Thirdhand Smoke: Clinical and Policy Approaches

Thursday, September 27, 2012 - 1:00 pm ET

Welcome Pioneers for Smoking Cessation







During the Webinar

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- Webinar is being recorded
- Questions are encouraged throughout via the chat box

Webinar Objectives:

- Provide a brief overview of secondhand and thirdhand smoke
- Learn ways to promote a smoke-free home and work environment
- Discuss strategies providers can use to address exposure to both secondhand and thirdhand smoke among patients

Moderator



- Catherine Saucedo
 - Moderator
 - Deputy Director
 Smoking Cessation Leadership
 Center, University of California,
 San Francisco

csaucedo@medicine.ucsf.edu

Agenda

- Welcome and Greetings
 - Catherine Saucedo, Deputy Director, SCLC, moderator
 - · Alicia Smith, xxx, CADCA
 - Steve Schroeder, Director, SCLC
- Presentation from Jonathan Winickoff, MD, MPH
 - Associate Professor of Pediatrics, Harvard Medical School
- Questions & Answers
- Technical Assistance and Closing Remarks

Disclosure: Faculty speaker, moderator, and planning committee members have disclosed no financial interestrarnagement or affiliation with any commercial componies who have provided products or services relating to their presentation or commercial support for this continuing medical education activity.

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Greetings from CADCA



- Alicia D. Smith, MPH
 - Project Manager,
 Tobacco Programs, CADCA
 asmith@cadca.org

Welcome

- Steven A. Schroeder, MD
 - Director, Smoking Cessation Leadership Center
 - Distinguished Professor of Health and Health Care, Department of Medicine, UCSF



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Today's Presenter

- Jonathan P. Winickoff, MD, MPH
 - Associate Professor of Pediatrics, Harvard Medical School
 - MGH Center for Child and Adolescent Health Policy

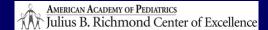






Thirdhand Smoke: Clinical and Policy Approaches

Jonathan P. Winickoff, MD, MPH Associate Professor in Pediatrics Harvard Medical School September 27, 2012



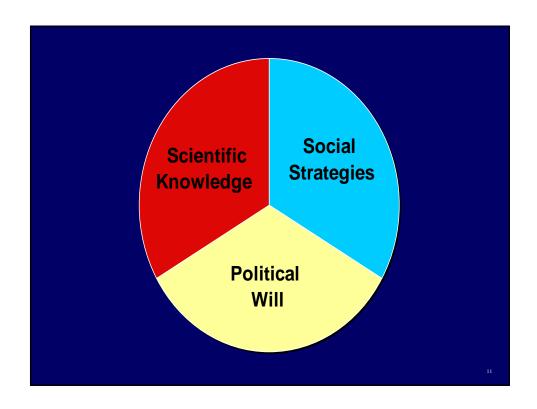


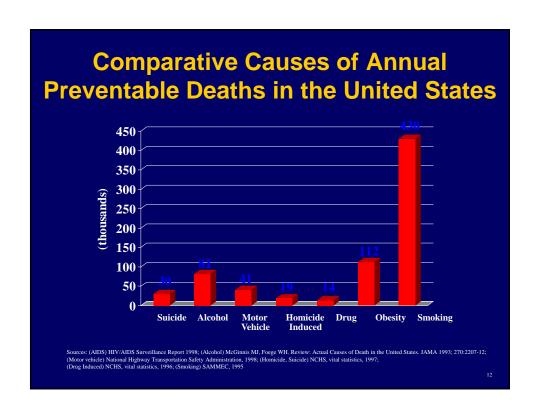
...dedicated to eliminating children's exposure to secondhand smoke and tobacco



And

...ensuring that all clinicians ask the right questions about tobacco and secondhand smoke exposure





