

MI PRAMS Delivery

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Special points of interest:

- ◊ Women who smoked the last 3 months of their pregnancy were 2.29 times more likely to deliver a low birth weight infant than a non-smoker.
- ◊ 16.73% of MI mothers reported they smoked in the last three months of their pregnancy.
- ◊ 70.66% of MI mothers reported that they had a discussion about tobacco during a prenatal care visit.

Tobacco & Health

Even prior to the first report from the Surgeon General about tobacco and its effects in 1964, the association between tobacco and adverse health outcomes was known. In women, as in men, smoking is associated with an increased risk for a wide variety of cancers, heart, cerebrovascular, and respiratory diseases. Be-

tween 1995-1999 smoking caused approximately 440,000 premature deaths and cost the nation \$157 billion in health-related economic losses annually.¹

In addition to chronic conditions, smoking is known to adversely affect the reproductive health of

women and the health of infants. The cost of complicated births attributable to maternal smoking was estimated at \$1.4 billion, in 1995.⁵ In 1996, Medicaid alone spent \$227 million in direct healthcare cost on neonates because of maternal smoking.³

Tobacco & MI Mothers and Babies

2,024 women, out of 2,589 surveyed in 2000, responded about their pre-pregnancy, pregnancy, and postpartum experiences (response rate: 78.2%). The survey contained questions about maternal smoking habits before, during, and after pregnancy. The first smoking related question was, "Have you smoked at least 100 cigarettes in the past 2 years?" Over a quarter of

mothers (27.42%) reported having smoked in the two years prior to their pregnancy whereas 72.58% did not. The second question in the series was, "In the 3 months before you got pregnant, how many cigarettes or packs of cigarettes did you smoke on an average day?" Smokers are defined in this report as women who indicated that they smoked re-

gardless of amount. Among Michigan mothers who delivered in 2000, 25.07% reported smoking in the three months prior to their pregnancy. The next question was, "In the last 3 months of your pregnancy, how many cigarettes or packs of cigarettes did you smoke on an average day?"

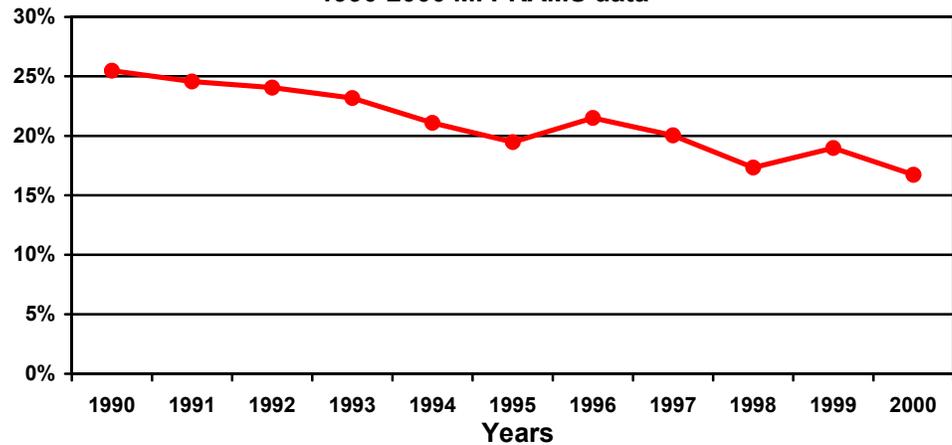
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TABLE 1 Demographics of Michigan mothers, pregnant in 2000, who reported smoking in their last 3 months of pregnancy

	Estimated number	Percent	95% CI
Age Group			
19 years or less	4241	26.07	(17.43~34.71)
20-29 years	12628	18.76	(14.98~22.54)
30-39 years	4857	11.01	(7.56~14.46)
40 years or more	128	4.32	(0.91~7.73)
Education			
less than HS	7255	37.2	(29.07~45.33)
HS/GED	9538	20.96	(16.04~25.88)
more than HS	4790	7.7	(5.09~10.31)
Race			
Black	3788	16.36	(13.54~19.18)
non-Black	17937	16.85	(13.79~19.91)

**Percentage of Michigan mothers who reported smoking in the last three months of their pregnancy
1990-2000 MI PRAMS data**



The percentage of mothers who reported smoking in the last three months of their pregnancy was 16.73% (an 8.7% decline from 1990) (Fig. #1). One third of mothers who were smoking in the three months prior to pregnancy were not smoking in the last trimester in 2000.

