

# Pediatricians' Confidence and Behaviors in Smoking Cessation Promotion and Knowledge of the Smoking Cessation Trust

Katharine Hall, MSc, MD,<sup>1,2</sup> Steve Kisely, MD, PhD,<sup>3</sup> Mariella Gastanaduy, MPH,<sup>4</sup> Fernando Urrego, MD<sup>2,5</sup>

<sup>1</sup>Department of Research, Ochsner Clinic Foundation, New Orleans, LA <sup>2</sup>The University of Queensland School of Medicine, Ochsner Clinical School, New Orleans, LA <sup>3</sup>Department of Psychiatry and Public Health, The University of Queensland School of Medicine, Brisbane, Queensland, Australia <sup>4</sup>Office of Biostatistical Support, Ochsner Clinic Foundation, New Orleans, LA <sup>5</sup>Department of Pediatric Pulmonology, Ochsner Health Center for Children, Ochsner Clinic Foundation, New Orleans, LA

**Background:** Secondhand smoke exposure increases morbidity and mortality in children. Thirty-one percent of caregivers who accompany their children to the Ochsner Health Center for Children smoke, and none uses the services of the Smoking Cessation Trust (SCT), a free smoking cessation program for eligible Louisiana residents who began smoking before 1988. The objective of this study was 2-fold: first, to assess and compare pediatricians' confidence and behaviors in regard to smoking cessation promotion with caregivers, and second, to determine pediatricians' knowledge and comfort level with the SCT.

**Methods:** Pediatricians were given a questionnaire to assess 12 parameters regarding their confidence and practice when screening, counseling, and referring caregivers to smoking cessation programs.

**Results:** Thirty-six questionnaires were administered, of which 27 were completed (75%). Only 7.41% of respondents had formal training in smoking cessation, 18.52% had never heard of the SCT, and 92.59% do not refer to the SCT. All the pediatrician respondents stated that they were confident in their ability to screen for secondhand smoke exposure, 62.96% were confident in providing counseling, and 44.44% were confident in offering referrals. Most pediatricians very often or always screened for secondhand smoke exposure (77.78%); however, only 25.93% counseled smoking caregivers to quit, and only 11.11% provided a smoking cessation referral. Pediatricians stated that they were confident to screen, counsel, and refer caregivers; however, they were significantly less likely to report actually screening for secondhand smoke exposure ( $P < 0.05$ ), counseling ( $P < 0.05$ ), and referring caregivers ( $P < 0.05$ ).

**Conclusion:** Efforts should be made to increase the rate by which pediatricians provide smoking cessation, counseling, and referrals to the SCT through education and training.

**Keywords:** Smoking, smoking cessation, tobacco smoke pollution, tobacco use cessation

Address correspondence to Fernando Urrego, MD, Ochsner Health Center for Children, Ochsner Clinic Foundation, 1315 Jefferson Hwy., New Orleans, LA 70121. Tel: (504) 842-3900. Email: [turrego@ochsner.org](mailto:turrego@ochsner.org)

## INTRODUCTION

Secondhand smoke exposure increases morbidity and mortality in children.<sup>1-3</sup> According to the Centers for Disease Control and Prevention, 54% of children aged 3-11 years have continuous secondhand smoke exposure.<sup>4</sup> Discrepancies in secondhand smoke exposure also exist; children growing up in low-income families are 7-10 times more likely to be exposed to tobacco than children of higher socioeconomic households.<sup>5</sup>

Pediatricians follow their patients closely during the first 2 years of life, as the American Academy of Pediatrics (AAP) recommends 10 well child visits during this period.<sup>6,7</sup> This frequency of visits puts pediatricians in a prime position to screen for smoking status, counsel caregivers to stop

smoking, and refer caregivers to smoking cessation programs. In fact, the AAP recommends that pediatricians screen for secondhand smoke exposure at every visit.<sup>8</sup>

Despite this recommendation, many studies have demonstrated that pediatricians infrequently screen caregivers for smoking status and secondhand smoke exposure in the home.<sup>9,10</sup> A national survey demonstrated that only 9% of caregivers who smoked received smoking cessation counseling from a pediatrician during their child's office visit. Garg et al hypothesized that pediatricians do not feel confident with counseling adults, as they do not have direct experience with this age group.<sup>11</sup>

