Kentucky PRAMS

Pregnancy Risk Assessment Monitoring Systems

2008

Kentucky Cabinet for Health and Family Services

Kentucky
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Kentucky Pregnancy Risk Assessment Monitoring System (PRAMS) Pilot Project 2008 Data Report

ACKNOWLEDGEMENTS

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INTRODUCTION

The health status of Kentuckians is commonly reported from public health surveillance surveys. These surveys, such as the Behavioral Risk Factor Surveillance Survey and the Youth Risk Behavior Survey, provide information that is used by policy makers, educators, public health professionals, advocacy groups, businesses, health care organizations, and others to develop initiatives to improve the health of Kentuckians. Despite the fact that many of Kentucky's worst health indicators, such as prematurity, low birth weight, infant mortality, late prenatal care, relate to the period around pregnancy, Kentucky has had limited data to determine the factors that influence health status of mothers and babies and help develop effective initiatives. The PRAMS survey is a CDC recommended tool to provide that information.

The Pregnancy Risk Assessment Monitoring System (PRAMS) was established in 1987 by the Center for Disease Control and Prevention (CDC). The purpose of this population-based surveillance system is to obtain information pertaining to maternal behavior and experiences that may be associated with adverse birth outcomes. The survey is disseminated to women that have recently given birth to live born infants. Thirty-seven other states currently participate in PRAMS and provide data to the CDC for a national report.

In Fall of 2007, the Kentucky Department for Public Health Division of Maternal and Child Health initiated a PRAMS Pilot Project following the CDC PRAMS Protocol. A random sample of Kentucky residents who delivered a live born infant were selected to complete the survey through mail or by telephone. The random sample was derived from birth certificate files. Data was collected on a variety of topics which include: access to prenatal care, insurance, quality of care, infant sleeping positions, medical problems during pregnancy, delivery of infant, employment status of mother, government assistance, intendedness of pregnancy, infections, smoking, and alcohol. The majority of the questions that were used for the Pilot Project were derived from the CDC PRAMS core and standardized questions. Five questions were added by the state.

PRAMS provides additional information for Kentucky to assess overall pregnancy experiences and investigate emerging issues in the field of Maternal and Child Health. PRAMS may be used to develop programs, modify existing programs, and to evaluate programs, which can aid in the determination of resource allocation. Furthermore, PRAMS will provide useful data to establish baseline and trend data to assess problematic areas and to develop and implement policies that address the needs of pregnant women, their infants and their families. The PRAMS Pilot Project was implemented in Kentucky both to collect this information for Kentucky, and to demonstrate that Kentucky has the established infrastructure and capacity to successfully conduct PRAMS. In the future, in hopes to become a CDC-approved project and contribute to the national PRAMS reporting.

This report contains an overview of the Kentucky PRAMS Pilot Project, description of the methodology, and summary of the results. The Kentucky PRAMS Pilot Project is a collaboration between the Kentucky Department for Public Health Division of Maternal and Child Health and the Kentucky Chapter of March of Dimes, who provided a Community Grant in support of the project.

Executive Summary

The Kentucky Department for Public Health conducted a Pregnancy Risk Assessment Monitoring System (PRAMS) Pilot Project in Fall of 2007 thru Spring 2008. The topics included in this survey were selected in hope that the data will enhance our understanding of maternal and infant morbidity and mortality in Kentucky. Key findings include:

- The Healthy People 2010 and Health Kentuckians 2010 goal is to reduce the proportion of children and adults without health care coverage to 0%. Kentucky PRAMS data indicate that 28.8% of the mothers were uninsured prior to pregnancy.

- The Healthy People 2010 goal is for 70% of the pregnancies to be intended; 59.3% of the PRAMS mothers reported their pregnancies being intended.
  - 40% of the mothers that reported unintended pregnancies were uninsured prior to their pregnancy compared to 22% of the mothers that reported intended pregnancies.

- The Healthy People 2010 goal is for 90% of the mothers to enter prenatal care during their first trimester. 73.6 of Kentucky PRAMS mothers entered care in the first trimester.

- 15.4% of the PRAMS mothers reported they didn't receive prenatal care as early as they wanted. Out of this 15.4%, 40% listed not having Medicaid card was a barrier to receiving prenatal care; 27.6% listed not having enough money as a barrier; 22.8% listed not being able to schedule an appointment as a barrier.

- 24.3% of the PRAMS mothers reported having high blood pressure & 15.1% reported having gestational diabetes.

- 37.1% of the PRAMS mothers reported smoking during their pregnancy. Out of the 37.1% smokers, 40.8% reported that their healthcare providers spent time with them discussing how to quit; almost 60% said providers did not spend time counseling them on quitting.

- 44.2% of the PRAMS mothers reported going to the dentist/dental clinic during their pregnancy

- The Healthy People 2010 goal is to decrease obesity to 15%. Obesity has been linked to worse pregnancy outcomes for both mother and baby. In Kentucky 29.1% of the PRAMS mothers were obese prior to pregnancy.

- 56% of the Kentucky PRAMS mothers reported initiating breastfeeding; the Healthy People 2010 goal is 75%.

- the Healthy People 2010 goal for infants placed on their back to sleep is 70%. The back-to-sleep position is key to preventing infant deaths from SIDS. PRAMS respondents in Kentucky exceeded this, with 74.5% reporting that they place their babies to sleep on their backs while sleeping.

METHODOLOGY

PRAMS is a population-based surveillance system conducted by surveying mothers with infants between two and six months of age. This Pilot Project was limited to Kentucky pregnancies resulting in live born infants. The sample was derived from the birth certificate files which allow exclusion of stillbirths, aborted pregnancies, and fetal deaths. Mothers were included regardless of age. In addition to the previous exclusions, there were eight exclusion criteria in this PRAMS Pilot Project:

*Out-of-state births to residents
*In-state births to non-residents
*Missing information (such as mother's last name or mother's mailing address)
*Delayed processing of birth certificates
*Multiple gestations (4 or more siblings)
*Adopted infants
*Surrogate births
*Non-English speaking mothers

This Pilot Project was point-in-time. A random selection of 200 mothers each month for a 3-month surveillance period was performed from a frame of eligible birth certificates. Surveys were distributed from September-November 2007, and follow up calls made thru April of 2008 to attain the desired completion rate. This PRAMS Pilot Project was stratified by race. African Americans were over-sampled. Multiple methods were used in order to conduct the surveys. To maximize the response rates we used a combination of mail and telephone surveys based on survey research[1]. First women received a pre-letter introducing and describing PRAMS to the mother and it informed her that she would receive the questionnaire within 3 to7 days. If the mother did not respond to the initial questionnaire then she received a reminder within 7 to 10 days of receiving the initial mailing. The mother could receive up to two additional mailings if she does not respond to the previous mailings. If the mother did not respond to any of the possible three mailings then she was contacted by telephone and had the opportunity to participate in the PRAMS Pilot Project survey over the phone. Mothers would also receive telephone calls if they returned an incomplete survey (<75% complete) or had undeliverable or returned mail.

Other efforts that were made in order to encourage participants to respond to and complete the survey were:

- **Inclusion of an incentive.** All mothers that are asked to participate in this pilot project received the incentive along with the pre-letter
- **Providing a Reward.** Rewards were given to mothers who completed the questionnaire.
- **Inclusion of a PRAMS brochure**. The PRAMS brochure contained frequently asked questions and answers pertaining to the PRAMS project.
- **Providing return envelopes with stamps**. In order to make this process as easy as possible for our participants and to show our appreciation for the mothers completing the survey, we will include a self-addressed stamped envelop.
- **Personalize correspondence.** Letters that are sent had real letterhead stationary and dates that were addressed to the individual and was viewed as respectful to the recipients.

[1] Dillman, D. *Mail and Internet Surveys*: The Tailored design Method. John Wiley 7 Sons, Inc; 2000.

To assist with the tracking, PRAMTrac software was used. This software developed and provided by the CDC and used in states that participate in PRAMS. PRAMTrac is a customized tracking system that assists with scheduling of mailings and phones calls, prepared letters, and tracked responses.

Statistical Analysis

All the results that are represented in this report were derived from data collected through the PRAMS survey and information listed on birth certificates through Vital Statistics. Mother's surveys were linked with their corresponding birth certificate data. The following variables were taken from Vital Statistics: infant birthweight, maternal age, maternal education, breastfeeding initiation while in hospital and inductions of labor. Analyses were performed using SAS 9.1 software (SAS Institute, Inc. Cary, NC)

Confidence Intervals (C.I) are included in every table. The Confidence Interval is the range around the indicator value that represents the margin of error. A 95% C.I. means that there is a 95% probability that the true value lies within that range. Narrow Confidence Intervals reflect less variability in the sample for that indicator. Large Confidence Intervals might reflect more variability in the sample, but can also be due to smaller sample sizes.

Weighting

After all of the data was collected, it was statistically weighted. Weighting allows the PRAMS data to be representative of live born births in the entire state. Responses were weighted to account for the sampling design. Then responses were weighted to account for non-response (i.e. women that had lower education attainment were less likely to respond than those with higher education attainment).

Confidentiality & Data Privacy

IRB for this survey was obtained through the Cabinet for Health and Family Services Institutional Review Board. Participation in the survey was voluntary. Mothers that participated in this Pilot Project were informed that they were not obligated to participate in the study and that there would be no penalty nor loss of benefits for refusing to participate. Mothers were also informed that their answers would be confidential and there would not be any identifying information when the results of the study were published. All of the data was de-identified and aggregated for analysis.

Limitations

Only live births were used in this study, therefore results can only be generalized to live births in Kentucky. The study was based on self-report which indicates there might be some recall bias and reporting bias that cannot be controlled. CDC strongly recommends a weighted response rate of 70%. Kentucky's weighted response rate for the pilot project was 62.15%, which is comparable to rates of many CDC approved states during their first year of operation.[1]

****Disclaimer:** Although this was a point-in-time study, the sample was taken during a three month period, the data can still be generalized for a whole calendar year because it was weighted.

DEMOGRAPHICS

This report is based on 356 mothers who participated in the survey. The overall weighed response rate was 62.15%. The responses have been adjusted to represent 12,671 Kentucky women residents that have given live births in Kentucky between April 2007 and November 2007. Although most of the demographics are consistent with Kentucky vital statistics reports, some show differences, like marital status. Kentucky vital statistics indicates 40.0% of the mothers are unmarried whereas, PRAMS data indicates 44.8%. The difference could be due to response bias, which cannot be controlled. The table below contains demographic categories that are consistently used throughout this report.

Table 1. Demographics

	PRAMS Sample		All Kentucky Birth Cohort
Demographics	**(%) Percent**	**95% C.I.**	**(%) Percent**
Race			
African American	8.3	6.5-10.2	9.4
White/Others	91.7	89.8-93.5	90.6
Age			
<20	15.3	10.6-20.0	13.1
20-24	29.5	23.8-35.2	30.6
25-29	24.8	19.7-29.9	29.3
30-34	20.0	15.3-24.6	17.7
>35	10.4	6.7-14.0	9.3
Education			
<High School	20.5	15.3-25.7	21.3
High School	32.9	26.9-38.9	28.8
> High School	46.6	40.6-52.6	49.9
Marital Status			
Married	55.2	49.1-61.4	60.0
Unmarried	44.8	38.6-50.9	40.0
Pre-Pregnancy Insurance Status			
Uninsured	28.8	23.0-34.5	N/A
Private	55.3	49.1-61.5	N/A
Medicaid	15.9	11.3-20.5	N/A
Income			
<$15,000	37.6	31.5-43.7	N/A
$15,000-$24,999	15.4	10.8-20.1	N/A
$25,000-$49,999	16.2	11.6-20.8	N/A
>$50,000	30.7	25.2-36.2	N/A

*Refer to Appendix A for PRAMS question that corresponds with this table

Health Care Coverage

Quotes from PRAMS Mothers:

“There is a problem with healthcare in Kentucky. I work everyday and do not have full coverage with the insurance available to me. I now have over $15,000 in medical bills *with* insurance.”

“My husband lost his job and subsequently our insurance during my most recent pregnancy. We had to live off our credit cards while he was on unemployment. Medicaid was wonderful and the nurses (Mommy & Me program) were helpful.”

“Even though my husband and I made more than $50,000 a year, we didn’t get any benefits and the doctor’s bills were outrageous. I’m now in debt because of it. There should be some kind of pregnancy assistance for bills if the insurance will not cover the pregnancy.”

Background

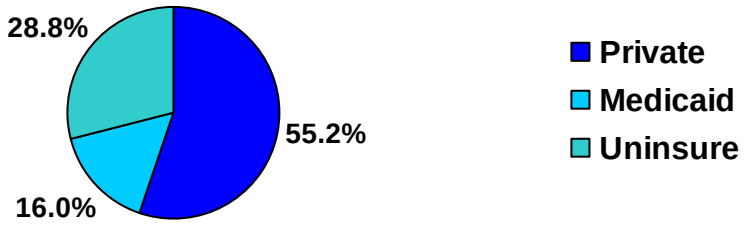
Health care coverage is key to accessing health care and staying healthy. Among the overall population, uninsured persons with an unintentional injury or discovering a new chronic condition are less likely to receive medical care and report worse health status than those who are insured with unintentional injuries or new chronic conditions.[2] Children without health insurance are three times more likely to not visit a doctor than those with insurance.[1] Pregnant women are also affected by lack of health care coverage. Approximately 13% of pregnant women nationally are not insured for health care. Pregnant women who are not insured are more likely to have fewer prenatal care services and delay or go without needed health care services.[3] Also insurance status has an effect on adverse birth outcomes. There is a correlation between insurance status and infant mortality as well as low birth weight.[4] Further, pregnant women who are uninsured or publically insured have been linked to higher rates of postpartum depression.[5]

In 1999, 14.5% of Kentucky adults had no health care coverage.[6]. By 2007, BRFSS data showed a worsening trend, with 15.9% of Kentucky adults not covered by health insurance. Nationally, 12.4% of adults had no health insurance coverage in 2007. However, Kentucky has made significant efforts to cover pregnant women and children. In Kentucky, 19.4% of women of childbearing age are uninsured, compared to 20.1% nationally. Among children less than age 18 in Kentucky, 11.3% were not covered by any health insurance at any time during the year in 1999; In the year 2007, this decreased to 8.0%. Kentucky has fewer uninsured children than the national average of 11.0% of children less than age 18 in America who did not have health insurance coverage.

Public Health Implications

The Healthy Kentuckians 2010 and Healthy People 2010 objective is to reduce to zero the proportion of children and adults without health care coverage.[6] Reports from the Kentucky PRAMS survey indicated that 28.8% of the PRAMS mothers were uninsured prior to their pregnancy (Figure1). This has significant implications for addressing Kentucky's adverse birth outcomes, and to meet the Healthy People 2010 health care coverage objective of 0.0%.

Figure 1. Insurance Status Before the Pregnancy



Women who answered 'Yes' to question 31 " Just before you got pregnant, did you have health insurance?" and 'No' to question 32 " Just before you got pregnant, were you on Medicaid (Passport, K-Chip, KenPac)" were classified as having private insurance prior to pregnancy. Women who answered 'Yes' to question 32 were classified as participating in Medicaid prior to pregnancy. Women who answered 'No' to both questions 31 and 32 were classified as having no insurance prior to pregnancy. This graph was developed by combining questions 31-32.

*Refer to Appendix A for PRAMS question that corresponds with this figure

Not getting health care coverage can have serious implications, not just for adults and children, but also pregnant women, as previously discussed. It has been estimated that every dollar spent on prenatal care can save approximately $3.33 on neonatal care costs.[8] Adequate prenatal care has been associated with improved birth weights and reduction of preterm birth, while lack of prenatal care has been associated with both infant mortality and maternal mortality as well as increased health care costs.[9]

Furthermore, there are disparities in insurance status between demographic groups. The Current Population Survey, 2007 Supplement revealed that 22% of non-Hispanic Blacks are uninsured and 12.6% of non-Hispanic Whites are uninsured in America. Kentucky's PRAMS data indicates that African Americans, mothers between the ages of 20-24, mothers with less than high school education, unmarried women and women with income less than $24,000 were more likely to be uninsured before their pregnancy. (Table 2)

Table 2. Mother's Insurance Status Before Pregnancy by Demographic Group

Demographics	**% Private Insurance (95% C.I)**	**% Medicaid (95% C.I)**	**% Uninsured (95% C.I)**
Total	55.3(49.1-61.5)	15.9(11.3-20.5)	28.8(23.0-34.5)
Race			
African American	33.5 (24.3-42.7)	25.8 (17.1-34.5)	40.7(30.4-51.0)
White/Others	57.6(50.8-64.4)	14.7 (9.8-19.7)	27.7 (21.4-33.9)
Age			
<20	29.3 (13.0-45.6)	46.9 (29.2-64.7)	23.8 (8.3-39.2)
20-24	43.8 (32.1-55.6)	15.2 (6.8-23.6)	41.0 (29.2-52.7)
25-29	63.7 (52.2-75.3)	8.8 (2.5-15.0)	27.5 (16.5-38.5)
30-34	75.4 (63.8-86.9)	7.0 (0-14.4)	17.7 (7.6-27.7)
>35	63.4 (45.2-81.7)	10.3 (0-21.5)	26.3 (9.2-43.4)
Education			
<High School	26.2 (12.4-39.9)	31.6 (17.6-45.5)	42.3 (27.1-57.5)
High School	39.2 (27.5-50.9)	21.0 (11.5-30.5)	39.8 (28.1-51.5)
> High School	78.0 (71.5-84.4)	6.2 (2.5-10)	15.8 (10.1-21.5)
Marital Status			
Married	75.2 (67.8-82.7)	6.0 (1.8-10.2)	18.8 (12.0-25.6)
Unmarried	30.2 (19.4-36.6)	28.0 (21.5-39.0)	41.7 (32.2-51.3)
Income			
<$15,000	21.2 (12.2-30.2)	36.8 (26.3-47.3)	42.0 (31.3-52.7)
$15,000-$24,999	42.7 (26.5-58.9)	11.1 (1.0-21.2)	46.2 (29.9-62.6)
$25,000-$49,999	68.2 (53.1-83.3)	2.5 (0.0-6.6)	29.3 (14.4-44.2)
>$50,000	97.1 (93.0-100.0)	0.0	2.9 (0.0-7.0)

*Refer to Appendix A for PRAMS question that corresponds with this table

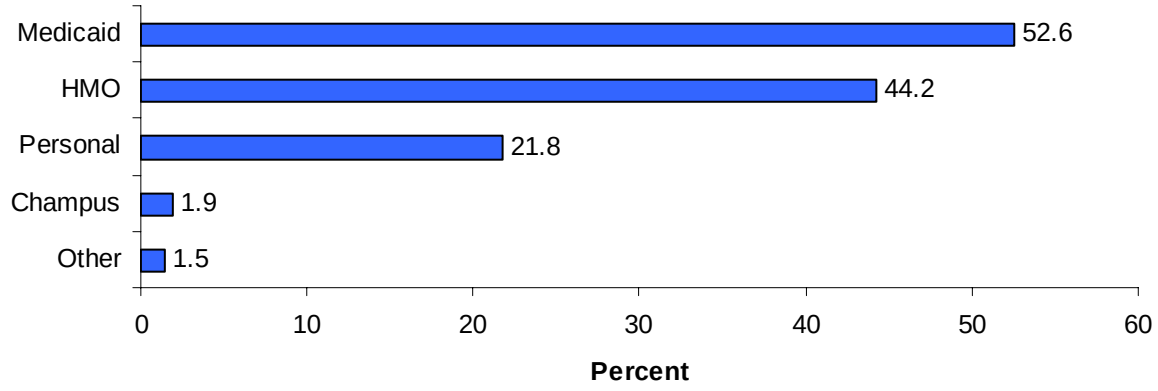
Where Do We Go From Here?