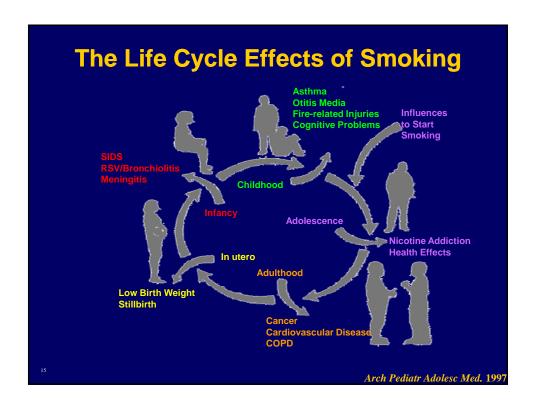
Tobacco Smoke Ingredients

There is <u>NO</u> risk-free level of exposure to tobacco smoke.

US Department of Health and Human Service:

Children and Tobacco Smoke

- Asthma, RSV pneumonia, SIDS, Otitis media, Metabolic Syndrome, Dental caries
- School absenteeism
- Sleep problems
- Hospitalizations
- Developmental delay



Even at Low Levels of Exposure? Yes

Yolton et al; using NHANES,

 Demonstrated a significant inverse relationship between a biomarker of tobacco smoke (cotinine) and block design, reading, and math scores

Wilson, et al; also using NHANES,

 Relationship between cotinine levels and serum levels of antioxidants, vitamin C, and carotenoids

What is Third-hand Smoke?

- Third-hand smoke is the left-over contamination in a room/car/clothing that persists after the cigarette is extinguished
 - The condensate on the glass from a smoking chamber was used in one of the first studies linking smoking and cancer (Wynder, 1953)
 - Homes and cars in which people have smoked may smell of cigarettes for long periods

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Remain on surfaces, in dust Re-emitted into gas phase React with oxidants to yield secondary pollutants Burton (2011)





The Media has Popularized the Third-Hand Smoke Concept



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Environments with Potential THS Exposure

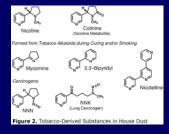
- Homes of smokers
- Apartments & homes previously occupied by smokers
- Multi-unit housing where smoking is permitted
- Automobiles of smokers (used cars)
- Hotel rooms

Evidence of THS Exposure Indoors

· House dust & surfaces contain:

nicotine
3-ethenylpyridine (3-EP)
polycyclic aromatic hydrocarbons
NNK

nicotelline



 Depending on the compound, rates of these compounds may be 50 times higher in homes where people smoke

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Possible Routes of Exposure— Dermal uptake

- Effective exposure depends on area of skin in contact with contaminated surfaces/body volume
- Sources: surfaces, dust, clothes, bedding--Thirdhand smoke dominates
- Children>adults
- Proof of concept
 - 1. Nicotine toxicity in child harvesters of tobacco
 - 2. Wynder, painting tobacco condensate on mice

Dermal Absorption of TSNAs

- Manuela Martins-Green (UC Riverside) and Peyton Jacob III
- Dermal application of NNK in mice
- NNAL and iso-NNAL measured in urine with positive exposure time urine concentration relationship

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Pathophysiological Implications

- Low level cumulative exposure over long periods of time
- Potential exposure to irritants, oxidants, pro-inflammatory chemicals, carcinogens, vascular toxins

Possible Routes of Exposure— Ingestion

- Effective Exposure depends on quantity of contaminated dust ingested/body weight
- Sources: dust, toys, food, mouthing behaviors-- thirdhand smoke dominates
- Children>adults...might be 20 times greater
- Proof of concept
 - 1. Children in homes where smoking has occurred in the past have detectable cotinine levels
 - 2. Level of contamination in dust of bedroom correlates with cotinine levels

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Possible Routes of Exposure— Inhalation

- Effective exposure depends on respiratory exchange rate and body weight
- Source: air--Secondhand smoke usually dominates but THS may dominate when spaces are heavily contaminated and active smoking occurs when child not present
- Children>adults
- Proof of concept: passive air monitoring

