subsequent births (2<sup>nd</sup> or higher). (2003 Birth File Match Data)



The racial and ethnic distribution of Medicaid infants demonstrate a reduction of the proportion of African American births, from 31 percent to 26 percent and an increase in Hispanic births from 33 percent to 35 percent between calendar year 2000 and calendar year 2004, respectively. The other racial distribution of Medicaid infants remained relatively constant.

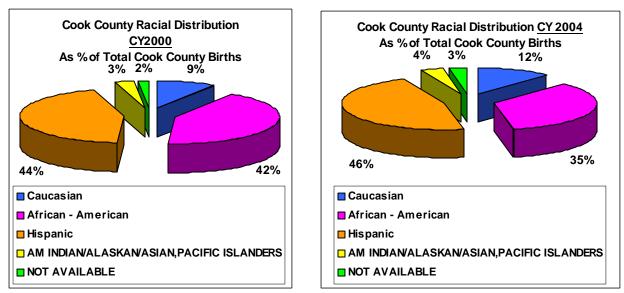


Souce: Healthcare and Family Services, Bureau of Rate Development and Analysis

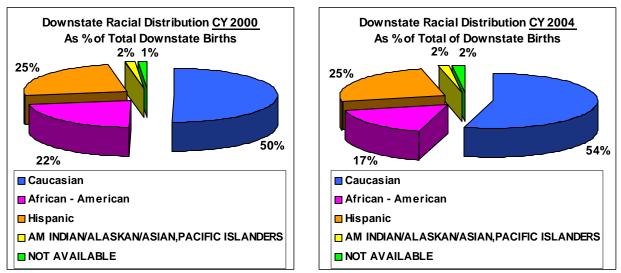


Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

The most dramatic racial shift in Medicaid births has occurred in Cook County. There was a relative increase of 27 percent in the births to Caucasians; 15 percent decrease in births of African Americans, and 5 percent increase in Hispanic births between calendar year 2000 and calendar year 2004. Alternatively, downstate realized an 8 percent increase in Caucasian births and a 22 percent decrease in African American births.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

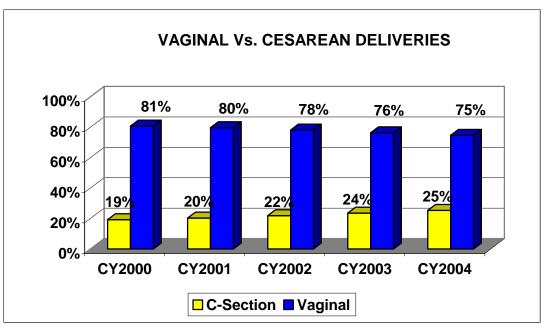


Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

## **Delivery Type and Costs**

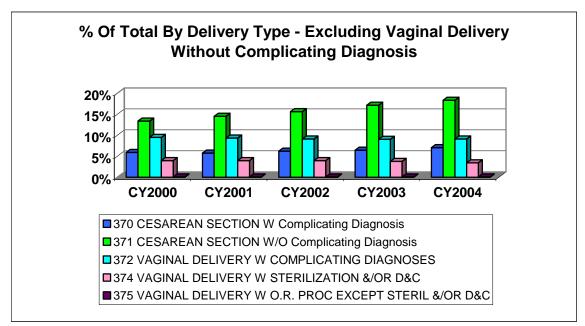
Seventy-five (75) percent of the Medicaid births were delivered vaginally, while 25 percent were delivered by a cesarean section in calendar year 2004. This represents a relative 32 percent increase in cesarean section deliveries since calendar year 2000. While there was a 37 percent increase in cesarean section deliveries without complications, the data demonstrates an increase in vaginal deliveries with complications during the same comparison years (calendar years 2000 to 2004).

Vaginal deliveries decreased from 81 percent to 75 percent and cesarean section deliveries increased from 19 percent to 25 percent from 2000 to 2004.

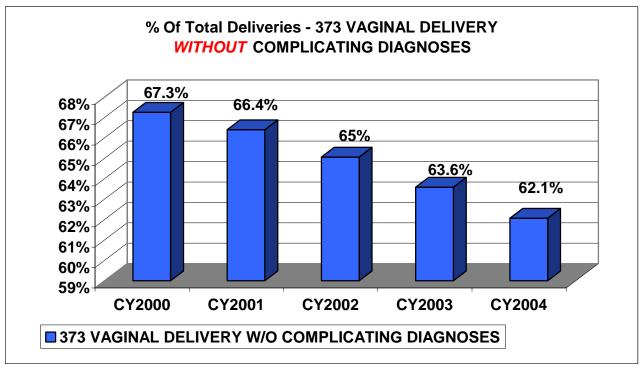


Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

There was also a 37 percent increase in cesarean sections without complications and a 6 percent decrease in vaginal deliveries without complications.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

## **Prenatal Care**

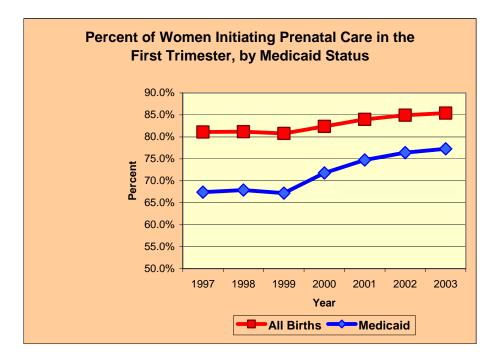
One factor influencing birth outcomes is believed to be prenatal care, the comprehensive health care received during pregnancy. "Early, high-quality prenatal care is one of the cornerstones of a safe motherhood program, which begins before conception, continues with appropriate prenatal

care and protection from pregnancy complications, and maximizes healthy outcomes for women, infants and families."<sup>27</sup>

Healthy People  $2010^{28}$  is a set of health objectives for the Nation to achieve over the first decade of a new century. It was developed by the federal Department of Health and Human Services in consultation with experts from across the country.

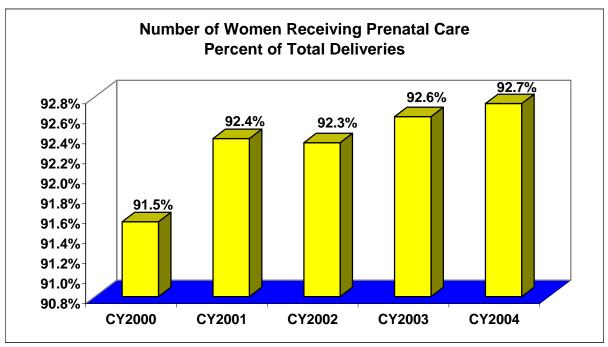
The Healthy People 2010 Objective (16-6a) has as its goal that at least 90 percent of pregnant women would begin prenatal care in the first trimester. In 2003, 85 percent of pregnant women in Illinois began prenatal care in the first trimester. This is up from 82 percent in 2001.

While women eligible for Medicaid initiate prenatal care later than non-eligible women, the gap continues to narrow. Approximately 77 percent of women eligible for Medicaid enter prenatal care in the first trimester. (2003 Birth File Match Data) This is up from 71 percent in 2001.



