Preface

Thirteen years ago, in 1986, my predecessor, Surgeon General C. Everett Koop, released a comprehensive analysis of the health dangers of environmental tobacco smoke (ETS)*. This landmark Surgeon General's Report, entitled *The Health Consequences of Involuntary Smoking* (U.S. DHHS, 1986), concluded that ETS causes lung cancer in adults and respiratory problems in children, and that simply separating smokers and nonsmokers within the same airspace reduced, but did not eliminate, ETS exposure. Around the same time, the National Academy of Sciences released an independent report that drew similar conclusions (NRC, 1986). Six years later, in 1992, the U.S. Environmental Protection Agency (EPA) released its own risk assessment of the health effects of ETS with respect to lung cancer and respiratory function (U.S. EPA, 1992); the EPA report reaffirmed the conclusions of both earlier reports. In addition, the EPA identified ETS as a Group A carcinogen, estimating that it causes 3,000 lung cancer deaths a year among American nonsmokers. The EPA also estimated that every year, ETS is responsible for up to 26,000 new asthma cases in children; up to 1,000,000 asthma exacerbations; and up to 300,000 cases of bronchitis and pneumonia in toddlers—15,000 of which require hospitalization.

In the 7 years since the EPA report was published, the evidence that ETS causes lung cancer and other serious diseases has continued to accumulate. Lung cancer was the first fatal disease linked to ETS, but in recent years, evidence that ETS exposure causes other major diseases—particularly heart disease—has emerged. In response to rapidly accumulating evidence that ETS causes disease beyond lung cancer and respiratory effects in children, the California Environmental Protection Agency (Cal/EPA) undertook a comprehensive assessment of the total range of health effects correlated with exposure to ETS.

Using the most up-to-date evidence available, Cal/EPA concluded that ETS causes not only lung cancer in adults and respiratory problems in children, but also low birth weight, sudden infant death syndrome, middle ear infections, nasal sinus cancer, and heart disease morbidity and mortality (Cal/EPA, 1997). Significantly, ETS was estimated to account for up to 62,000 heart disease deaths annually—20 times the number of ETS-related lung cancer deaths.

* Various terms have been used in the scientific literature to describe a nonsmoker's exposure to ambient tobacco smoke. Passive smoking, involuntary smoking, secondhand smoke, and environmental tobacco smoke are the most prevalent and are often used interchangeably by researchers and the public.

Cal/EPA also found evidence that suggests a link between ETS exposure and spontaneous abortion, adverse effects on cognition and behavior, exacerbation of cystic fibrosis, decreased pulmonary function in adults (as well as that previously described for children), and cervical cancer.

The above-mentioned major public health burden caused by ETS more than justifies public policies creating smoke-free workplaces and public areas. They have also motivated many individuals and families to make their homes smoke-free in order to protect children and other loved ones from the toxic chemicals in ETS.

Since the Cal/EPA report was completed, evidence that ETS causes disease has continued to accumulate. Additional studies have been published, including several major reviews confirming the association between ETS exposure and increased risk for both lung cancer and heart disease in nonsmokers. The International Agency for Research on Cancer (IARC) published a large study (Boffetta *et al*., 1998) demonstrating that nonsmokers exposed to ETS experience a 16 percent elevation in the risk of developing lung cancer—a level consistent with other estimates. While the results in this individual study did not reach statistical significance, the consistency of their estimates with those of other studies increases the confidence we can have in the results of earlier studies. Taken together, all the existing published studies demonstrate a significant and important elevation in lung cancer risk associated with ETS exposure.

British investigators (Law *et al*., 1997) conducted an analysis of 19 epidemiological studies on ETS and heart disease that convincingly demonstrated that the elevation in heart disease risk seen in ETS-exposed nonsmokers is unlikely to be due to the effects of other risk factors. Their finding of a 23 percent increased risk for heart disease is almost identical to that recently published in the *New England Journal of Medicine* by a team of U.S. investigators (He *et al*., 1999). Furthermore, a study from San Francisco showed that respiratory symptoms in bartenders improved significantly just 6 weeks after their ETS exposure was eliminated by a new California law requiring smoke-free bars (Eisner *et al*., 1998). California restaurants became smoke-free on January 1, 1995, followed by bars on January 1, 1998 (Macdonald *et al*., 1997; Glantz and Balbach, 1999 in press). The rapid resolution of the effects of the ETS exposure after the smoke-free law went into effect both demonstrates that ETS causes respiratory problems and illustrates that simple control measures can protect nonsmokers. The California legislation was made possible by community action in support of smoke-free environments (Glantz, 1997). Hundreds of communities across America are now following California's lead.

The California Environmental Protection Agency spent 5 years preparing this document, and it solicited input from all interested parties—including the tobacco industry and its consultants. Cal/EPA held several public workshops to solicit input and made drafts available for public comment and criticisms. The final draft was peer reviewed by California's Scientific Review Panel, a body created under California law to provide independent peer review of many scientific aspects of the state's toxic air contaminants and air pollution programs.

The National Cancer Institute (NCI), acting on behalf of the U.S. Public Health Service, recognized the importance of the Cal/EPA report and saw the need to disseminate it broadly as part of their Smoking and Tobacco Control Monograph series. I hope that this broad dissemination will accelerate public recognition that ETS causes lung cancer, heart disease, sudden infant death, and a wide variety of other serious diseases. I also hope that awareness of this evidence will continue to stimulate public policies to protect nonsmokers from ETS exposure.

In a speech to the American Lung Association in 1984, Dr. C. Everett Koop called for a smoke-free society by the year 2000. While we will not accomplish Dr. Koop's goal, we have made major progress. Just 3 percent of the American workforce was employed in a smoke-free environment in 1986 (Gerlach *et al*, 1997). By 1996, nearly two-thirds (64 percent) of the American indoor workforce was covered by a smoke-free workplace policy (NCI, 1999 in press). Additionally, fully 75 percent of all homes have adopted rules that restrict smoking, with more than half completely banning smoking in the home (NCI, 1999 in press). Even among smokers this trend is evident, with 50 percent of current smokers restricting smoking in their home to some degree and nearly one in five reporting that they do not permit smoking anywhere in the home. I can only hope that the information contained in this report will renew the effort to meet the goal of a smoke-free society in which no one would be involuntarily exposed to ETS.

I call on everyone committed to public health to join with me in a renewed effort to complete the creation of a smoke-free society by:

- Encouraging communities to enact clean indoor air ordinances requiring 100 percent smoke-free environments in all public areas and workplaces, including all restaurants and bars.
- Encourage smokers as well as nonsmokers to make their homes smoke-free to protect their children and families from ETS exposure.

With these simple steps, we can all breathe a little easier.

David Satcher, M.D., Ph.D.
U.S. Surgeon General and
Assistant Secretary for Health

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