The Kentucky Cabinet for Health and Family Services works toward getting access to health care for all Kentucky residents through programs in Medicaid, Health Care Access, and Local Health Department services.

The Kentucky Medicaid Program offers health care services to families and individuals who have income and resource constraints within established guidelines, and includes pregnant women in the population of those covered. Health Care Access programs, within the Department for Public Health, assist with access to primary care for citizens of Kentucky through such programs as the Charitable Health Care Services Program, Health Professional Shortage and Medically Underserved Areas Designation Program. Also, the Kentucky Physicians Care Program, which consists of providers who donate their time to provide free health care services to low-income uninsured Kentuckians provides some assistance. Local Health Departments offer health care services in 120 counties in Kentucky with a mission to protect and ensure the health of citizens in the state through individual and population-based services.

However, even with these services, more work needs to be done in Kentucky in order to decrease the number of children and adults, especially pregnant women, who are not covered by health insurance and, therefore, forego the health care they need. To ensure the health of mothers and babies through access to an adequate number of prenatal care visits without delay during pregnancy, more women need to have health care coverage prior to pregnancy. With almost one-third of women in Kentucky without health insurance before becoming pregnant, there is a need for the state to expand health care access programs to this population so that health care can be utilized when most needed.

Figure 2. Delivery payment method



*Refer to Appendix A for PRAMS question that corresponds with this figure

Facts About Health Insurance

- 28.8% of the PRAMS mothers had no health care coverage, public or private, prior to their pregnancy
- Although 16.0% of the mothers reported having Medicaid prior to their pregnancy, 52.9% reported Medicaid being their delivery payment method.
- Although 55.2% of the mothers reported having private insurance prior to pregnancy, 44.2% used private insurance to pay for the delivery.
- Of the mothers that reported having private insurance prior to pregnancy, 81.1% used private insurance to pay for their delivery.
- Of the mothers that reported having private insurance prior to pregnancy , 37.7% used personal income (cash, check, or credit card) to pay for their delivery.
- Of the mothers that reported having private insurance prior to pregnancy, 23.2% used Medicaid to pay for their delivery.
- Of the mothers that reported having Medicaid prior to pregnancy, 90.8% paid for their delivery using Medicaid.

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Pregnancy Intendedness

Quotes from PRAMS Mothers:

"I am a 17 year old mother who still goes to school. I do everything I can to help my baby grow and stay healthy. I may be young, but I do not regret being pregnant or having her. I am staying in school for her because later on, my education is what she will need to support her. You need to talk more about the positive and not the negative. You all need to tell teenagers that it's not a mistake, that it is part of life and what they make of it."

"...They might feel left out as a teen stepping into early motherhood. They don't know about raising a child and how many responsibilities come along with being a mother. They might deal with peer pressure, being talked about around the school, and might be neglected at home. They need to know it is okay to ask for help with motherhood. Also knowing that it is still possible to be whatever they wanted to be when they grow up."

Background

In the United States, it is estimated that one-half of all pregnancies are unintended Although the proportion of unintended pregnancies in the United States has declined, other industrialized nations report fewer unintended pregnancies.

Previous analyses of PRAMS data in other states have revealed that higher rates of unintended pregnancies are more likely seen in women that are African American, unmarried, on Medicaid , and are younger.[1] Kentucky PRAMS data is similar to other states (Table 3).

Table 3. Demographic characteristics for intended and unintended pregnancies.€

	% Intended (95% C.I.)	% Unintended (95% C.I.)
Total	59.3 (53.1-65.4)	40.7 (34.6-46.9)
Race		
African American	34.2% (23.9-44.4)	65.8% (55.6-76.1)
White and Others	62.3% (55.7-69.0)	37.7% (31.0-44.3)
Age		
<20	34.6% (17.1-52.1)	65.4% (47.9-82.9)
20-24	58.5% (47.0-70.1)	41.5% (29.9-53.0)
25-29	69.5% (58.7-80.4)	30.5% (19.6-41.3)
30-34	69.2% (57.4-81.0)	30.8% (19.0-42.6)
>35	50.0% (31.5-68.7)	50.0 (31.3-68.5)
Education		
<High School	52.0% (36.8-67.2)	48.0% (32.8-63.2)
High School	52.2% (40.2-64.2)	47.8% (35.8-59.8)
>High School	67.4% (60.0-74.9)	32.6% (25.1-40.0)
Marital Status		
Married	74.5% (67.2-81.8)	25.5% (18.2-32.8)
Unmarried	42.3% (32.7-52.0)	57.7% (48.0-67.3)
Pre-Pregnancy Insurance Status		
Uninsured	44.8% (32.7-56.8)	55.2% (43.2-67.3)
Medicaid	40.1% (23.6-56.6)	59.9% (43.4-76.4)
Private	73.4% (66.1-80.6)	26.6% (19.4-33.9)
Income		
<$15,000	40.7% (27.7-53.7)	59.3% (46.3-72.2)
$15,000- $24,999	53.4% (36.9-69.8)	46.6% (30.2-63.1)
$25,000 - $49,999	45.4% (20.5-70.2)	54.6% (29.8-79.5)
≥$50,000	74.2% (66.7-81.7)	25.8% (18.3-33.3)

*Refer to Appendix A for PRAMS question that corresponds with this table

€ Intended pregnancies are those in which respondents reported either “I wanted to be pregnant then” or “I wanted to be pregnant sooner”. Unintended pregnancies are those in which respondents reported either “I wanted to be pregnant later” or “I did not want to be pregnant then or at any time in the future”

Unintended pregnancy may result in adverse health outcomes affecting the mother, infant and family. Women with unintended pregnancies my delay seeking prenatal care. They report higher levels of stressful events during the pregnancy. An unintended pregnancy is also a risk factor for depression among pregnant women. Depression has been associated with risky behaviors, low birth weight and preterm delivery in adults.[2] Another study has shown that mothers of very low birth weight infants were significantly more likely than those of normal weight infants to report feeling unhappy about their pregnancy.[3]

Public Health Implications

The CDC recommends that all women of childbearing age develop a reproductive life plan for their pregnancies. Women who plan their pregnancy are more likely to enter pregnancy in a better health status, have chronic diseases under control, and be taking folic acid, a vitamin to prevent birth defects prior to becoming pregnancy. Family planning clinics provide services to low income women to assist them in achieving their childbearing goals and avoid unplanned pregnancies. The benefits from these services are numerous including health benefits for women and infants due to better birth spacing, personal benefits for individuals who have a greater chance of realizing their educational and career goals, and economic benefits for both families and society due to personal and public cost savings associated with fewer unplanned children.[4] National studies have evaluated the impact of family planning on unintended pregnancies and cost savings from these programs. According to the Guttmacher Institute,[5] for every $1 spent nationally to provide services in the nationwide network of publicly funded family planning clinics, $4.02 is saved in averted Medicaid birth costs.

Healthy People 2010 has identified as one of its goals to improve pregnancy planning and spacing and prevent unintended pregnancy. There are three objectives relating to pregnancy intendedness:[6]

- Objective 9-1: To increase to 70% the proportion of pregnancies that are intended
- Objective 9-2: To reduce by 6% the proportion of births occurring within 24 months of a previous birth
- Objective 9-3: To increase to 100% the proportion of females at risk of unintended pregnancy (and their partners) who use contraception.

Figure 4. How did you feel about becoming pregnant

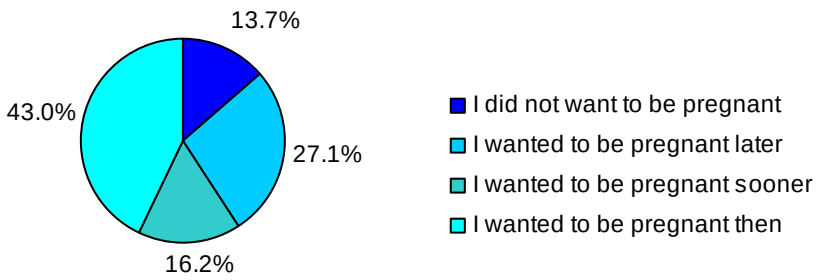

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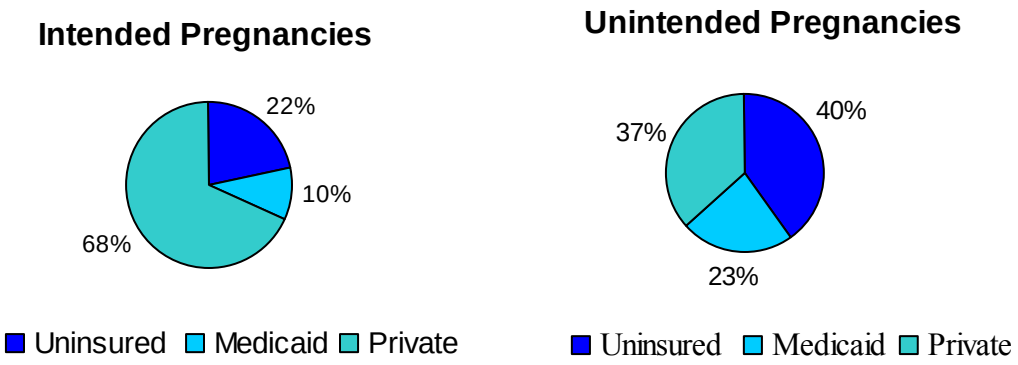
Figure 5.
Comparison of Intended pregnancies by Pre-Pregnancy insurance coverage*



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Where do we go from here?

Pre-conception health, as recommended by CDC, should be emphasized by all providers. In addition, an emphasis on adolescent health, male involvement, and positive youth development are integral areas to address.

In order to help Kentucky's women to plan for their pregnancies there is a statewide Family Planning Program. The mission of the Kentucky statewide Family Planning Program remains that of providing the target population of low-income men and women at any age the information and the means to choose the number and the spacing of their children.. Reducing unintended pregnancies in Kentucky will have far-reaching effects in both medical and social settings. The social costs of unintended pregnancies include reduced educational achievement, reduced employment opportunities, increased welfare rolls, and increased potential for domestic violence and child abuse. Rising medical costs can create a barrier for individuals seeking family planning services. The Family Planning program is available through local health departments across the state. The State Family Planning Program continually reinforces to its delegate agencies the need to increase community access and awareness of family planning services. Increasing the number of clinic days, expanding clinic hours, and broadening community outreach are all ways to eliminate current health disparities.

The Kentucky Title X program promotes positive youth development in leadership, reduction of risky behaviors, and promotion of abstinence through a number of venues and programs across the state. These include the Pike County Male Initiative, the Brighton Center in Newport, the Kentucky Teen Pregnancy Coalition (KTPC), the Bluegrass Farmworker Health Clinic, and the Young Parents Program (YPP) both in Lexington, and Teen Pregnancy Prevention Intervention (TPPI) in Louisville. The Abstinence Education and Adolescent Health Initiatives Program provide "Abstinence Until Marriage", a federally funded curriculum, through sixteen Local Health Departments and other abstinence-based curriculum is provided in thirty two additional Local Health Departments.

Facts About Pregnancy Intendedness

- 41% of respondents reported that their pregnancy was unintended. 27% of pregnancies were mistimed.

- Women who were on Medicaid had the highest rate of unintended pregnancy, at 59.9%. In women who had health care insurance coverage, 73.4% of pregnancies were intended; only 26.6% were unintended.

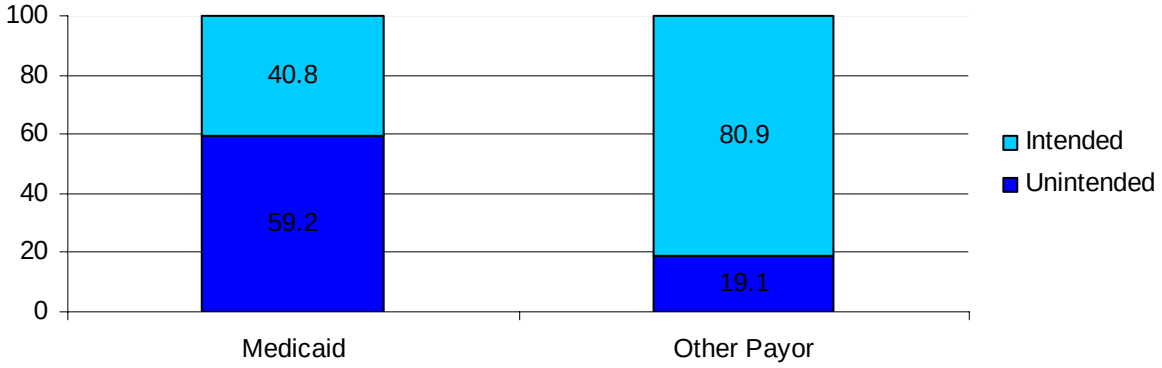
- Factors that were identified as different between intended and unintended pregnancies were age, race, income, marital status and pre-pregnancy insurance status. Unintended pregnancies were more common in:

  -Younger (<20 years) women - 65.4% unintended
  -Older (>35 years) women - 49.9% unintended
  -African American women - 65.8% unintended
  -Women with incomes <$15,000 - 59.3% unintended
  -Unmarried women - 57.7% unintended
  -Uninsured women - 55.2% unintended
  -Women with Medicaid - 59.9% unintended

- The breakdown of pre-pregnancy insurance status was different between intended and unintended pregnancies. For intended pregnancies, 68% had private insurance, 10% had Medicaid and 22% were uninsured. For unintended pregnancies, 37% had private insurance, 23% had Medicaid and 40% were uninsured.

- For deliveries for which Medicaid paid, 40% were intended pregnancies while 60% were unintended. For other payers, however, 80% were intended pregnancies while 20% were unintended (Figure 6)

Figure 6. Payment source for deliveries by intendedness of pregnancy



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Facts About Pregnancy Intendedness, continued

- Women with intended pregnancies were more likely to initiate breastfeeding than women with unintended pregnancies.

- Of the respondents reporting that they did not receive prenatal care as early as they wanted, 40% were intended pregnancies while 60% were unintended.

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Prenatal Care

Quotes from PRAMS Mothers:

“For the mothers- Just make sure you are seeing health care specialists all through the pregnancy as soon as you find out. And please do not do anything that will leave your baby having any health problems, especially during the winter months. Every newborn child needs care from day one until nine months and especially after they are born. Do what your doctor tells you.”

“I believe the healthcare for pregnant women in Kentucky is wonderful. Anytime I was worried or sick a healthcare provider was there to help anytime I needed it. They were also very nice and took my conditions seriously even though I was only 16 at the time!”

“I was fortunate to receive excellent care from my healthcare provider. My doctors provided me with resources for childbirth classes, breastfeeding classes, and finding a pediatrician.”

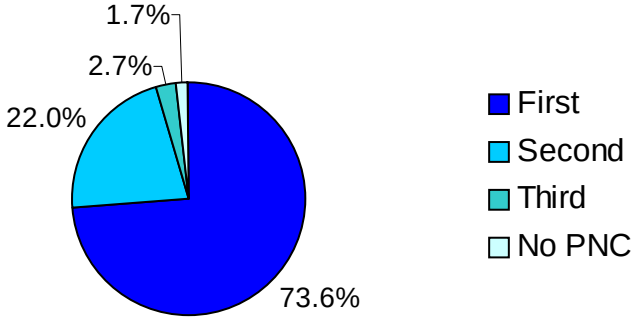
Background

Prenatal care early in pregnancy (care beginning in the first trimester) is essential for maintaining a healthy pregnancy and detecting any problems early in fetal development. All pregnant women need prenatal care. Women who see a health care provider regularly during pregnancy have healthier babies, are less likely to deliver prematurely, and are less likely to have other serious problems related to pregnancy.[1] Even though Kentucky's rate of first trimester prenatal care entry has traditionally been slightly above the Nation, within the past few years, this rate has dropped and continues to decline. One possible explanation for the decline is the implementation of a new standard certificate of live birth that changed the method for calculating entry into prenatal care was implemented in 2004. However, other factors such as substance abuse, lower educational attainment, marital status, lack of insurance coverage or income, lack of transportation, and lack of family support among others should still be considered and examined when determining possible causes associated with the recent decline in early entry to prenatal care.[2,3]

Public Health Implications

The Healthy People 2010 objective for the proportion of pregnant women who receive early prenatal care is 90%.[4] Kentucky PRAMS data (Figure 7) is consistent with the birth certificate data, with 72.4% mothers receiving prenatal care during the first trimester, 21.5% in the second, 4.5% in the third and 1.6% not receiving any prenatal care.