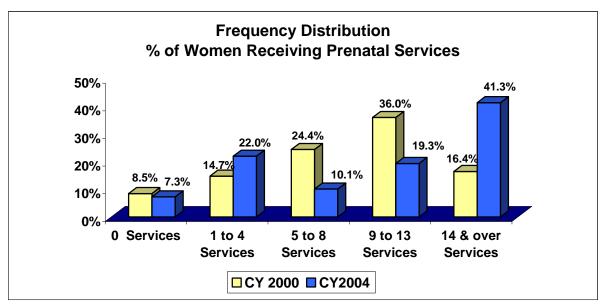
 <sup>&</sup>lt;sup>27</sup> United States Department of Health and Human Services, Centers for Disease Control and Prevention, "Entry Into Prenatal Care – United States, 1989-1997," *Morbidity and Mortality Weekly Report*, May 12, 2000
<sup>28</sup> U.S. Department of Health and Human Services, Healthy People 2010, November 2000

From calendar year 2000 to calendar year 2004, there was a slight increase in the percent of Medicaid women receiving prenatal care.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

When analyzing the frequency distribution of the percentage of women receiving prenatal care services, the largest increase from calendar year 2000 to calendar year 2004 was in women receiving 14 or more prenatal services, with a slight decrease in women receiving no prenatal care services. Further study is needed to determine whether the increase in prenatal visits in the 14 and over services category relates to more complications.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

### **Adequate Prenatal Care**

All pregnant women need health promotion and timely detection and treatment of health risks. One of the Healthy People 2010 objectives (Objective 16-6b) is to increase to at least 90 percent the proportion of all live-born infants whose mothers receive early (first trimester) and adequate (or more than adequate) prenatal care. First trimester (and continuous) care provides an opportunity to identify and address health issues and behaviors that may cause problems in fetal development and the mother's health that will lead to improved birth outcomes.<sup>29</sup> Modest improvement in early and adequate prenatal care has occurred nationally between 2001 and 2003. In 2001, 83.4 percent of women received early prenatal care and 42.7 percent of women received adequate prenatal care nationally compared to 84.1 percent of women receiving early prenatal care and 42.9 percent of women receiving adequate prenatal care in 2003. The improvements in early prenatal care during the same period in Illinois are consistent with those nationally – 84.0 percent in 2001 compared to 85.4 percent in 2003. The percent of women receiving late or no prenatal care has declined from 2001 to 2003 in Illinois, from 3.3 percent to 2.8 percent.<sup>30, 31</sup>

There are two generally accepted methods to help assess whether adequate prenatal care occurred. The two-part (Kotelchuck) Adequacy of Prenatal Care Utilization Index<sup>32</sup> combines independent assessments of the timing of prenatal care initiation and the frequency of visits received after initiation. The Kotelchuck Index incorporates an adequate plus category – women who start by the fourth month of pregnancy and have a greater than expected number of visits. The adequate plus group likely represent at-risk women; these women receive "adequate care" but may still experience a poor birth outcome due to their high-risk status. Another commonly used scale is the Kessner Index.<sup>33</sup> This scale also assesses the timing of prenatal care and the frequency of visits received after initiation, adjusted for duration of pregnancy, although it does not adjust for risk.

Applying both assessment tools results in similar findings for Illinois' births. Approximately 75 percent of pregnant women are receiving as much prenatal care services as they should (74 percent using the Kotelchuck Index and 75.2 percent using the Kessner Index). Medicaid specific data has been measured using the Kessner Index. The Medicaid population fares less favorably using these measures with only 63.6 percent of Medicaid women receiving adequate prenatal care (Kessner Index). However, with the intervention of WIC or FCM, better compliance with prenatal care is achieved, according to the data derived from the birth file match. Even with FCM and/or WIC, the percentage of women eligible for Medicaid receiving adequate prenatal care is below both the state and national level.

<sup>&</sup>lt;sup>29</sup> United States Department of Health and Human Services, *Caring for our Future: The Content of Prenatal Care.* Washington, DC: USDHHS/PHS, 1989

<sup>&</sup>lt;sup>30</sup> Centers for Disease Control and Prevention, National Vital Statistics Reports, *Births: Final Data for 2001*, December 18, 2002

<sup>&</sup>lt;sup>31</sup> Centers for Disease Control and Prevention, National Vital Statistics Reports, *Births: Final Data for 2003*, September 8, 2005

<sup>&</sup>lt;sup>32</sup> Kotelchuck, M., "An Evaluation of the Kessner Adequacy of Prenatal Care Index and a Proposed Adequacy Prenatal Care Utilization Index, "*American Journal of Public Health*, 84:1414-1420, 1994

<sup>&</sup>lt;sup>33</sup> Kessner, D.M., Institute of Medicine, "Infant Death: An analysis by maternal risk and health care. Contrasts in health status," Vol. 1, ed. Washington, D.C, *National Academy of Sciences*, pp. 58-59, 1973

Calendar									
Year 2003		Adequate	Kessner	No Care		Third Trin	nester	Second Tr	imester
	Births	Number	Percent	Number	Percent	Number	Percent	Number	Percent
WIC or									
FCM	72,427	47,284	65.29%	523	0.72%	2,073	2.86%	13,043	18.01%
Medicaid									
Only*	13,270	7,192	54.20%	697	5.25%	579	4.36%	2,470	18.61%

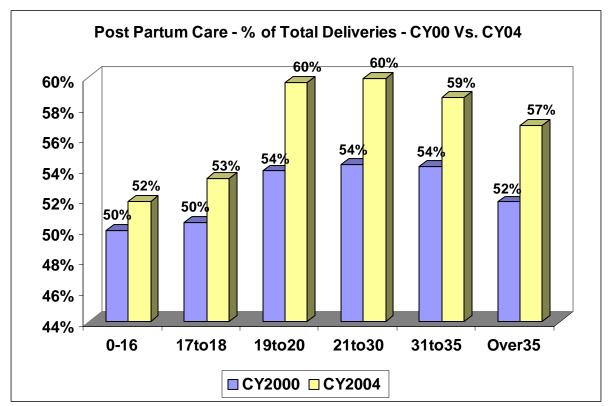
\*No WIC or FCM

In summary, women eligible for Medicaid fare less well compared to the general population in seeking out early and continuous prenatal care, but improvement results when these women receive the intervention of FCM and/or WIC and the percentage with first trimester and/or adequate prenatal care has increased over the last five years. The percent of women eligible for Medicaid who receive FCM and/or WIC intervention continues to increase with 84 percent of these women participating in WIC or FCM in 2003, up from 82 percent in 2001. With the implementation of the pilot outreach initiative targeting "hard-to-reach" women in the Austin and North Lawndale communities, HFS expects to see continued increases of FCM/WIC participation and correlated improvement in early and continuous prenatal care.

## **Postpartum Care**

There has been a dramatic increase in the percentage of women whose delivery was paid for by Medicaid and who received postpartum care, with the largest increase in the age group of 19-20 and

21-30.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

# **Infant Mortality**

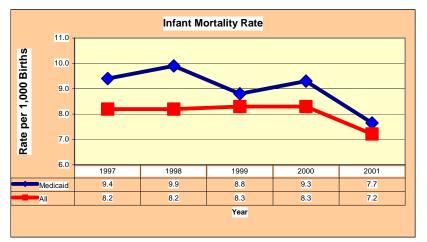
Illinois' infant mortality rate has decreased significantly since 1990. Although the infant mortality rate for African-Americans has continued to decrease, the racial disparity of the infant mortality rate continues to be dramatic.

Kates are Per 1,000 Live Births						
		Overall		African-		
Year	Number	Rate	White	American		
2003	1,380	7.6	6.1	15.6		
2002	1,304	7.2	5.5	15.7		
2001	1,379	7.5	5.9	14.9		
2000	1,528	8.3	6.5	16.3		
1999	1,504	8.3	6.2	17.4		
1998	1,505	8.2	6.3	16.8		
1997	1,476	8.2	6.2	16.5		
1996	1,536	8.4	6.3	17.1		
1995	1,724	9.3	7.2	18.2		
1994	1,711	9.0	6.7	17.9		
1993	1,838	9.6	7.1	18.8		
1992	1,911	10.0	7.4	19.5		
1991	2,068	10.7	7.9	21.1		
1990	2.090	10.7	7.6	22.1		

#### Illinois Infant Mortality Rates are Per 1.000 Live Births

Source: Illinois Center for Health Statistics, IDPH, Vital Statistics

The infant mortality rate for infants in Medicaid dropped from 9.3 per 1,000 live births in calendar year 2000 to 7.7 per 1,000 live births in calendar year 2001. The infant mortality rate for Medicaid continues to be higher than the statewide rate. It increased from calendar year 1999 to 2000, but it dropped sharply in 2001 in tandem with the decline in the overall infant mortality rate.