A recent study found that 31% of adults who bring their children to the Ochsner Health Center for Children smoke, a

percentage that is much higher than the US national average of 18%.<sup>12</sup> Consequently, the Ochsner pediatric population is particularly susceptible to the effects of secondhand smoke exposure. In addition, in our earlier study, we determined that 0% of surveyed caregivers who smoked were aware of the Smoking Cessation Trust (SCT) of Louisiana, a free smoking cessation program available to any Louisiana resident who began smoking prior to September 1, 1988.<sup>12</sup> Based on our earlier work, we estimate that Ochsner pediatricians can refer approximately 8,700 SCT-eligible smoking caregivers to the SCT,<sup>12</sup> so the promotion of smoking cessation by Ochsner pediatricians can potentially have an impact on this particularly vulnerable population.

The primary aim of this study was to assess and compare pediatricians' confidence level with their behaviors in screening caregivers for secondhand smoke exposure, providing smoking cessation counseling, and referring smoking caregivers to cessation programs. A secondary outcome of this study was to determine pediatricians' knowledge and utilization of the SCT.

## METHODS

The study population consisted of 36 general pediatricians practicing at 4 Ochsner pediatric clinics. The questionnaires were made available online to all pediatricians from November 15, 2015, to January 15, 2016.

Pediatricians were sent an email with a link to an online questionnaire that consisted of 12 questions (Figure). The email message informed the pediatricians that the questionnaire would take approximately 5-10 minutes to complete and that participation in the study was completely voluntary. The questionnaires were self-administered and included 6 questions designed to assess pediatricians' confidence and practice when screening, counseling, and referring caregivers to smoking cessation programs. Questions were based on a review of the literature regarding screening for secondhand smoke exposure, counseling caregivers to stop smoking, and referring caregivers to smoking cessation programs. Five faculty members in pediatrics and public health reviewed the questionnaire for content validity. The study was reviewed and approved by the Ochsner Institutional Review Board.

Three questions assessed demographics (sex of the pediatricians, the clinic in which they practice, and how many full years they had been practicing medicine). One question assessed prior professional training in smoking cessation. Two questions assessed knowledge of the SCT and the prevalence of their referrals to the SCT.

Three questions focused on pediatricians' confidence level regarding smoking cessation activities in the clinic. Participants were asked to state their level of agreement with the following questions: (1) screen caregivers for smoking behavior, (2) counsel smoking caregivers about cessation options, (3) refer caregivers to smoking cessation programs. A 5-point Likert scale was used to document pediatricians' level of agreement with the statements and was scored as 1=Definitely no, 2=Not really, 3=Indifferent, 4=Probably yes, 5=Definitely yes.

Three additional questions focused on pediatricians' behaviors regarding smoking cessation activities in the clinic. Participants were asked to state their level of

agreement with the following questions: (1) screen caregivers for smoking behavior, (2) counsel smoking caregivers about cessation options, (3) refer caregivers to smoking cessation programs. A 5-point Likert scale was used to document pediatricians' level of agreement with the statements and was scored as 1=Never, 2=Rarely, 3=Usually, 4=Very often, 5=Always.

A descriptive analysis was conducted to identify the distribution of pediatricians' characteristics such as sex, length of practice, clinic in which the pediatricians practiced, knowledge of the SCT, and confidence levels and behavior reports on screening, counseling, and referring smoking caregivers to the SCT.

The differences in pediatricians' confidence level and self-reported behavior on screening, counseling, and providing referrals were examined by using the Wilcoxon signed rank test, given that Likert scales can be considered ordinal data variables. Statistical significance was determined as  $P < 0.05$ .

## RESULTS

Thirty-six questionnaires were administered to 4 pediatric clinics in the Ochsner Health System, of which 27 were completed (75%).

Response rates at the 4 clinics ranged from a high of 100% to a low of 43%. In 3 of 4 clinics, the response rate was at or above 63%. Pediatrician clinic location, duration of practice, and training experience in smoking cessation are presented in Table 1. Most respondents were female (77.80%), practiced medicine at the Metairie/Destrehan clinic (clinic 2, 37.04%), had been practicing medicine for 11-15 years (25.93%), and had no prior professional training in smoking cessation (92.59%).

