



SMOKING AND PREGNANCY: THE HARMS OF CONTINUED SMOKING AND THE BENEFITS OF QUITTING

A recent study in the journal Tobacco Control found coverage of cessation services for pregnant women on Medicaid led to “higher rates of quitting and continued cessation.”¹

Key Points

- Tobacco use during pregnancy causes serious harm to the fetus.
- Tobacco cessation saves lives.
- Tobacco cessation saves money – preventing just one smoking-related low birth weight baby can result in the avoidance of more than \$40,000 in health care expenditures.²

The Problem

According to the U.S. Surgeon General, a pregnant woman who smokes is 1.5 to 3.5 times more likely than a non-smoker to have a low-birth weight baby.³ Numerous studies have found that smoking and exposure to secondhand smoke among pregnant women is a major cause of spontaneous abortions, stillbirths, and sudden infant death syndrome (SIDS) after birth.⁴ According to a meta-analysis of published studies, tobacco use is responsible each year for 19,000 to 141,000 spontaneous abortions; 1,900 to 4,800 infant deaths caused by perinatal or pre-birth disorders; and 1,200 to 2,200 deaths from SIDS.⁵ Almost one quarter of all SIDS deaths have been attributed to prenatal maternal smoking; and fetal mortality rates are 35 percent higher among pregnant women who smoke than among nonsmokers.⁶

Health Benefits to Infants of Cessation During Pregnancy

- According to the U.S. Surgeon General, infants of women who quit smoking by the first trimester have weight and body measurements comparable to infants of nonsmokers.⁷
- Prenatal smoking cessation programs have been shown to have a protective effect on intrauterine growth retardation.⁸

Disproportionate Impact on Medicaid

- Conservative estimates indicate that at least one out of every ten pregnant women smoke, accounting for half a million births per year.⁹ However, according to the Centers for Disease Control and Prevention (CDC), pregnant women on Medicaid are 2.5 times more likely to smoke than pregnant women not on Medicaid¹⁰ and a separate study found that Medicaid provides health insurance coverage to 60-70% of all pregnant smokers.¹¹
- The total cost to Medicaid (and tax payers) of adult smoking in 1997 was estimated to be more than \$17 billion, or 12.1% of all Medicaid expenditures (this estimate excludes neonatal health care costs).¹²
- According to joint estimates by the CDC and the Centers for Medicare and Medicaid Services, smoking-attributable neonatal health care costs for Medicaid total almost \$228 million, or about \$738 per pregnant smoker.¹³

Estimated Costs of Interventions to Reduce Prenatal Smoking

- In a managed care setting, a comprehensive smoking cessation benefit (counseling and pharmacotherapy) costs less than \$5.92 per member per year (about \$0.40 per month).¹⁴
- A 15-minute counseling session provided to a pregnant woman by a nurse, along with written materials, costs approximately \$6.00 per patient.¹⁵

Budget/Economic Benefits of Prenatal Smoking Cessation Interventions

- For every \$1 spent on smoking cessation for pregnant women, an estimated \$3 in reduced neonatal intensive care costs could be saved.¹⁶
- A single percentage point decline in smoking prevalence among pregnant women would prevent 1,300 cases of low birth weight among babies annually and save \$21 million in direct medical costs (1995 U.S. dollars).¹⁷
- According to the CDC, if 25% of pregnant smokers on Medicaid receive counseling that achieves an 18% quit rate, almost \$10 million in excess Medicaid neonatal health care costs could be averted. If participants receive one counseling session that costs \$30 and this results in an 18% quit rate, Medicaid could save almost \$3.50 in averted neonatal medical expenditures for every \$1 spent on counseling pregnant smokers to quit.¹⁸

Comparison to Other Preventive Services

- Evidence-based tobacco cessation can more than double or triple a smoker's chances of quitting successfully compared to quitting "cold-turkey".¹⁹
- A study in the July 2001 *American Journal of Preventive Medicine* ranked the effectiveness of various clinical preventive services recommended by the U.S. Preventive Services Task Force, using a one to ten scale, with ten being the highest possible score.²⁰ Of the thirty preventive services evaluated, tobacco cessation ranked second in its degree of effectiveness, scoring a nine out of 10 (the highest ranking was for childhood vaccines which scored a 10). Among other preventive services covered by Medicaid, colorectal cancer screening received a score of eight and mammography screening scored a six.

What Should A Medicaid Cessation Benefit for Pregnant Women Look Like?

A tobacco cessation benefit for pregnant women who use tobacco should be consistent with the recommendations of the U.S. Public Health Service's (PHS) clinical treatment guidelines, *Treating Tobacco Use and Dependence*. According to the PHS guidelines, pregnant women should be offered "extended or augmented psychosocial interventions that exceed minimal advice to quit" and that such interventions should be conducted throughout the pregnancy.²¹ Pharmacotherapy (drug treatment) should only be considered "when a pregnant woman is otherwise unable to quit, and when the likelihood of quitting, with its potential benefits, outweighs the risks of the pharmacotherapy and potential continued smoking."²² Therefore, pregnant women (after consulting with their treating physician/health care professional) should have access to all FDA approved smoking cessation drugs to help them quit if the first-line intervention (counseling) does not succeed. Further, any proposal should remain current with the scientific literature and therefore should remain consistent with either the current version of the PHS guidelines or any subsequent revisions to those guidelines.

