

11. van Wijnen JH, Verhoeff AP, Jans HW, van Bruggen M. The exposure of cyclists, car drivers and pedestrians to traffic-related air pollutants. *Int Arch Occup Environ Health*. 1995;67(3):187–193.

12. Rank J, Folke J, Jespersen PH. Differences in cyclists and car drivers exposure to air pollution from traffic in the city of Copenhagen. *Sci Total Environ*. 2001; 279(1-3):131–136.

13. Chertok M, Voukelatos A, Sheppard V, Rissel C. Comparison of air pollution exposure for five commuting modes in Sydney – car, train, bus, bicycle and walking. *Health Promot J Austr*. 2004;15(1):63–67.

14. Chillrud SN, Grass D, Ross JM, et al. Steel dust in the New York City subway system as a source of manganese, chromium, and iron exposures for transit workers. *J Urban Health*. 2005;82(1):33–42.

15. Grass DS, Ross JM, Family F, et al. Airborne particulate metals in the New York City subway: a pilot study to assess the potential for health impacts. *Environ Res*. 2010;110(1):1–11.

16. Neitzel R, Gershon RR, Zeltser M, Canton A, Akram M. Noise levels associated with New York City's mass transit systems. *Am J Public Health*. 2009;99(8):1393–1399.

Reductions in Cigarette Smoking and Acute Myocardial Infarction Mortality in Jefferson County, Texas

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After litigation against the tobacco industry ended in a settlement, the Texas legislature funded pilot projects to reduce tobacco use in selected areas of the state. Subsequent telephone surveys showed that well-funded activities were successful in reducing population rates of self-reported cigarette smoking. We present evidence that the reduction in smoking promptly led to lower rates of death from acute myocardial infarctions. (*Am J Public Health*. 2010;100:2391–2392. doi:10.2105/AJPH.2010.192211)

In 2000, the Texas Department of State Health Services received significant new

funding for tobacco control from the proceeds of a settlement of litigation against the tobacco industry. Because the amount was not considered sufficient for effective statewide action, various activities of different levels of intensity were organized in southeast Texas. This area was selected because its rates of tobacco-related diseases were higher than in the rest of the state.

The most intensive pilot activities (receiving approximately \$800 000 per year) were organized in Jefferson County (population approximately 250 000), beginning in the autumn of 2000 and continuing for 5 years. Activities for adult smokers included intensive mass media promotion of cessation,¹ mobilization of health care providers to advise patients to quit, and a heavily advertised telephone cessation counseling service provided by the American Cancer Society.² This pilot project was evaluated by analyses of telephone surveys in Jefferson County and other parts of the state in 2000 and 2004. The analyses showed a statistically significant relative decrease in the reported prevalence of adult cigarette smoking, with rates decreasing from 22% to 16% in Jefferson County and from 19% to 17% in the remainder of the state.³

METHODS

The Texas Department of State Health Services reports rates and causes of death within each county in Texas, including acute myocardial infarction (AMI), defined according to *International Classification of Diseases, 10th Revision*, criteria.⁴ We compiled the numbers of deaths attributed to that primary cause, with age and gender records, for Jefferson County and other counties in the state and converted them into age-adjusted annual rates according to the US 2000 standard population.⁵

To examine changes in AMI mortality rates that could be attributable to differing levels of reduction in tobacco use, we fitted a bivariate piecewise linear regression model to the data. The model had linear segments for 1996 through 2000 and for 2001 through 2005. These lines represented yearly AMI mortality rates per 100 000 persons, and the slopes of the segments represented the trends (increase or decrease) per year. We determined the AMI mortality trends in Jefferson County separately

for the intervals from 1996–2000 and 2001–2005, and we calculated the net change in trends, along with the standard error. We separately determined the trends for other Texas counties for the same intervals and calculated the change in trends and standard error. We then compared the change in trends for Jefferson County with the change in trends for other Texas counties with the *t* test.