Source: Illinois Center for Health Statistics, IDPH, Vital Statistics

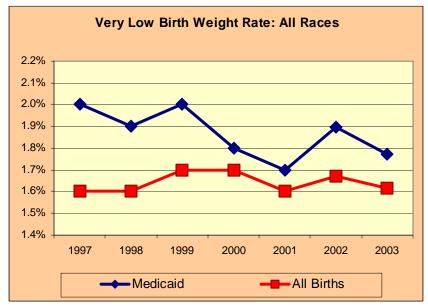
# **Prematurity and Birth Weight**

Low birth weight and premature birth are the leading causes of neonatal mortality and the third leading causes of infant mortality in the U.S.<sup>34</sup> The Centers for Disease Control and Prevention estimates a low birth weight infant is 40 times more likely to die during the first 28 days of life than normal weight infants.

Premature birth is defined as less than 37 weeks gestation. Low birth weight (LBW) is defined as weighing less than 2,500 grams or about 5.5 pounds. Very low birth weight (VLBW) is defined as weighing 1,500 grams, or less than 3 pounds, 5 ounces.

Overall, the rate of LBW in Illinois for calendar year 2003 was 8.3 percent. The rate for Medicaid was 9.4 percent, however, those in FCM and/or WIC had a LBW rate of 8.6 percent, and those without WIC and/or FCM experienced a LBW rate of 13.4 percent, 55.8 percent higher than those with the intervention. The Healthy People 2010 Objective (16-10a) is to reduce the LBW rate to 5.0 percent.

Medicaid has experienced a dramatic decrease in VLBW outcomes during the past several years. There has been a 12 percent reduction in Medicaid VLBW outcomes between 1997 and 2003. The VLBW rate for Illinois was 1.6 percent (calendar year 2003). The Medicaid VLBW rate was 1.8 percent while the VLBW rate of babies born to Medicaid-enrolled women who received WIC and/or FCM was 1.4 percent. Medicaid women who were without the intervention of WIC and/or FCM experienced a rate of 3.9 percent VLBW outcomes among women with intervention. Medicaid women who receive WIC and or FCM experienced a rate of VLBW outcomes among women with intervention. Medicaid women who receive WIC and or FCM have better outcomes in relation to VLBW than that of the general population (not low income). Their VLBW rate was 1.5 percent. The Healthy People 2010 Objective (16-10b) is to reduce the VLBW rate to 0.9 percent.



Source: Illinois Center for Health Statistics, IDPH, Vital Statistics

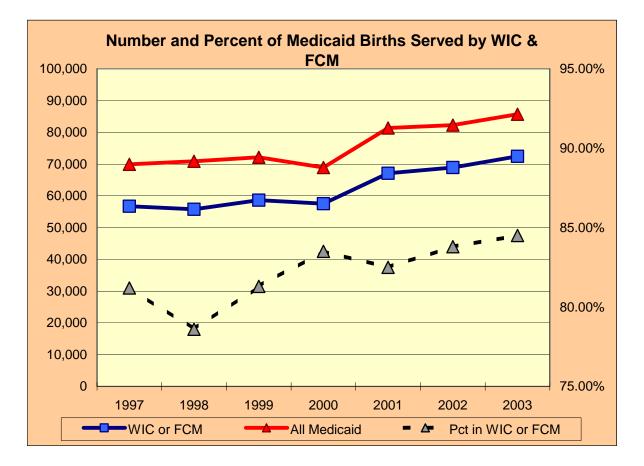
<sup>&</sup>lt;sup>34</sup> Singh, G.K. & Yu, S.M. "Infant mortality in the United States: Trends, differentials, and projections, 1950 through 2010," *American Journal of Public Health*, 85(7), 957-964, 1995

		LBW Perce	nt		VLBW Perc	ent
YEAR	ALL	BLACK	WHITE	ALL	BLACK	WHITE
1990	7.6	14.5	5.5	1.5	3.2	1.0
1991	7.8	14.9	5.7	1.5	3.1	1.0
1992	7.7	14.6	5.7	1.6	3.2	1.1
1993	8.1	15.3	5.9	1.6	3.2	1.1
1994	7.9	14.8	5.9	1.5	3.2	1.1
1995	7.9	14.5	6.1	1.6	3.1	1.2
1996	8.0	14.5	6.3	1.5	3.2	1.1
1997	8.0	14.1	6.4	1.6	3.2	1.2
1998	8.0	14.2	6.4	1.6	3.3	1.2
1999	8.0	14.3	6.5	1.7	3.6	1.2
2000	8.0	14.1	6.5	1.7	3.5	1.2
2001	8.0	13.8	6.7	1.6	3.1	1.2
2002	8.2	14.3	6.8	1.7	3.5	1.3
2003	8.3	14.5	6.9	1.6	3.4	1.2

Low birth weight and very low birth weight rates in Illinois since 1990 are shown below.

Source: Illinois Center for Health Statistics, IDPH Vital Statistics

In calendar year 2003, the WIC and FCM programs served about 85 percent of the eligible births and/or pregnant women enrolled in Medicaid that occurred in the state. In 2003, there were 85,697 Medicaid births (2003 Birth File Match), of which WIC and FCM served approximately 72,000 of those families.



# Participation in FCM/WIC – Infant Mortality, Prematurity, Low Birth Weight, Very Low Birth Weight

Perinatal outcomes for WIC and FCM participants continue to be better than for nonparticipants. The infant mortality rate among infants born to women who participated in both WIC and FCM was 5.8 per 1,000 in calendar year 2001, almost one-third the rate (16.2) per 1,000 among infants born to Medicaid-eligible women who did not participate in either program. While infant mortality rates were lower with WIC and FCM participants, it is also possible that selection bias affects this lowering. Women who are more likely to have better birth outcomes may choose to participate in these programs. This is partly mitigated by the high proportion of the target population served. To definitively show improvement with the intervention, a randomized controlled trial would be necessary.

For 2001, infant mortality rates for African Americans, Hispanics, single mothers, teen mothers and the entire population were:

2001	African- American	Hispanic	Single	Teen	State
FCM/WIC	8.8	3.4	6.8	7.9	6.1
Medicaid, No	29.1	17	24.9	27.3	23.4
Intervention					
Percent Decrease	69.8%	80.0%	72.7%	71.1%	73.9%

Using the Birth File Match Data, IDHS evaluated the benefit of participating in the FCM and WIC programs during pregnancy. The evaluation found that women who participated in both programs during pregnancy were much less likely to have a premature birth than women who did not participate in either program. Prematurity is defined as a very low birth weight infant, or an infant weighing less than 1,500 g. (e pounds, 5 ounces).

The Very Low Birth Weight Rate (per 100 births) Among Infants Born to Medicaid Eligible Women by Program Participation Status and Year							
Program Participation	1997	1998	1999	2000	2001	2002	2003
Participated in WIC and FCM during							
Pregnancy	1.3%	1.4%	1.3%	1.3%	1.2%	1.5%	1.4%
Did Not Participate in WIC or FCM							
During Pregnancy	3.9%	3.7%	4.3%	3.4%	3.7%	4.2%	3.9%
Percent Difference	66.7%	62.2%	69.8%	61.8%	67.6%	65.2%	64.1%

Women who participated in both programs during pregnancy were much less likely to have a low birth weight infant than women who did not participate in either program. Low birth weight is defined as less than 2,500 g. (5 pounds, 8 ounces).