Figure 7. Prenatal care entry by trimester



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Women who receive little or no prenatal care at all during pregnancy can have a direct public health impact on society. Studies have shown that infants born to women not receiving prenatal care are more likely to have poor birth outcomes such as infant mortality, preterm birth, low birth weight, premature rupture of the membranes, and stillbirth all of which have serious emotional and financial implications on a community.[2]

Not only is lack of prenatal care associated with adverse health outcomes, there are disparities that exist among the different demographic groups in accessing prenatal care. Disparities in access to prenatal care can lead to disparities in adverse birth outcomes. A study from 2005

found that women who received no prenatal care were more likely to be older, African American, unmarried, have less education, foreign-born, have high parity, and live in urban areas.[5] Kentucky PRAMS data showed similar results. Even though there was not a significant difference Whites/Others were more likely to enter prenatal care in their first trimester (76.2%) compared to African Americans (66.8%). Older age, unmarried, women with less than a high school education, uninsured and lower income women were less likely to enter prenatal care during their first trimester (Table 4)

Table 4. Entry into prenatal care by demographics

Demographics	% Early entry (95%C.I.)	% Late/no entry (95%C.I.)
Total	73.6 (68.2-79.1)	26.4 (20.9-31.8)
Race		
African American	63.7 (54.4-73.1)	36.3 (26.9-45.6)
White/Others	75.0 (69.2-80.9)	25.0 (19.0-30.8)
Age		
<20	67.6 (52.1-83.1)	32.4 (16.9-47.9)
20-24	72.9 (62.6-83.2)	27.1 (16.8-37.4)
25-29	79.7 (70.4-89.0)	20.3 (11.0-29.6)
30-34	78.3 (67.1-89.4)	21.7 (10.6-32.9)
>35	61.2 (42.8-79.5)	38.8 (20.5-57.1)
Education		
<High School	56.9 (42.6-71.2)	43.1 (28.8-57.4)
High School	69.5 (58.9-80.1)	30.5 (19.9-41.1)
> High School	83.9 (78.3-89.6)	16.1 (10.4-21.7)
Marital Status		
Married	85.1 (79.3-91.0)	14.9 (9.0-20.7)
Unmarried	603 (51.1-69.5)	39.7(30.5-48.8)
Pre-Pregnancy Insurance Status		
Uninsured	55.3 (43.3-67.3)	44.7(32.7-56.7)
Private	83.7(77.4-89.9)	16.3 (10.1-22.6)
Medicaid	72.2 (58.9-85.6)	27.7 (14.4-41.1)
Income		
<$15,000	64.8 (54.9-74.7)	35.2 (25.2-45.1)
$15,000-$24,999	70.7(56.0-85.4)	29.3(14.6-44.0)
$25,000-$49,999	80.4 (63.6-97.1)	19.6 (2.9-36.4)
>$50,000	81.7(73.8-89.6)	18.3(10.4-26.2)

*Refer to Appendix A for PRAMS question that corresponds with this table

Where Do We Go From Here?

Local Health Departments provide a safety net to ensure access to prenatal care. Although not all health departments in Kentucky provide direct prenatal care at their facility, they assist women in their communities to find local providers in the community who will to provide care for women. referred from the local health department. There is ongoing collaboration within

women in their communities to find local providers in the community who will to provide care for women. referred from the local health department. There is ongoing collaboration within Local health departments, so that all women seen in local health departments with a positive pregnancy test are immediately referred to care providers.

Based upon PRAMS reported data, the majority of Kentucky mothers are aware of the importance of prenatal care and are seeking prenatal care (98.9%). However, 15.4% of the PRAMS-mothers reported that they did not receive prenatal care as early as they wanted. (Figures 8 & 9)

Figure 8. Percentage of mothers who sought prenatal care from a health care provider

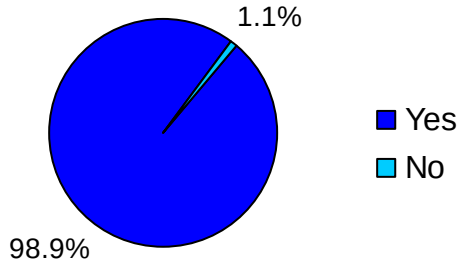

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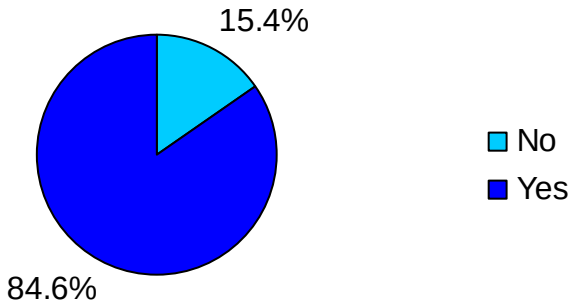
Figure 9. Precentage of mothers that received prenatal care as early as they wanted during their pregnancy



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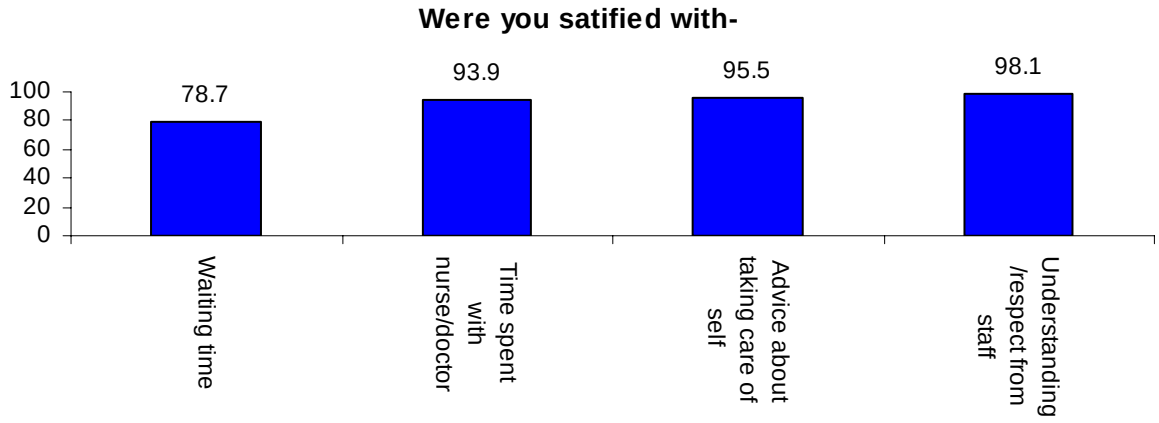
In order for Kentucky to improve its early entry to prenatal care for pregnant women and to work towards reaching the Healthy People 2010 objective, efforts must be made towards improving access for all pregnant women to early care. Kentucky must focus on exploring women's perceived reasons for not initiating early care. Studies suggest that external and psychosocial barriers such as financial difficulties, lack of insurance, problems with transportation and child care, long waits at clinic, delayed acceptance of pregnancy, interpersonal conflicts, lack of social support, and negative attitudes towards physicians all contribute to delays in prenatal care.[3] Kentucky has gained some insights into these issues from the PRAMS survey.

Overall, the majority of women who received prenatal care were satisfied with the care they received. Over 90% of the women reported being satisfied with the time spent with the doctor or nurse, advice received about taking care of oneself, and understanding/respect from staff. Time spent waiting in the office was the category with the least amount of satisfaction reported (78.7%). (Figure 10) Therefore, attitudes towards physicians and satisfaction with care did not play a significant role in the delay of prenatal care.

Figure 10. How did you feel about the prenatal care you got during your most recent pregnancy?



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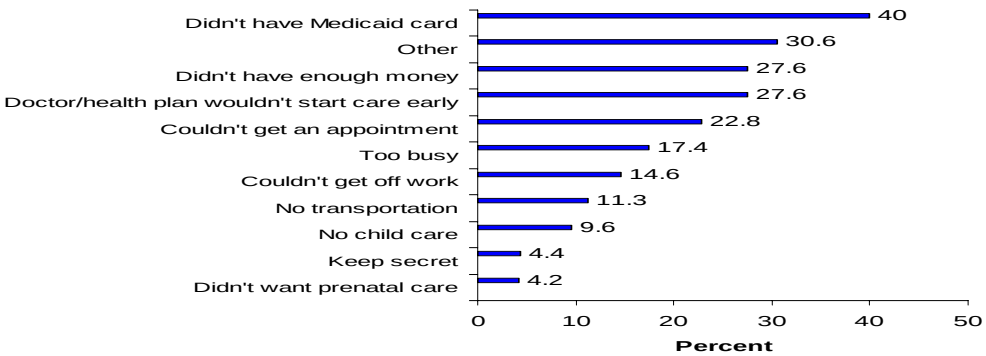
In Kentucky, from the PRAMS data, the most significant barriers to receive early prenatal care appear to relate to access issues. Of the women that reported not receiving prenatal care as early as they wanted 40% reported not having a Medicaid card as a barrier, 27.6% cited not having enough money, and 22.8% reported they couldn't get an appointment. (Figure 11) Because PRAMS has given insight to barriers to early entry to prenatal care, public health efforts can be developed to address these barriers..

Figure 11. Barriers to receiving prenatal care for those who reported not getting prenatal care as early as they wanted



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Prenatal Care Facts

- 98.9% of Kentucky PRAMS mothers reported seeking early entry into prenatal care
- 15% of respondents were not able to get in to prenatal care as early as they wanted
- Over 90% of mothers responding were satisfied with their prenatal care and the time spent with providers
- Mothers that were White/Other more likely reported receiving prenatal care as early as they wanted compared to African Americans (85.7% versus 72.2% respectively).
- Mothers that reported being uninsured or having Medicaid prior to pregnancy were less likely to report receiving prenatal care as early as wanted compared to mothers that had private insurance prior to pregnancy
  - 73.6% Uninsured
  -83.7% Medicaid
  -90.9% Private
- Mothers that had low birth weight (<2500 grams) babies were less likely to report that they received prenatal care as early as they wanted compared to mothers that gave birth to normal weight babies(>2500 grams) (64.9% versus 86.1%, respectively).

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Social Supports

Quotes from PRAMS Mothers:

“I received food stamps but not enough. $218 is not enough for three people in a household”

“If you’re a new parent, take parenting classes they will answer all questions you have about being a new mother and it prepares you for labor and delivery”

“Once I found out I was pregnant, I tried to get a medical card and without filling out any paperwork the caseworker told me that I make too much. When I asked her what should I do, because I could not get medical insurance from my job at the time, she said "I don't know I guess go to the clinic and pay out of pocket" It was easy for her to say that but I didn't have a lot of extra money. My money went to bills. Trying to get money to pay for doctor visits, lab work, testing was so stressful. I finally could get a medical card once my job closed down.”

“The WIC vouchers for Farmer’s Market were great!”

Background

Federal, state and local governments provide many programs designed to help meet the educational, mental, medical, and nutritional needs of expecting mothers and young children. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a national program, established in 1972 by an amendment to the Child Nutrition Act of 1966, to enhance maternal and infant health through better nutrition and education. WIC has been known to enhance the health of women, infants, and children by promoting improved preconception nutrition status, breastfeeding, infant feeding practices, childhood immunizations, proper nutrition, and the use of appropriate medical services by women and children.[1] The government also provides low-income households with food stamps that they can use like cash at most grocery stores. As of Oct. 1, 2008, the federal Food Stamp Program was changed to the Supplemental Nutrition Assistance Program (SNAP).[2] The new name reflects its focus on nutrition and providing healthy food within reach for low- income households. The Office of Family Assistance administers Temporary Assistance to Needy Families (TANF) thereby providing financial security to its citizens who need assistance.

Public Health Implications

The Healthy People 2010 goal is to increase food security among U.S. households and in so doing reduce hunger.[3] This objective was framed as a result of increased recognition of the problem in the United States and an improved ability to measure it. From FY 2003 to FY 2007 there has been a steady rise in the average monthly participation of persons in the food stamp program in Kentucky. During the same time period, monthly WIC participation increased from 113,109 to 129,684. In the PRAMS survey, 55.3% of the PRAMS mothers reported they were on WIC (Figure 12). Still, food security is an issue, as 8.9% of PRAMS mothers reported they ate less than they needed because they didn't have enough money to buy food (Figure 13). There is an increasing need for food security for these pregnant women, infants and children.[2]

Figure 12. Were you on WIC during your recent pregnancy

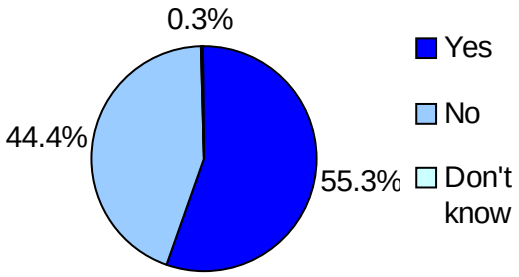
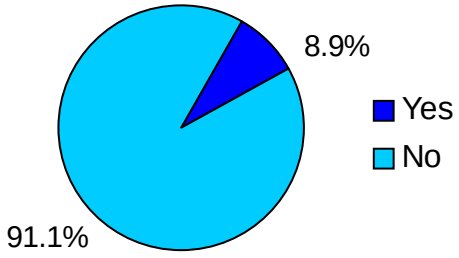


Figure 13. During 12 mths before your new baby was born, did you ever eat less than you felt you should because there wasn't enough money to buy food



*Refer to Appendix A for PRAMS questions that corresponds with these figures

Where do we go from here?

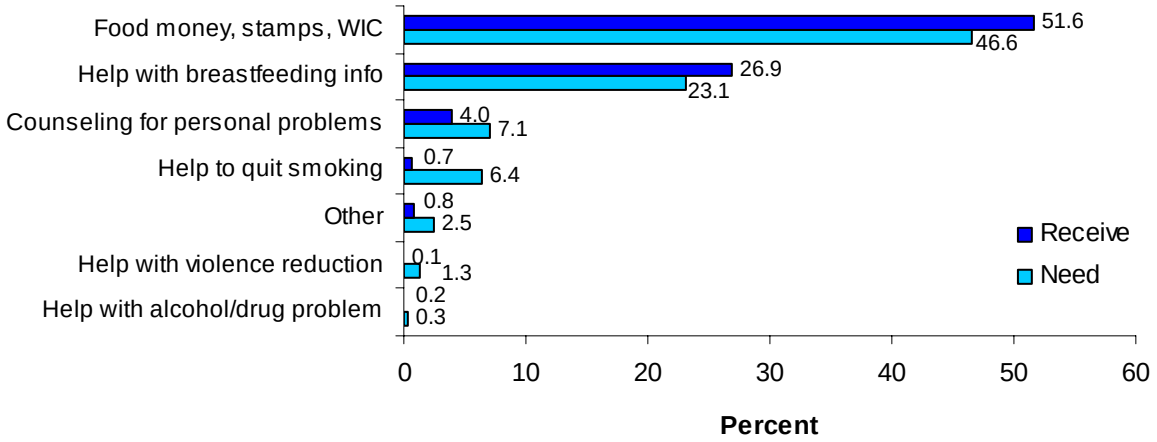
The Commonwealth of Kentucky has several programs such as WIC and food stamps that provide food security to its residents. It also provides services such as Kentucky Transitional Assistance Program Aid (K-TAP) to provide families with tools to become self-sufficient while ensuring that children are valued and protected.

In addition to this, the Kentucky Department for Public Health's Division of Maternal and Child Health (MCH) has a program for first time parents called HANDS (Health Access Nurturing Development Services). HANDS is a voluntary home visitation program for new and expectant mothers that are overburdened (single, low income, substance abuse or domestic violence). HANDS provides skills on parenting, assists families with resources for the baby, and links parents to healthcare services. When these overburdened, first time parents enter the HANDS program early in the pregnancy, the effects are dramatic—1/3 the rates of preterm birth and low birth weight, as well as lower infant mortality, less child abuse, increased maternal education and employment. Currently the program is limited to first time parents cue to funding constraints, but it is likely other families could benefit as well.

The state also provides free tobacco cessation assistance to residents to help them quit smoking. This includes not only the 1-800-QUIT NOW line, but also local Cooper-Clayton smoking cessation classes all across the state. However, these do not address smoking in pregnant women. Kentucky still has a very high prevalence of pregnant women who smoke. In 2007, 34.2% of women of childbearing age (18-44 years) reported smoking, compared to 21.2% of women overall in the U.S.[4] More research is needed to enroll women in effective programs that assist clients in quitting to smoke.

Even though there are resources for expecting mothers in Kentucky, not all expecting mothers are getting what they need. Figure 14 shows the discrepancy between mothers that needed resources and received those services. For instance, 7.1% needed counseling for personal problems, however only 4.0% of the mothers reported receiving counseling.

Figure 14. During your recent pregnancy, did you need or receive any of the following



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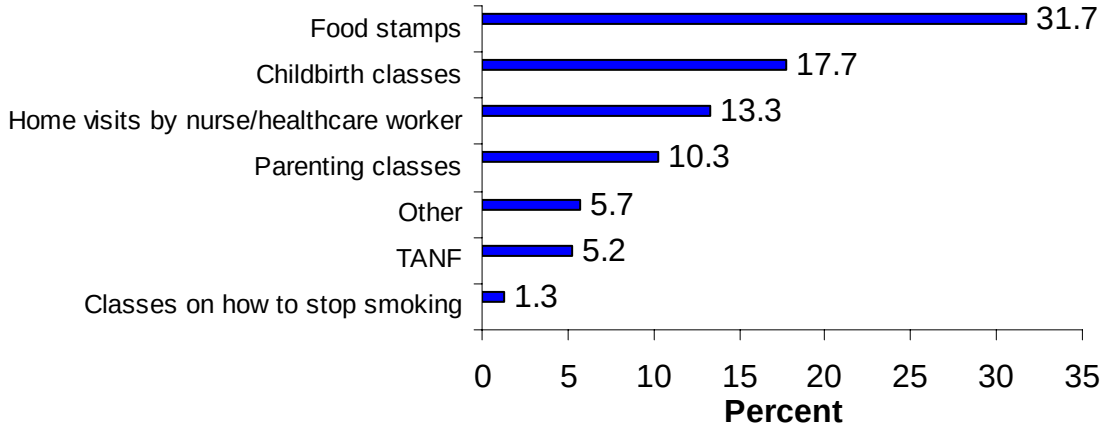
From the survey, 6.4% of mothers reported needing help to quit smoking, but only one in nine women who expressed the need for help with smoking cessation received that help.. With the high smoking rates in Kentucky (discussed in the Substance Use during Pregnancy Chapter) most likely mothers are not aware of the resources.

The local health departments, the state health department, community partners, and advocacy groups all need to work together to ensure that people are aware of the resources that are available to them to increase the chances of positive birth outcomes, based upon the low percentage of mothers reporting they receive social support services (Figure 15)

Figure 15. During recent pregnancy, did you get any of the following services-



*Refer to Appendix A for PRAMS question that corresponds with this figure

Facts About Government Assistance

- Of the mothers (55.3%) who received WIC during their pregnancy, the majority (68.6%) of them were white.
- Of the mothers (55.3%) who received WIC during their pregnancy around 86% were less than 20 years in age.
- During their recent pregnancy 31.7% women received food stamps and 5.2% received TANF.
- 46.6% of women expressed a need for money to buy food, food stamps or WIC vouchers and 51.6% said that they received the above mentioned service.
- During their recent pregnancy 7.1% of mothers said that they needed counseling information for family and personal problems and 4% responded that they received this service.
- 6.4% of mothers reported a need for help to quit smoking.