Biomarker Ratios as a Better Tool to Indentify THS Exposure

NNK/nicotine - environmental assessment

Urine NNAL/cotinine – human exposure

- Rationale
 - As smoke ages nicotine levels decline and TSNA levels rise
 - Metabolism converts nicotine to cotinine and NNK to NNAL

The NNAL/Cotinine Ratio in Active and Passive Smokers and in Kids

Urine NNAL/Cotinine Ratio X 10-4

Active Smokers Passive Smokers Tots¹ 1.2 6.6 74

This suggests that measuring cotinine only would underestimate NNK exposure,² and is consistent with our hypothesis that the ratio is higher in people exposed to THS as compared to SHS (Hand to mouth behavior in toddlers)

Healthy Tots Project - San Diego State University, Mel Hovell and Joy Zakarian Benowitz N, Goniewicz ML, Eisner MD, Lazcano-Ponce E, Zielinska-Danch W, Koszowski B, Sobczak A, Havel C, Jacob P 3rd. Urine cotinine underestimates exposure to the tobacco-derived lung carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in passive compared with active smokers. Cancer Epidemiol Biomarkers Prev. 2010:2795-800.

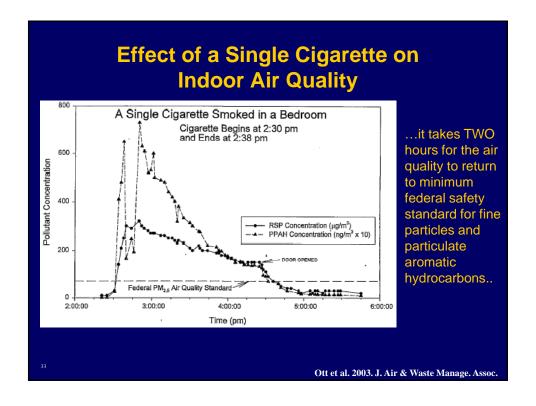
Thirdhand Smoke Accumulates

- THS accumulates in the homes of people who smoke
- Matt et. al. showed that even after a home remain vacant for 2 months and a prepared for the new residents, THS contamination remains on surfaces and in house dust.
- Non-smokers living in former smokers homes are exposed to tobacco smoke toxins.

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Reason for Concern

- Exposure through shared ventilation, along air ducts, leaky walls.
- The numbers add up quickly, if just 5 people in a building smoke ½ pack of cigarettes in their apartment each day—5 X 10 X 365; the load to the building is over 18,000 cigarettes each year.



Can smoking in one unit contaminate another unit?

- Kraev et al. (2009) demonstrated, using "Hammond" filters, that air in 89% of non-smoking units was contaminated with nicotine.
- When another resident smelled cigarette smoke the levels in that apartment were higher.
- But people didn't need to smell cigarette smoke to be contaminated.

Does this Exposure Get into Children?

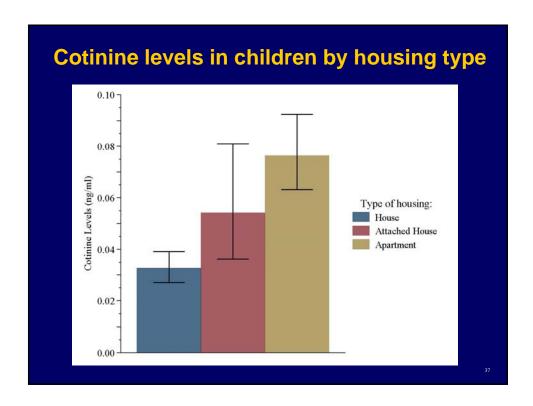
 Whatever the combination of involuntary (SHS+THS) exposure...

