



## PUEBLO HEART STUDY

**This Important Study Observed an Immediate *and* Significant Decline in Heart Attack Admissions at Pueblo’s Major Hospitals AFTER a Citywide Smoke-free Indoor Air Ordinance Went Into Effect.**

*Past epidemiologic studies have linked breathing of secondhand tobacco smoke with acute myocardial infarction (heart attack). In addition, smoke-free indoor air laws have been shown to reduce overall levels of exposure to secondhand smoke among the general public. The Pueblo Heart Study is the first study to validate previous scientific evidence that indoor smoke-free laws may well promote immediate and sustained reductions in the incidence of heart attacks within a given population. These results offer fresh insight into this important public health and policy issue.*

### **Q - What is the Pueblo Heart Study?**

**A:** The Pueblo Heart Study was a controlled research effort designed to assess the potential impact of a newly enacted public smoke-free indoor air ordinance on heart attack rates in Pueblo Colorado. This is the first study to validate previous scientific evidence that indoor smoke-free laws can dramatically reduce heart attacks. Only one other study to date has evaluated the impact of smoke-free laws on public health. As a result, physician researchers from Pueblo and Denver sought to replicate a groundbreaking 2003 study done in Helena, Montana that showed restrictions on public exposure to secondhand smoke caused a sharp decline in heart attacks. The study sought to prove (or disprove) a connection between a reduction in hospital admissions for heart attacks and the enactment of a citywide smoke-free indoor air ordinance in Pueblo. This law prohibited smoking inside workplaces and all buildings open to the public, and included restaurants, bars, bowling alleys and other business establishments. Enactment and enforcement of the ordinance began on 7/1/2003 and continued throughout the study period – and to this day.

### **Q - Who Conducted the Pueblo Heart Study?**

**A:** The study was performed by a group of Pueblo researchers who brought in experts from the Colorado Prevention Center to help with the statistical evaluation and presentation of the study data. The following individuals and organizations contributed to the study:

- Carl Bartecchi, MD - Department of Medicine, University of Colorado Health Sciences Center
- Robert N. Alsever, MD - Parkview Medical Center and St. Mary Corwin Medical Center, Pueblo CO
- Christine Nevin-Woods DO, MPH - Pueblo City-County Health Department
- William M. Thomas, PhD - Centura Health, Denver, CO and St. Mary Corwin Medical Center, Pueblo, CO
- Raymond O. Estacio, MD - Colorado Prevention Center
- Becki Bucher-Bartelson, PhD - Colorado Prevention Center
- Mori J. Krantz, MD - Colorado Prevention Center

*The Pueblo Heart Study, November 2005*

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## Q - How Was the Pueblo Heart Study Conducted?

**A:** The study included an analysis of electronic medical records from the two primary hospitals in Pueblo, evaluating the number of heart attacks over a three-year period from January of 2002 to December of 2004. This timeframe covered the year and a half before the city of Pueblo's *Smoke-free Indoor Air Act* was enacted on 7/1/2003, as well as a year and a half afterward. All patients with a primary diagnosis of acute myocardial infarction (AMI), (ICD-9 codes 410.xx) admitted to both institutions between 1/1/2002 and 12/31/2004 were identified and included in the study. To enhance diagnostic certainty, all secondary AMI diagnoses were excluded. To determine the effects of the smoke-free indoor air ordinance, the study compared the number of heart attack hospitalizations among individuals living within city limits, the area where the public *Smoke-free Indoor Air Act* applied, to those living outside the city limits. The study methodology accounted for other factors that could have impacted results, such as the overall nationwide trend toward better preventative care. After adjusting for these factors, the study found that heart attack rates within the city of Pueblo decreased by 27 percent, while rates outside city limits stayed consistent. The study also compared heart attack hospitalizations during the same time period in Colorado Springs, another geographically isolated but nearby community that doesn't have a smoke-free indoor air ordinance. There were no significant changes in the number of people being hospitalized for heart attacks in that area.

## Q - What Did the Pueblo Heart Study Find?

**A:** The study found that a public smoke-free indoor air ordinance for reducing exposure to secondhand smoke was associated with a decrease in hospitalizations for heart attacks among residents of the locale in which the ordinance was in effect. This confirms and further builds upon previous epidemiologic data and findings from a similar study performed in another western U.S. city, Helena, Montana. The control community used in the Pueblo Heart Study, the city of Colorado Springs, showed no significant change in heart attack hospitalizations during the time period of the study. These results strengthen the possibility that the reduction in hospitalizations for heart attacks may be directly related to the enactment and enforcement of a smoke-free indoor air ordinance.

## Q - Why are the Results of the Pueblo Heart Study So Important to ALL Coloradans?

**A:** This is the first study to validate previous scientific evidence that indoor smoke-free laws can dramatically reduce heart attacks. Only one other study to date has evaluated the impact of smoke-free laws on public health. This study, conducted in Helena, Montana during 2002, and published in the *British Medical Journal* (2004), observed very similar and significant results. Based upon the Helena Heart Study, the CDC recommended that, "people at risk of coronary heart disease should avoid exposure to secondhand smoke." Studies have shown that as little as 30 minutes of exposure to secondhand smoke puts certain individuals at greater risk of heart attack. The Pueblo Heart Study suggests the immediate benefits of smoke-free indoor air laws may persist for many months (perhaps years) - well beyond the initial implementation of the law. Anyone who is interested in public health – indeed anyone who is interested in their own health – should take these findings seriously and take action. With evidence like this mounting, establishing smoke-free indoor air protections and laws are becoming a matter of common sense. They simply are the right thing to do given what we now know. The Pueblo Heart Study offers important insights and additional factual data to inform and assist decision-makers involved with setting public health policy in Colorado communities, across the state of Colorado, and around the nation.

## For More Information on the *Pueblo Heart Study*, please contact:

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