

# The Clinical Effort Against Secondhand Smoke Exposure (CEASE) Intervention: A Decade of Lessons Learned

Jonathan P. Winickoff, MD, MPH, Bethany Hipple, MPH, Jeremy Drehmer, MPH, Emara Nabi, MBBS, MS, Nicole Hall, MS, Deborah J. Ossip, PhD, and Joan Friebely, EdD

## ABSTRACT

- **Objective:** To describe lessons learned in developing the CEASE tobacco control intervention.
- **Methods:** Descriptive report.
- **Results:** Tobacco use and tobacco smoke exposure harm families in a multitude of ways. The child health care setting is the ideal location to address parental smoking and tobacco smoke exposure in children. Few interventions have been developed specifically for families in the child health care setting. One such intervention, the CEASE program, was developed with assistance from tobacco control experts, pediatric researchers, policy makers, and child health care clinicians to address parental smoking.
- **Conclusion:** An effective tobacco cessation intervention can be developed in a systematic way that may not require extensive resources and expertise.

Tobacco smoke exposure has long been recognized as a danger to both children and their families. Child health care clinicians are in a unique and important position to address parental smoking. We developed the Clinical Effort Against Second hand Smoke Exposure (CEASE) program to help clinicians tailor their office setting to address parental tobacco use in a routine and effective manner.

Few interventions have been developed specifically for families in the child health care setting. This article explores how one such intervention was developed with assistance from tobacco control experts, pediatric researchers, policy makers, and child health care clinicians to address parental smoking and tobacco smoke exposure in children. The article further explores how other health care providers, researchers, and professionals can develop their own interventions with minimal resources and expertise.

## PROGRAM OVERVIEW

The CEASE program trains pediatricians and office staff to systematically provide cessation counseling and interventions to parents and other adults who smoke. Clinicians intervene with smoking families using a streamlined, 3-step version of the traditional 5-step approach (Ask, Advise, Assess, Assist, Arrange) recommended in the US Public Health Service guideline [1]. The 3 steps focus on identifying and asking all smoking parents if they want assistance in quitting (Ask), assisting them if they do (Assist), and referring them to specialized resources if necessary (Refer) (Table 1).

The CEASE module includes tools to both change the pediatric health care office infrastructure and to facilitate pediatric health care providers' delivery of counseling, medications, and referral for tobacco cessation. These tools are a training manual and video, an implementation guide to use in structuring office responsibilities for accomplishing each stage of the CEASE intervention, posters for the office, and handouts for the parents that reinforce the importance of smoke-free families to children's current and future health and the availability of resources for quitting. All materials for family members are written at or below a 6th-grade reading level [2], as is suggested by national health literacy standards. Handouts and posters feature culturally appropriate images. In addition to English, materials are available in Spanish and Portuguese. All materials are available for free at [www.ceasetobacco.org](http://www.ceasetobacco.org)

*From the Center for Child and Adolescent Health Research and Policy, Massachusetts General Hospital, Boston, MA (Winickoff, Hipple, Nabi, Hall, and Friebely), the American Academy of Pediatrics, Elk Grove Village, IL (Drehmer), and the University of Rochester Medical Center, Rochester, NY (Ossip).*

**Table 1.** The 3As of Tobacco Cessation

<b>Implementation Steps</b>	<b>The As</b>
<p><b>Step 1: Ask</b> Identify smokers during the office visit and document smoking status. Document no smoking policy in the home and car. Assess interest in quitting smoking and acceptance of cessation assistance.</p>	Ask and Assess
<p><b>Step 2: Assist</b> Talk with smokers about tobacco use and establishing a strict no smoking rule in the home and car. Provide brief counseling, information about free programs, and document. Prescribe or recommend pharmacotherapy, as appropriate, for relief of withdrawal symptoms and to aid cessation. Offer assistance for creating smoke-free spaces, such as a letter to a landlord about the need for smoke-free apartment buildings.</p>	Advise and Assist
<p><b>Step 3: Refer</b> Refer or enroll smokers who are ready to quit in the telephone quitline. Talk with those who smoke about smoking at each visit until the family is smoke-free.</p>	Arrange