Do children who live in multiunit housing have higher cotinine levels than children who live in detached housing

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Cotinine levels in children

- 2001-2006 National Health and Nutrition Examination Survey (NHANES)
- Hypothesized and found that among 4,782
 children ages 6 to 18 years, in households that do not allow smoking in their own home, children who live in apartments have a 140% higher cotinine level than children living in detached homes,
- This relationship persists when controlling for poverty and race/ethnicity



Legal and ethical framework

- 7% of housing authorities smokefree and increasing.
- Due to legal and regulatory precedent, the health consequences of tobacco smoke, and the inability of non-smokers to escape exposure... a recent NEJM paper argues that principles of social justice can only be met by smokefree housing policies. (Winickoff et al NEJM 2010)
- Policies could proceed as leases are renewed, and safe forms of nicotine replacement therapy could be offered to support addicted individuals

Completely Smokefree

- Although no safe level of tobacco smoke exposure, quantifying the relative exposure due to SHS and THS is difficult
- Especially across different age ranges in the human life cycle
- However, the state of the science supports completely smokefree environments for all children—even at times when children are not present

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Use social strategies

- Social strategies can be very effective when you put a human face on the problem of parental smoking.
- Public support for protecting those at risk
- The press and the media can help

Newsweek Magazine Article

Ban Smoking in Jub lie Housing Jonathan I. Win ideall SHUKUHHE Jam be ---

0 2009 Ban Sandang in Rublic Hausing (Print Aradic (Movemed, and Page Loft) bug Movemorewa കൊടി (2012) Maugushini (16/2009)

The Cessation Imperative

The only way to protect non-smoking family members completely is for all family smokers to quit completely

Cessation is the Goal

- Eliminate the #1 cause of preventable morbidity and mortality
- Eliminate tobacco smoke exposure of all household members
- Decrease economic impact
 - -Average cost per pack across US > \$5.75
- Decrease teen smoking rates

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Tobacco Users Want to Quit

- 70% of tobacco users report wanting to quit
- 44% have made at least one quit attempt in the past year
- Users say expert advice is important to their decision to quit
 - The expert can be a physician, clinician, health care worker - any member of your practice!

Research in Child Healthcare Settings

- Majority of parents would accept medications to help them quit—only 7% get it (Winickoff et al 2005)
- Majority of parents want to be enrolled in a telephone quitline—only 1% get enrolled (Winickoff et al 2005)
- Majority of parents would be more satisfied with visit if child's doctor addressed their smoking (Cluss 2002; Frankowski 1993; Groner 1998: Klain 1995)

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Pediatric Visit Creates a Teachable Moment for Smoking Cessation

- Many parents see their child's health care provider more often than their own
- Interventions in the pediatric office setting have been successful:
 - Decreased number of cigarettes smoked and home nicotine levels
 - Increases in parent-reported smoke-free homes and quit rates (Rosen et al Pediatrics 2012)

Principles of Tobacco Dependence Treatment

- Tobacco dependence is a chronic, relapsing condition
 - Nicotine is addictive
 - Effective treatments exist
 - Every person who uses tobacco should be offered treatment

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Three Easy Steps

Step 1: Ask

Step 2: Assist

Step 3: Refer

Step One: Ask

Ask families about tobacco use and rules about smoking in the home and car

Every year, ask families:

"Does any member of the household use tobacco?"

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Step One: Ask

If the parent/patient you're speaking with uses tobacco.. ask if they are

- Interested in quitting?
- Would they like a medication to help them quit?
- Want to be enrolled in the free quitline?

Step Two: Assist

- Use the responses on Step One to guide how you assist with addressing tobacco use.
 - Interested in Quitting?
 - Set a quit date in the next 30 days
 - Prescribe or recommend medication for assisting quit
 - Enroll in Quitline
- Document services delivered to enhance complexity of visit to level 4— code 989.84

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A New Health Message: Tobacco Smoke Contamination, or Third-Hand Smoke...







Step Three: Refer

Refer families who use tobacco to outside help

- Use your state's "fax to quit" quitline enrollment form
- Arrange follow-up with tobacco users
- Record in the child's medical record

Quitlines

Quitlines are free and confidential programs providing evidence-based stop smoking services to U.S. residents who want to stop smoking or using other forms of tobacco.