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Maternal Morbidity, Stress and Pregnancy

Quotes from PRAMS Mothers:

“I had pre-eclampsia & H.E.L.L.P with my first pregnancy. I was told by my OB/GYN that all the symptoms were just "part of pregnancy" & "deal with it". This OB is no longer in practice. The care I received from a high risk OB in Lexington was exceptional!”

“I have never been a victim of domestic violence. Nevertheless, I would like to comment on that issue. On approx. 4 occasions during my prenatal care, I was asked if I was a victim of domestic violence in front of my husband. I was asked the question in front of him at my doctor’s office and at the hospital. Luckily I have never had to suffer from that type of violence. However, if I had, I certainly wouldn't feel comfortable talking about it in front of the possible perpetrator. That issue should be addressed when a mother is alone.”

“I was in the hospital more than twice while pregnant, once for labor pains. I stayed less than a day. I got food poisoning to close to my due date and was there for 3 days.”

Background

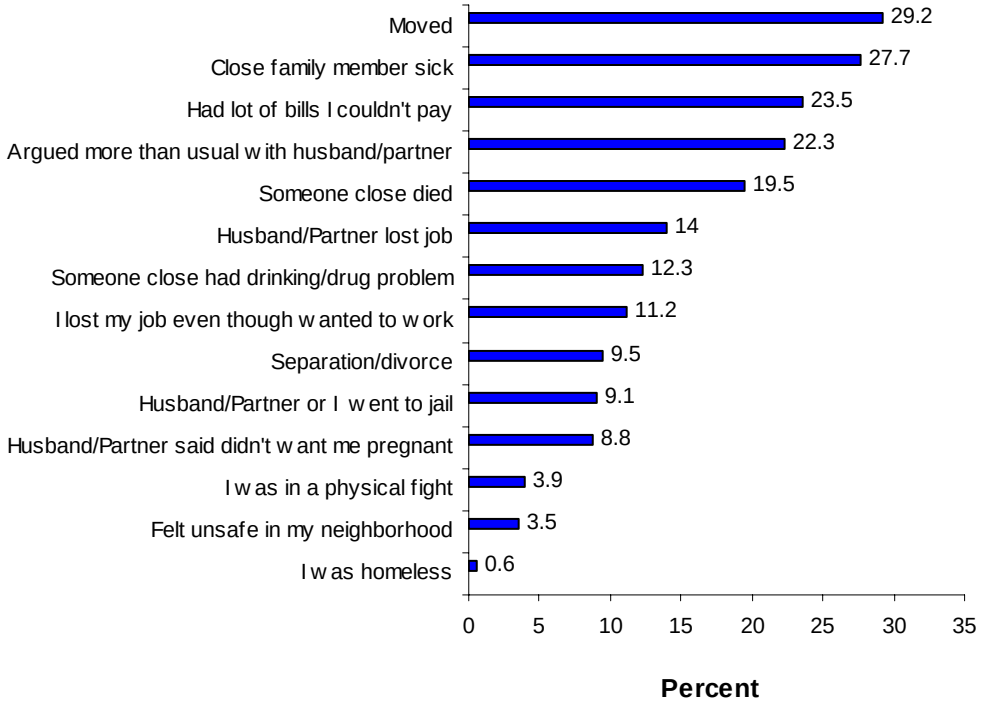
Maternal morbidity is generally defined as any illness or injury caused by, aggravated by, or associated with pregnancy or childbirth.[1] Maternal morbidity from pregnancy related complications can lead to more stress and even hospitalizations. It not only affects the health of the mother but also her infant. If there is severe maternal morbidity it may even lead to fetal, infant or maternal death.[2] Currently, limited data exist for monitoring national trends in maternal morbidity. Hospitalization rates for pregnancy-related complications have been the primary means for measuring maternal morbidity.[4]

There are many pre-existing medical conditions (such as diabetes, hypertension) that can affect pregnancy or be affected by pregnancy and these require the clinical care of a healthcare professional. Chronic hypertension was positively related to prematurity and a low birth weight birth.[5] Forms of hypertension related specifically to pregnancy include pregnancy induced hypertension (PIH), also known as toxemia or preeclampsia, and also increase the likelihood of adverse outcomes. Diabetes in pregnancy can have serious consequences for the mother and the growing fetus. The severity of problems often depends on the degree of the mother's diabetic disease, especially if she has vascular (blood vessel) complications and poor blood glucose control. Diabetes that occurs only during pregnancy is referred to as gestational diabetes, but still has effects on the fetus. Infants of mothers with diabetes are at greater risk for several problems, such as: birth defects, stillbirth, macrosomia, birth injury, hypoglycemia and respiratory distress. It has been found that duration of diabetes in women is a significant predictor of cesarean delivery.[5] Another medical problem that can affect pregnancy is vaginal bleeding which carries a fetal loss rate of 13.8%.[6]

Public Health Implications

In Healthy People 2010 the two overarching goals are to increase quality and years of healthy life and to eliminate health disparities,[7] and these served as a guide in the development of objectives that are used to measure progress. Because increased stress during the pregnancy could effect the quality of life for both the mother and infant, this should be a public health concern. PRAMS data indicates that stress during pregnancy is an issue. Over 20% of the mothers responded that they encountered the following stressors during the pregnancy: had to move, close family member was sick, had a lot of bills they couldn't pay, and argued more than usual with their husband/partner. (Figure 16)

Figure 16. Percentage of problems that occurred during pregnancy



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High levels of stress during pregnancy can result in an alteration of immune regulation in the fetus and persistent disparities in health outcomes among minority women.[3]
Furthermore, there were significant disparities in the stressors that mothers had to endure during their pregnancies. African American mothers had higher rates of moving, bills they couldn't pay, arguing with their partner, having someone close die, and losing their job. (Table 5)

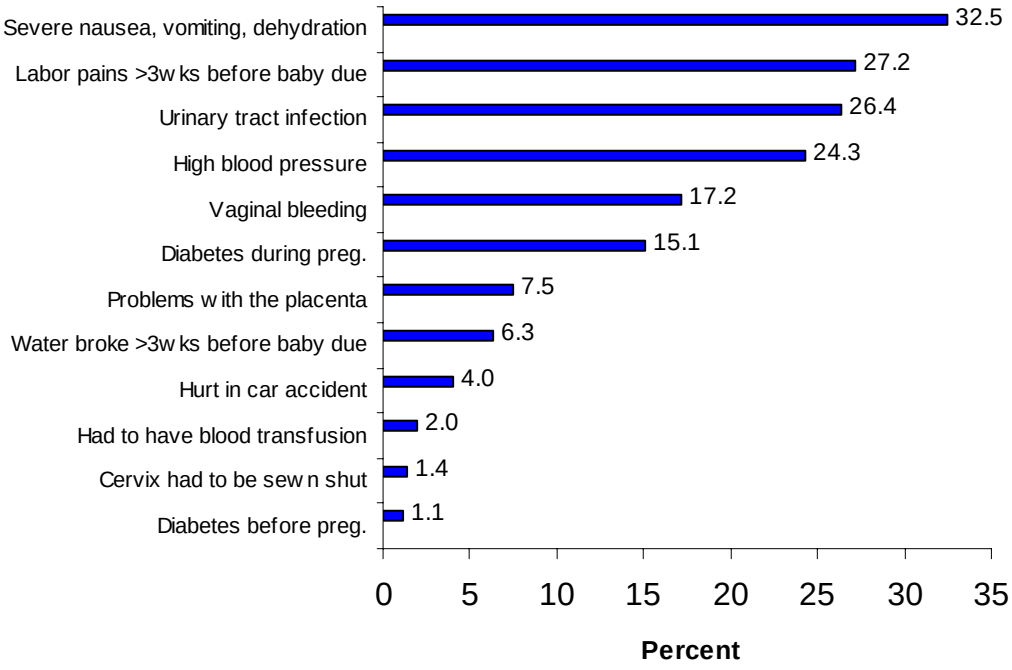
Table 5. Prevalence of Stressors that Occurred During Pregnancy by Race Among Women in Kentucky

Stressor	Overall	White	African American
Moved	29.2	28.0	38.8
Had lot of bills I couldn't pay	23.5	22.1	32.7
Argued more than usual with husband/partner	22.3	21.0	34.2
Someone close died	19.5	18.0	32.6
I lost my job even though I wanted to work	11.2	10.6	19.7

*Refer to Appendix A for PRAMS question that corresponds with this table

The most common reasons for hospitalizations during pregnancy are preterm labor, nausea or vomiting, genitourinary complications, and hypertensive disorders.[8] With 24.3% of the mothers reporting having high blood pressure, 17.2% reporting having vaginal bleeding, and 15.1% reporting having gestational diabetes, (Figure 17) morbidities during pregnancy is a great public health concern.

Figure 17. Mother's medical problems during pregnancy



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Where do we go from here?

Disparities in maternal and infant health have been observed among members of different racial and ethnic populations and persons of differing socioeconomic status. In order to achieve the Healthy People 2010 objectives for maternal and child health, the nature and extent of disparities in communities and the family environments that affect maternal or infant health should be understood. The Division of Women's Health in the Kentucky Department for Public Health has received a grant to establish an Office of Minority Health whose mission will be to understand and reduce the racial and ethnic disparities that exist in various health areas, including maternal and child health.

Several studies have implicated psychosocial stress as a potential contributor to two major adverse pregnancy outcomes: preterm birth and low birthweight.[9-11] In a pregnant woman it is believed that when the fetal-placental unit is exposed to excessive stressors, the neuroendocrine response is activated resulting in poor birth outcomes.[9] PRAMS results indicate that there are certain subpopulations (black women and adolescents) that are identified to be at risk for poor birth outcomes. These findings underscore the need for preconception clinical and public health

services specially targeted towards these groups. The state has several initiatives that address the needs of pregnant women at increase risk for morbidity and stress. In partnership with March of Dimes, Johnson & Johnson Pediatric Institute, the Kentucky Department for Public Health has implemented an innovative, multifaceted preterm birth prevention program in Kentucky entitled, *Healthy Babies are Worth the Wait.* Addressing psychosocial stressors and maternal morbidity are a major part of the intervention in the selected communities. The HANDS Home Visiting program, available all across the state also has demonstrated improved outcomes by addressing family stressors and health education. A federal program, Healthy Start, in Jefferson County in Kentucky that especially targets high-risk African American pregnant women. These initiatives have shown that adverse maternal and infant health outcomes (e.g., low birthweight, preterm delivery) often can be prevented by supporting families and modifying maternal stressors in combination with proper management of maternal health conditions.

Figure 18. Percentages of mothers who had bedrest/hospital stays during pregnancy

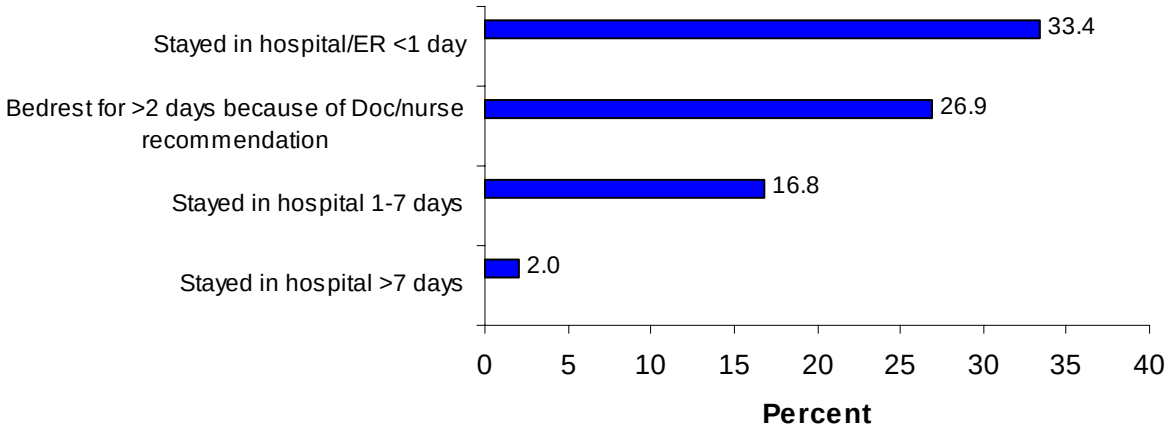

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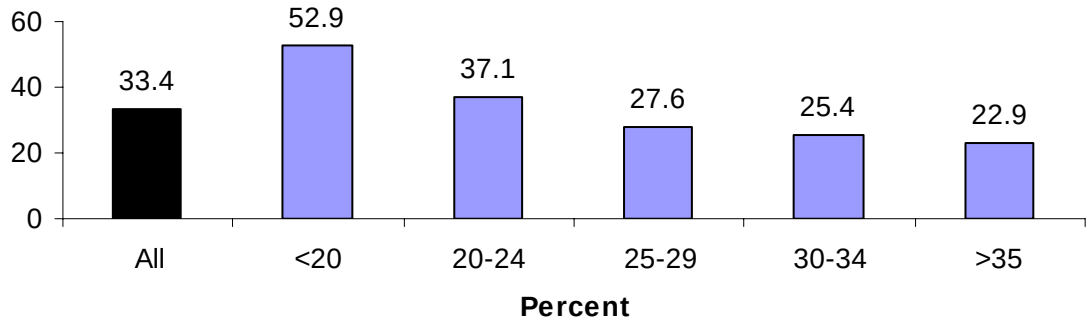
Figure 19. Percentage of mothers that reported going to the hospital or emergency room and stayed less than 1 day by age



Facts About Stress, Maternal Morbidity and Pregnancy

- 35.5% of the mothers that were less than 20 years of age reported experiencing severe nausea, vomiting, and dehydration.
- 46.3% of the mothers between the ages 20-24 reported experiencing severe nausea, vomiting, and dehydration.
- 45% of women ages less than 20 years and with less than high school education reported kidney or bladder (urinary tract) infections.
- 16.8% of the mothers reported staying in the hospital between 1-7 days (Figure 18).
- Of the 33.4% of women who said that they went to the hospital or emergency room and stayed less than 1day, more than half were less than 20 years of age (Figure 19).

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Substance Use During Pregnancy

Quotes from PRAMS Mothers:

"Secondhand smoke is the worst type of smoke. NEVER smoke or let anyone smoke near or while holding their child."

"I smoked while I was pregnant and because of it my baby was born with lung disease. It's very hard being a mother of a sick child not knowing if or when your baby will stop breathing. It's emotionally stressful...if you smoke, please stop. Smoking almost killed my baby—at least stop while you're pregnant."

"In regards to smoking, I quit the day I found out I was pregnant. I knew it could cause a miscarriage and I wanted my baby to be born and born healthy."

"I am concerned about the number of women who still continue to smoke AFTER finding out about their pregnancy. Furthermore, these women go on to continue smoking around their infants/ children after birth. Perhaps, there could be more education regarding the risks of smoking while pregnant and also exposing babies and young children to second-hand smoke."

Background

According to the Centers for Disease Control and Prevention, smoking before and during pregnancy is the single most preventable cause of illness and death among mothers and infants[1]. Smoking during pregnancy is associated with complications for the mother and the infant. Women who smoke are more likely to be infertile or have a delay in becoming pregnant[1]. Compared to nonsmokers, women who smoke are more likely to have complications of pregnancy including premature rupture of membranes, placental abruption and placenta previa[1]. Babies born to smokers are more likely to be premature and have low birth weight[1].

Exposure to secondhand smoke also contributes to health concerns for the mother and infant including more upper respiratory infections[2]. These exposures may also result in an increased risk for ear infections, impaired lung function, asthma, stunted growth and Sudden Infant Death Syndrome (SIDS)[2].

Kentucky far exceeds the nation in current smokers among both women of child-bearing age (KY 34.7% vs. US 22.4%)[3] and especially smoking among pregnant women (KY 26.5% vs. US 10.7%)[4,5]. The proportion of pregnant women who smoke in Kentucky is over twice that of the pregnant smokers in the nation, and during 2002, the most recent year of a complete national ranking, Kentucky was ranked second (worst) in the Nation in terms of women who smoked during pregnancy[6]. The percentage of PRAMS mothers that reported smoking in the last two years was higher than national rates with 37% reporting smoking at least 100 cigarettes with in the past two years (Figure 20).

Figure 20.
Percentage of mothers who reported smoking at least 100 cigarettes in the past two years

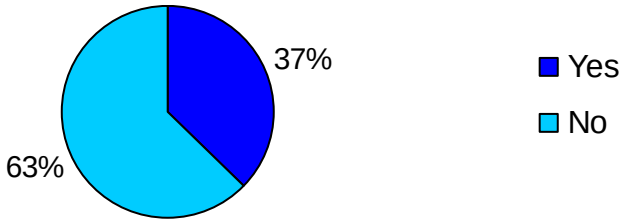

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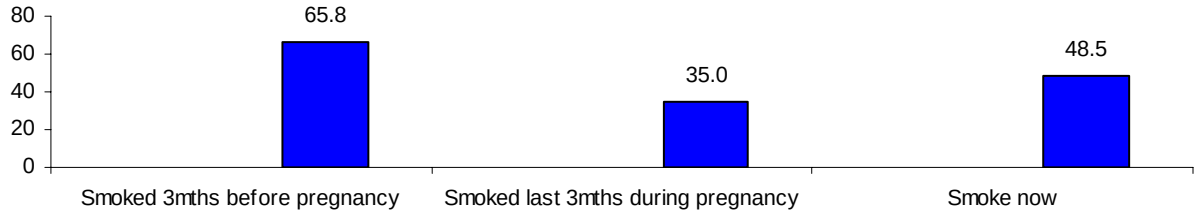
Figure 21. Percentage of mothers that smoked throughout their pregnancy



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Furthermore, there is a high percentage of PRAMS mothers that reported that they continued to smoke throughout their pregnancy (Figure 21) Research[7] suggests that women who are white, unmarried, with lower education attainment and lower income were more likely to smoke during pregnancy. PRAMS data was consistent with those findings (Table 6)

Table 6. Demographic characteristics for smokers and nonsmokers.€

	% Smokers (95% C.I.)	% Non-smokers (95% C.I.)
Total	37.1(31.1-43.2)	62.9(56.8-68.9)
Race		
African American	30.1% (21.1-39.2)	69.9% (60.8-78.9)
White and Others	37.0% (30.4-43.6)	63.0% (56.4-69.6)
Age		
<20	51.8% (34.9-68.6)	48.2% (31.4-65.1)
20-24	45.5% (33.5-57.2)	54.6% (42.8-66.5)
25-29	35.0% (23.4-46.7)	65.0 (53.3-76.6)
30-34	18.7 % (8.5-28.9)	81.3% (71.1-91.5)
>35	32.2% (14.4-50.1)	67.8% (49.9-85.6)
Education		
<High School	55.5% (40.6-70.4)	44.5% (29.6-59.4)
High School	42.9% (31.0-54.7)	57.1% (45.3-69.0)
>High School	25.0% (18.0-31.9)	75.0% (68.1-82.0)
Marital Status		
Married	20.7% (13.9-27.6)	79.3% (72.4-86.1)
Unmarried	55.6% (46.1-65.0)	44.4% (35.0-53.9)
Pre-Pregnancy Insurance Status		
Uninsured	47.9% (35.7-60.1)	52.1% (39.9-64.3)
Medicaid	62.9% (47.5-78.3)	37.1% (21.6-52.5)
Private	24.5% (17.1-31.9)	75.5% (68.1-82.9)
Income		
<$15,000	49.2% (36.2-62.1)	50.8% (37.9-63.8)
$15,000- $24,999	42.4% (25.6-59.2)	57.6% (40.8-74.4)
$25,000 - $49,999	28.6% (6.3-50.9)	71.4% (49.1-93.7)
≥$50,000	30.1% (22.1-38.2)	69.9% (61.8-77.9)

*Refer to Appendix A for PRAMS question that corresponds with this table

€ Smokers are those in which respondents reported smoking at least 100 cigarettes in the past two years.

