Mississippi State Department of Health

Mississippi Morbidity Report

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The Health Effects of Secondhand Smoke

Introduction: The 1964 Surgeon General's Report summarized the scientific evidence concerning tobacco smoking and health, and concluded that tobacco was harmful to an individual's health. Evidence since then has shown not only that smoking is dangerous to the smoker's health, but that secondhand smoke, or exposure to environmental smoke, is dangerous to nonsmokers' health. Smoking rates in the U.S. have decreased markedly over the last 50 years, and social norms have changed so that public smoking has become unacceptable in many venues. However, 43% of Americans are still being exposed to environmental tobacco smoke. Below is a summary of the evidence regarding secondhand smoke and health, including local data which show improvements in health following local implementation of smoke free air policies.

The 2006 Surgeon General's Report: The 1986 Surgeon General's Report, *The Health Consequences of Involuntary Smoking,* documented the causal relationship between secondhand smoke and lung cancer. The 2006 report, *The Health Consequences of Involuntary Exposure to Tobacco Smoke* updated the 1986 report with a summary of the scientific data concerning secondhand tobacco smoke exposure and health. The 2006 report has six major conclusions.

1. **Children and adults are still exposed to secondhand smoke in their homes and workplaces.** In national surveys 43% of U.S. nonsmokers still have detectable levels of cotinine, a biomarker of smoke exposure, and approximately 30% of indoor workers in the U.S. are not covered by workplace smoke free air policies.
2. **Exposure to secondhand smoke causes disease and death in adults and children who are not smokers.** The U.S. EPA and the International Agency for Research on Cancer have designated secondhand smoke a "known human carcinogen." Secondhand smoke contains thousands of chemicals, hundreds known to be toxic and/or cause cancer, including formaldehyde, benzene, vinyl chloride, arsenic, ammonia, and hydrogen cyanide, and heavy metals such as cadmium and lead.
3. **In children, secondhand smoke exposure increases their risk for sudden infant death syndrome (SIDS), acute respiratory infections, ear problems and more frequent and more severe asthma.** Children whose parents smoke have slower lung growth than children whose parents do not smoke.
4. **Secondhand smoke exposure is associated with an increased long term risk of lung cancer and heart disease, but also acutely affects the cardiovascular system, having a prothrombotic effect and causing endothelial cell dysfunction.** Nonsmokers who are exposed to secondhand smoke at work or at home increase their risk of developing heart disease by 25 to 30 percent.
5. **There is no safe level of secondhand smoke.** Even short exposures affect platelet and endothelial function. Otsuka and colleagues (2001) demonstrated that among healthy nonsmokers, even 30 minutes of exposure to secondhand smoke compromised the endothelial function in coronary arteries to the same degree as among habitual smokers.
6. **Efforts to eliminate secondhand smoke indoors through separation of smokers and/or building ventilation do not eliminate exposure to nonsmokers.** The only complete protection is to eliminate smoking in indoor spaces. Indoor smoking restrictions have been shown to improve indoor air quality and the health of employees in that environment, and have also been shown to decrease smoking among employees. In addition, peer-reviewed studies agree that smoke-free regulations do not have an adverse economic impact on the hospitality industry.

The 2010 Surgeon General's Report: The *2010 Report of the Surgeon General: How Tobacco Smoke Causes Disease* is the 30th tobacco-related Surgeon General's report. It describes in detail the specific pathways by which tobacco smoke damages the human body. The Report has six major conclusions, one of

which addresses the affects of secondhand smoke, "Low levels of exposure, including exposures to secondhand tobacco smoke, lead to a rapid and sharp increase in endothelial dysfunction and inflammation, which are implicated in acute cardiovascular events and thrombosis."

Institute of Medicine Report: The Institute of Medicine (IOM) is a nongovernmental, nonprofit, organization, the health arm of the National Academies of Science. The IOM undertakes to provide unbiased answers to pressing questions about health and healthcare for the nation. In October 2009, at the request of the Centers for Disease Control and Prevention, the IOM released a report (*Secondhand Smoke Exposure and Cardiovascular Effects, Making Sense of the Evidence*) which summarized the evidence around the association between secondhand exposure to smoke, cardiovascular disease and acute coronary events, as well as the association between smoking bans and heart attacks. The conclusions they reached were that studies consistently show coronary heart disease risk is elevated 25 to 30% by exposure to secondhand smoke, and that the evidence shows that policies that ban smoking in public places decrease the population rate of heart attacks from six to 47 percent.

Local data: The Mississippi State University Social Science Research Center, Tobacco Control Unit, evaluated the health effects of public indoor smoking prohibitions implemented in Starkville in May of 2006, and in Hattiesburg in January of 2007. Hospital admissions for myocardial infarction (MI) were compared in each city prior to and after the municipal policies were put in place. In addition, hospital admissions for MI were compared between each municipality and the hospital catchment area outside each municipality, which was not covered by the policy. Both communities showed marked decreases in MI hospital admissions compared to the time period prior to implementation of the ban. Starkville had a 27.7% decrease and Hattiesburg had a 13.4% decrease in admissions related to MI. The geographic areas surrounding the municipalities also had decreases, but to a lesser extent. The area surrounding Starkville had a decrease in MI admissions of 14.8% and the Hattiesburg surrounding area had a reduction of 3.8%. The reasons for the decline in hospital admissions for MIs in the geographic areas surrounding these municipalities may include both a general national trend and some effect of the smoke free air ordinances among the populations that live outside the cities, but work and/or play inside the cities.