1-800-QUIT-NOW

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State-Specific Fax-to-Quit Form for Pediatrics (CA form pictured) Security of the Company of the Carlos of the Ca

Quitline Services

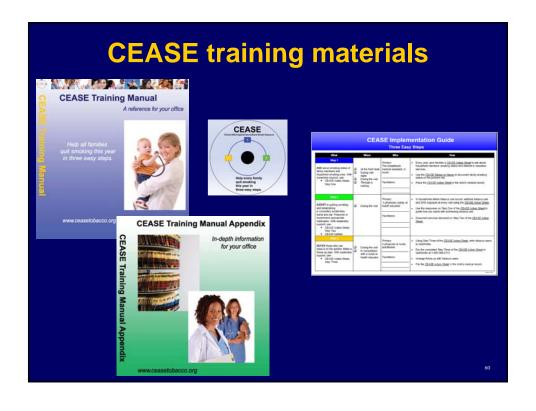
- Upon receipt of enrollment form
 - Trained counselor conducts 10-minute telephone interview
 - Mails Quitline materials
 - Offers multiple counseling options
- Free telephone counseling sessions

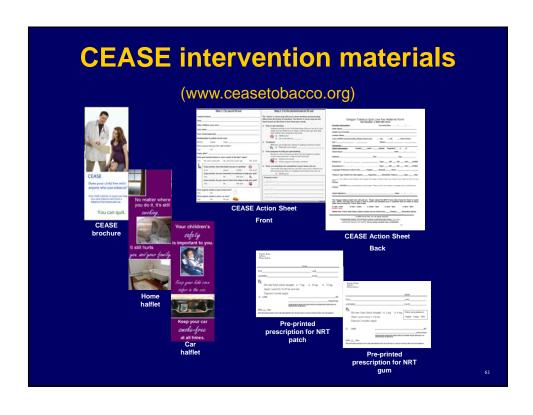
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In pediatrics there are easy (and proven) ways to put it all together....

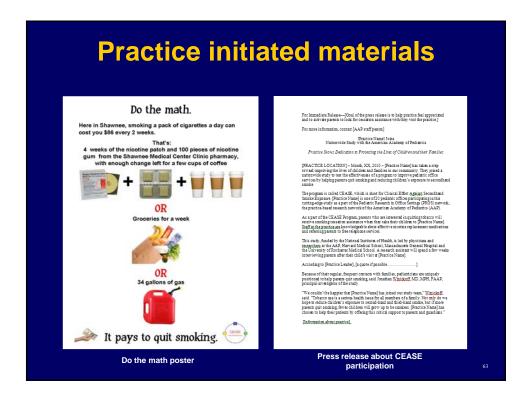
www.ceasetobacco.org





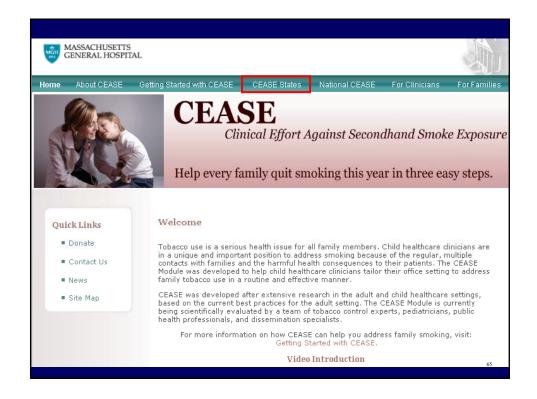






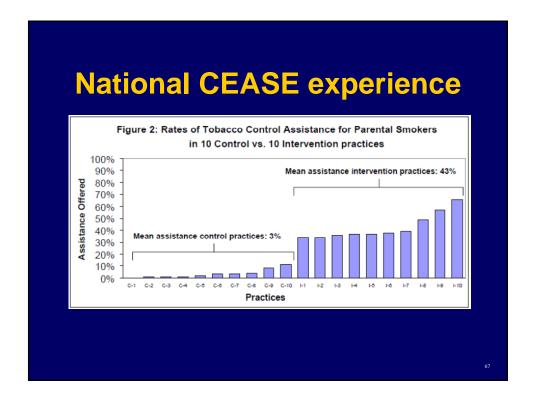
Link to Video

- Demonstration
- 5 available pediatric tobacco control scenarios
- Full training video is available on the website www.ceasetobacco.org
- EQIPP module: "Eliminate tobacco use and Exposure" helps train the office in CEASE