Another preventable cause of birth defects and developmental disorders in the United States, is alcohol use during pregnancy. Children exposed to alcohol during pregnancy may have lifelong disabilities related to fetal alcohol syndrome/effects. Exposures prenatally have also been linked to cognitive and behavioral deficits. Finally, prenatal alcohol exposure is a strong predictor of low birth weight and preterm births[8]—significant perinatal issues in the United States and Kentucky.

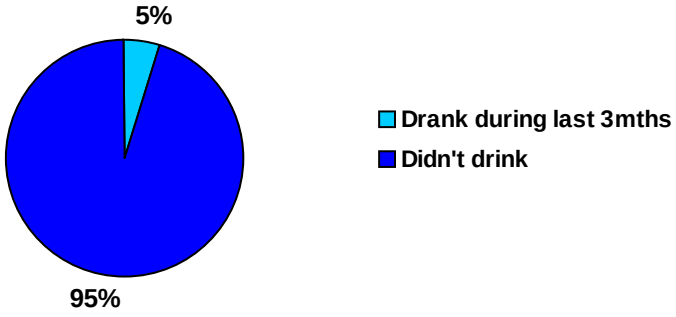
Public Health Implications

Kentucky has a great deal of work to do in order to achieve the Healthy People 2010 goal that no more than 1.0% of pregnant women smoke. In addition, secondhand smoke must also be considered as it is known to cause premature deaths in adults and children. There have been no levels of exposure found to be safe. Secondhand smoke contains approximately 4,000 chemicals, many of which are known carcinogens, and is responsible for approximately 3,000 cases of lung cancer deaths among nonsmokers each year. In Kentucky, 45% of homes with pregnant women or children have second hand smoke.

There are also great costs associated with smoking in pregnancy. The direct medical costs of a complicated birth are 66 percent higher for smokers than for non-smokers, reflecting the greater severity of complications and the more intensive care that is required[9]. Reducing smoking prevalence by one percentage point would prevent 1,300 low birth-weight babies and save $21 million in direct medical costs in the first year. Over a seven year period, this means the prevention of 57,200 low birth-weight babies and savings of $572 million in direct medical costs.[10] In Kentucky, smoking attributed to 4.35% of the total neonatal expenditures yielding a total of $9,902,505 in neonatal expenditures directly related to smoking based on 2001 figures.[11]

Every year a half a million women report drinking alcohol during pregnancy with nearly one in five admitting to binge drinking. Healthy People 2010 has goals related to alcohol use during . pregnancy of 94% alcohol abstinence and 100% elimination of binge drinking during pregnancy. With 95% of the PRAMS mothers reporting that they didn't drink during the last three months of pregnancy Kentucky is surpassing the Healthy People objective pertaining to 94% alcohol abstinence during pregnancy. (Figure 22)

Figure 22. Percentage of mothers reporting drinking during the last three months of pregnancy



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Where do we go from here?

With the prevalence of smoking during pregnancy more than twice the national rate in Kentucky, there must be a multi-leveled approach to this issue. This will require collaboration between professionals and communities, and must encompass a lifespan approach. While pregnancy is a time when many women will quit smoking, the focus needs to be broadened to prevent initiation of smoking in adolescents and young adults as well as prevention of postpartum relapse.

Almost 60% of the respondents to this survey reported that their health care provider did **NOT** spend time with them discussing how to quit smoking. (Table 7)

Table 7. Percentage of smokers that report that a doctor, nurse or other health care worker did during any of their prenatal care visits**

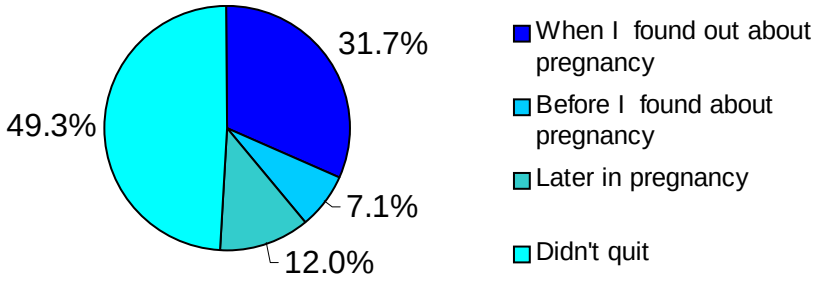
Spend time with you discussing how to quit smoking	40.8%
Suggest that you set a quit date to stop smoking	31.8%
Provide you with booklets, videos or other materials to help you quit smoking on your own	28.4%
Suggest you attend a class or program to stop smoking	20.6%
Ask if a family member or friend would support your decision to quit	18.8%
Refer you to counseling for help with quitting	10.3%
Refer you to a national or state quit line	6.2%
Recommend using a nicotine patch	4.5%
Recommend using nicotine gum	3.4%
Prescribe a nicotine nasal spray or nicotine inhaler	1.5%
Prescribe a pill like Zyban® to help you quit	1.4%

*Refer to Appendix A for PRAMS question that corresponds with this table

**Smokers are defined as women who reported smoking at least 100 cigarettes in the past two years.

All health care providers working with women must screen for tobacco use and secondhand smoke exposures, provide a brief counseling intervention, and make referrals to appropriate smoking cessation interventions in the community. In the public health setting, the message about smoking must be consistent across all programs, i.e. family planning, WIC and well-child services. Public health must work collaboratively with professional medical organizations and professionals throughout the state to ensure that practitioners have the necessary resources to be effective with their clients. Smoking status must become a vital statistic just like weight and blood pressure in medical practices in Kentucky.

Figure 23. Percentage of mothers who quit smoking during their pregnancy



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With 49.3% of the PRAMS mothers reporting that they didn't quit smoking during their pregnancy, (Figure 23) action must also be taken to assure that smoking cessation interventions are available in all areas of Kentucky. The PRAMS survey suggests that very few women who smoke during pregnancy are accessing these resources. (Table 8) A better understanding of the unique needs of our population may be necessary to understand why these resources are not used and to identify appropriate evidence-based interventions.

Table 8. Percentage of smokers reporting using the listed intervention during their pregnancy**

Set a specific quit date to stop smoking	27.4%
Use booklets, videos or other materials to help you quit	6.7%
Attend a class or program to stop smoking	2.9%
Call a national or state quit line	1.7%
Use nicotine gum	1.4%
Use a nicotine patch	0.9%
Use a nicotine nasal spray or nicotine inhaler	0%
Take a pill like Zyban® to help you quit	0%
Go to counseling for help with quitting	0%

*Refer to Appendix A for PRAMS question that corresponds with this table

**Smokers are defined as women who reported smoking at least 100 cigarettes in the past two years.

Individualized case management services may be an effective mechanism to promote smoking cessation among pregnant women. The Kentucky Department for Public Health has a pilot project, Giving Infants and Families Tobacco-free Starts (GIFTS) in a nine-county area to provide tailored services to women who are smoking. A wide variety of resources are utilized in the program including referral of family members for secondhand smoke exposure. Recently, focus groups have been completed with GIFTS participants to assess barriers to utilization of GIFTS services and Kentucky's Tobacco Quit Line as well as strategies for promoting these interventions. Program enhancements will be made from this information.

Expansion of the program to other areas in Kentucky should be considered upon completion of the evaluation of this pilot project.

Finally, there must be community involvement around issues related to smoking. In order to dramatically impact on smoking prevalence, the culture associated with smoking must be addressed. This may be accomplished through collaborative efforts among community partners or through statewide media campaigns.

Similar strategies must be undertaken with alcohol and other substance abuse. Providers must implement strategies to obtain an accurate assessment of prenatal alcohol use as well as pregnancy-related psychosocial problems. Brief in-office interventions have been effective for non-dependent women.

FACTS ABOUT SMOKING AND ALCOHOL DURING PREGNANCY

- 96.5% of all mothers reported that their prenatal care provider asked them about their smoking status
- 37% of mothers reported smoking at least 100 cigarettes in the past two years
- Almost 66% of the mothers smoked in the three months before pregnancy, while 35% smoked in the last three months of pregnancy and 48.5% smoke now
- 45% of women who smoked did not quit during pregnancy while 9.5% quit before they found out they were pregnant, 16% before they got pregnant and 30% later in pregnancy
- Demographic characteristics that were different between smokers and non-smokers included age, education, marital status and pre-pregnancy insurance status
- Of women who smoked, 27.4% set a quit date, 6.7% used materials, 2.9% attended a class to stop smoking, 1.7% used a national or state quit line, 1.4% used nicotine gum and 0.9% used a nicotine patch
- Almost 60% of smokers reported that their health care provider did not spend time with them discussing how to quit smoking
- 5% of mothers reported drinking during their last three months of pregnancy

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Oral Health & Pregnancy

Quotes from PRAMS Mothers:

“What you do while you are pregnant will forever affect you and your child.”

“The health of our kids starts with us. If we stay healthy through-out our pregnancies then that is a good start for our children.

“Our babies are precious and they deserve the best.”

Background

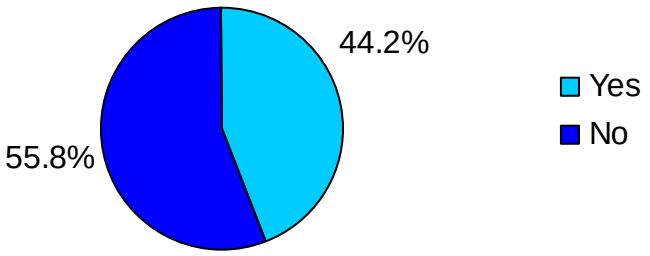
Within recent years, more research has focused on maternal oral health during and after pregnancy.[1] Studies suggest oral health during pregnancy can influence birth outcomes. According to the American Academy of Periodontology (AAP), "Emerging science indicates that women with periodontal diseases may be at greater risk of delivering preterm and low birth weight babies.[2] Other adverse birth outcomes associated with poor oral health during pregnancy are high levels of carigenic bacteria which leads to increased caries in babies, pre-eclampsia, gestational diabetes and fetal loss.[3-6]

In addition to adverse birth outcomes, poor oral health could negatively impact the health of the mother. Due to hormonal changes, pregnant women are more susceptible to gingivitis.[2,6-8] Also teeth can loosen during pregnancy because of increased levels of progesterone and estrogen (which affect the ligaments and bone that support teeth).[6] Furthermore, evidence suggest periodontal disease is associated with increased risk of cardiovascular disease, diabetes, community and hospital acquired respiratory infections, and rheumatoid arthritis.[4,5]

Public Health Implications

Only 22 to 34 percent of women in the United States consult a dentist during their pregnancy. Even when a problem occurs, only half of pregnant women attend to it.[3] Based upon PRAMS results, Kentucky is exceeding the U.S. prevalence of consulting a dentist during pregnancy with 44.2% (Figure 24) of the mothers reporting they went to the dentist/dental clinic during their most recent pregnancy. Although Kentucky surpasses the national rate of consulting a dentist during pregnancy, Kentucky is not meeting the Healthy People 2010 objective of increasing the proportion of adults who use the oral health care system each year to 56%.[9]

Figure 24. Percentage of mothers who went to dentist/dental clinic



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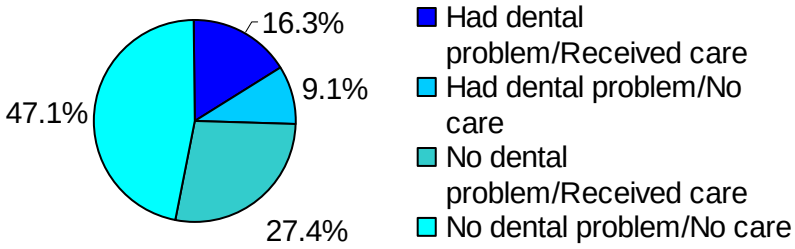
Nationally, rates of pregnant women seeking dental care when they have a problem is 50%. In the Kentucky PRAMS survey, only 16.3% (Figure 25) reported that they needed to go to the dentist because of a problem and actually went. With the low rates of seeking dental care and the adverse outcomes that are associated with oral health during pregnancy, this is an important issue and deserves more attention in Kentucky.

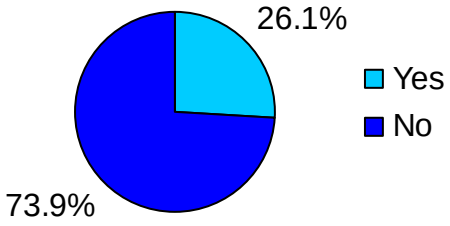
Figure 25. Percent of mothers that reported needing to go to the dentist & actually going to the dentist



For those who checked "Yes" I need to see a dentist for a problem (56a) and checked "Yes" for I went to a dentist or dental clinic (56b) then they were categorized Had a dental problem/received care. Those that checked "Yes" for I need to see a dentist for a problem and checked "No" I went to a dentist or dental clinic, they were categorized as Had dental problem/No care. Those who checked "No" for I needed to see a dentist for a problem and "Yes" I went to the dentist or dental clinic then they were categorized as No dental problem/Received care. Those that checked "No" for I needed to see a dentist for a problem and "No" for I went to a dentist or dental

*Refer to Appendix A for PRAMS question that corresponds with this figure

Figure 26. Percentage of mothers who needed to see a dentist for a problem



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Where do we go from here?

In 2004, the American Academy of Periodontology released a recommendation that all women who are pregnant or planning to get pregnant should undergo periodontal examination.[5] Despite these recommendations, pregnant women are not seeking oral health care. One barrier to

obtaining oral health care is that dentists are reluctant to provide care for pregnant women because they are concerned with possible risks, such as fetal safety during dental treatment.[3,4] An education program is underway by The Kentucky Department for Public Health Dental program. Education will eliminate the myths that patients, physicians, and dentists have about fetal safety during dental treatment.[3] Another barrier that prevents women from obtaining oral health care during pregnancy is that there is a lack of national clinical guidelines for the management of common oral conditions in pregnancy.[3,6]

Overall, the state of Kentucky has recognized that there is a need to raise awareness about the importance of oral health during pregnancy. Oral health instructions needs to be included in any prenatal or preconception counseling that takes place in private practices, as well as health departments. To eliminate the misconceptions that providing oral health during pregnancy can lead to adverse birth outcomes, education of dentists and health care providers need to take place. Studies suggest that education, race, age, marital status, income, insurance, body mass index, prenatal care entry, and smoking status are predictors of usage of dental care during pregnancy.[1] These predictors are evident in Kentucky as well (Table 9). Therefore, a market for providing oral health care during pregnancy needs to be created targeting individuals that are less-likely to access dental care during pregnancy. If women understand the importance of oral health then the demand for dentists to provide oral health care during pregnancy will increase which will lead to an increased need for prenatal oral health care providers.

Facts About Oral Health

- 19.5% of mothers that reported not going to the dentist during their pregnancy had gestational diabetes compared to 9.9% of mothers that went
- 13.9% of the mothers that reported not going to the dentist during their pregnancy had macrosomia compared to 5.9% that went
- 9.3% of the mothers that reported not going to the dentist during their pregnancy had low birth weight babies compared to the 2.7% of mothers that went to the dentist
- Of the mothers that reported going to the dentist during their pregnancy 78.9% had early prenatal care entry compared to 69.6% that didn't report going to the dentist

Table 9. Percentage of mothers that reported going to the dentist/dental clinic during pregnancy		
Demographics	**% Didn't Received Care (95%C.I.)**	**% Received Care (95%C.I.)**
Total	44.2(38.1-50.4)	55.8(49.6-61.9)
Race		
African American	40.4 (30.7-50.1)	59.6 (49.9-69.3)
White/Others	44.6 (37.8-51.3)	55.4 (48.7-62.2)
Age		
<20	39.8 (22.9-56.6)	60.2 (43.4-77.1)
20-24	36.2 (24.8-47.5)	63.8 (52.5-75.2)
25-29	48.5 (36.4-60.5)	51.5 (39.5-63.6)
30-34	50.6 (37.5-63.6)	49.4 (36.4-62.5)
>35	51.6 (31.0-72.4)	48.4 (29.9-66.8)
Education		
<High School	32.7 (18.6-46.7)	67.3 (53.3-81.4)
High School	36.6 (25.1-48.0)	63.4 (52.0-74.9)
> High School	54.6 (46.6-62.7)	45.4 (37.3-53.4)
Marital Status		
Married	48.6 (40.4-56.8)	51.4 (43.2-59.6)
Unmarried	38.8 (29.4-48.2)	61.2 (51.8-70.6)
Pre-Pregnancy Insurance Status		
Uninsured	39.2 (27.1-51.2)	60.8 (48.8-72.9)
Private	46.1(37.9-54.3)	53.9 (45.7-75.8)
Medicaid	40.7(24.7-56.6)	59.3 (24.7-56.6)
Income		
<$15,000	43.7 (33.0-54.5)	56.3 (45.5-67.0)
$15,000-$24,999	40.7 (24.2-57.2)	59.3 (42.8-75.8)
$25,000-$49,999	27.9 (14.8-40.9)	72.1 (59.1-85.2)
>$50,000	57.1 (46.4-67.8)	42.9 (32.2-53.6)

*Refer to Appendix A for PRAMS question that corresponds with this table

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Obesity and Pregnancy

Quotes from PRAMS Mothers:

“To all new moms I like to say eat healthy and exercise and stay positive”

“If we stay healthy throughout our pregnancies then that is a good start for our children.”