**RESEARCH BASE**

The CEASE intervention was developed from a body of research that focused on office-based interventions [3–5], treating tobacco use [1,6,7], implementing pediatric tobacco control programs [7–9], and crafting office materials consistent with behavior change theory at acceptable reading levels. The chronic and relapsing nature of tobacco dependence lends itself to disease management approaches [10–13]. The theoretical framework for the CEASE intervention was primarily informed by the literature on development and implementation of disease management programs, including Wagner’s chronic care model [14], guideline implementation [15], and the spread of effective practices [16]. Research also focused on other effective tobacco control interventions, especially those that could be easily embedded in the primary care setting at little or no cost, such as state quitlines, programs based on the 5 As of tobacco control, and those that incorporate motivational interviewing. This background research [17] led to a firm understanding of how to develop a tobacco control intervention that met the unique needs of the pediatric office.

**PROGRAM EVOLUTION**

**Early Efforts**

The development of CEASE has been an iterative process involving experts and programs from across the country. The CEASE team, based at Massachusetts General Hospital in Boston, consulted and obtained feedback from tobacco control experts, pediatricians,

public health professionals, and dissemination specialists at organizations including the American Academy of Pediatrics (AAP), the Massachusetts Tobacco Cessation and Prevention Program, and the Massachusetts General Hospital Center for Child and Adolescent Health Research and Policy. The program began in 1999 with an exploration of the opportunities to help families with hospitalized children quit smoking [18] and the subsequent development of a smoking cessation intervention for families with children hospitalized for respiratory illness [19]. The intervention was extended to the outpatient setting to address smoking by parents of children with respiratory illness. These early efforts, known as the STOP program, appeared to be effective in helping parents quit smoking but were limited to either the parents of children who were hospitalized or children with respiratory illness. Our team developed the CEASE intervention to help all family members quit smoking as well as to establish smoke-free homes and cars regardless of the clinical setting or the child’s diagnosis. The first CEASE module was based on the 5 As of tobacco cessation (Ask about tobacco use, Advise to quit, Assess readiness, Assist in change, Arrange follow-up [1]) as well as the American Legacy Foundation’s tobacco control materials and the QuitWorks referral process developed by the Massachusetts Department of Public Health ([www.makesmokinghistory.org](http://www.makesmokinghistory.org)).

Acknowledging that child health care providers have limited time and resources to address family tobacco use, the CEASE team designed materials that were feasible for busy health care providers to routinely use. Using

national surveys, we previously found that smoking parents find referral to a quitline [20], as well as the provision of medications for tobacco dependence [21] by their child's pediatrician, to be acceptable. To keep costs low, the first materials were developed using MS Office Suite; when photos were needed, inexpensive stock photos were purchased. The materials and other information were posted on a simple website.

### Pilot Testing

The CEASE module was pilot tested in 10 pediatric practices in the AAP practice-based research network in New York and Massachusetts from 2004 to 2007. Through 2 phone sessions, pediatricians and pediatric office staff were trained to use the CEASE materials to help families become smoke-free. Despite our best intentions to create easy-to-use materials and methods to help families quit smoking, the participating pediatric practices advised us that the 5-step intervention was too time consuming for the pediatric office setting. Pediatricians also wanted more flexibility with scheduling training, as it was difficult to organize phone sessions that the entire staff could attend at once.

Based on this feedback, we simplified the module and reduced the number of steps from 5 to 3: Ask, Assist, Refer (Table 1), and tested the revised module in another 20 practices in the AAP practice-based research network. The intervention put more emphasis on brief motivational messages, whereby clinicians are trained to tailor the message to the child and parent's situation, such as when the child has an upper respiratory infection or asthma exacerbation. One key message to parents was inspired by the 2006 Surgeon General's report on involuntary tobacco smoke exposure [22]: there is no safe level of exposure to tobacco smoke.

### Training Video

With funding from the Massachusetts Tobacco Cessation and Prevention Program, the CEASE team produced a 30-minute training video that emphasizes the need for addressing tobacco control in pediatrics, presents the CEASE materials, and provides guidance for talking with patients during the office visit. Four counseling scenarios are presented: a child with asthma who lives with a smoking mother and grandmother; a new mother who quit smoking while pregnant whose husband still smokes; a young mother who has started smoking again; and a teen who smokes [23].