Campaign for Tobacco Free Kids, Matt Barry, May 5, 2006

¹ Petersen R et al, "Medicaid reimbursement for prenatal smoking intervention influences quitting and cessation," *Tobacco Control* 2006 ;15:30-34.

² Letter dated April 29, 2003 from James L. Reed, Consulting Actuary, Milliman USA, to Dawn Robbins, Tobacco Free Coalition of Oregon, Re: cost of selected conditions by state.

- ³ U.S. Department of Health and Human Services. Women and Smoking: a Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General; Washington D.C.: For sale by the Supt of Docs., U.S. G.P.O. 2001.
- ⁴ On spontaneous abortions, see, e.g., Mendola, P., et al., "Risk of Recurrent Spontaneous Abortion, Cigarette Smoking, and Genetic Polymorphisms in NAT2 and GSTM1," *Epidemiology* 9(6): 666-668 (November 1999); Shiverick, K.T. & C. Salafia, "Cigarette Smoking and Pregnancy I: Ovarian, Uterine and Placental Effects," *Placenta* 20(4): 265-272 (May 1999); Ness, R. B., et al., "Cocaine and Tobacco Use and the Risk of Spontaneous Abortion," *New England Journal of Medicine* 340(5): 333-339 (February 4, 1999); Chatenoud, L., et al., "Paternal and Maternal Smoking Habits Before Conception and During the First Trimester: Relation to Spontaneous Abortions," *Annals of Epidemiology* 8(8): 520-26 (November 1998); Dominquez-Rojas, V., et al., "Spontaneous Abortion in a Hospital Population: Are Tobacco and Coffee Intake Risk Factors?," *European Journal of Epidemiology* 10(6): 665-668 (December 1994); Walsh, R.A., "Effects of Maternal Smoking on Adverse Pregnancy Outcomes: Examination of the Criteria for Causation," *Human Biology* 66(6): 1059-1092 (December 1994); Windham, G.C., et al., "Parental Cigarette Smoking and the Risk of Spontaneous Abortion," *American Journal of Epidemiology* 135(12): 1394-403 (June 15, 1992); Armstrong, B.G. et al., "Cigarette, Alcohol, and Coffee Consumption and Spontaneous Abortion," *American Journal of Public Health* 82(1): 85-87 (January 1992); Pattinson, H.A. et al., "The Effect of Cigarette Smoking on Ovarian Function and Early Pregnancy Outcome Of In Vitro Fertilization Treatment," *Fertility and Sterility* 55(4): 780-783 (April 1991); Himmelberger, D. U., et al., "Cigarette Smoking During Pregnancy and the Occurrence of Spontaneous Abortion and Congenital Abnormality," *American Journal of Epidemiology* 108(6): 470-479 (December 1978); Kline, J., et al., "Smoking: A Risk Factor for Spontaneous Abortions," *New England Journal of Medicine* 291(15): 793-96 (October 1977). See, also, Kline, J. et al., "Cigarette Smoking and Spontaneous Abortion of Known Karyotype: Precise Data But Uncertain Inferences," *American Journal of Epidemiology* 141(5): 417-427 (March 1995); Economides, D. & J. Braithwaite, "Smoking, Pregnancy, and the Fetus," *Journal of the Royal Society of Health* 114(4): 198-201 (August 1994); Fredricsson, B. & H. Gilljam, "Smoking and Reproduction: Short and Long Term Effects and Benefits of Smoking Cessation," *Acta Obstetrica Gynecologica Scandinavica* 71(8): 580-592 (December 1992). But see, also, Windham, G.C. et al., "Exposure to Environmental and Mainstream Tobacco Smoke and Risk of Spontaneous Abortion," *American Journal of Epidemiology* 149(3): 243-247 (February 1, 1999); Sandahl, B. "Smoking Habits and Spontaneous Abortion," *European Journal of Obstetric Gynecology and Reproductive Biology* 31(1): 23-31 (April 1989).
- On still births, see, e.g., Raymond, E.G. et al., "Effects of Maternal Age, Parity, and Smoking on the Risk of Stillbirth," *British Journal of Obstetric Gynaecology* 101(4): 301-306 (April 1994); Ahlberg, G. Jr. & L. Bodin, "Tobacco Smoke Exposure and Pregnancy Outcome Among Working Women: A Prospective Study At Prenatal Care Centers In Orebro County, Sweden," *American Journal of Epidemiology* 133(4): 338-347 (February 1991).
- On sudden infant death syndrome, see, e.g., Cooke, R.W., "Smoking, Intra-Uterine Growth Retardation and Sudden Infant Death Syndrome," *International Journal of Epidemiology* 27(2): 238-41 (April 1998).
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