Background

Within the past 22 years, the prevalence of obesity has drastically increased throughout the United States. In 1985, just 20 years ago, the Behavioral Risk Factor Surveillance System (20 states were included at the time) showed an obesity prevalence of less than 14% in the United States. By 2007, the obesity prevalence had increased to greater than 20% in nearly all states (all 50 were represented). Some states had an obesity prevalence of greater than 30% (Tennessee , Louisiana, and Mississippi). [1]

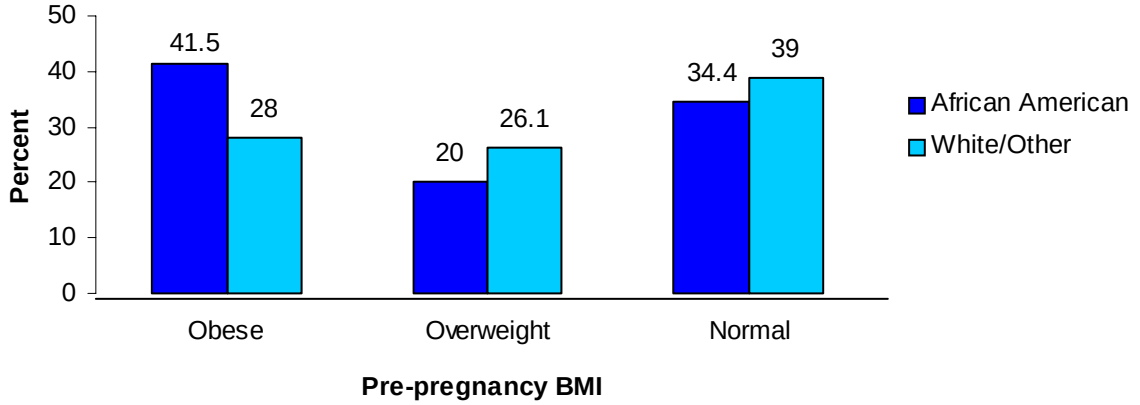
This trend is also evident in women of reproductive age.[2] The incidence of obesity at the first prenatal visit has increased from 7.3% to 24.4% in a 20 year period.[3] There are multiple adverse health outcomes affecting both mother and child that are associated with pre-pregnancy obesity and overweight, such as an increased risk in gestational diabetes, chronic hypertension, pre-eclampsia, urinary tract infections, induction of labor, cesarean sections, infant macrosomia, (birthweight >4000 grams), and fetal and early neonatal death.[2-7] Studies have suggested that pre-pregnancy overweight and obese mothers are less likely to breastfeed their children. Also they have shorter durations of breastfeeding than mothers who have normal pre-pregnancy weights.[9-11] Furthermore, pre-pregnancy obesity and overweight are associated with childhood obesity. The child of an overweight mothers is three times more likely to be overweight by the age of seven years.[8]

Public Health Implications

One of the Healthy People 2010 objectives is to reduce adult obesity to 15%.[12] With a pre-pregnancy obesity rate of 29.1%, Kentucky is far from reaching the objective. Because the obesity prevalence is increasing in Kentucky and in the nation, it is difficult to accomplish one of the main goals of the Healthy People 2010, which is to improve people's quality of life and to increase life expectancy. As the rates of obesity increase, the risk of obesity related morbidities such as diabetes and hypertension in both adults and children increase as well. The increase in obesity and obesity-related morbidities also have an economic impact. The cost to treat obesity is estimated to be 70 billion dollars a year, about 10% of health expenditures for the United States.[13]

The obesity epidemic also is hindering progress to accomplishing the other goal of the Healthy People 2010, which is to eliminate health disparities. African American women had a pre-pregnancy obesity prevalence of 41.5% compared to 28% in Whites/Others (Figure 27). Research suggests that there is evidence that obesity-related risks during pregnancy vary by race, obese African Americans and Hispanics are more likely to have adverse pregnancy outcomes than obese Whites.[5] Studies have shown that African Americans have the highest rates of pregnancy induced hypertension, preeclampsia, low birthweight, and other obese-related negative pregnancy outcomes.[2,5]

Figure 27. Pre-Pregnancy BMI Percent by Race



BMI , the Body Mass Index, is the measure of obesity. It is calculated from height and weight to approximate the body mass.

*Refer to Appendix A for PRAMS question that corresponds with this figure

Where do we go from here?

The state of Kentucky has a variety of initiatives that focus on combating obesity. The state of Kentucky utilizes four main venues to combat obesity: worksite, school, health services, and the community in the built environment. To combat obesity in the community, the Partnership for Fit Kentucky was developed in 2005. It includes both a state-wide coalition, as well as local community coalitions. The purpose of The Partnership for a Fit Kentucky is to promote nutrition and physical activity though linking resources, networking programs, and strengthening partnership. With community input, the following objectives were created: 1) increase fruit and vegetable consumption; 2) increase breastfeeding initiation and duration; 3) increase physical activity; 4) reduce TV viewing time; 5) increase parental involvement and 6) other dietary concerns. In each of the state's 15 Area Developmental Districts (ADD) there is a local coalition of the Partnership for a Fit Kentucky; these local groups focus on the six objectives and develop their own plans to improve the health of their region.

Through schools obesity is addressed utilizing four avenues: surveillance, assessment, resource guidance, and laws. Every two years CDC conducts the Youth Risk Behavior Surveillance Systems (YRBSS) to monitor health risk behaviors (which include physical activity and nutrition) of adolescents. Also every two years two assessments take place in Kentucky: Profiles and School Level Impact Measures (SLIMS). Profiles is a system of surveys that assess school health policies and programs among middle and high school principals and lead health education teachers. SLIMS is a measure of the percentages of secondary schools in a jurisdiction that are implementing policies and practices recommended by the CDC to address critical health problems (i.e. obesity) faced by children and adolescents. A resource guide called the PANTA

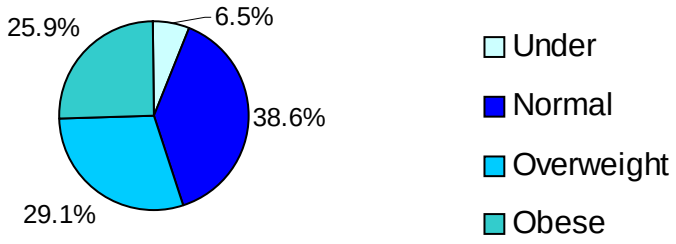
guide (Physical Activity, Nutrition, Tobacco, and Asthma) was developed and distributed to all schools in Kentucky. PANTA was developed to provide assistance to schools, as well as agencies and organizations that partner with schools in designing and planning policies and programs, encouraging environmental change and promoting overall health of students, staff, and school community.

In addition to surveillance, assessments, and resource guidance, in 2005 the Kentucky General Assembly passed SB172 which addressed several nutrition and physical activity requirements and encouragements for Kentucky schools. Now SB 172 is located in the Kentucky Revised Statutes: 158.850 (limitation on retail fast foods in cafeterias), 158.852 (district food service directors), 158.854 (competitive foods-vending machine sales), 158.856 (assessment and reporting on nutrition and physical activity environments), 160.345(11) (local wellness policies for elementary schools) are in effect. Since this passage, bills have been introduced to modify the physical activity section, including the current 2009 General Assembly.

Obesity prevention is also a concern in programs such as WIC and Food Stamps. WIC provides health education and medical nutrition therapy in local health departments throughout the state to educate overweight pregnant and post-partum women who are eligible for the WIC program.

Even though efforts are taking place to combat obesity in Kentucky, more work needs to be done. According to the Kaiser Family Foundation state reports, Kentucky ranks number 50 (worst) in adult obesity and overweight with a combined rate of 66.3%. African Americans are disproportionately impacted by obesity and overweight with a rate of 77.8%. For children, Kentucky ranks number 49 in the U.S. with 21% of children being overweight. For pregnant women, the subject of this report, Kentucky's PRAMS data is reflective of the BRFSS. With a pre-pregnancy prevalence of 41.5%, African Americans were disproportionately impacted by pre-pregnancy obesity. Findings also indicate women that are uninsured (Table 10) prior to their pregnancy (Figure 28) are at higher risk to be overweight or obese.

Figure 28. Prevelance of BMI before pregnancy**



**Normal BMI for adult women is between 18.5-24; 38.6% of the Kentucky mothers were normal weight prior to pregnancy. Over half of the PRAMS mothers were either overweight or obese prior to pregnancy with 29.1% overweight (a BMI between 25 and 29) and 25.9% were obese prior to pregnancy (a BMI of 30 or more). The remaining 6.5% of mothers were considered underweight (BMI less than 18.5) prior to pregnancy, which also has negative effects on the fetus and the mother.

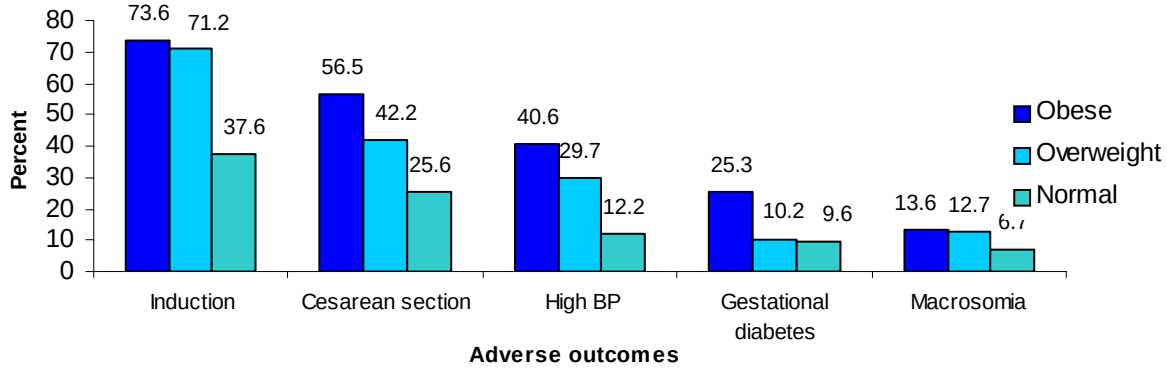
*Refer to Appendix A for PRAMS question that corresponds with this figure

Table 10. Prevalence of pre-pregnancy BMI			
Demographics	**Obese (%) (95% C.I.)**	**Overweight (%) (95% C.I)**	**Normal (%) (95%C.I.)**
Total	25.9 (20.5-31.3)	29.1 (23.4-34.7)	38.6 (32.7-44.5)
Race			
African American	41.5 (31.4-51.6)	20 (12.1-27.9)	34.4 (23.9-44.9)
White/Others	28.0 (21.9-34.1)	26.1(20.3-32)	39 (32.6-45.4)
Age			
<20	30.1(14.6-45.7)	19.1 (5.9-32.3)	38.5 (22-55)
20-24	23.2 (13.5-32.9)	25.8 (15.4-36.1)	42.7 (31.2-54.2)
25-29	33.5 (22.2-44.9)	21.1 (11.6-30.5)	38.8 (27.5-50.1)
30-34	33.9 (21.4-46.3)	30.7 (18.6-42.7)	33.6 (21.7-45.5)
>35	24.3 (7.5-41.2)	38.9 (20-57.8)	36 (18.2-53.8)
Education			
<High School	31.6 (17.9-45.4)	21.8 (9.5-34.1)	38.4 (24-52.9)
High School	36.0 (24.7-47.3)	28.4 (17.7-39.1)	25.8 (15.6-36)
>High School	23.2 (16.6-29.8)	25.3 (18.4-32.2)	47.9 (40-55.9)
Martial Status			
Married	29.1 (21.6-36.8)	25.8 (18.7-32.9)	37.6 (29.7-45.4)
Unmarried	29.1 (20.5-37.8)	25.8 (17.3-34.3)	39.4 (30.1-48.6)
Pre-Pregnancy Insurance Status			
Uninsured	41.2 (29.3-53.3)	18.7 (9.2-28.2)	34.9 (23.5-46.4)
Private	24.5(17.4-31.5)	26.7 (19.5-34)	40.5 (32.5-48.4)
Medicaid	27.1(12.6-41.6)	30.4 (15.3-45.5)	41.4 (25.4-57.4)
Income			
<$15,000	35.6 (25.4-45.7)	26.3 (16.9-35.8)	34.2 (24.3-44.2)
$15,000-$24,999	21.9 (8.7-35.0)	29.1 (13.9-44.3)	32.3 (17.3-47.2)
$25,000-$49,999	37.3 (22.2-52.4)	22.0 (9.2-34.8)	37.5 (22.4-52.5)
>$50,000	19.9 (11.4-28.3)	26.9 (17.6-36.1)	46.5 (36.0-57.0)

**Normal BMI for adult women is between 18.5-24; 38.6% of the Kentucky mothers were normal weight prior to pregnancy. Over half of the PRAMS mothers were either overweight or obese prior to pregnancy with 29.1% overweight (a BMI between 25 and 29) and 25.9% were obese prior to pregnancy (a BMI of 30 or more). The remaining 6.5% of mothers were considered underweight (BMI less than 18.5) prior to pregnancy, which also has negative effects on the fetus and the mother.

*Refer to Appendix A for PRAMS question that corresponds with this figure

Figure 29. Percent of adverse birth outcomes by BMI



*Refer to Appendix A for PRAMS question that corresponds with this figure

Overweight and obesity prior to pregnancy is an important public health issue and deserves more attention. There is a drastic difference in adverse birth outcomes among women that are obese and overweight prior to pregnancy compared to women that have a normal BMI prior to pregnancy (Figure 29). Women that are obese and overweight prior to pregnancy are more likely to have high blood pressure, gestational diabetes, and macrosomia, and to deliver from inductions or C-sections. Furthermore, this health issue deserves more attention because of the correlation between overweight and obesity in mothers and their childhood obesity. In Kentucky, more research initiatives need to take place that focus on exploring why a disparity exists in obesity and why the rates are drastically higher than the rest of the United States. Research should focus on environmental factors and access to health enhancing resources that influence eating healthy and engaging in physical activity for childbearing and pregnant women. Studies have suggested that if neighborhoods lack parks, sidewalks, bike paths, or they are unsafe then that can prevent people from engaging in physical activity.[14-16] People who live in lower income neighborhoods and neighborhoods that consist of predominately minorities have fewer chain supermarkets than the middle class and white neighborhoods.[17] Lack of supermarkets can lead to lack of access to healthy food, such as fresh fruits and vegetables. Taking these factors into consideration, initiatives should be developed to combat environmental factors that prevent people from obtaining healthy foods and getting physical activity.

Women of childbearing-age and pregnant women need education about preventing obesity in their future children. Not only do they need to learn about nutrition and physical activity, but they need to know about other manners of preventing obesity, such as breastfeeding. The Center for Disease Control and Prevention estimate that 15%-20% of obesity could be prevented through breastfeeding.[18]

Obesity and Pregnancy Facts

- Of mothers that reported not getting prenatal care as early as they wanted 39.7% were obese compared to 27.4% were normal weight.
- Obese mothers were more than twice as likely as normal weight mothers to have complications of pregnancy

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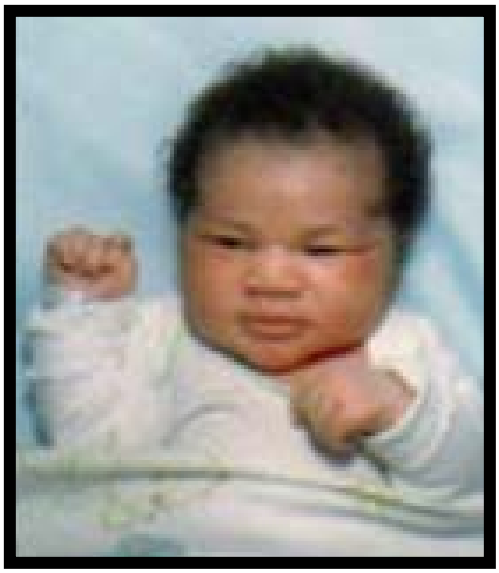


Labor & Delivery

Quotes from PRAMS Mothers:

“People need to always think what’s best for the child, I had some hard time while I was pregnant and after but I always put my child first. That’s a small life counting on you and you need to be the best you can be for that child.”

“I had no choice to be active; at 6 months I had to be put on bed rest. When I went into pre-term labor they went ahead and took him. He had tied his cord in a knot, had almost cut off his oxygen. They did an ultrasound the night before I had him but could not see it. He was lucky to be alive. They sad that was why I went into labor”

Background

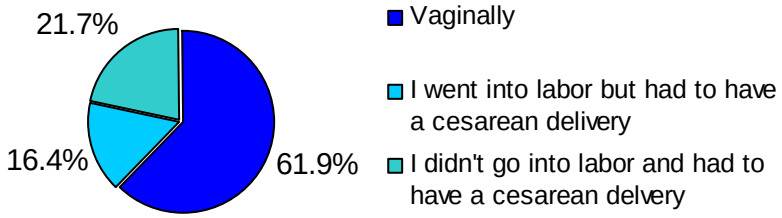
Method of delivery is playing a larger role in perinatal outcomes in recent years. In the United States, the culture of childbearing has changed dramatically in the last 20 years. "Natural" childbirth, a desirable outcome in the 1970's and 1980's, is now a rare event, and medial interventions, both inductions and cesarean deliveries have increased significantly in the recent years. Over the last 20 years there has been a significant decline in infant mortality, presumably from the advances in obstetric and neonatal care. However, since 2000, the infant mortality rate in the United States has leveled off and is now increasing in some states, causing a re-examination of perinatal care and particularly the rising number of interventions. For example, in 1996 the cesarean section rate was 20.7%; by 2006, it had risen to 31.1%.[1]

Concomitant with the rising cesarean section rate, there has been a 30% rise in preterm birth in this country. A recent article examined the rise in preterm births and found that 92% of the increase in preterm births was from cesarean deliveries.[4] While there are many medical reasons for intervening with a cesarean section, such as breech position, fetal distress, diabetes, pree-clampsia and uterine rupture (which are just a few), research is now revealing that the rising cesarean rate is also occurring in women with no or low medical risk, and at all ages. Furthermore, there are multiple risk and complications associated with cesarean deliveries for both mother and infant. For the mother, these include infection, hemorrhage or increased blood loss, injury to organs, adhesions, extended hospital stay, reaction to medications, extended recovery times, risk of additional surgeries, and maternal mortality[4]. The are also risks and complication associated with the baby, such as breathing problems, low APGAR scores, premature birth, and infant mortality 1.5-2.5 times higher than with vaginal births.[2]

Public Health Implications

The Healthy People 2010 goal for preterm birth is 7.6%; Kentucky currently has one of the highest preterm birth rates in the nation, with over 15% of births delivered preterm (before 37 weeks).[5] The rate of cesarean sections is also high at 33%. In the Kentucky PRAMS survey, 39% of the mothers reported having cesarean deliveries. Of those with Cesarean births, at least 2 of every 5 cesarean deliveries were done without the mother going into labor. (Figures 30)

Figure 30. Percentage of mothers' delivery methods



*Refer to Appendix A for PRAMS question that corresponds with this figure

Cesarean sections without labor have a higher rate of complications for the infant, especially respiratory distress. Cesarean deliveries without labor may be done for medical reasons, or may be "elective". The American College of Obstetricians and Gynecologists cautions against elective induction and cesarean delivery before 39 weeks.[3]

Recent evidence suggests elective cesarean deliveries may be occurring before 39 weeks. If the pregnancy due date was not confirmed by an early ultrasound, this could result in electively delivering a premature infant, who is at higher risk for complications. Although interventions are expected and appropriate in situations where medical complications of pregnancy exist, studies now suggest that cesarean deliveries are occurring early even when no medical indications exist. The PRAMS data must be further analyzed to see if the Kentucky data reflects these issues.

