

Running the Numbers

*A Periodic Feature to Inform North Carolina Physicians and Their Patients
About Current Topics in Health Statistics*

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Maternal Smoking and Infant Mortality in North Carolina

National studies estimate that, if women were to quit smoking while pregnant, the overall infant death rate would drop 10 to 20 percent. In North Carolina, the infant death rate in 1999 for women who smoked during pregnancy was 13.0 infant deaths per 1,000 live births, compared to a rate of 6.7 among women who did not smoke during pregnancy (for single live births only). However, not all of this nearly two-fold difference is attributable to smoking *per se*. Women who smoke are more likely to have other characteristics that are associated with an increased risk of infant death; for example, they are more likely to have low income and low education, and to be unmarried.

The difference in infant mortality between women who did and did not smoke during pregnancy is even greater for some specific causes of infant death. In 1999, there were 2.8 sudden infant death syndrome (SIDS) deaths per 1,000 single live births among women who smoked, compared to 0.5 among those who did not smoke (relative risk = 5.6). The infant death rate from respiratory conditions was 1.2 per 1,000 women who smoked during pregnancy and 0.6 for those who did not (relative risk = 2.0).

In further multivariable analyses, the difference in total infant mortality between women who did and did not smoke was statistically significant after controlling for other risk factors for infant death (adjusted odds ratio = 1.77). Measures of the following risk factors were obtained from birth certificates: maternal age, race, education, and marital status; medical risk factors; Medicaid enrollment; parity; and sex of infant. The adjusted odds ratios for smoking were also statistically significant for SIDS (5.11) and respiratory conditions (1.88), after controlling for these variables. Based on these adjusted odds ratios and the prevalence of smoking among all live births (14.3%), the estimated percentage of infant deaths attributable to smoking in North Carolina is 10% for total infant deaths, 37% for SIDS and 11% for respiratory conditions.

The very strong association of smoking during pregnancy with SIDS deaths (most of which occur after one month of age) is probably related to the fact that women who smoke during pregnancy are also likely to smoke after delivery. Smoking during pregnancy is self-reported by the mother on the birth certificate and is thus likely to be somewhat under-reported. However, this would not affect the main results here unless the degree of under-reporting differs markedly between women who did and did not have an infant death.

In conclusion, successful reduction of maternal smoking would improve the health of both infants and their mothers.

The full report from which these findings are taken is forthcoming at www.schs.state.nc.us/SCHS/pubs.

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*From the State Center for Health Statistics
www.schs.state.nc.us/SCHS
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