



## Letter to the Editor

**Meta-analysis of the effects of smokefree laws on acute myocardial infarction: An update****Keywords:**

Tobacco smoke pollution  
Secondhand smoke  
Environmental tobacco smoke  
Acute myocardial infarction

There have been 8 published studies (Sargent et al., 2004; Barone-Adesi et al., 2006; Bartecchi et al., 2006; Cronin et al., 2007; Juster et al., 2007; Khuder et al., 2007; Cesaroni et al., 2008; Lemstra et al., 2008) evaluating the immediate effects of smokefree policies on hospital admissions for acute myocardial infarction since the first report of such a drop in Helena, Montana (Sargent et al., 2004). This brief report updates an earlier meta-analysis of the first four studies (Dinno and Glantz, 2007).

Pooling all the available estimates of this effect using the Stata 9.2 metan procedure in a random effects meta-analysis yields a pooled estimate of an immediate 19% (95% CI 14% to 24%) reduction on AMI admission rates associated with these laws (Fig. 1).

The fact that the studies from Italy (Barone-Adesi et al., 2006; Cesaroni et al., 2008) and Ireland showed smaller drops in AMI admissions than in the American locations may reflect lower levels of

compliance with the law than in the US. In Italy and Ireland, implementation of the law was associated with 64% (Valente et al., 2007) and 69% (Mulcahy et al., 2005) reductions, respectively, in levels of secondhand smoke exposure, compared to an 84% reduction in the US (Travers et al., 2004).

In addition to these 8 published studies, this analysis does not include two studies for which confidence intervals are not available: a small study of Monroe County, Indiana (Seo and Torabi, 2007) which found a significant drop in AMI and a study of Scotland (Moss, 2007) presented at a conference that reported a 17% drop, but which has not yet been published.

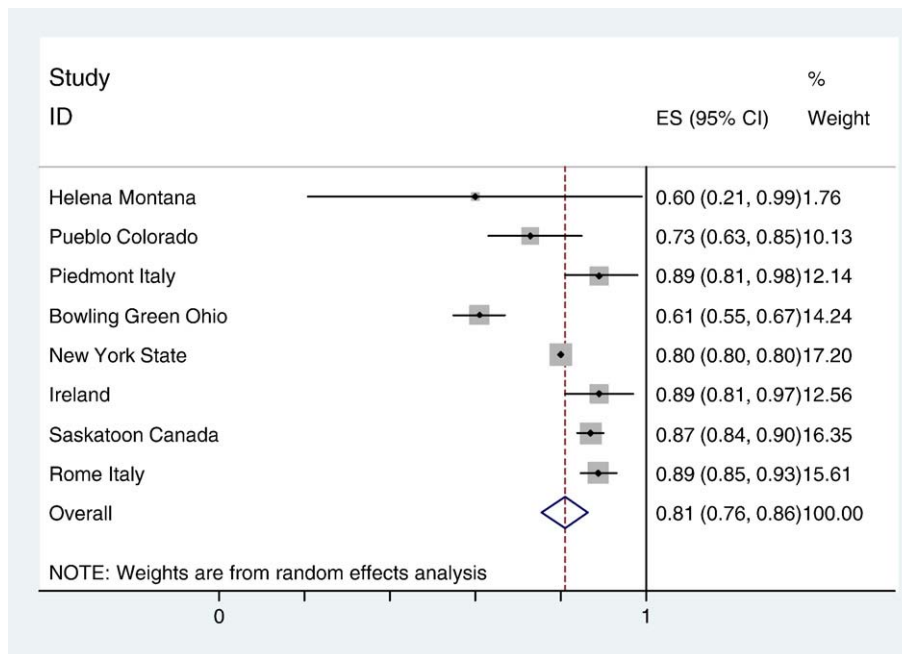
The fact that many studies from so many locations around the world provide consistent findings of a substantial drop in AMI's associated with the implementation of smokefree laws increases the confidence that we can have that smokefree policies have immediate and substantial benefits in terms of reducing acute myocardial infarctions.

**Conflict of interest statement**

The sponsor played no role in the conduct of the research or preparation of the manuscript. The author has no conflict of interest.

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**Fig. 1.** Summary of studies of the effects of smokefree laws on acute myocardial infarction in Helena, Montana (Sargent et al., 2004), Pueblo, Colorado (Bartecchi et al., 2006), Piedmont, Italy (Barone-Adesi et al., 2006), Bowling Green, Ohio (Khuder et al., 2007), New York State (Juster et al., 2007), Ireland (Cronin et al., 2007), Saskatoon, Canada (Lemstra, Neudorf and Opondo 2008), and Rome, Italy (Cesaroni et al., 2008).

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