Familiarity with and use of the SCT are reported in Table 2. Most pediatricians were aware of the SCT but were not familiar with its services (77.78%), while 18.52% had never heard of the program. Only 3.70% reported being very

**Table 1. Pediatricians' Clinic Location, Duration of Practice, and Training Experience in Smoking Cessation**

Characteristics	n (% of Clinic)	% of Total
Total	27	100.0
Clinic location		
Clinic 1	9 (100)	33.33
Clinic 2	10 (83)	37.04
Clinic 3	6 (63)	22.22
Clinic 4	2 (43)	7.41
Years of practice		
0-5	5	18.52
6-10	5	18.52
11-15	7	25.93
16-20	4	14.81
>20	6	22.22
Completion of smoking cessation training		
Yes	2	7.41
No	25	92.59

<b>Please mark the choice the best reflects your response to the following items:</b>			
1. Your gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female	<input type="checkbox"/> Prefer no response
2. At which location do you conduct the majority of your medical practice?			
3. As of December 1 2015, how many full years have you been practicing medicine? <input type="checkbox"/> 0-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> 11-15 years <input type="checkbox"/> 16-20 years <input type="checkbox"/> >20 years			
4. Have you ever completed professional training in smoking cessation?	<input type="checkbox"/> Yes		<input type="checkbox"/> No
5. How familiar are you with the Smoking Cessation Trust (SCT) of Louisiana?	<input type="checkbox"/> I have never heard of the SCT	<input type="checkbox"/> I have heard of the SCT but don't know much about it	<input type="checkbox"/> I am very familiar with the SCT
6. Do you regularly refer caregivers to the SCT?	<input type="checkbox"/> Yes		<input type="checkbox"/> No

DIRECTIONS: In this next section, please use the 5-point response scale to respond to each item for the two following questions:

Questions 7-9. Right now, to what extent are you confident to do each of the following? **(Confident?)**

Questions 10-12. In the past 6 months, how often do you include the behavior described as part of your routine medical care of a patient? **(Behavior?)**

Statement	Confident?					Behavior?				
	Definitely No	Not Really	Indifferent	Probably Yes	Definitely Yes	Never	Rarely	Usually	Very Often	Always
Screen caregivers for smoking behavior	<input type="checkbox"/>									
Counsel smoking caregivers about cessation options	<input type="checkbox"/>									
Refer caregivers to smoking cessation programs	<input type="checkbox"/>									

**Figure. Study questionnaire.**

familiar with the SCT. Most pediatricians in our study reported that they have never referred a caregiver to the SCT (92.59%).

Pediatricians' confidence in their ability to promote smoking cessation among caregivers is presented in Table 3. All pediatricians (100%) stated that they were confident in their ability to screen for secondhand smoke exposure, 62.96% were confident in providing counseling, and 44.44% were confident in offering referrals.

Pediatricians' behavior related to caregiver smoking cessation is presented in Table 3. Most pediatricians reported that they screened caregivers for smoking behavior very often or always (77.78%); however, only 25.93% reported very often or always counseling smoking caregivers to quit, and only 11.11% reported providing a smoking cessation referral very often or always.

A comparison between confidence level and self-reported behavior is reported in Table 4. Each measure of smoking

**Table 2. Familiarity With and Use of the Smoking Cessation Trust (SCT)**

	n	%
Familiarity with SCT		
I have never heard of the SCT	5	18.52
I have heard of the SCT but don't know much about it	21	77.78
I am very familiar with the SCT	1	3.70
Refer caregivers to the SCT		
Yes	2	7.41
No	25	92.59

cessation promotion showed a significant difference between confidence level and actual self-reported behavior. Pediatricians stated that they were confident in screening, counseling, and referring caregivers; however, they were significantly less likely to report that they screened for secondhand smoke exposure, counseled caregivers to stop smoking, and referred caregivers to smoking cessation programs ( $P < 0.05$ ).

## DISCUSSION

The results of this study indicate that our surveyed pediatricians are very confident in their ability to screen for secondhand smoke exposure but are less confident about providing counseling and referrals to caregivers. Physician behavior followed this trend, with secondhand smoke exposure screening occurring most frequently, followed by counseling and referrals.