The Low Birth Weight Rate (per 100 births) Among Infants Born to Medicaid Eligible Women by Program Participation Status and Year							
Program Participation	1997	1998	1999	2000	2001	2002	2003
Participated in WIC and FCM during							
Pregnancy	8.3%	8.8%	8.4%	7.9%	8.1%	8.6%	8.7%
Did Not Participate in WIC or FCM							
During Pregnancy	15.8%	14.0%	14.7%	12.9%	13.6%	13.9%	13.4%
Percent Difference	47.5%	37.1%	42.9%	38.8%	40.4%	38.5%	35.4%

Infants born to women who participated in both programs during pregnancy were much less likely to die before their first birthday than infants born to women who did not participate in either program.

The Infant Mortality Rate (per 1,000 births) Among Infants Born to Medicaid Eligible Women by Program Participation Status and Year						
Program Participation	1997	1998	1999	2000	2001	
Participated in WIC and FCM during Pregnancy	6.9	7.1	6.8	6.6	5.8	
Did Not Participate in WIC or FCM During						
Pregnancy	15.8	23.4	19.0	21.4	16.2	
Percent Difference	56.3%	69.7%	64.2%	69.1%	64.0%	

Infants born to women who participated in either program during pregnancy had lower health care costs during the first year of life than infants born to women who did not participate in either program. This table compares infants born to women who participated **in either one or both programs** to infants born to women who did not participate in either program. Medicaid claims data was used for comparison with the Birth File Match data set.

Average Medicaid Expeditures During the First Year of Life by Program Participation Status and Year								
Program Participation	1997	1998	1999	2000	2001	2002	2003	
Participated in WIC and FCM								
during Pregnancy	\$4,673	\$5,035	\$4,989	\$5,540	\$4,769	\$5,580	\$5,887	
Did Not Participate in WIC or								
FCM During Pregnancy	\$8,800	\$10,675	\$8,556	\$8,652	\$7,072	\$9,457	\$8,924	
Percent Difference	46.9%	52.8%	41.7%	36.0%	32.6%	41.0%	34.0%	

The VLBW rates among infants born to women who participate in both programs is almost 70 percent lower than the rate among infants born to Medicaid-eligible women who did not participate in either program. Further, the LBW rate among participants is over 40 percent lower than the rate among infants born to non-participants; the infant mortality rate was 64 percent lower and Medicaid expenditures during the first year of life were nearly 33 percent lower.

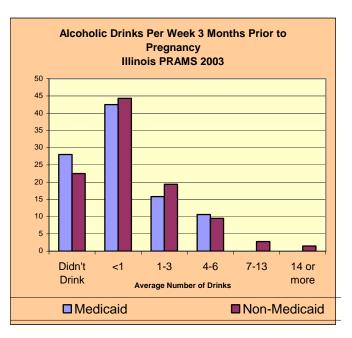
Comparison of Outcome Measures Between Medicaid-Eligible Pregnant Women who Did and Did Not Participate in WIC and FCM: 2001								
	WIC & No Percent							
Outcome Measure	Outcome Measure FCM Intervention Difference							
Very Low Birth Weight	1.2%	3.7%	67.6%					
Low Birth Weight	8.1%	13.6%	40.4%					
Infant Mortality*	5.8	16.2	64.0%					
Avg \$ 1st year of Life \$4,769 \$7,072 32.6%								
*Per 1,000 Births		•						

Per 1,000 Births

# **Risk Factors**

#### Alcohol

According to PRAMS data, Medicaid-eligible and women who are not eligible appear to be equally likely to use alcohol before pregnancy. Medicaid-eligible women were somewhat more likely to not drink at all.



### **Smoking**

Overall, between 15 percent and 30 percent of women smoke at some point during their pregnancy.<sup>35</sup> According to PRAMS data, Medicaid-eligible women are more likely to smoke

<sup>&</sup>lt;sup>35</sup> C. Tracy Orleans, et al., "Helping Pregnant Smokers Quit: Meeting the Challenge of the Next Decade," Tobacco Control Princeton, NJ, The Robert Wood Johnson Foundation, Vol. 182 (1),68-75, 2000

than women who are not eligible for Medicaid prior to pregnancy. Approximately 28 percent of the Medicaid-eligible women smoke three months prior to pregnancy while 18 percent of the women not eligible for Medicaid smoked three months prior to pregnancy.

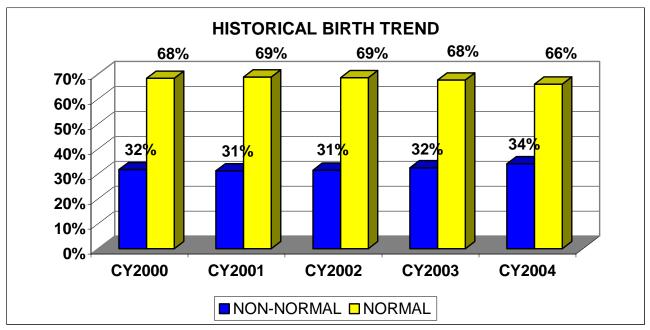
**Evidence of Smoking in Pregnancy: Illinois** 

Illinois PRAMS:		
Women who smoked during last 3 months of pregnancy:		12.8%
with income less than \$15,000/year:		19.8%
Medical Birth File Match:	2001	2003
Medicaid pregnant women who report smoking	16.45%	15.1%
Other low-income pregnant women who report smoking	9.20%	7.8%
General population (Pregnant non-Medicaid or other low income)	5.35%	4.5%

The calendar year 2003 birth file match data similarly indicate that Medicaid-eligible women are more likely to smoke during pregnancy than are their counterparts who are not eligible for Medicaid (15.1 percent versus 4.5 percent). The incidence of smoking in pregnant women has declined from 2001 to 2003.

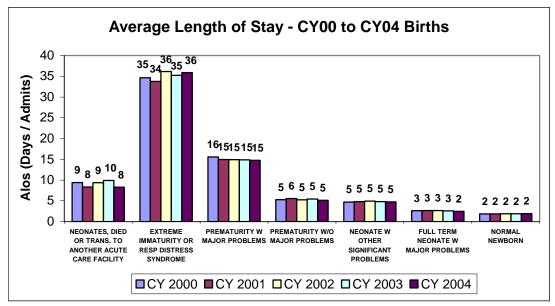
# **Delivery Costs**

There has been minimal change from calendar year 2000 to calendar year 2004 in the percentage of normal versus non-normal births, with approximately a 2 percent absolute increase in the non-normal births covered by Medicaid. Non-normal births increased from 32 percent to 34 percent whereas normal births decreased from 68 percent to 66 percent.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

The average length of stay for infants born between calendar year 2000 and calendar year 2004 has remained fairly constant with extreme immaturity or respiratory distress syndrome having the longest length of stay (36 days).



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

The cost per birth by Disease Related Group (DRG) has demonstrated minimal change between calendar year 2000 and calendar year 2004.

