

# More Evidence Linking Smoke-Free Legislation and Lower Risk of Prematurity and Low Birth Weight

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Premature and low birth weight infants have increased mortality and morbidities including chronic respiratory symptoms, neurocognitive deficits, feeding difficulties, and retinopathy of prematurity. These sequelae often result in prolonged hospitalizations, frequent readmissions, and need for subspecialty care. Direct and indirect costs for the care of these children can be significant. Reduction of maternal secondhand smoke exposure during pregnancy has been identified as a modifiable risk factor for both preterm and low birth weight infants. The most recent US Surgeon General's report on secondhand smoke noted a causal relationship between maternal exposure to secondhand smoke and a reduction in birth weight as well as a suggestive relationship between the same exposure and preterm delivery,<sup>1</sup> underscoring the need for eliminating maternal exposure to secondhand smoke during pregnancy.

Although it would be expected that banning smoking in public indoor venues would reduce the rates of preterm and low birth weight infants, studies assessing pre- and postimplementation of smoking bans has not consistently revealed this. For example, pooled estimates from a recent systematic review and meta-analysis with studies from North America and Europe found a 10.4% reduction in preterm births, but no significant effect on low birth weight.<sup>2</sup> It is possible that the effects differ from study to study depending on the

specific ban restrictions for the state or country, the local rates of maternal smoking, and local compliance with the bans.

In this issue of *Pediatrics*, Simón et al,<sup>3</sup> in their article "Smoke-free Legislation in Spain and Prematurity," present data from Spain revealing a reduction in preterm births and low birth weight infants with the institution of partial and comprehensive smoking bans. This study attempts to tease out the effects of specific ban restrictions based on the gradual bans that were put in place in Spain. In January 2006, a smoking ban was enacted in Spain banning smoking in workplaces, except in the hospitality sector, where a partial ban was implemented. In January 2011, this ban was modified to include almost all public places. Simón et al<sup>3</sup> report that the more comprehensive 2011 ban was associated with reduction in preterm births of 4.5% and a reduction of low birth weight infants of 3.5% 1 year postimplementation. The more significant reduction in small for gestational age infants (1.7%) occurred after the more limited 2006 ban. Although these results highlight the positive effects of even partial smoking bans, they also confirm that more comprehensive smoking regulations have the biggest impact on neonatal outcomes.

In the United States, as of February 2016, 25 states and the District of Columbia have comprehensive smoking bans for restaurants, bars, and workplaces, and an additional 5 states have bans for restaurants and

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bars.<sup>4</sup> Given that in 2015, 9.62% of live births in the United States were premature,<sup>5</sup> and also according to the World Health Organization, prematurity was the leading cause of mortality for children <5 years old,<sup>6</sup> it is time to close the gap and advocate for comprehensive smoking bans in all states and countries.

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