Interestingly, pediatricians reported significantly greater confidence in their ability to promote smoking cessation than actually doing so. Past studies have hypothesized that lack of confidence is the reason for pediatricians' failure to promote smoking cessation with caregivers. As previously noted, Garg et al stated that pediatricians do not spend a lot of time with adults, leading to a lack of self-assurance in this area.<sup>11</sup> Our study challenges this assumption, as most pediatrician respondents reported feeling confident, especially in their ability to screen for secondhand smoke exposure. Another factor, therefore,

must account for the discrepancy between confidence level and behavior.

A lack of formal training may account for the incongruity found in this study. In a 2010-2011 survey conducted by Hymowitz et al, 65% of pediatrics residency program directors stated that they offered smoking cessation training and supervision in 2012.<sup>13</sup> In addition, our survey indicates that the majority of our pediatricians received training more than 11 years ago. At that time, only 40% of pediatric residency directors stated that they incorporated structured smoking cessation education into the program.<sup>14</sup>

These results are in line with our findings, as most of the pediatricians we surveyed indicated that they have never received smoking cessation training (92.59%). Perhaps pediatricians are confident in their ability to provide smoking cessation services but have not been trained to incorporate these actions into their clinical encounters. Various studies have demonstrated that smoking cessation education can increase physician rates of screening, counseling, and referring caregivers to smoking cessation programs.<sup>9,11,15,16</sup> Furthermore, practicing pediatricians report that they are more likely to promote smoking cessation if they have training.<sup>17</sup> In addition to providing education, these training sessions may also serve as a reminder to pediatricians to promote the reduction of secondhand smoke exposure, as well as to provide strategies to incorporate such behaviors into everyday practice.

Hymowitz et al postulated that pediatricians do not believe that addressing tobacco use by caregivers is their responsibility.<sup>15</sup> Although segregating duties is ideal, reserving smoking cessation promotion for primary care physicians is not practical. As previously mentioned, caregivers visit their child's pediatrician often during the first 2 years of life, making this time an optimal period for modifying caregivers' behaviors.

Studies to date have used the National Cancer Institute and the Clinical and Community Effort Against Secondhand Smoke Exposure (CEASE) smoking cessation training program to increase the rate by which pediatricians deliver smoking cessation promotion with marked success.<sup>9,15,16,18</sup> These studies suggest that guidelines should be implemented to increase provider compliance with smoking cessation promotion, with an emphasis on counseling and

**Table 3. Pediatricians' Confidence and Behavior in Screening, Counseling, and Referring Caregivers to Smoking Cessation Programs**

	Confidence Level			Behavior		
	Not Confident, <sup>a</sup> n (%)	Indifferent, n (%)	Confident, <sup>b</sup> n (%)	Perform Rarely or Never, n (%)	Perform Usually, n (%)	Perform Very Often or Always, n (%)
Screen caregivers for smoking behavior	0 (0)	0 (0)	27 (100)	3 (11.11)	3 (11.11)	21 (77.78)
Counsel smoking caregivers about cessation options	8 (29.63)	2 (7.41)	17 (62.96)	17 (62.96)	3 (11.11)	7 (25.93)
Refer caregivers to smoking cessation programs	12 (44.44)	3 (11.11)	12 (44.44)	22 (81.48)	2 (7.41)	3 (11.11)

<sup>a</sup>Not Confident=Definitely no and Not really responses.

<sup>b</sup>Confident=Probably yes and Definitely yes responses.

**Table 4. Mean Difference Between Self-Reported Confidence and Behavior on Screening, Counseling, and Referring Caregivers**

	Confidence Level, Mean $\pm$ SD	Behavior, Mean $\pm$ SD	Z-Score	P Value <sup>a</sup>
Screen caregivers for smoking behavior	4.48 $\pm$ 0.5	4.00 $\pm$ 1.05	-2.67	<0.05
Counsel smoking caregivers about cessation options	3.44 $\pm$ 1.03	2.63 $\pm$ 1.09	-3.41	<0.05
Refer caregivers to smoking cessation programs	3.04 $\pm$ 1.1	1.93 $\pm$ 1.05	-4.20	<0.05

<sup>a</sup>Wilcoxon signed rank test.

referring caregivers.<sup>9,15,16,18</sup> In addition, education sessions can be developed to teach pediatricians how to approach smoking cessation from the standpoint of the child's health. Garg et al reported that pediatricians feel confident in discussing the harmful effects of secondhand smoke exposure as it relates to children with the children's caregivers.<sup>11</sup> This focus may be one mechanism by which pediatricians integrate smoking cessation promotion in their practice.