Table 11. Percentage of Complications by Birth Route

	Low Birth Weight	Preterm Birth	Induction
Vaginal	5.1	14.1	37.3
Cesarean	8.9	20.3	21.9

Repeat sections may also be a factor in the rising rate of cesarean deliveries. Studies suggest that not all women that receive cesareans in the past need them in the future. Norman, Kostovcik and Lanning found that only 30% of the women in their study decided to have a trial of labor when 71% were eligible.[6] With 93% of the PRAMS mothers reporting having repeat cesarean sections, it appears that in Kentucky, few mothers are choosing vaginal delivery after C-section, or might have limited availability of vaginal births after cesarean delivery.

Another potential factor in the increase in cesarean sections is that more mothers are waiting until they are older to have children. Studies have shown that cesarean rates increase with increasing maternal age. Although rates of cesarean section have increased in all maternal age groups, during 2006, in the United States almost half (47.6%) of the births among women over 40 years were delivered by cesarean section compared with 22.2% of teen births.[1] This trend is consistent in with Kentucky PRAMS data. Table 12 shows that rate of cesarean sections consistently increases with age, especially with women age 30-34 (rate is 43.3%) and women over 35 years of age (53.2%).

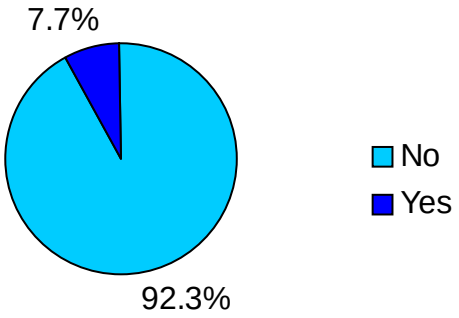
Table 12. Demographics by Delivery Route		
Demographics	**% Vaginal (95% C.I.)**	**% Cesarean (95% C.I.)**
Total	61.9 (55.9-67.9)	38.1 (32.1-44.1)
Race		
African American	61.5 (52.0-71.1)	38.5 (29.0-48.0)
White/Others	61.7 (55.2-68.2)	38.3 (31.8-44.8)
Age		
<20	66.9 (50.7-83.2)	33.1(16.8-49.4)
20-24	65.7(54.5-76.8)	34.3(23.2-45.5)
25-29	64.8(53.8-75.8)	35.2(24.2-46.2)
30-34	56.7(43.9-69.5)	43.3(30.5-56.1)
>35	46.8 (28.4-65.2)	53.2(34.8-71.6)
Education		
<High School	64.7(50.6-78.9)	35.3(21.1-49.4)
High School	56.8 (45.2-68.5)	43.2(31.6-54.8)
> High School	64.2 (56.9-68.0)	35.8 (28.2-43.4)
Marital Status		
Married	64.0 (56.1-71.8)	36.0(28.2-43.9)
Unmarried	58.6(49.3-68.0)	41.4(32.0-50.7)
Pre-Pregnancy Insurance Status		
Uninsured	57.1(44.9-69.3)	42.9(30.7-55.1)
Private	63.9(56.1-71.7)	36.1(28.3-43.9)
Medicaid	57.5(41.7-73.2)	42.5(26.8-58.3)
Income		
<$15,000	56.4(45.9-66.9)	43.6(33.1-54.1)
$15,000-$24,999	65.3(49.7-90.0)	34.7 (19.0-50.3)
$25,000-$49,999	59.2(44.1-74.3)	40.8(25.7-55.9)
>$50,000	65.9(55.9-75.8)	34.1(24.2-44.1)

*Refer to Appendix A for PRAMS question that corresponds with this figure

Where do we go from here?

Premature birth is a serious issue, but perhaps not taken seriously enough, since survival rates are high in all but the smallest premature infants In Kentucky, prematurity related causes of death is the number one leading cause of death for infants. If gestational age was not calculated correctly, a baby induced or delivered by cesarean for non-medical reasons easily could be delivered too early or be low birth weight.[2] With the link between preterm births and cesarean deliveries,[3] it requires more information and education about reasons for cesarean deliveries and inductions with no documented medical indication. Cesareans and inductions are beneficial when there is a medical reason behind it, however evidence is mounting that elective interventions, with low or no medical risk, are occurring before 39 weeks gestation (as recommended by the American College of Obstetricians and Gynecologists) in as many as 36% of elective deliveries, even in university centers. In in the Kentucky PRAMS pilot, mothers 7.7% of mothers reported that they discussed inducing labor for convenience with their health care provider (Figure 32).

Figure 32. Percentage of mothers that discussed inducing labor for convenience



*Refer to Appendix A for PRAMS question that corresponds with this figure

Kentucky has been focusing on these issues in the "Healthy Babies are Worth the Wait" Initiative with March of Dimes and Johnson & Johnson Pediatric Institute. This demonstration project focuses on "preventable preterm birth" in 3 intervention sites. Interventions include provider education and patient safety initiatives, linking patients to public health and support services, and educating the entire community about the importance of women going to full term before delivery. Lessons learned from this project will be disseminated state-wide, and will reinforce to all Kentuckians that early elective delivery has significant risks. Many of the states provider groups, including the Kentucky Medical Association, the Kentucky Perinatal Association, the Kentucky Chapter of American College of Obstetricians and Gynecologists, the Kentucky Chapter of the American Academy of Pediatrics, and the Kentucky Chapter of the American Association of Women's Health, Obstetric, and Neonatal Nurses are all promoting education and outreach to better inform both providers and the pregnant women they serve in Kentucky.

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Breastfeeding

Quotes from PRAMS Mothers:

“People think breastfeeding is not for everyone. But breast milk is digested better by your baby. It has antibodies to help your baby fight against infection, and lowers your baby’s chances of getting respiratory infections, like colds, lower chance of ear infections, of being overweight later in childhood and protects your baby from all allergies and asthma”

“I currently breastfeed my daughter and I think it should be more encouraged than it is currently. It is the best thing for the mother and the child”

“I think there needs to be one on one help in the hospital for women who want to breastfeed. Out of the 3 days I was at the hospital, a lactation specialist was only available 1/2 of 1 day!”

Background

Breastfeeding has universally been accepted as the optimal way to nourish and nurture infants.[1] Research has indicated that breastfeeding has a variety of benefits for not only infants, but for mothers and society as a whole.[2] Infants that are breastfed have decreased risk of asthma, leukemia, type 1 and 2 diabetes, and obesity. Breastfeeding helps enhance the infant's immune system therefore, breastfed babies have lower incidence of hospitalizations for lower respiratory illness, and other infectious illnesses such as bacterial meningitis, gastrointestinal infections and urinary tract infections.[3,4] Breastfed babies have lower rates of death before age one from Sudden Infant Death Syndrome (SIDS). The benefits of breastfeeding continue into childhood, including lower rates of childhood obesity in breastfed infants. Breastfed children score higher on cognitive and IQ tests and on tests of visual acuity.[2]

Similarly, breastfeeding provides several benefits to the health of mothers. Breastfeeding decreases the risk of breast and ovarian cancers. Also it reduces the risk of osteoporosis.[2,4] In addition to the health benefits, breastfeeding contributes to feelings of attachment between mother and child that are so critical to the social-emotional development of the child.[2]

In addition to the health benefits, there are economic benefits of breastfeeding, both immediately for the mother and child, and long term for their communities. The cost for formula is more expensive than breastfeeding. The estimated cost for formula is four times that of breastfeeding, up to $1200 for formula versus approximately $300 for appropriate food supplements for lactating women.[2] Nationally, it is estimated that there is a decrease of $3.6 billion in annual health care costs due to breastfeeding , a decrease in cost for public supplementation programs (WIC) and a decrease inpatient cost. Breastfeeding is environmentally friendly, leading to a decrease in disposal of formula cans and bottles.

Public Health Implication

Despite the multitude of benefits breastfeeding offer and the many efforts that exist to promote breastfeeding, the United States as well as Kentucky fall short of national goals.[1] The Healthy People 2010 objective is to increase women that attempt breastfeeding to 75%.[5] Kentucky PRAMS survey is consistent with other data sources, showing that 56% of the PRAMS mothers initiated breastfeeding.

Where do we go from here?

The Nutrition Branch in the Kentucky Department for Public Health partners with many agencies, providers, and groups throughout the state to improve rates of breastfeeding. Each local health department has a Breastfeeding/WIC coordinator and provides resources for breastfeeding. There are breastfeeding coalitions across the state, as well as private practice doctor offices and universities (particularly colleges in the health field), and other providers working with pregnant mothers to encourage not only initiation of breast feeding, but prolonging the duration of breastfeeding. These efforts have been buoyed by passage of legislation in 2005 and 2007 supporting breastfeeding in the workplace and breastfeeding in public places.

Despite the many efforts that are taking place, data indicates that Kentucky has a low rate of those who ever breastfed (48.2%) and an even lower rate of mothers that exclusively breastfeed at 6 months (5.9%).[6] These rates are far below the Healthy People 2010 objective. Furthermore, there is a great disparity in breastfeeding across different demographic groups, like between African Americans and White/Others, age, education levels, marital status, and insurance status. (Table 11)

Table 13. Demographics of mothers that initiated breastfeeding while in hospital

Demographics	% Mothers who Breastfed (95% C.I.)	% Mothers who Didn't Breastfeed (95% C.I.)
Total	56.0 (49.9-62.0)	44.0 (38.0-50.1)
Race		
African American	40.8 (31.2-50.4)	59.2 (49.6-68.8)
White/Others	57.9 (51.3-64.6)	42.1 (35.4-48.7)
Age		
<20	44.5 (27.6-61.4)	55.5 (38.6-72.4)
20-24	46.2 (34.7-57.7)	53.8 (42.3-65.3)
25-29	65.4 (54.2-76.6)	34.6 (23.4-45.8)
30-34	60.7 (47.9-73.5)	39.3 (26.6-52.1)
>35	68.9 (51.6-86.2)	31.1 (13.8-48.4)
Education		
<High School	37.4 (23.2-51.6)	62.6 (48.4-76.8)
High School	41.8 (30.2-53.3)	58.2 (46.7-69.8)
> High School	74.4 (67.6-81.2)	25.6 (18.8-32.4)
Marital Status		
Married	70.3 (62.7-78.0)	29.7 (22.0-37.3)
Unmarried	39.0 (29.9-48.2)	60.9 (51.8-70.1)
Pre-Pregnancy Insurance Status		
Uninsured	39.0 (27.3-50.6)	61.0 (49.4-72.7)
Private	72.1 (64.6-79.5)	27.9 (20.5-35.4)
Medicaid	29.2 (14.6-43.7)	70.8 (56.3-85.4)
Income		
<$15,000	34.3 (24.3-44.3)	65.7 (55.7-75.7)
$15,000-$24,999	61.0 (44.8-77.3)	39.0 (22.7-55.2)
$25,000-$49,999	59.0(43.6-74.3)	41.0 (25.7-56.4)
>$50,000	79.3 (70.6-87.9)	20.7 (12.1-29.4)

*Vital Statistics

To eliminate the disparity in breastfeeding and in order to meet the Health People 2010 goal of increasing initiation to 75% multiple actions are needed. Because disparities exist within the demographic groups, breastfeeding promotion initiatives can be developed that directly target groups that are in need.

More education needs to take place. Health professionals as well as new mothers need to realize the importance of breastfeeding. Health professionals need to take a more active role of asking mothers if they are planning to breastfeed and explaining to the mothers the benefits of breastfeeding. They need to ensure mothers receive the resources they need in order to feel comfortable and confident with breastfeeding. Furthermore, Kentucky needs to increase access and quantity of breastfeeding resources such as pumps, breast pads, and bottle liners (for pumped milk). Most of the resources that are available are targeted at lower income mothers, women without insurance, or mothers that are going back to school. Mothers with insurance, high income, and that are in the workforce are not receiving needed resources. This could contribute to such a low rate in breastfeeding initiation. In addition, Kentucky needs to increase the promotion of worksite breastfeeding. More worksites need to have sanitized facilities that enable mothers to pump milk while at work.

Breastfeeding Facts

- 23.1% of the mothers reported needing help or information pertaining to breastfeeding
- Mothers that had greater than High School education were more likely to report that they needed help or information about breastfeeding with a rate of 31% compared to those who had a high school education (16.6%) and those who had less than a high school education (15.4%)
- 26.9% of the mothers reported receiving help or information about breastfeeding
- 28.4% of White/Other mothers reported receiving help or information about breastfeeding compared to 16% African Americans
- Mothers that had private insurance were more likely to report receiving help or information about breastfeeding than mothers that were uninsured (17.9%) and those that were on Medicaid (10.7%)
- Of the mothers that reported breastfeeding initiation:
  - -28.2% were obese
  - -22.7% were overweight
  - -42.4% were normal weight
  - -6.7% were underweight
- Out of the mothers who had early entry into prenatal care 60.5% breastfed compared to 43.4% that didn't have early entry into prenatal care

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Infant Sleeping Position

Quotes from PRAMS Mothers:

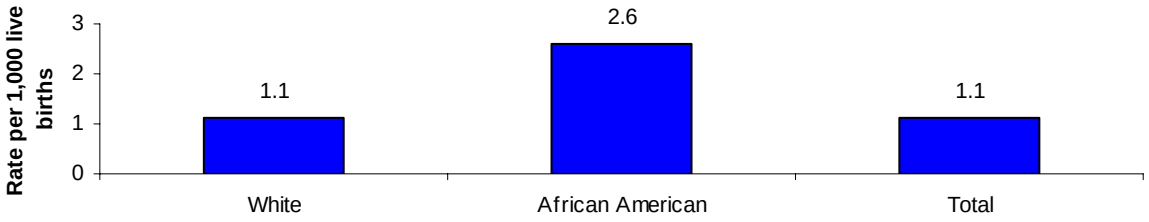
“I enjoyed finding all the information about babies. The more informed we are the better you are prepared to care for your child.”

Background

In the United States, Sudden Infant Death Syndrome (SIDS) is the third leading cause of overall deaths for infants less than a year of age, and the number one leading cause of infant deaths after the first month of life.[1] SIDS is defined as the sudden death of an infant under one year of age, which remains unexplained after a thorough case investigation, including performance of an autopsy, examination of the death scene and review of the medical history .[3,4] During the year 2005 in Kentucky, SIDS was the number one leading cause of death for infants less than one year of age.[2]

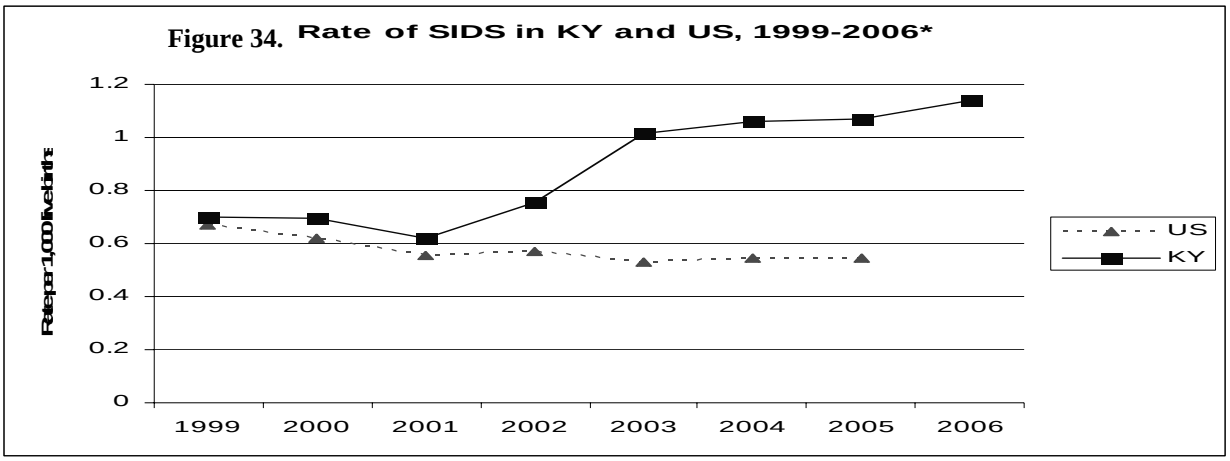
Studies have determined that the following are risk factors for SIDS:maternal smoking during and/or after pregnancy, late or no prenatal care, young maternal age, preterm and/or low birthweight, male gender, sleeping on soft surfaces, over heating, and prone (stomach) or side sleeping.[3-6] Additionally, studies have shown that there are racial disparities in SIDS rates. Nationally, SIDS rates for Black and American Indian/Alaska Native are 2 to 3 times that of national averages. In Kentucky, SIDS rates of African Americans are doubled that of whites and statewide rates (2 per 1,000 live births compared 1.1 per 1,000 live births) (Figure 33).