### Recent Updates

Thirdhand smoke refers to residual tobacco smoke contamination that remains after the cigarette is extinguished [24]. The toxins that linger in carpets, clothes, and other materials hours or even days after a cigarette is put out pose a potential health hazard for infants and children [25]. Recent research suggests that many people do not realize that thirdhand smoke is dangerous. One survey revealed that only 43.3% of smokers and 65.2% of nonsmokers believed that thirdhand smoke could harm children's health [24]. The new training and materials for the 20-practice trial include information about thirdhand smoke; discussing risks posed to children of thirdhand smoke may further help pediatricians in helping families create 100% smoke-free homes and vehicles.

The thirdhand smoke concept suggested the importance of adopting and endorsing the cessation imperative: that is, the only way to protect children from the harms of tobacco smoke exposure completely is for all family smokers to quit completely. The cessation imperative is now a part of the CEASE education module.

### DISSEMINATION AND ACCESS

The CEASE website ([www.ceasetobacco.org](http://www.ceasetobacco.org)) houses all the CEASE materials, the CEASE training videos, and research on CEASE. The website, which is updated with new materials and research developments on a regular basis, has grown to an average 1600 hits a month, with visitors from around the world.

Press releases were sent to local media to announce that the pediatric practice was implementing CEASE. To reach families, the CEASE team launched a Facebook page in 2010. On the Facebook page, the CEASE team post news clips about tobacco issues that families face, present opportunities to connect to other tobacco control advocates, and promote awareness about the harms of tobacco use and exposure. The Facebook page had 182 followers as of July 2012.

### CONTINUING EDUCATION

The CEASE team developed 2 online courses in conjunction with the AAP, which can be accessed through AAP's PediaLink Learning Center ([pedialink.aap.org](http://pedialink.aap.org)). The short online course Help Every Family Quit Smoking describes the burden of family tobacco use and demonstrates how to assist families in quitting smoking and establishing smoke-free rules, and participants can

**Table 2.** Implementation Process Survey

	No. of Control Practices Answering “To Some Extent” or “To a Great Extent” (n = 10)	No. of Intervention Practices Answering “To Some Extent” or “To a Great Extent” (n = 10)
To what extent does this practice site:		
A. Use a systematic method of identifying and documenting parents who use tobacco?	8/10	10/10
B. Use a system for identifying and documenting whether families have rules against smoking in the home?	6/10	9/10
C. Use a system for identifying and documenting whether families have rules against smoking in the car?	5/10	9/10
D. Use a systematic method of assessing whether parents who smoke would accept help with quitting?	3/10	10/10
E. Use materials to support smoking cessation for parents?	3/10	10/10
F. Link parents who smoke with counseling resources outside the practice, such as a smoking quitline?	4/10	10/10

earn 1 AMA PRA Category 1 Credit. The longer online quality improvement course Eliminate Tobacco Use and Exposure guides physicians through performance improvement activities in which they collect baseline and follow-up data as they work to improve care and processes through Plan, Do, Study, and Act cycles. The course offers 26 AMA PRA Category 1 credits as well as 20 Performance Improvement credits.

**PROGRAM EVALUATION**

The CEASE intervention was recently evaluated in a randomized clinical trial using 20 practices from the AAP practice-based research network. The research was approved by the Massachusetts General Hospital and AAP institutional review boards. The pediatric practices were sent the CEASE materials, shown the training video, provided with short training phone calls, and supported in their efforts to address tobacco use and exposure through routine listserv emails, monthly newsletters, and monthly mailings of innovative materials. The practice leaders were asked to complete a survey pre- and post-intervention (Table 2, 100% response rate). This study is currently in the final stages; early data shows that, in comparison to usual care control practices, post-intervention intervention practices had greater rates of identifying and documenting parents

who smoke, as well as using materials to help parents stop smoking.

**INNOVATION**

The CEASE module has been continuously reviewed and adapted, resulting in the development and incorporation of emerging best practices and innovations [23,26]. The CEASE intervention was named an “Innovation in Medicine” by the Agency for Healthcare Research and Quality [27]. Recent CEASE module innovations have included:

- enhancing the CEASE website by adding videos, materials, and links to supporters
- collecting data about the visitors to the CEASE website with Google Analytics
- creating new online training opportunities for pediatricians through the American Academy of Pediatrics PediaLink Learning Center
- finding ways to promote the CEASE intervention in the media and in tobacco control circles

These types of innovation strategies have enhanced our ability to address tobacco control, change practice, and perform continuous quality improvement at the program

level. Most of these innovations are low-cost and make use of existing systems and technology infrastructure.