	CY 2000	CY 2001	CY 2002	CY 2003	CY 2004
NEONATES, DIED OR TRANS. TO ANOTHER ACUTE CARE FACILITY	\$17,450	\$14,598	\$16,899	\$18,635	\$14,205
EXTREME IMMATURITY OR RESP DISTRESS SYNDROME	\$52,331	\$49,972	\$54,335	\$51,518	\$54,131
PREMATURITY W MAJOR PROBLEMS	\$18,959	\$17,044	\$16,771	\$17,346	\$17,487
PREMATURITY W/O MAJOR PROBLEMS	\$5,220	\$4,815	\$4,546	\$4,929	\$4,685
NEONATE W OTHER SIGNIFICANT PROBLEMS	\$4,955	\$4,701	\$4,866	\$4,817	\$5,017
FULL TERM NEONATE W MAJOR PROBLEMS	\$1,698	\$1,702	\$1,662	\$1,691	\$1,596
NORMAL NEWBORN	\$69	\$71	\$68	\$71	\$84

## Historical Cost per Birth – CY 2000 to CY 2004

Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

As reflected on the following page, the Decile Report for Deliveries compiled for Medicaid claims data indicates a steady increase in liability (\$142 million to \$172 million) due to an increase in the number of recipients and a decrease in per member/per month (PM/PM) costs (\$259 to \$257) between calendar year 2000 and calendar year 2004 respectively. The actual cumulative total of births per decile, however, has remained basically unchanged with the exception of a slight increase in lower cost births (10<sup>th</sup> decile), which may contribute to the reduction in PM/PM costs.

# **Decile Report for Deliveries CY 2000 to CY 2004** Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

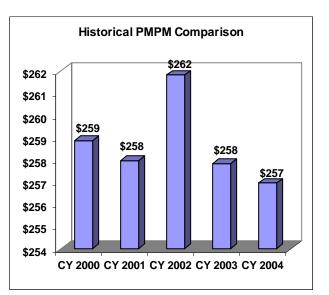
	CY 2000							
Decile	Cumulative	#Recipients	Liability					
	Total							
1	4%	2,258	\$14,205,588					
2	11%	3,667	\$14,208,904					
3	19%	4,283	\$14,207,842					
4	27%	4,895	\$14,208,710					
5	37%	5,306	\$14,208,436					
6	47%	5,610	\$14,209,068					
7	58%	6,033	\$14,209,471					
8	70%	6,433	\$14,208,606					
9	83%	6,932	\$14,208,538					
10	100%	9,596	\$14,208,906					
Total		55,013	\$142,084,069					
	PMPM	l	\$259					

	CY 2001							
Decile	Cumulative	#Recipients Liabil						
	Total							
1	4%	2,399	\$15,026,260					
2	11%	3,882	\$15,028,712					
3	18%	4,516 5,149	\$15,026,784					
4	27%		\$15,027,135 \$15,029,673 \$15,026,687					
5	37%	5,594						
6	47%	5,915						
7	58%	6,364	\$15,028,592					
8	69%	6,787	\$15,028,418					
9	82%	7,335	\$15,026,482					
10	100%	10,743	\$15,029,666					
Total		58,684	\$150,278,409					
	PMPM	I	\$258					

	CY 2002								
Decile	Cumulative	#Recipients	ecipients Liability						
	Total								
1	4%	2,362	\$16,080,475						
2	10%	4,102	\$16,087,234						
3	18%	4,765	\$16,083,173						
4	27%	5,371	\$16,083,337						
5	36%	5,908	\$16,086,577						
6	46%	6,303	\$16,083,977						
7	57%	6,743	\$16,083,223						
8	69%	7,236	\$16,083,949						
9	81%	7,765	\$16,084,742						
10	100%	11,632	\$16,085,477						
Total		62,187	\$160,842,164						
	РМРМ	l	\$262						

CY 2003							
Decile	Cumulative	#Recipients	Liability				
	Total						
1	4%	2,510	\$16,806,702 \$16,812,479 \$16,808,882 \$16,810,416 \$16,810,474				
2	10%	4,292					
3	18%	4,970					
4	27%	5,525					
5	36%	6,104					
6	<b>46%</b> 6,533		\$16,809,191				
7	57%	7,011	\$16,809,915				
8	68%	7,531	\$16,811,041				
9	81%	8,074	\$16,808,420				
10	100%	12,654	\$16,811,619				
Total		65,204	\$168,099,139				
	PMPM		\$258				

	CY 2004							
Decile	Cumulative	#Recipients	Liability					
	Total							
1	4%	2,589	\$17,203,021					
2	10%	4,354	\$17,206,221					
3	18%	5,027	\$17,203,595					
4	26%	5,547	\$17,206,813					
5	35%	6,186	\$17,203,658					
6	45%	6,643	\$17,205,991					
7	56%	7,142	\$17,204,274					
8	67%	7,686	\$17,205,972					
9	80%	8,244	\$17,205,680					
10	100%	13,573	\$17,205,530					
Total		66,991	\$172,050,755					
	РМРМ	l	\$257					



The proportion of infants with non-normal diagnoses by the individual DRG has remained relatively constant comparing calendar year 2000 with calendar year 2004, with some changes noted (a reduction in the full term neonate with major problems and an increase in the neonate with other significant problems).

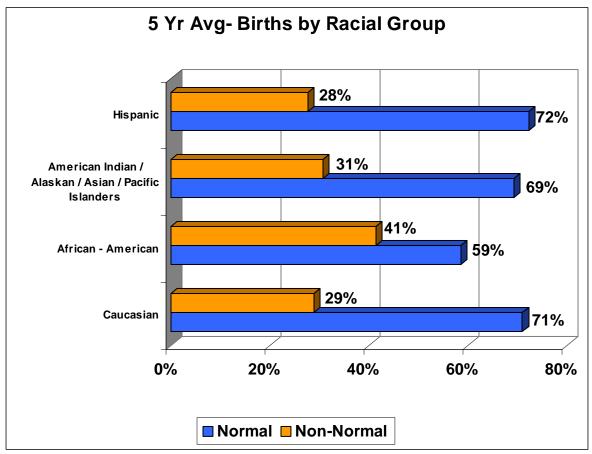
% of Total Medicaid Births					
CY2000	CY2001	CY2002	CY2003	CY2004	
1.69%	1.57%	1.63%	1.53%	1.70%	
2.14%	2.11%	2.14%	2.14%	2.13%	
2.38%	2.38%	2.32%	2.63%	2.48%	
4.38%	4.36%	4.31%	4.27%	4.50%	
7.30%	7.08%	6.63%	6.77%	6.84%	
13.79%	13.64%	14.39%	15.05%	16.36%	
68.32%	68.86%	68.57%	67.62%	65.99%	
	1.69% 2.14% 2.38% 4.38% 7.30% 13.79%	CY2000     CY2001       1.69%     1.57%       2.14%     2.11%       2.38%     2.38%       4.38%     4.36%       7.30%     7.08%       13.79%     13.64%	CY2000     CY2001     CY2002       1.69%     1.57%     1.63%       2.14%     2.11%     2.14%       2.38%     2.38%     2.32%       4.38%     4.36%     4.31%       7.30%     7.08%     6.63%       13.79%     13.64%     14.39%	CY2000CY2001CY2002CY20031.69%1.57%1.63%1.53%2.14%2.11%2.14%2.14%2.38%2.38%2.32%2.63%4.38%4.36%4.31%4.27%7.30%7.08%6.63%6.77%13.79%13.64%14.39%15.05%	

Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

NON-LEVEL 3 FACILITIES					
NEONATES, DIED OR TRANSFERRED TO ANOTHER ACUTE CARE FACILITY	6.7%				
EXTREME IMMATURITY OR RESPIRATORY DISTRESS SYNDROME, NEONATE	5.0%				
PREMATURITY W MAJOR PROBLEMS	8.5%				
PREMATURITY W/O MAJOR PROBLEMS	29.4%				
FULL TERM NEONATE W MAJOR PROBLEMS					
LEVEL 3 FACILITIES					
NEONATES, DIED OR TRANSFERRED TO ANOTHER ACUTE CARE FACILITY	4.4%				
EXTREME IMMATURITY OR RESPIRATORY DISTRESS SYNDROME, NEONATE	8.9%				
PREMATURITY W MAJOR PROBLEMS	7.7%				
FULL TERM NEONATE W MAJOR PROBLEMS	13.2%				

