



# CHRONIC DISEASE BURDEN UPDATE

■ This update focuses on findings from an assessment of hospitalizations before and after implementation of the Smoke-free Illinois Act.

## THE SMOKE-FREE ILLINOIS ACT

On January 1, 2008 the Smoke-free Illinois Act (SFIA) was implemented. The SFIA is a comprehensive state-law that requires public places and places of employment, including offices, warehouses, retail stores, hospitals, student dormitories, private clubs, private residences, shopping centers, restaurants, bars, taverns and gaming facilities, be completely smoke-free inside and within 15 feet from entrances, exits, windows that open and ventilation intakes.

## SMOKE-FREE LAWS AND HEALTH

Breathing secondhand smoke for even a short time can have immediate adverse effects on the cardiovascular system and interferes with the normal functioning of the heart, blood and vascular systems in ways that increase the risk of a heart attack<sup>1</sup>. Persons who already have asthma or other respiratory conditions are at especially high risk for being affected by secondhand smoke and should take special precautions to avoid secondhand smoke exposure<sup>2</sup>. The evidence base for declines in hospitalizations for respiratory and cardiovascular diseases following implementation of smoke-free bans has been established through numerous studies in cities and states throughout the United States and through meta analysis<sup>3-13</sup>.

## REDUCTIONS IN HOSPITALIZATIONS DURING STUDY PERIOD

Hospitalization rates declined by 7.6 percent for asthma, 14.5 percent for acute myocardial infarction (AMI) and 13.0 percent for stroke from 2006 to 2011 in Illinois.

**Table 1 . Age-adjusted hospitalization rates per 10,000 in Illinois by year, 2006 – 2011**

Phase	Year	Asthma Rate (95% CI)	COPD Rate (95% CI)	AMI Rate (95% CI)	Stroke Rate (95% CI)	Appendicitis Rate (95% CI)
<i>Pre-SFIA</i>	<b>2006</b>	15.8 (15.6-16.0)	34.0 (33.7-34.4)	17.3 (17.0-17.5)	30.8 (30.5-31.1)	9.1 (8.9-9.2)
<i>Pre-SFIA</i>	<b>2007</b>	14.4 (14.2-14.6)	32.7 (32.4-33.0)	16.7 (16.5-16.9)	29.3 (29.0-29.6)	9.1 (9.0-9.3)
<i>SFIA Post-phase I</i>	<b>2008</b>	15.6 (15.4-15.8)	38.4 (38.1-38.8)	16.2 (16.0-16.4)	28.7 (28.4-29.0)	9.0 (8.8-9.1)
<i>SFIA Post-phase I</i>	<b>2009</b>	16.1 (15.9-16.3)	37.7 (37.3-38.0)	15.4 (15.2-15.7)	28.1 (27.8-28.3)	8.6 (8.5-8.8)
<i>SFIA Post-phase II</i>	<b>2010</b>	14.8 (14.6-15.0)	35.7 (35.4-36.1)	15.4 (15.2-15.6)	27.5 (27.2-27.7)	8.4 (8.2-8.6)
<i>SFIA Post-phase II</i>	<b>2011</b>	14.6 (14.3-14.8)	36.3 (36.0-36.6)	14.8 (14.6-15.0)	26.8 (26.6-27.1)	7.9 (7.8-8.1)
<i>Percent Change from 2006 to 2011</i>		-7.6%	6.8%	-14.5%	-13%	-13.2%

Note: Age-adjusted rates are per 10,000 and 95 percent confidence interval (CI) provided.

Appendicitis was selected as a control condition, meaning it should be unaffected by smoke-free ordinances. However, appendicitis increased in the Illinois population, which may indicate hospitalizations were naturally declining. Chronic Obstructive Pulmonary Disease (COPD) hospitalization increased in Illinois during the time period. Smoke-free policies may provide protection for asthma exacerbations that result in hospitalizations, but not for COPD exacerbations.

From 2006 to 2011, male hospitalizations declined for asthma, AMI and stroke (-9.4%, -9.7%, and -8.2 percent change, respectively) while female hospitalizations only decreased for asthma, remained the same for AMI and increased for stroke (-5.4%, 0.8%, 5.6% percent change, respectively). (Data not displayed).

## HOW DOES ILLINOIS COMPARE?

- Rhode Island found over a seven-year period (2003 to 2009, law enacted in 2005) AMI hospitalization rates declined, asthma rates increased and there was no change in appendicitis<sup>5</sup>.
- The Delaware smoking ordinance enacted in 2003 affected the incidence of AMI which decreased by 9 percent and there was also a decrease in asthma from 1999 to 2004.
- Arizona's statewide smoking ban enacted in 2007 showed declines in hospital admission for AMI, stroke, asthma and angina from 2004 to 2008<sup>10</sup>.
- New York State had an 8 percent reduction in AMI after its comprehensive smoking ban enacted in 2003, but did not see an effect on stroke. Data analyzed from 1995 to 2004, ban enacted in 2003<sup>11</sup>.

## ACKNOWLEDGEMENTS

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