Current status: In the U.S., 29 states and the District of Columbia have adopted state-wide laws that prohibit smoking inside all public places. In Mississippi, 37 municipalities have comprehensive smoke free ordinances, prohibiting smoking in indoor public places, and 11 more have ordinances that exempt one or more businesses. These policies cover just over 20% of the population of the state.

Conclusion: The conclusion from the IOM report clearly and accurately sums up the evidence and is supported by Mississippi specific data. "Data consistently demonstrate that secondhand smoke exposure increases the risk of coronary heart disease and heart attacks and that smoking bans reduce heart attacks. Given the prevalence of heart attacks and the resultant deaths, smoking bans can have a substantial impact on public health. The savings, as measured in human lives, is undeniable."

References:

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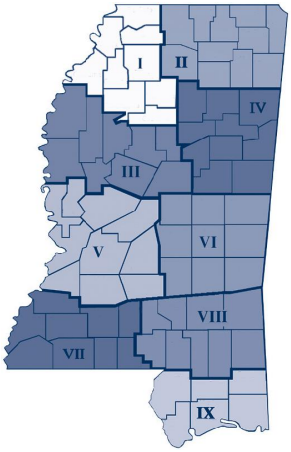
4. Otsuka R, Watanabe H, Hirata K, Tokai K, Muro T, Yoshiyama M, Takeuchi K, Yoshikawa J. Acute effects of passive smoking on the coronary circulation in healthy young adults. *Journal of the American Medical Association* 2001;286(4):436–41.
5. McMillen, R, Hill A, Valentine N, Collins R. The Starkville and Hattiesburg health attack studies, reductions in heart attack admissions following the implementation of local smoke-free ordinances. October 2010. Available at http://surveillance.mstobaccodata.org/wp-content/uploads/2010/06/HeartAttackReport.pdf. Accessed January 30, 2010.



Mississippi
Provisional Reportable Disease Statistics
December 2010

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	Dec 2010	Dec 2009	YTD 2010	YTD 2009
Sexually Transmitted Diseases	**Primary & Secondary Syphilis**	0	1	1	2	6	0	0	3	13	26	40	225	235
	Total Early Syphilis	7	7	3	7	16	1	3	7	24	75	93	618	562
	Gonorrhea	48	46	77	36	165	47	38	50	72	579	472	6,196	7,243
	Chlamydia	194	166	248	119	441	182	115	176	168	1,809	1,779	21,422	23,592
	HIV Disease	3	2	4	3	17	4	0	6	5	44	42	554	609
Myco-bacterial Diseases	**Pulmonary Tuberculosis (TB)**	1	2	0	0	3	0	0	0	0	6	10	96	101
	Extrapulmonary TB	0	0	0	0	0	0	0	0	0	0	2	10	20
	Mycobacteria Other Than TB	3	0	2	1	9	1	2	1	2	21	33	383	297
Vaccine Preventable Diseases	**Diphtheria**	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	0	0	0	1	1	0	0	1	3	7	91	80
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0
	Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	0	0	0	0	0	0	0	0	0	0	0	0	1
	Hepatitis B (acute)	0	0	0	0	1	0	0	0	0	1	1	32	32
	Invasive *H. influenzae* b disease	0	0	0	0	0	0	0	0	0	0	0	0	0
	Invasive Meningococcal disease	0	0	0	0	0	0	0	0	0	0	1	5	5
Enteric Diseases	**Hepatitis A (acute)**	0	0	0	0	0	0	0	0	0	0	1	2	9
	Salmonellosis	5	5	2	6	14	4	3	3	0	42	32	1208	901
	Shigellosis	0	2	2	2	0	0	0	0	0	6	7	58	52
	Campylobacteriosis	0	0	0	0	1	1	0	1	0	3	6	128	110
	E. coli O157:H7/HUS	0	0	0	0	0	0	0	0	0	0	0	24	6
Zoonotic Diseases	**Animal Rabies (bats)**	0	0	0	0	0	0	0	0	0	0	0	0	4
	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rocky Mountain spotted fever	0	0	0	0	0	0	0	0	0	0	0	16	9
	West Nile virus	0	0	0	0	0	0	0	0	0	0	1	9	53

*Totals include reports from Department of Corrections and those not reported from a specific District.

Mississippi State Department of Health
570 East Woodrow Wilson
Post Office Box 1700
Jackson, Mississippi 39215-1700

Smoking Cessation Information

Patient tobacco quitline: 1 800 quit now (1 800 784-8669)

Patient guidelines for smoking cessation:

http://www.ahrq.gov/path/tobacco.htm
http://www.smokefree.gov/

Clinical guidelines for treating tobacco use and dependence:
http://www.ahrq.gov/path/tobacco.htm

For more information about second hand smoke, local ordinances, or tobacco cessation programs please contact the MSDH Office of Tobacco Control at 1-866-724-6115