### LESSONS LEARNED BY THE CEASE TEAM

- If you are developing an intervention, use several different perspectives when developing and implementing a practice change program, such as a programmatic perspective (focusing on sustaining the program), a practice perspective (focusing on the needs of the practice), or a patient perspective (focusing on the needs of the patient). Each one can enhance value and impact of the program.
- Be flexible and willing to learn from everybody. Sometimes “non-experts,” such as patients, parents, or administrators, can be the most authentic and useful collaborators.
- Simplify the intervention as much as possible.
- Look for opportunities to disseminate the program through the press, to a broad practice population, and to as many patients as possible. These methods can be through technology (the Web, social media), through press releases, through conferences, and through partnerships with foundations, state health departments, and funding organizations. Purchase a domain name; domain names can be bought for as little as \$10 a year.
- Use inexpensive materials to conserve resources and enhance your ability to widely distribute them. No one on the CEASE team is a graphic designer or web developer, but with a small amount of effort, these skills can be learned. Inexpensive stock images can be adapted to suit the needs of the program. Acceptable materials can be made with standard computer programs.
- Study the intervention and rely on evidence to evaluate whether it is working and how to improve it. Do PDSA (Plan Do Study Act) cycles on problems that arise. Ask others to review the program critically
- Be patient. Developing a successful intervention and materials can take a long time.
- Once an intervention program functions within the clinical setting, the work of maximizing its effectiveness begins! Be prepared for changes.

---

*The pediatric practices or individual practitioners who enrolled participants in the larger study are listed here by AAP Chapter: Alaska: Anchorage Pediatric Group, LLC (Anchorage); Connecticut: Hospital of Saint Raphaels*

*(New Haven); Illinois: Community Health Improvement Center (Decatur); Maryland: Cambridge Pediatrics LLC (Waldorf); Massachusetts: Quabbin Pediatrics (Ware), RiverBend Medical Group - Springfield Office (Springfield); Missouri: Priority Care Pediatrics LLC (Kansas City); New Mexico: Las Vegas Clinic for Children and Youth (Las Vegas); Ohio: Bryan Medical Group (Bryan), The Cleveland Clinic Wooster (Wooster); Oklahoma: Shawnee Medical Center Clinic (Shawnee); Oregon: Siskiyou Pediatric Clinic LLP (Grants Pass); Pennsylvania: Pennridge Pediatric Associates (Sellersville); South Carolina: Inlet Pediatrics (Murrells Inlet); South Dakota: Avera McGreevy Clinic (Sioux Falls); Tennessee: Raleigh Group PC (Memphis); Virginia: Pediatrics of Kempville PC (Virginia Beach), Riverside Pediatric Center (Newport News), The Clinic (Richlands); West Virginia: Shenandoah Community Health Center (Martinsburg).*

*Corresponding author: Jonathan P. Winickoff, MD, MPH, MGH Center for Child and Adolescent Health Policy, 50 Staniford St, Suite 901, Boston, MA 02114, jwinickoff@partners.org.*

*Funding/support: Supported by the National Institutes of Health NCI grant R01-CA127127 (to Dr. Winickoff) with co-funding from the National Institute on Drug Abuse and the Agency for Healthcare Research and Quality. The video was supported by the Massachusetts Tobacco Cessation and Intervention Program. This study was also supported by a grant from the Flight Attendant Medical Research Institute to the AAP Julius B. Richmond Center, and the Pediatric Research in Office Settings (PROS) Network, which receives core funding from the HRSA MCHB (HRSA 5-UA6-10-001) and the AAP.*

*Financial disclosures: None.*

### REFERENCES

1. Fiore MC, Bailey WC, Cohen SJ, et al. Treating tobacco use and dependence. Clinical Practice Guideline. Rockville, MD: US Department of Health and Human Services. Public Health Service. June 2000.
2. Hipple B, Friebely J, Vieira C, Winickoff JP. Reading levels of CEASE secondhand smoke information materials for parents. Presented at the National Conference on Tobacco or Health, Minneapolis MN, October 2007.
3. Curry SJ, Ludman EJ, Graham E, et al. Pediatric-based smoking cessation intervention for low-income women: a randomized trial. *Arch Pediatr Adolesc Med* 2003;157:295–302.
4. Wagner EH, Austin BT, Von Korff M. Improving outcomes in chronic illness. *Manag Care Q* 1996;4:12–25.
5. Solberg LI, Kottke TE, Conn SA, et al. Delivering clinical preventive services is a systems problem. *Ann Behav Med* 1997;19:271–8.