We found that Ochsner pediatricians are not familiar with the SCT and the services the program offers, so it is not surprising that most pediatricians are not referring smoking caregivers to this service. This underutilization of SCT services is not unique to the Ochsner population. Approximately 200,000 smokers in Louisiana are entitled to services provided by the SCT; however, only 30,731 eligible smokers applied for SCT-funded smoking cessation services in 2013.<sup>12</sup> The SCT has the potential to make a large social impact because it is a free program offered in a state that has a high prevalence of smokers.<sup>4,12</sup> However, one of the stipulations of the court settlement is that the SCT cannot advertise any services, making dissemination of information about the SCT extremely difficult.

This is where pediatricians come in. Pediatricians can disseminate information about the SCT to their patients' caregivers, and SCT services may help the caregiver stop smoking by assisting in their cessation efforts. Based on our results, however, Ochsner pediatricians need to be made aware of the SCT and its extensive services.

The literature supports the opinion that an intervention geared to pediatricians increases physicians' ability to refer caregivers to smoking cessation programs.<sup>14,18,19</sup> A review of the literature indicates that the best method to increase referral rates is for pediatricians to undergo smoking cessation training and be equipped with smoking cessation materials for distribution.<sup>9,11,14,18-22</sup> One suggestion for future studies is to implement interventions involving smoking cessation education and materials for pediatricians to increase the use of smoking cessation programs.

We acknowledge that a limitation of this study is the potential for nonresponse bias, as one of our surveyed clinics had a low response rate. All the clinics we surveyed are affiliated with the Ochsner Health System. We expect that each clinic in this study has equal access to smoking cessation resources; consequently, we do not expect that additional responses from the clinic with a low response rate would change our results. Despite this expectation, sample bias should be considered.

A second noteworthy limitation of this study is the potential for self-report bias. Confidence and behavior were

measured by self-report without an independent assessment of accuracy. However, any bias would likely be in the direction of underestimating the disparity between self-reported confidence and actual behavior given that counseling and referral could be seen as desired practice. In addition, questionnaires were anonymous to reduce respondent bias. Nonetheless, the intrinsic inaccuracy of self-reports should be considered when examining this study.

Finally, the questionnaire responses for assessing pediatricians' behavior in screening, counseling, and referring caregivers consisted of never, rarely, usually, very often, and always. Differentiating the variance between *usually* and *very often* may have caused confusion in our respondents. In future studies, words with clear, nonoverlapping definitions should be used.

## CONCLUSION

Our pediatric group reported that they screen, counsel, and refer patients at a significantly lower rate than their level of confidence indicates. In addition, our pediatricians are unfamiliar with and therefore underutilize the SCT services. Efforts should be made to increase the rate by which pediatricians provide smoking cessation, counseling, and referrals through education and training. Providing a smoking cessation educational intervention, with particular emphasis on screening, counseling, and referring caregivers to the SCT, is likely to provide pediatricians with the necessary tools to help reduce secondhand smoke exposure in infants and children.

## ACKNOWLEDGMENTS

*The authors have no financial or proprietary interest in the subject matter of this article.*

## REFERENCES

- Ezzati M, Lopez AD. Estimates of global mortality attributable to smoking in 2000. *Lancet*. 2003 Sep 13;362(9387):847-852.
- DiFranza JR, Aligne CA, Weitzman M. Prenatal and postnatal environmental tobacco smoke exposure and children's health. *Pediatrics*. 2004 Apr;113(4 suppl):1007-1015.
- Barnoya J, Glantz SA. Cardiovascular effects of secondhand smoke: nearly as large as smoking. *Circulation*. 2005 May 24; 111(20):2684-2698.
- Centers for Disease Control and Prevention. Tobacco Use: Smoking & Secondhand Smoke. September 2010. <http://www.cdc.gov/vitalsigns/TobaccoUse/SecondhandSmoke/index.html>. Accessed March 29, 2016.
- Singh GK, Siahpush M, Kogan MD. Disparities in children's exposure to environmental tobacco smoke in the United States, 2007. *Pediatrics*. 2010 Jul;126(1):4-13. doi:10.1542/peds.2009-2744.