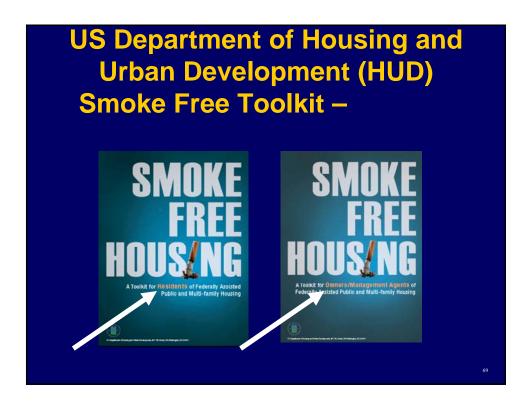
But How?

- Clinical Staff: Can ASK, ASSIST, and REFER
- Administrative Staff: Can keep materials stocked and administer screening questionnaires
- Management: Need to support the "cause"



Pediatricians as Partners

- AAP policy recommends that pediatricians help every parent quit smoking and help eliminate tobacco use and exposure of all household members; support clean-air and smoke free environment ordinances and legislation in their community and state.
- To aid in accomplishing smoke free goals you can work with pediatricians and child healthcare clinicians to:
 - Develop a state-wide strategy to ensure that every pediatrician is trained to deliver the three steps: Ask, Assist, Enroll
 - Work with AAP chapters to pass state legislation or local ordinances requiring that multi-unit housing be smoke free



AAP Resources

• Clinical and Community Effort Against Secondhand Smoke Exposure

Ceasetobacco on Facebook

 Maintenance of Certification-Tobacco Control Module

http://www.pedialink.org/cme/eqip ptc

•

Team Effort

- MGH: Susan Regan, Bethany Hipple, Janelle Dempsey, Nancy Rigotti, Yiuchiao Chang, Emara Nabi, Jim Perrin, Blair Dickinson.
- PROS: Stacia Finch, Eric Slora, Victoria Weiley, Mort Wasserman, Hiedi Woo, Jeremy Drehmer, PROS Coordinators, PROS Steering
- AAP/Tobacco Consortium/Richmond Center: Jonathan Klein, Debbie Ossip-Klein; Regina Schaffer, Kiran Patel
- National Advisory: Sue Curry, Michael Fiore, Don Berwick, Mel Hovell, Karen Emmons, David Abrams.
- MA DPH: Donna Warner; Indiana DPH: Karla Sneegas

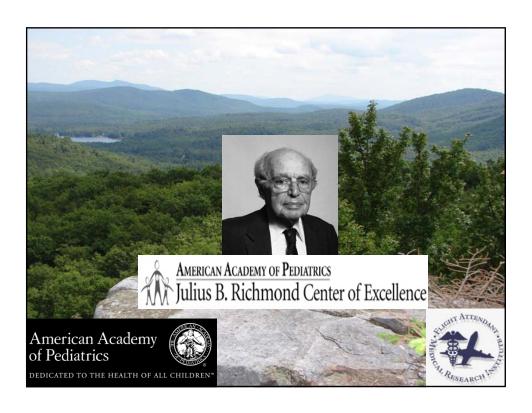
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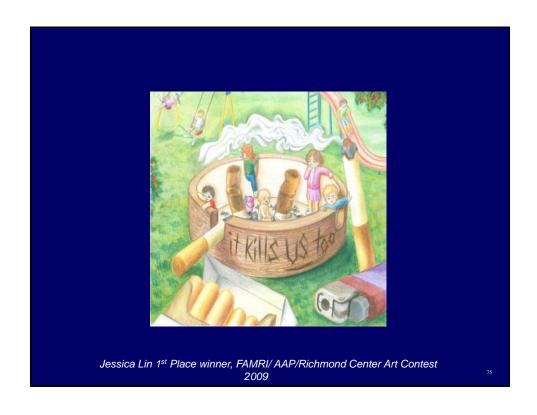
Summary