For many adverse outcomes affecting the infant there is a dose response relationship between the health outcome and maternal tobacco use. The likelihood of an undesirable outcome increases with the quantity of cigarettes smoked.² Also affecting the likelihood of an adverse outcome is the period of pregnancy when smoking occurs. Women who quit smoking in the first trimester

are, for example, less likely to deliver a low birth weight infant than the women who smoke throughout their pregnancy.² Smoking in the third trimester is associated with an increased risk for adverse outcomes, including low birth weight, when compared to smoking in the first or second trimesters.²

Among the Michigan mothers surveyed in 2000: 12.35% were 19 years or younger, 52.09% were between the ages of 20-29 years, 33.32% were between the ages of 30-39 years, and 2.24% were either 40 years or older. The age group with the largest share of its members reporting having smoked in the third trimester is '19 years old or less' (Table 1). Of the

number of Michigan mothers who delivered in 2000, 15.55% had less than a high school education, 35.98% had either a high school diploma/GED, and 48.47% had post-secondary education. Mothers with less than a high school diploma had a higher proportion of third trimester smokers than mothers who either completed high school or had post secondary education (Table 1). The percentage of Black and non-Black mothers delivering in 2000 was 17.91% and 82.09%, respectively. There were no statistically significant differences in the proportion of smokers between Black and non-Black mothers (16.36% v. 16.85%) (Table 1). Women who reported smoking in the last three months

Health Outcomes Attributed to Maternal Smoking

Conducting a meta-analysis, DiFranza and Lew concluded that:

- ◇ 3%-8% of all cases of spontaneous abortion (19,000-141,000 cases)
- ◇ 11%-21% of all cases of low birth weight (32,000-61,000 cases)
- ◇ 3%-8% of all cases of perinatal mortality (1900-4800 cases), and
- ◇ 21%-41% of all cases of sudden infant death syndrome (1200-2200 cases)

were attributed to maternal smoking during pregnancy.⁶

Maternal and Infant Risks Associated with Smoking

Tobacco is known to affect the reproductive health of women and pregnancy outcomes. Smoking before and during pregnancy is associated with:

- ◇ Spontaneous abortion
- ◇ Ectopic pregnancies
- ◇ Premature rupture of membrane (PROM)
- ◇ Abruptio placenta and placenta praevia
- ◇ Stillbirths
- ◇ Preterm births, and
- ◇ Low birth weight infants ²

of their pregnancy were younger (57.78% of smokers were between the ages of 20-29 year old) and less educated (77.80% of smokers had a high school diploma/GED or less). The likelihood of having a low birth weight infant among women who indicated that they smoked in their last three months of pregnancy is 2.29 times greater than the likelihood of having a low birth weight infant in women who reported not smoking.

Complications during birth not only represent an increase in risk for mother and infant, but also are costlier than uneventful births. In 1995, the cost of complicated births attributable to maternal smoking was estimated at 1.4 billion dollars (assuming a 19% prevalence of smoking during pregnancy). ⁷ This figure represents 11% of the