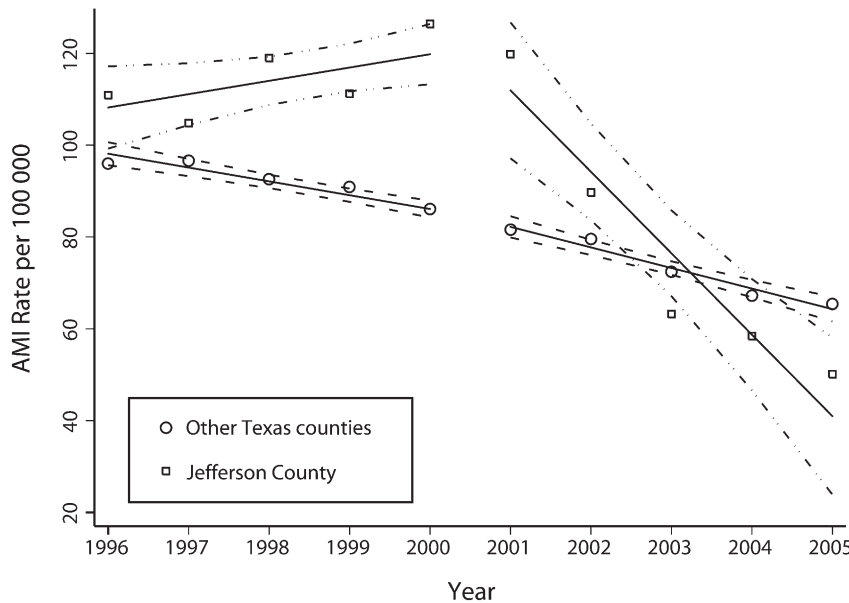
RESULTS

Figure 1 shows the trends in AMI mortality rates for Jefferson County and for other Texas counties, along with their 95% confidence intervals. The slopes of the line segments represent the trends (i.e., rates of change per year in AMI mortality rate per 100 000 persons). For Jefferson County in 1996–2000, the trend was 3.74 (SE=2.82); in 2001–2005, the trend was –17.07 (SE=2.82). The net change in trends was –20.81 (SE=3.98). Trends in other Texas counties were –2.55 (SE=0.514) for 1996–2000 and –4.48 (SE=0.514) for 2001–2005; the net change in trends was –1.93 (SE=0.727).

The difference in the changes in trends (change in Jefferson County versus change in other Texas counties) was –18.88 (SE=4.201). This difference in changes was significantly less than zero, with an approximate *P* value of .004 (*t*=–4.49). This implied a greater rate of decline in AMI mortality rates in Jefferson County than in other Texas counties during 2001–2005. The 95% confidence interval for the difference in trends for 2001–2005 ranged from 8.6 to 29.2 fewer AMI deaths per 100 000 persons per year for Jefferson County than for other Texas counties. Because no other major health improvement in Jefferson County was observed during the time of the intervention, the substantial change in AMI mortality rates can reasonably be attributed to the reduction in cigarette smoking that was achieved there through successful state-sponsored tobacco control activities.

DISCUSSION

Our findings are consistent with data from other population studies in which AMI hospital admission rates and deaths from ischemic heart disease decreased after vigorous public health actions to reduce cigarette smoking.^{6–8}



Note. Dotted lines indicate confidence intervals; solid lines indicate regression model results.

FIGURE 1—Acute myocardial infarction mortality rates in Jefferson County, TX, where effective tobacco control activities were carried out in 2000–2005, and other Texas counties for 1996–2000 and 2001–2005.

However, the promise shown by this pilot project was not fulfilled in Texas. In 2006, tobacco programs at the Texas Department of State Health Services were reorganized, and their funding was reduced. Support for activities in Jefferson County was withdrawn. ■

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This article was accepted March 17, 2010.

Contributors

A.L. McAlister and P. Huang were the primary writers. A.G. Ramirez wrote the description of intervention activities and edited the Discussion section. R.B. Harrist conducted analyses, prepared the figure, and wrote most of the Results section. V.P. Fonseca collected the data and wrote parts of the Introduction and Results sections.

Acknowledgments

This research was supported in part by a grant from the National Institutes of Health (R01-CA-86295).

Human Participant Protection

No protocol approval was required because only publicly available data were used.

References

- McAlister A, Morrison TC, Hu S, et al. Media and community campaign effects on adult tobacco use in Texas. *J Health Commun.* 2004;9(2):95–109.
- McAlister AL, Rabius V, Geiger A, Glynn TJ, Huang P, Todd R. Telephone assistance for smoking cessation: one year cost effectiveness estimations. *Tob Control.* 2004; 13(1):85–86.
- McAlister AL, Huang P, Ramirez AG. Settlement-funded tobacco control in Texas: 2000–2004 pilot project effects on cigarette smoking. *Public Health Rep.* 2006;121(3):235–238.
- International Classification of Diseases, 10th Revision.* Geneva, Switzerland: World Health Organization; 1992.
- Anderson RN, Rosenberg HM. Age standardization of death rates: implementation of the year 2000 standard. *Natl Vital Stat Rep.* 1998;47(3):1–16, 20.
- Schroeder SA. Public smoking bans are good for the heart. *J Am Coll Cardiol.* 2009;54(14):1256–1257.
- Sargent RP, Shepard RM, Glantz SA. Reduced incidence of admissions for myocardial infarction

associated with public smoking ban: before and after study. *BMJ.* 2004;328(7446):977–980.

8. Vartiainen E, Puska P, Pekkanen P, Toumilehto J, Jousilahti P. Changes in risk factors explain changes in mortality from ischaemic heart disease in Finland. *BMJ.* 1994;309(6946):23–27.

Adding Sexual Orientation Questions to Statewide Public Health Surveillance: New Mexico's Experience

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We examined refusal rates for sensitive demographic questions to determine whether questions on sexual orientation are too sensitive for routine use on public health surveys. We compared the percentage of active refusals in New Mexico for a sexual orientation question and 6 other sensitive demographic questions. In 2007 and 2008, refusal rates for sexual orientation questions were similar to rates for questions on race/ethnicity and weight and significantly lower than rates for questions on household income. Perceptions that sexual orientation is too controversial a topic to be included on state surveys may be unfounded. (*Am J Public Health.* 2010;100:2392–2396. doi:10.2105/AJPH.2009.186270)

Lesbian, gay, bisexual, and transgender (LGBT) populations have clear disparities in cigarette smoking,^{1,2} suicidal ideation,³ violent victimization,^{4–6} and sexually transmitted infections⁷ compared with the general population. Yet demographic questions about sexual orientation (i.e., questions about identity, attraction, or behavior), in addition to those on gender identity,