- Outpatient settings should be used to deliver tobacco dependence treatments to all patients and household members
- Parents and families should be the number one priority population for tobacco control efforts

Changing the World

- · Start with the science
- Tell anecdotes and get media support as part of creating a social strategy
- Use child healthcare clinician partners to mobilize political will for societal change





Contact Information Jonathan P. Winickoff MD, MPH Director, Pediatric Tobacco Control Research MGH Tobacco Research and Treatment Center Harvard Medical School American Academy of Pediatrics Director, Translational Research Julius B. Richmond Center of Excellence

jwinickoff@partners.org

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Questions & Answers

 Feel free to ask questions via the chat box.





Closing Remarks

Please help us by completing the post-webinar survey.

Thank you for your continued efforts to combat tobacco.

SAVE THE DATE!

Tuesday, October 23rd, 1 pm ET

"Tobacco Free State Psychiatric Hospitals: From Policy to Practice", with panelists from NRI, the research arm of the National Association of State Mental Health Program Directors (NASMHPD)

Dr. Winickoff's Bio:

Dr. Winickoff is a member of the Center for Child and Adolescent Health Policy, a practicing pediatrician at MGH and Associate Professor of Pediatrics at Harvard Medical School. He has training and experience in health services research, medical ethics, neurobiology, statistics, and behavioral theory. Dr. Winickoff has received numerous awards including the Secretary's Award for Distinguished Service for "protecting the health of the United States public," and the 2011 Academic Pediatric Association Health Policy Award in recognition of cumulative public policy and advocacy efforts that have improved the health and well-being of infants, children, and adolescents. He served for 7 years as the Chair of the American Academy of Pediatrics (AAP) Julius Richmond Center of Excellence Tobacco Consortium, a national group of researchers who take a family-centered approach to tobacco control issues that affect children. He has authored over 70 peer-reviewed papers, 40 addressing tobacco control in child healthcare settings. Two of these studies were the first to evaluate the delivery of smoking cessation pharmacotherapies to parents in the pediatric setting.

He has drafted key tobacco control policy for the AMA, AAP, and the APA and served as a scientific advisor for the CDC Communities Putting Prevention to Work (CPPW grants), the Massachusetts Tobacco Control Program, Indiana Tobacco Control Program, Head Start, WIC, the Food and Drug Administration, Department of Housing and Urban Development, and the U.S. Surgeon General through the Interagency Committee on Smoking and Health. The national program his team developed out of their research known as CEASE, the Clinical and Community Effort Against Secondhand Smoke Exposure, is available for free at www.ceasetobacco.org . A \$4 million dollar award from NIH-NCI/NIDA/AHRQ (R01-CA127127-01) is funding a national dissemination trial of CEASE through the PROS network of the AAP. Recently, his team completed an online CME tobacco control module for Pedialink, an online learning platform of the AAP. With NIH ARRA funding, he collaborated with several AAP committees and the elearning division to build a tobacco control maintenance of certification module—Eliminating Tobacco Use and Exposure, which launched March 1, 2011.

He and his team is researching the issue of smoking in multi-unit housing. With colleagues at the AAP Richmond Center, Harvard School of Public Health, and Massachusetts General Hospital, he pursues public education, legal ethical and social justice analyses, and biochemical analysis of those living in multi-unit housing, and national attitudes of indoor smokefree policies among multi-unit housing residents.