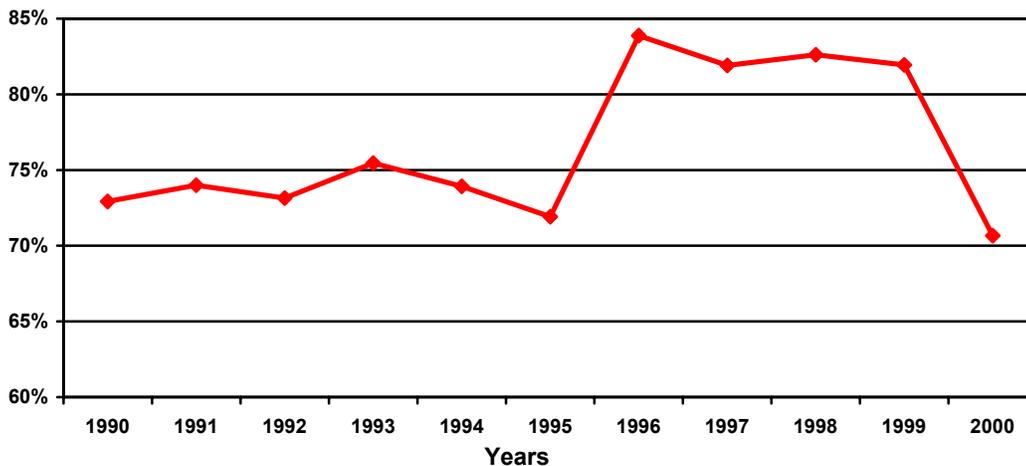
cost of all complicated births that year.¹

The last question regarding maternal smoking habits asked, “How many cigarettes or packs of cigarettes do you smoke on average now?” At the time they were surveyed (2-6 months postpartum) 22.42% of mothers were smoking compared to 77.58% who were not. There was a strong tendency for smokers before pregnancy to smoke postpartum. Factors associated with poor smoking cessation rates during pregnancy and postpartum are low self-efficacy, friends and family members who smoke, less likely to agree on the hazards of smoking, and fewer years of education.^{8,9}

Prenatal care visits offer an ideal time and setting to inform mother about the

hazards of smoking during pregnancy. Women surveyed were also asked, “During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below?” Option ‘a’ was “How smoking during pregnancy could affect your baby”. In 2000, the percentage of Michigan mothers who reported having discussed the effects of tobacco on their pregnancy with their doctor, nurse, or other health care professional was 70.66% (Fig. #2). This represents an 11.3% decline from 1999. From 1990-1995 the prevalence fluctuated slightly (ranging between 70% and 76%). It peaked in 1996 and remained steady until 1999.

**Percentage of Michigan mothers who reported having a discussion about smoking during pregnancy with a doctor, nurse, or other health care worker
1990-2000 MI PRAMS data**



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About PRAMS

Pregnancy Risk Assessment and Monitoring System (PRAMS) is a population-based survey of maternal experiences and behaviors before and during a woman's pregnancy and during early infancy of her child. African-American women and women who deliver low birth weight infants are over-sampled in order to ensure more accurate estimates. Each year, approximately 1,000-

3,000 new mothers are randomly selected from a frame of eligible birth certificates. A survey is mailed out to the women at two to six months after delivery, followed by telephone reminders to those who have not responded. In addition to the mailed surveys, a stratified systematic sample of African-American mothers is selected

from six inner city hospitals, where an initial interview is conducted followed by a mailed survey two to six months later. This is so we can better capture the experiences among African-American mothers and their infants. The results presented are weighted to represent all of Michigan's mothers and infants.

Smoke Free for Baby and Me

Michigan's Prenatal Smoking Cessation (PSC) Program is currently designed to work with pregnant smokers who are receiving health services in prenatal programs. Its intervention program, "Smoke Free for Baby and Me", is designed to assess and support pregnant women in quitting smoking. For more information, call Aurea Booncharoen at (517) 335-9750.

Our New Arrival



Cassandre C. Larrieux received her Master in Public Health in Epidemiology/ Biostatistics at Florida A&M University. Although a recent graduate, Cassandre has participated in a variety of public health projects in the state of Florida. She joined the PRAMS staff in September and is currently the MCH Epidemiologist for PRAMS and the Special Supplemental Food Program for Women, Infants, and Children (WIC) programs.

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