6. American Academy of Pediatrics. *Guidelines for Health Supervision III*. Elk Grove Village, IL: American Academy of Pediatrics; 1997.
7. Fiore MC, Jaen CR, Baker TB, et al. A clinical practice guideline for treating tobacco use and dependence: 2008 update: a US Public Health Service report. *Am J Prev Med*. 2008 Aug;35(2): 158-176. doi:10.1016/j.amepre.2008.04.009.
8. Sims TH; Committee on Substance Abuse. From the American Academy of Pediatrics: technical report—tobacco as a substance of abuse. *Pediatrics*. 2009 Nov;124(5):e1045-e1053. doi:10.1542/peds.2009-2121.
9. Beaty T, Dornelles AC, Sahuque T, Urrego F. Evaluation of pediatricians' adherence to tobacco prevention, control, and treatment guidelines before and after an educational outreach program. *Ochsner J*. 2013 Fall;13(3):375-379.
10. Winickoff JP, Buckley VJ, Palfrey JS, Perrin JM, Rigotti NA. Intervention with parental smokers in an outpatient pediatric clinic using counseling and nicotine replacement. *Pediatrics*. 2003 Nov;112(5):1127-1133.
11. Garg A, Serwint JR, Higman S, et al. Self-efficacy for smoking cessation counseling parents in primary care: an office-based intervention for pediatricians and family physicians. *Clin Pediatr (Phila)*. 2007 Apr;46(3):252-257.
12. Hall KE, Egger AL, Dezara C, Kisely S, Urrego FA. The Smoking Cessation Trust Program of Louisiana: the pediatrician's role in identifying and referring eligible caregivers. *Ochsner J*. 2015 Fall;15(3):237-240.
13. Hymowitz N, Schwab JV. Pediatric residency training director tobacco survey II. *Pediatrics*. 2012 Oct;130(4):712-716. doi: 10.1542/peds.2011-3570.
14. Hymowitz N, Schwab J, Eckholdt H. Pediatric residency training on tobacco: training director tobacco survey. *Prev Med*. 2001 Dec;33(6):688-698.
15. Hymowitz N, Schwab J, Eckholdt H. Pediatric residency training on tobacco. *Pediatrics*. 2001 Jul;108(1):E8.
16. Hipple B, Nabi-Burza E, Hall N, Regan S, Winickoff JP. Distance-based training in two community health centers to address tobacco smoke exposure of children. *BMC Pediatr*. 2013 Apr 17; 13(1):56. doi:10.1186/1471-2431-13-56.
17. Zapka JG, Fletcher K, Pbert L, Druker SK, Ockene JK, Chen L. The perceptions and practices of pediatricians: tobacco intervention. *Pediatrics*. 1999 May;103(5):e65.
18. Hymowitz N, Pyle SA, Haddock CK, Schwab JV. The pediatric residency training on tobacco project: four-year parent outcome findings. *Prev Med*. 2008 Aug;47(2):221-224. doi:10.1016/j.ypmed.2008.05.011.
19. Sharifi M, Adams WG, Winickoff JP, Guo J, Reid M, Boynton-Jarrett R. Enhancing the electronic health record to increase counseling and quit-line referral for parents who smoke. *Acad Pediatr*. 2014 Sep-Oct;14(5):478-484. doi:10.1016/j.acap.2014.03.017.
20. Collins RL, D'Angelo S, Stearns SD, Campbell LR. Training pediatric residents to provide smoking cessation counseling to parents. *ScientificWorldJournal*. 2005 May 13;5:410-419.
21. Klein J, Sesselberg T, Pbert L, et al. Successful recruitment and distance training of clinicians in an adolescent smoking cessation pilot study in AAP PROS practices. *J Adolesc Health*. 2010;46(2 suppl 1):S58-S59.
22. Scal P, Hennrikus D, Ehrlich L, Ireland M, Borowsky I. Preparing residents to counsel about smoking. *Clin Pediatr (Phila)*. 2004 Oct;43(8):703-708.

*This article meets the Accreditation Council for Graduate Medical Education and the American Board of Medical Specialties Maintenance of Certification competencies for Patient Care, Medical Knowledge, and Systems-Based Practice.*