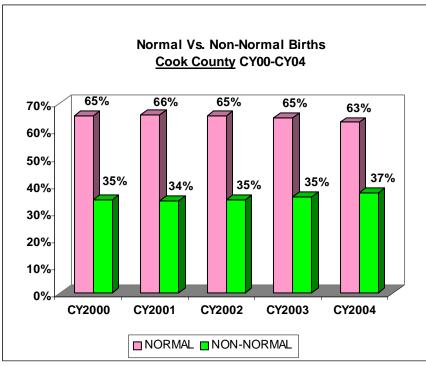
Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

The five-year average distribution of normal versus non-normal births has been examined by racial and ethnic groups. Forty-one (41) percent of African American births are considered non-normal, as contrasted to 28 percent of Hispanic births and 29 percent of Caucasian births.

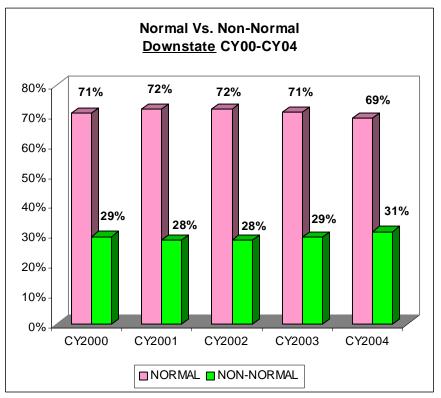


Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

The distribution of normal versus non-normal births has not changed significantly either in cook county or downstate between calendar year 2000 and calendar year 2004. The percent of non-normal births in Cook County has increased from 35 percent to 37 percent and similarly, downstate, the increase in the percent of non-normal births has been from 29 percent to 31 percent.



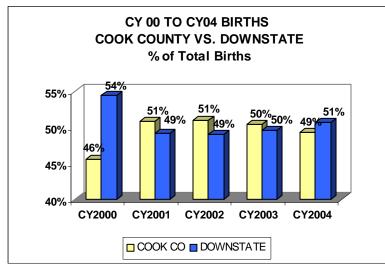
Source: Healthcare and Family Services, Bureau of Rate Development and Analysis



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

# **Distribution of Medicaid Births**

There have been modest changes in the proportion of Medicaid births in Cook County versus downstate with the proportion in Cook County increasing from 46 percent to 49 percent between calendar year 2000 and calendar year 2004 and the proportion in downstate decreasing from 54 percent to 51 percent during the same period.



Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

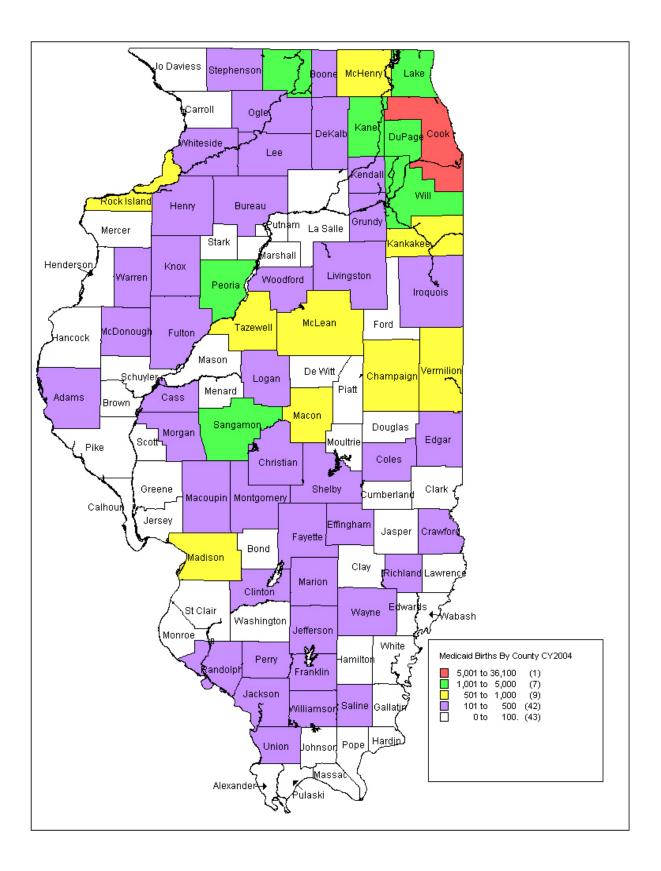
The geographic location of the counties in which the majority of Medicaid women deliver has remained fairly constant comparing calendar year 2000 with calendar year 2004, although some counties have realized significant growth in the number of total births (Cook, Lake, Will, St. Clair and Peoria). Cook County has the largest percent of Medicaid births (49 percent) and the largest number of Medicaid women of childbearing age.

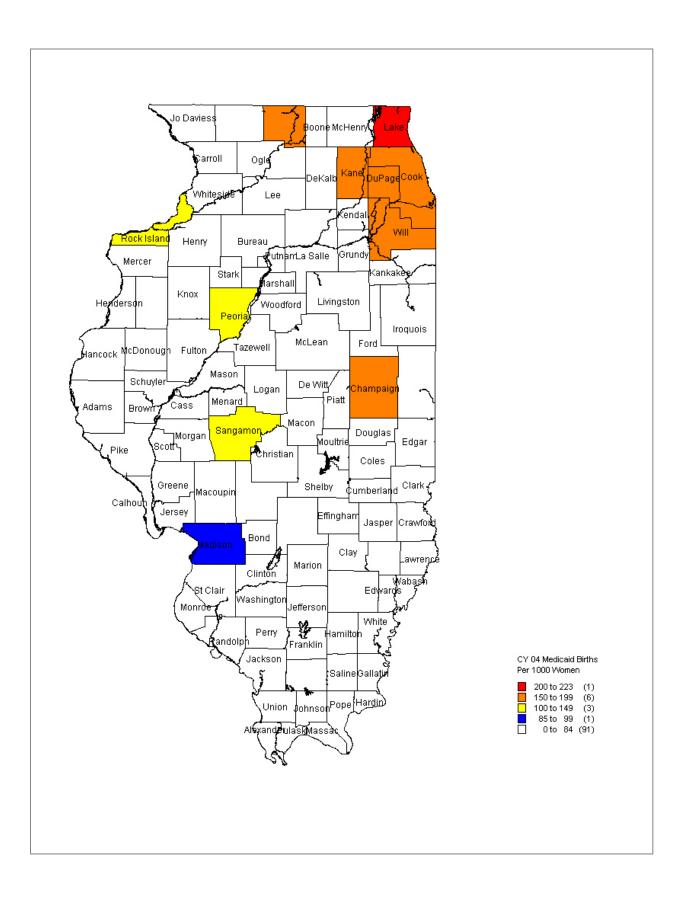
When analyzing the geographic distribution of non-normal births, DeKalb, Peoria and Madison counties experience the highest proportion of non-normal births (in excess of 40 percent) over a five-year average period.

