

The Role of Secondhand Smoke Research in Protecting Nonsmokers

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In the 53 years since the release of the landmark US Surgeon General's Report on Smoking and Health, our understanding of the burden of tobacco use and secondhand smoke (SHS) exposure has grown exponentially. Research has proven that tobacco use and SHS exposure causes a significant proportion of 6 of the world's 8 leading causes of death, including heart disease, cardiovascular disease, chronic obstructive pulmonary disease, and many cancers.¹ Scientists and clinicians in medicine and public health have also built a strong evidence base for tobacco control, and have implemented educational and policy initiatives and clinical support services to prevent tobacco use, protect nonsmokers from SHS, and encourage cessation. Although these efforts have been successful in reducing rates of tobacco use and smoke exposure in some countries, there remains significant work to be done.

Each year, tobacco use and SHS exposure continue to kill. By World Health Organization estimates, 6 000 000 people die of tobacco annually, with 10% of these deaths caused by SHS.^{1,2} Much of the burden of this fully preventable disease has shifted to vulnerable populations, including children and low-income families. Children are exposed to SHS at higher rates than any other age group, resulting in a disproportionate disease burden; globally, nearly 1 in 4 of the deaths caused by SHS occur in children, most often from respiratory infection in the early years of life.³

Children are most frequently exposed to tobacco smoke by parents or caregivers in homes or in vehicles, but they are also exposed in public places, and in multiunit housing settings. This leaves children with "no voice and no choice" in the face of dangerous toxins that can shape their future;

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children exposed to tobacco are at higher risk for asthma, ear infections, sudden infant death syndrome, and behavioral and cognitive difficulties.^{4,5} Clinicians, families, and child health advocates need continued evidence to best protect children. Indeed, child survival goals are unlikely to be met unless the contributions of tobacco smoke exposure to low birth weight, prematurity, hunger, and food insecurity, in both high- and low-income countries, are recognized and prevented.

Scientific research is the foundation of effective tobacco control practice and policy, and scientists from many disciplines have contributed to our current understanding of this epidemic. The Flight Attendant Medical Research Institute (FAMRI) has uniquely focused its grant-making on medical and scientific research on tobacco smoke exposure. FAMRI was founded out of a class-action lawsuit brought on behalf of nonsmoking flight attendants against the tobacco industry. In 2006, with FAMRI support, the American Academy of Pediatrics established the Julius B. Richmond Center of Excellence, a research center dedicated to preventing child and family exposure to tobacco and SHS. Since FAMRI began operations, and during the first decade of FAMRI's support of the American Academy of Pediatrics Richmond Center's SHS research, Richmond Center investigators and others in the scientific community have detailed the trajectory of tobacco and tobacco-related diseases and developed and tested treatments to reduce morbidity and mortality. Researchers have identified psychosocial and pharmacological methods to support effective cessation and have designed screening and counseling tools to help clinicians ask the right questions about tobacco use and SHS exposure in clinical settings. Child

health tobacco control investigators have monitored trends in tobacco use and related public opinion and have translated this evidence into targeted interventions and policy solutions that have changed social norms around smoking and SHS exposure. Through careful and systematic work, tobacco control leaders have mobilized the evidence and helped save countless lives.

In the articles in this issue of *Pediatrics*, authors explore topics in child health and tobacco control and in implementation of the evidence base for eliminating SHS exposure. These findings reveal that the evidence for protecting children and youth is strong and continues to grow and that a committed group of scientists are addressing needed questions in pediatric tobacco control and SHS research.

If we contemplate a future tobacco endgame in which every child is free from tobacco and SHS, several priorities are clear. First, the scientific community must continue to improve detection and measurement of tobacco exposure in the environment and in the human body and must work to incorporate these measures into interventions to protect children and other nonsmokers from the dangers of SHS and tobacco. Second, we must continue to improve the quality and quantity of tobacco-control policies in our communities, and the delivery of effective interventions in clinical settings, by ensuring that every child is screened for tobacco use and exposure at every visit and that parents and families receive effective support to eliminate use and exposure. Third, we must continue to add to our understanding of ways that tobacco impacts the human body to strengthen future efforts to protect individuals from the harms of smoke exposure. Fourth, we must continue to monitor the prevalence of SHS exposure of children, and of

tobacco use among youth, including the recent rapid increase in the use of electronic cigarettes and other novel products with which manufacturers are seeking to addict the next generation. Finally, we need to increase efforts to translate science into policy and practice and to increase the adoption of effective policy solutions, such as smoke-free air laws and Tobacco 21 policies.

The tobacco control climate has changed rapidly in recent decades, and scientific advances have increasingly resulted in the identification of effective solutions to ending the tobacco epidemic. Although research into tobacco and SHS is critical to protecting child health and increasing quality of life for millions of people worldwide, strategic implementation of what is already known is a continuing challenge that also requires dedicated efforts from the scientific community. The evidence provided in the release of tobacco industry documents reveals the industry's history of efforts to generate false evidence and mislead the public about the harms caused by tobacco. Additionally, as evidence reveals, the industry continues to use similar tactics in opposition to efforts to protect the health of children and other nonsmokers in the United States and in other countries.^{1,2,6} Dr Julius B. Richmond, for whom our center is named, often spoke of the need for scientific evidence, social strategies, and political will as essential ingredients needed to bring about change. To truly achieve a world free of tobacco and SHS, renewed efforts are needed to bring these 3 ingredients together for the health of all children.

ABBREVIATIONS

FAMRI: Flight Attendant Medical Research Institute
SHS: secondhand smoke

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