6. Abrams DB, Boutwell WB, Grizzle J, et al. Cancer control at the workplace: the working well trial. *Prev Med* 1994;23:15–27.
7. Severson HH, Andrews JA, Lichtenstein E, et al. Reducing maternal smoking and relapse: long-term evaluation of a pediatric intervention. *Prev Med* 1997;26:120–30.
8. Hovell MF, Zakarian JM, Matt GE, et al. Effect of counselling mothers on their children’s exposure to environmental tobacco smoke: randomised controlled trial. *BMJ* 2000;321:337–42.
9. Frankowski BL, Weaver SO, Secker-Walker RH. Advising parents to stop smoking: pediatricians’ and parents’ attitudes. *Pediatrics* 1993;91:296–300.
10. Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: toward an integrative model of change. *J Consult Clin Psychol* 1983;51:390–5.
11. Prochaska JO, DiClemente CC, Norcross JC. In search of how people change: applications to addictive behaviors. *Am Psychol* 1992;47:1102–14.
12. Abrams DB, Orleans CT, Niaura RN. Smoking treatment issues: towards a stepped care approach. *Tobacco Control* 1994;2:517–37.
13. Brogan MM, Prochaska JO, Prochaska, JM. Predicting termination and continuation status in psychotherapy using the transtheroretical model. *Psychotherapy* 1999;36:105–13.
14. Wagner EH, Austin BT, Von Korff M. Improving outcomes in chronic illness. *Manag Care Q* 1996;4:12–25.
15. Solberg LI, Brekke ML, Fazio CJ. Lessons from experienced guideline implementers: attend to many factors and use multiple strategies. *Jt Comm J Qual Improv* 2000;26:171–88.
16. Rogers EM. *Diffusion of innovations*. 5th ed. New York: Free Press; 2003.
17. Winickoff JP, Berkowitz AB, Brooks K, et al. State-of-the-art interventions for office-based parental tobacco control. *Pediatrics* 2005;115:750–60.
18. Winickoff JP, Hibberd PL, Case B, et al. Child hospitalization: an opportunity for parental smoking intervention. *Am J Prev Med* 2001;21:218–20.
19. Winickoff JP, Hillis VJ, Palfrey JS et al. A smoking cessation intervention for parents of children who are hospitalized for respiratory illness: the stop tobacco outreach program. *Pediatrics* 2003;111:140–5.
20. Winickoff J, Tanski S, McMillen R, et al. A national survey of the acceptability of quitlines to help parents quit smoking. *Pediatrics* 2006;117:e695-e700.
21. Winickoff JP, Tanski SE, McMillen RC, et al. Child health care clinicians’ use of medications to help parents quit smoking: a national parent survey. *Pediatrics* 2005;115:1013–7.
22. The health consequences of involuntary exposure to tobacco smoke: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2007.
23. Hall N, Hipple B, Friebely J, et al. Addressing family smoking in child health care settings. *J Clin Outcomes Manag* 2009;8:367–73.
24. Winickoff JP, Friebely J, Tanski SE, et al. Beliefs about the health effects of “thirdhand” smoke and home smoking bans. *Pediatrics* 2009;123:e74-e79.
25. Matt GE, Quintana PJ, Destailats H, et al. Thirdhand tobacco smoke: emerging evidence and arguments for a multidisciplinary research agenda. *Environ Health Perspect* 2011;119:1218–26.
26. Dempsey JH, Friebely J, Hall N, et al. Parental tobacco control in the child healthcare setting. *Current Pediatric Reviews* 2011;7:115–22.
27. Winickoff JP. Pediatrician-led program increases provision of smoking cessation support, boosts quit rates among parents. *Innovations Med* 2011. Accessed 15 May 2012 at <http://innovations.ahrq.gov/content.aspx?id=2580>.

Copyright 2012 by Turner White Communications Inc., Wayne, PA. All rights reserved.