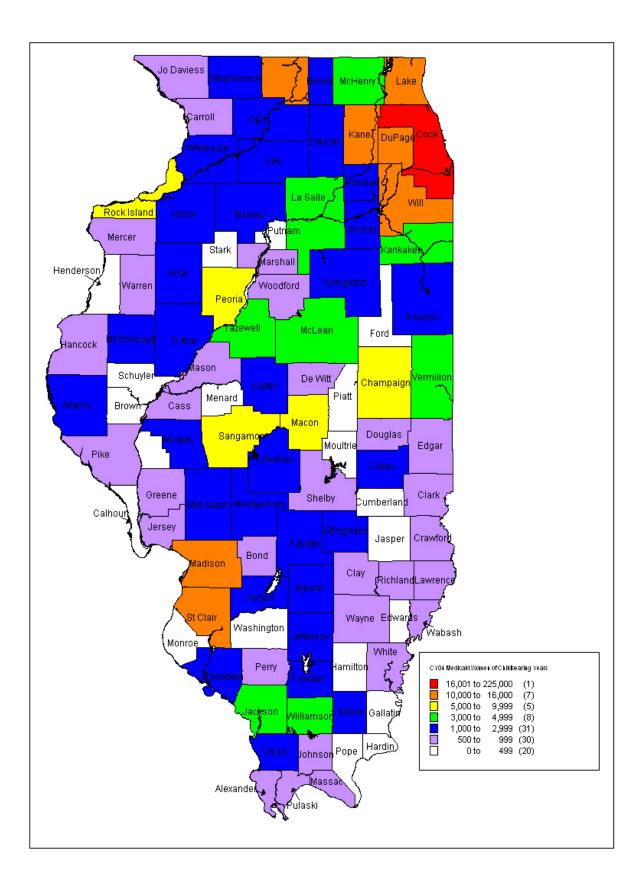
	CY 2000				CY 2004					
	Total Births	% Non- Normal Births	% of Total Medicaid Births	Births Per 1000 Medicaid Women 19-44		Total Births	% Non- Normal Births	% of Total Medicaid Births	Births Per 1000 Medicaid Women 19-44	% Change From CY 2000
Cook	28,637	35%	45%	139	Cook	36,014	37%	49%	160	15%
Kane	1,963	29%	3%	199	Lake	3,112	23%	4%	222	27%
Lake	1,862	25%	3%	175	Kane	3,040	32%	4%	199	0.1%
Winnebago	1,490	39%	2%	158	DuPage	2,301	40%	3%	155	9%
Saint Clair	1,306	27%	2%	108	Will	2,188	35%	3%	165	21%
Will	1,289	32%	2%	137	Winnebago	2,028	37%	3%	160	1%
DuPage	1,246	41%	2%	143	Saint Clair	1,638	27%	2%	126	16%
Peoria	834	39%	1%	115	Peoria	1,216	41%	2%	136	19%
Sangamon	827	25%	1%	130	Sangamon	1,146	27%	2%	142	9%
Madison	757	39%	1%	85	Rock Island	961	34%	1%	146	1%
Rock Island	745	31%	1%	144	Champaign	943	24%	1%	153	4%
Champaign	697	25%	1%	148	Madison	937	50%	1%	89	6%

Source: Healthcare and Family Services, Bureau of Rate Development and Analysis

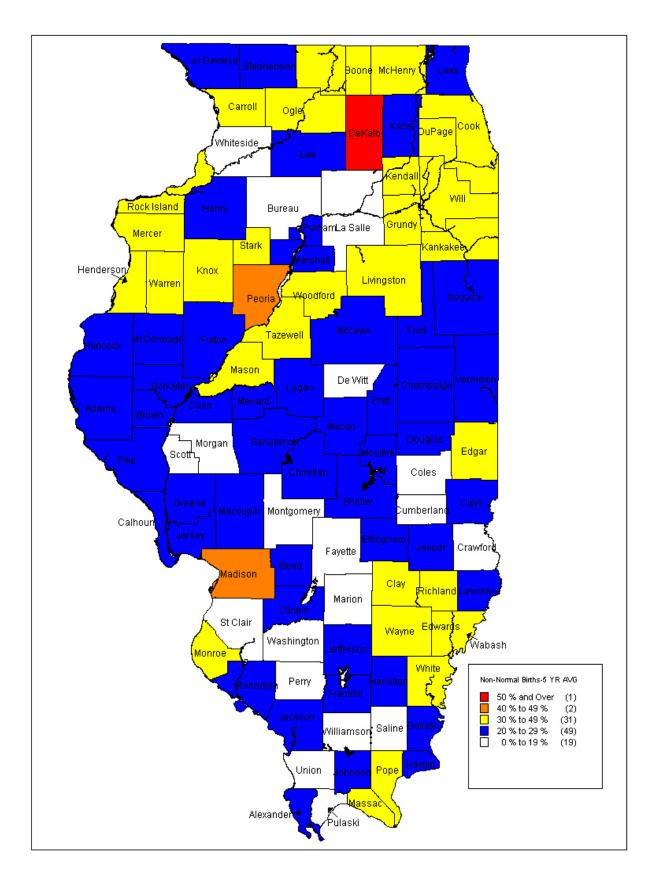
# **Medicaid Births by County**







# **Non-Normal Births**



# Future Direction: Priorities for 2006 and 2007

### Health Care Delivery System

A significant change that could impact the delivery of health care for participants is the landmark legislation Governor Blagojevich signed to provide comprehensive health coverage for every uninsured child in Illinois. The Governor's *All Kids* program offers children access to comprehensive health care. As part of the initiative, Illinois is working to ensure that program participants (including adults) have a "medical home" and receive comprehensive preventive and primary care services. The plan goes into effect on July 1, 2006. Providers will be required to meet program requirements and to perform comprehensive preventive and primary health care services.

As a component part of the *All Kids* initiative, participants will be enrolled in a Primary Care Case Management (PCCM) Program and select a Primary Care Provider to provide their health care, or make referrals to specialty and medically-related care, as needed, or in counties where managed care is a choice, the participants who qualify for managed care may select an MCO as their plan. A PCCM Vendor will be procured to implement a statewide PCCM Program that:

- Provides enrollees with a medical home to ensure enrollees receive all necessary care in a timely manner
- Improve access to and quality of care for enrollees through the development of a Primary Care Provider Network and specialty care
- Improve health outcomes and appropriate health care utilization
- Provides ongoing feedback to Primary Care Providers about their patients' health care utilization, clinical care guidelines, and how they compare with peers on certain performance measures

Women will have direct access to providers in the network for family planning and obstetrical care, regardless of their PCP assignment. With the establishment of a medical home, the provider and the patient will establish a relationship conducive to continuity of needed health care services, and monitoring (and ongoing feedback) of those services can be more easily achieved.

An additional component of the *All Kids* initiative is Disease Management, specifically to provide disease management to certain high-risk groups. Women who meet the criteria for the program may be provided with this disease management strategy.

The changes in the health care delivery system, targeted for implementation in July 2006, are expected to have a dramatic positive impact on access, quality and content of care, and appropriate health care utilization

### Performance-Based Outreach for Hard-to-Reach Pregnant Women

HFS is working closely with IDHS and private funding sources to implement a performancebased outreach pilot targeted to hard-to-reach pregnant women. The pilot is intended to increase the number of women who receive early and adequate prenatal care in an effort to reduce high rates of fetal and infant deaths and prematurity in certain community areas of Chicago.

### **Interconceptional Care**

HFS is working closely with IDHS and private funding sources to develop and implement a more intensive model of case management designed to provide interconceptional care.

The model will target the hard-to-reach women who have experienced a previous poor birth outcome (very low birth weight, previous preterm delivery, fetal or infant death), many of whom are high-risk with chronic medical conditions. Many of the poor birth outcomes may be attributable, in part, to inadequate prenatal care, late entry into prenatal care, chronic medical conditions, short inter-pregnancy spacing intervals, risk-taking behaviors (such as smoking or substance abuse) and lack of medical care or supportive services.