Figure 33. Rate of SIDS deaths among infants in Kentucky by race (n=64)



In the United States, from 1992 to 2001 SIDS was steadily declining. (Figure 34) The rate went from 1.2 deaths per 1000 live births to .56 deaths per 1000 live births.[4] The leveling of SIDS rates occurred the same time there was a slowing in the reduction of the prevalence in prone

Figure 34. Rate of SIDS in KY and US, 1999-2006*



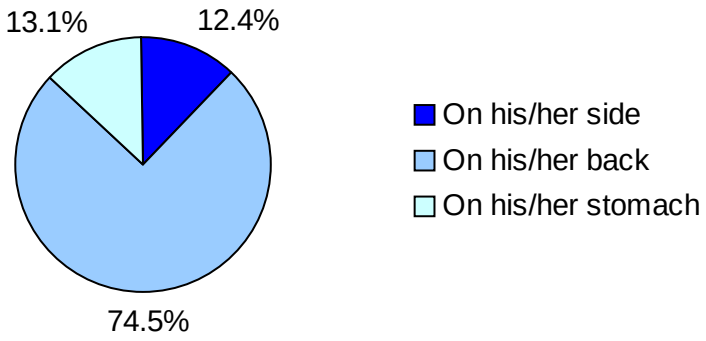
Vital Statistics, Births: Final data for 2005

Public Health Implications

Sleep position has been identified as a major risk factor for SIDS.[5] In 1992 the American Academy for Pediatrics (AAP) released a recommendation that infants should be placed down to sleep in a non-prone (none stomach) position. However, now the AAP no longer recognizes side sleeping as a reasonable alternative to sleeping on the back.[3] Because sleep position is major risk factor for SIDS, the public health effort in reducing SIDS has focused on promoting infants sleeping on their backs.[5]

With a percentage of 74.5% (Figure 35) Kentucky is exceeding the Healthy People 2010 goal of increasing the percentage of healthy full-term infants who are placed on their back to sleep to 70%.[8] Despite this triumph, efforts still need to take place to combat SIDS (considering SIDS is the number one leading cause of death for infants).

Figure 35. How do most often lay your baby down to sleep now?

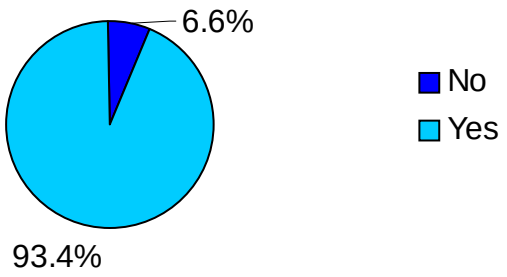


*Refer to Appendix A for PRAMS question that corresponds with this figure

Where do we go from here?

Following the AAP recommendations in 1992, Kentucky public health agencies, hospitals, private providers, advocacy groups and parent groups all worked together to assure new mothers and fathers receive information and instruction on safe sleep for their newborn. There are a number of reports that suggest that medical recommendations do make a difference in maternal choices.[10] While Kentucky has not solved the problem of SIDS, the information from the PRAMS survey suggests the message about sleep position has been effectively communicated. 93.4% of mothers reported they were instructed to put their babies on their back to sleep. Only 6.6% of mothers did not recall getting that message. (Figure 36) However, this does not explain the drop to 74.5% of mothers reporting that they lay their baby to sleep on their backs. Because SIDS is still a leading cause of infant death in Kentucky, efforts to promote safe sleeping still need to continue. In addition, Kentucky has a Child Fatality Review System to review SIDS deaths and try to determine additional trends or common risk factors that might be addressed to lower Kentucky's rates of SIDS. Smoking during pregnancy, and second-hand smoke after pregnancy, both put babies at high risk for SIDS. These are significant factors in Kentucky's high rates of SIDS, but also represent another potential strategy for lowering the rates.

Figure 36. Did a doctor, nurse, or other healthcare provider advise you to lay your baby on his/her back while he/she was sleeping?



*Refer to Appendix A for PRAMS question that corresponds with this figure

Other strategies to reduce SIDS in Kentucky safe sleep initiatives need to target minorities. African American mothers in Kentucky had a higher reported prevalence of not lying their babies on their back to sleep than Whites/Others (36.1% compared to 24.8%) (Table 12). This is consistent with national data that shows disparities in sleep position and SIDS between African American babies compared to Whites.[5,6] In Chicago, prone sleeping was found to be a significant risk factor for SIDS in their primarily African American sample.[5] An increase in education and awareness pertaining to SIDS and risk factors of SIDS, in culturally appropriate interventions, could reduce the racial disparity and increase the percentage of babies that are placed asleep on their backs.

Infant Sleep Position Facts

- 76.7% of mothers that had early prenatal care entry reported laying their babies on their backs when placed to sleep compared to 68.5% of the mothers that didn't have early prenatal care.
- 79.8% of mothers who reported not getting prenatal care as early as they wanted laid their babies on their back.
- Of the mothers that reported smoking during their pregnancy, 27.4% did not lay their babies on their back.

Table 14. Percentage of babies sleeping position		
Demographics	**% Placed infants on their back**	**% Did Not place infants on their back**
Total	74.5(69.2-79.9)	25.4(20.1-30.8)
Race		
African American	69.9(54.1-73.7)	36.1 (26.3-45.9)
White/Others	75.2 (69.4-81.0)	24.8 (19.0-30.6)
Age		
<20	66.2(50.5-81.9)	33.8 (18.1-49.5)
20-24	71.9(61.3-82.4)	28.1 (17.6-38.7)
25-29	74.2(63.9-84.5)	25.8 (15.5-36.1)
30-34	82.1(72.6-91.5)	17.9 (8.5-27.4)
>35	81.3(66.8-95.8)	18.7 (4.1-33.2)
Education		
<High School	69.3(55.8-82.8)	30.7 (17.2-44.2)
High School	77.0(67.2-86.9)	23.0 (13.1-32.8)
> High School	75.1(68.2-81.9)	24.9 (18.1-31.8)
Marital Status		
Married	74.9(67.7-82.2)	25.1 (17.8-32.3)
Unmarried	73.4(65.2-81.5)	26.6 (18.5-34.8)
Pre-Pregnancy Insurance Status		
Uninsured	73.9(63.2-84.5)	26.1 (15.5-36.8)
Private	76.1(69.2-83.1)	23.9 (16.9-30.8)
Medicaid	73.8(60.4-87.2)	26.2 (12.8-39.6)
Birth Weight		
<$15,000	73.5(64.4-82.5)	26.4 (17.5-35.5)
$15,000-$24,999	69.9(54.9-84.9)	30.1 (15.1-45.1)
$25,000-$49,999	76.9(69.4-90.4)	23.1 (9.6-36.6)
>$50,000	77.9(68.9-86.8)	22.1 (13.2-31.1)

*Refer to Appendix A for PRAMS question that corresponds with this table

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Appendix

Appendix A

Figure	Table	Corresponding survey question
1-3	2	PRAMS question 31: *Just before* you got pregnant, did you have health insurance? Do not count Medicaid (Passport, K-chip, Ken-PAC) No/Yes PRAMS question 32: *Just before* you got pregnant, were you on Medicaid (Passport, K-Chip, Ken-Pac)? No/Yes PRAMS question 33: How was your delivery paid for? Check <u>all</u> that apply __Medicaid (Passport, K-chip, Ken-Pac) __ Personal income (cash, check, or credit card)__ Health insurance or HMO (including insurance from your work or your husband's work)__ Champus Tri-care (military)__ Other →Please tell us:
4-6	3	PRAMS question 37: Thinking back to *just before* you got pregnant with your *new* baby, how did you feel about becoming pregnant? Check <u>one</u> answer __I wanted to be pregnant sooner__ I wanted to be pregnant later__ I wanted to be pregnant then __I didn't want to be pregnant then or at any time in the future
7,33,34	1,4,11	Vital Statistics
8		PRAMS question 11: During anytime in your pregnancy did you seek prenatal care from a health care provider? No—Go to Question 14 /Yes
9		PRAMS question 13: Did you get prenatal care as early in your pregnancy as you wanted? No/Yes
10		PRAMS question 16: We would like to know how you felt about the prenatal care you got during your most recent pregnancy. If you went to more than one place for prenatal care, answer for the place where you got *most* of your care. For each item, check the box under **Yes** if you were satisfied or check the box under **No** if you were not satisfied. **Were you satisfied with—** a. The amount of time you had to wait after you arrived for your visits b. The amount of time the doctor or nurse spent with you during your visits c. The advice you got on how to take care of yourself d. The understanding and respect that the staff showed toward you as a person
11		PRAMS question 14: Here is a list of reasons why some women don't receive prenatal care. For each item, check the box under Yes if it was a problem for you during your most recent pregnancy or check the box under **No** if it was not a problem or did not apply to you. a. I couldn't get an appointment when I wanted one b. I didn't have enough money or insurance to pay for my visits c. I had no way to get to the clinic or doctor's office d. I couldn't take time off from work e. The doctor or my health plan would not start care as early as I wanted f. I didn't have my Medicaid card g. I had no one to take care of my children h. I had too many other things going on i. I didn't want anyone to know I was pregnant j. I didn't want prenatal care k. Other

Appendix A

Figure	Table	Corresponding survey question
12		PRAMS question 26: During your most recent pregnancy, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants and Children)? No/Yes
13		PRAMS question 36: During the *12 months before* your new baby was born, did you ever eat less than you felt you should because there wasn't enough money to buy food? No/Yes
14		PRAMS question 29: During your most recent pregnancy, did you feel you *needed* any of the following services? For each one, check the box under **Yes** if you felt you needed the service or check the box under **No** if you did not feel you needed the service. Did you *need*— a. Money to buy food, food stamps or WIC vouchers b. Help with an alcohol or drug problem c. Help to reduce violence in your home d. Counseling information for family and personal problems e. Help to quit smoking f. Help with or information about breastfeeding g. Other- If checked "yes" for other, please tell us: PRAMS question 30: During your most recent pregnancy, did you *receive* any of the following services? For each one, check the box under **Yes** if you received the service or check the box under **No** if you did not receive the service. Did you *receive*— a. Money to buy food, food stamps or WIC vouchers b. Help with an alcohol or drug problem c. Help to reduce violence in your home d. Counseling information for family and personal problems e. Help to quit smoking f. Help with or information about breastfeeding g. Other If checked "yes" for other, please tell us:
15		PRAMS question 27: During your most recent pregnancy, did you get any of these services? For each one, check the box under **Yes** if you got the service or check the box under **No** if you did not get it. a. Childbirth classes b. Parenting classes c. Classes on how to stop smoking d. Visits to your home by a nurse or other health care worker e. Food stamps f. TANF [Temporary Assistance for Needy Families (Welfare) g. Other If checked "yes" for other, please tell us:

Appendix A

Figure	Table	Corresponding survey question
16	5	PRAMS question 51: This question is about things that may have happened during the *12 months before* your new baby was born. For each item, check the box under **Yes** if it happened to you or check the box under **No** if it did not. (It may help to use the calendar.) a. A close family member was very sick and had to go into the hospital b. I got separated or divorced from my husband or partner c. I moved to a new address d. I was homeless e. My husband or partner lost his job f. I lost my job even though I wanted to go on working g. I argued with my husband or partner more than usual h. My husband or partner said he didn't want me to be pregnant i. I had a lot of bills I couldn't pay j. I was in a physical fight k. My husband or partner or I went to jail l. Someone very close to me had a bad problem with drinking or drugs m. Someone very close to me died n. I felt unsafe in my neighborhood
17		PRAMS question 53: Did you have any of these problems during your most recent pregnancy? For each item, check the box under **Yes** if you had the problem or check the box under **No** if you didn't have the problem a. High blood sugar (diabetes) that started *before* this pregnancy b. High blood sugar (diabetes) that started *during* this pregnancy c. Vaginal bleeding d. Kidney or bladder (urinary tract) infection e. Severe nausea, vomiting or dehydration f. Cervix had to be sewn shut (incompetent cervix) g. High blood pressure, hypertension (including pregnancy-induced hypertension [PIH], preeclampsia, or toxemia) h. Problems with the placenta (such as abruptio placentae or placenta previa) I Labor pains more than three weeks before my baby was due (preterm or early labor) j. Water broke more than three weeks before my baby was due (premature rupture of membranes [PROM]) k. I had to have a blood transfusion l. I was hurt in a car accident
18&19		PRAMS question 54: Did you do any of the following things because of these problems? For each item, check the box under **Yes** if you did that thing or check the box under **No** if you did not. a. I went to the hospital or emergency room and stayed less than 1 day b. I went to the hospital and stayed 1 to 7 days c. I went to the hospital and stayed more than 7 days d. I stayed in bed at home more than 2 days because of my doctor's or nurse's advice

Appendix A

Figure	Table	Corresponding survey question
20,21,23	6,7,8	PRAMS question 62: Have you smoked at least 100 cigarettes in the *past 2 years*? (A pack has 20 cigarettes.) No/Yes/I never have smoked-Go to question 69 PRAMS question 63: In the *three months before* you got pregnant, how many cigarettes did you smoke on an average day? (A pack has 20 cigarettes.) __ 41 cigarettes or more__21 to 40 cigarettes__11 to 20 cigarettes__6 to 10 cigarettes __1 to 5 cigarettes __Less than 1 cigarette __None (0 cigarettes) PRAMS question 64: In the *last 3 months* of your pregnancy, how many cigarettes did you smoke on an average day? (A pack has 20 cigarettes.) __ 41 cigarettes or more__21 to 40 cigarettes__11 to 20 cigarettes__6 to 10 cigarettes __1 to 5 cigarettes __Less than 1 cigarette __None (0 cigarettes) PRAMS question 65**:** How many cigarettes do you smoke on an average day *now*? (A pack has 20 cigarettes.) __ 41 cigarettes or more__21 to 40 cigarettes__11 to 20 cigarettes__6 to 10 cigarettes __1 to 5 cigarettes __Less than 1 cigarette __None (0 cigarettes) PRAMS question 66: Listed below are some things about smoking. For each thing, check the box under **Yes** if it applied to you during your most recent pregnancy or check the box under **No** if it did not. **During your most recent pregnancy, did you—** a. Set a specific date to stop smoking b. Use a nicotine nasal spray or nicotine inhaler c. Take a pill like Zyban® (also known as Wellbutrin® or Bupropion®) to help you quit d. Use nicotine gum e. Use a nicotine patch f. Attend a class or program to stop smoking g. Use booklets, videos or other materials to help you quit h. Go to counseling for help with quitting i. Call a national or state quit line

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Figure	Table	Corresponding survey question
20,21,23 cont	6,7,8 cont.	PRAMS question 67: Listed below are some things about smoking that a doctor, nurse or other health care worker might have done during any of your prenatal care visits. For each thing, check **Yes** if it applied to you during any of your prenatal care visits or check **No** if it did not. **During any of your prenatal care visits, did a doctor, nurse or other health care worker—** a. Spend time with you discussing how to quit smoking b. Suggest that you set a specific date to stop smoking c. Prescribe a nicotine nasal spray or nicotine inhaler d. Prescribe a pill like Zyban® (also known as Wellbutrin® or Bupropion®) to help you quit e. Recommend using nicotine gum f. Recommend using a nicotine patch g. Suggest you attend a class or program to stop smoking h. Provide you with booklets, videos or other materials to help you quit smoking on your own i. Refer you to counseling for help with quitting j. Ask if a family member or friend would support your decision to quit k. Refer you to a national or state quit line PRAMS question 68: When did you quit smoking? __ I didn't quit smoking__ Before I found out I was pregnant__ When I found out I was pregnant__ Later in my pregnancy
22		PRAMS question 73: During the *last 3 months* of your pregnancy, how many alcoholic drinks did you have in an average week? __ 14 drinks or more a week__7 to 13 drinks a week__4 to 6 drinks a week__1 to 3 drinks a week__ Less than 1 drink a week__ I didn't drink then
24,25,26	9	PRAMS question 56: This question is about the care of your teeth during your most recent pregnancy. For each item, check the box under **Yes** if it is true or check the box under **No** if it is not true. a. I needed to see a dentist for a problem b. I went to a dentist or dental clinic c. A dental or other health care worker talked with me about how to care for my teeth and gums
27&28	10	PRAMS question 2: *Just before* you got pregnant with your new baby, how much did you weigh? ____Pounds **OR** ___Kilos PRAMS question 3: How tall are you without shoes?___ Feet__ Inches **OR** ____Centimeters

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Figure	Table	Corresponding survey question
29		PRAMS question 2: *Just before* you got pregnant with your new baby, how much did you weigh? ____Pounds **OR** ___Kilos PRAMS question 3: How tall are you without shoes?___ Feet__ Inches **OR** ____Centimeters PRAMS question 47: How was your *new* baby delivered? __ Vaginally __ I went into labor but had to have a cesarean delivery __ I didn't go into labor and had to have a cesarean delivery PRAMS question 53: Did you have any of these problems during your most recent pregnancy? For each item, check the box under **Yes** if you had the problem or check the box under **No** if you didn't have the problem a. High blood sugar (diabetes) that started *before* this pregnancy b. High blood sugar (diabetes) that started *during* this pregnancy c. Vaginal bleeding d. Kidney or bladder (urinary tract) infection e. Severe nausea, vomiting or dehydration f. Cervix had to be sewn shut (incompetent cervix) g. High blood pressure, hypertension (including pregnancy-induced hypertension [PIH], preeclampsia, or toxemia) h. Problems with the placenta (such as abruptio placentae or placenta previa) i. Labor pains more than three weeks before my baby was due (preterm or early labor) j. Water broke more than three weeks before my baby was due (premature rupture of membranes [PROM]) k. I had to have a blood transfusion l. I was hurt in a car accident
30	11,12	PRAMS question 47: How was your *new* baby delivered? __ Vaginally __ I went into labor but had to have a cesarean delivery __ I didn't go into labor and had to have a cesarean delivery
31		PRAMS question 48: How did the doctor, nurse, or other health care worker who provided your prenatal care, suggest you deliver your new baby? Check <u>one</u> answer __He or she suggested I deliver my baby vaginally (naturally) __He or she suggested I have a cesarean delivery __He or she didn't suggest how I deliver my baby__ I did not have prenatal care
32		PRAMS question 50: At any time during your pregnancy did you and your doctor, nurse or other health care providers discuss inducing your labor for the following reasons? (check all the answers that apply) __ Convenience __ Tax breaks__ Leaving for vacation__ Family visiting __ We didn't discuss inducing labor __Other →Please tell us

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Figure	Table	Corresponding survey question
35	14	PRAMS question 22: How do you *most often* lay your baby down to sleep now? Check one answer __ On his or her side __On his or her back
36		PRAMS question 23: Did a doctor, nurse, or other healthcare provider advise you to lay your baby on his or her back while he or she was sleeping? No/Yes

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