HFS' expansion of FamilyCare will allow continued coverage to provide women with ongoing needed medical care to address chronic medical conditions. The Interconceptional Care Model will provide ongoing case management services and care coordination to provide education and needed referrals and encourage these women to comply with their medical treatment regimen and maintain a healthy lifestyle.

## **Preconception Care**

HFS is partnering with the state's Title X Program administered by IDHS to develop a risk assessment tool for preconception care and plans to add coverage for a preconception risk assessment in early 2006.

### Implementation of Illinois Healthy Women Expansion

Upon approval by CMS of the waiver request to expand the *Illinois Healthy Women* program to include women at or below 200 percent of poverty, HFS will implement the expansion. Implementation requires an outreach campaign to inform eligible women and providers, changes to the computer system, dissemination of applications and staff hiring and training.

### **Perinatal Depression**

Using paid claims data, monitoring will occur to determine the increase in the percentage of women being screened, diagnosed and treated for perinatal depression. Trend data will be analyzed over a number of fiscal years to further assess the impact.

A client notice will be sent to inform Medicaid women of the signs and symptoms of perinatal depression and to encourage them to be screened. The notice will also include the 24-hour client hotline number for prenatal depression. HFS will continue to work with its partners (University of Illinois at Chicago, Evanston Northwestern Healthcare and other perinatal depression programs) to develop a comprehensive sustainable system of care for perinatal depression.

### **Smoking Cessation**

HFS will continue to periodically encourage participants to quit smoking. Future smoking cessation initiatives include information and resources to be developed for the HFS website and a pilot project being planned for calendar year 2007 in partnership with the March of Dimes. Private grant funds will be sought to finance the pilot. The project will use peer

educators to perform outreach, education and support activities. The program will be evaluated to determine the efficacy of the smoking cessation interventions in reducing the number of pregnant women who successfully quit and the impact on birth outcomes.

## **HIV Counseling**

In consultation with the IDPH, HFS has developed a provider notice that will be mailed to Medicaid providers in early 2006. The notice informs providers of the benefits of rapid HIV testing and encourages the use of rapid HIV testing with pregnant women whose HIV status is unknown during labor and delivery. Providers are encouraged to document HIV testing results in each woman's medical record and provide such documentation to the labor and delivery hospital. The notice also includes information on consent requirements, content of required counseling, infant testing, reimbursement for rapid HIV testing, and provides rapid HIV testing resources and perinatal HIV hotlines numbers.

HFS will work with provider organizations to include information on rapid HIV testing of pregnant women and documentation of results in newsletters.

#### **Standards of Care**

The medical record reviews for the Closing the Gap initiative will be completed and data will be provided to UIC for evaluation of the quality of care actually provided compared to ACOG standards. The purpose of the evaluation is to identify specific issues affecting the quality of care. Based on the results of the evaluation, HFS will work with perinatal care experts to develop a provider education curriculum that addresses the issues identified.

### **Educational Campaign on Reproductive Health Care**

A client notice will be mailed to female participants to educate them on issues affecting reproductive health care. The notice will include information on family planning services available, optimum interpregnancy spacing intervals for healthy births, the role of folic acid in decreasing neural tube defects, and the importance of early and continuous prenatal care.

Additional focus will be also given to educating and promoting women's preventive health care, such as breast and cervical cancer screening as when reviewing the data, less than one-half of women enrolled in HFS' medical programs are receiving breast cancer or cervical cancer screening, as recommended.

# Bibliography

2002 data from the Centers for Disease Control National Center for Health Statistics show the first rise in the overall infant mortality rate in the Unites States in the last 45 years (from 6.8 to 7.0 infant deaths per 1,000 live births)

American College of Obstetricians and Gynecologists and American Academy of Pediatrics, *"Guidelines for Perinatal Care"*, 2002

American University's Drug Court Clearinghouse and Technical Assistance Project, sponsored by the Office of Justice Programs, U.S. Department of Justice at: http://www.ojp.usdog.gov/ocom/Annual/97annual.txt

Association of Maternal and Child Health Programs, Building State Partnerships to Improve Birth Outcomes, January 2005

C. Tracy Orleans, et al., "Helping Pregnant Smokers Quit: Meeting the Challenge of the Next Decade," Tobacco Control Princeton, NJ, The Robert Wood Johnson Foundation, Vol. 182 (1), 68-75, 2000

Centers for Disease Control and Prevention, Folic Acid, Frequently Asked Questions (FAQs), <u>http://www.cdc.gov/doc.do/id/0900f3ec8000d558</u> Date Last Reviewed: 09/25/2003

Centers for Disease Control and Prevention, *Folic Acid for Healthy Babies, A Primer,* <u>http://www.cdc.gov/doc.do/id/0900f3ee8000d61c</u> Date Last Reviewed: 09/19/2003

Centers for Disease Control and Prevention, National Vital Statistics Reports, *Births: Final Data for 2001*, December 18, 2002

Centers for Disease Control and Prevention, National Vital Statistics Reports, *Births: Final Data for 2003*, September 8, 2005

Cornerstone Data Match, CY 2003

Harwood, H., Fountain, D., Livermore, G., & The Lewin Group. (1998). *The economic costs of alcohol and drug abuse in the United States*, 1992. Washington, DC: U.S. Department of Health and Human Services.

Illinois Department of Human Services, FFY'06 Maternal and Child Health Block Grant Needs Assessment

Illinois Department of Human Services, "The Reduction in Infant Mortality in Illinois", February 2005

Illinois Medicaid Paid Claims Data, 2004

Kessner, D.M., Institute of Medicine, "Infant Death: An analysis by maternal risk and health care. Contrasts in health status," Vol. 1, ed. Washington, D.C., *National Academy of Sciences*, pp. 58-59, 1973

Kotelchuck, M., "An Evaluation of the Kessner Adequacy of Prenatal Care Index and a Proposed Adequacy Prenatal Care Utilization Index, "*American Journal of Public Health*, 84:1414-1420, 1994

National Center on Addication and Substance Abuse at Columbia University (CASA), No Safe Haven: Children of Substance-Abusing Parents, January 1999.

Reiches, N.; Thomas, A.; Menkedick, J.; and Strauss, W. "White Paper on Measures for NCS Core Hypotheses; Commissioned by the National Children's Study Program Office, National Institute for Child Health and Human Development, 2004

Singh, G.K. & Yu, S.M. "Infant mortality in the United States: Trends, differentials, and projections, 1950 through 2010," *American Journal of Public Health*, 85(7), 957-964, 1995 Spina Bifida Association, Spina Bifida Statistics for the Media, <u>http://www.sbaa.org/docs/media/sb\_stats.pdf</u>

Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Substance Abuse Treatment (CSAT) "1993-2000 Residental Treatment Programs for Pregnant and Parenting Women"

The Financial Impact of Fetal Alcohol Syndrome SAMHSA Fetal Alcohol Spectrum Disorders Center for Excellence

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, "Entry Into Prenatal Care – United States, 1989-1997," *Morbidity and Mortality Weekly Report*, May 12, 2000

U.S. Department of Health and Human Services, Healthy People 2010, November 2000

U.S. Department of Health and Human Services, "*Preventing Infant Mortality*," March 18, 2002.

U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Child Health and Human Development, "Health Disparities – Bridging the Gap," September 2000

"U.S. Drops in Rank of Industrialized Nations for Infant Mortality, Life Expectancy," November 11, 1997, quotation from Gerald Anderson, Ph.D., professor on health policy and management at Johns Hopkins School of Public Health, with references from O.E.C.D. Health Data 98: A comparative analysis of 29 countries. Personal communication. Health Canada

Vital Statistics, Birth File Match, 2003