

June 14, 2017

The Honorable Benjamin S. Carson, Sr., MD Secretary Department of Housing and Urban Development 451 Seventh Street SW Washington, DC 20410

Re: Reducing Regulatory Burden; Enforcing the Regulatory Reform Agenda Under Executive Order 13777; Docket No. FR-6030-N-01

Dear Secretary Carson:

As health organizations dedicated to reducing the death and disease caused by tobacco use and exposure to secondhand smoke, we appreciate this opportunity to respond to a request for comment published in the *Federal Register* on May 15, 2017 (Docket No. FR-6030-N-01), "Reducing Regulatory Burden; Enforcing the Regulatory Reform Agenda Under Executive Order 137775." We understand that the Department of Housing and Urban Development (HUD) will be establishing a Regulatory Task Force to evaluate "current regulations that may be outdated, ineffective, or excessively burdensome, and, therefore, warranting repeal, replacement, or modification." As organizations that strongly support the HUD rule finalized last year that implements smokefree policies in government-owned public housing, we write to urge you to maintain this important policy that will greatly improve the health of public housing residents. This rule is innovative, effective, and is not excessively burdensome to implement. It has represented a major step forward in protecting the millions of Americans who currently live in federally-owned public housing from the harms of tobacco.

#### Secondhand Smoke Exposure Poses Serious Health Threats to Children and Adults

Secondhand smoke (SHS) contains many poisons and cancer-causing chemicals, including nicotine, carbon monoxide, ammonia, formaldehyde, hydrogen cyanide, nitrogen oxides, phenol, sulfur dioxide, lead, and others. Twenty years ago, in 1992, the US Environmental Protection Agency classified SHS as a Class A known human carcinogen. As such, SHS poses health concerns for all individuals, particularly children and pregnant women.

The reports of direct health effects of SHS exposure are numerous and growing in number. The most comprehensive report of these effects is the 2006 US Surgeon General's report, *The Health Consequences of Involuntary Exposure to Tobacco Smoke*.<sup>3</sup> The report details how even small amounts of exposure can have serious health effects and concludes that there is no safe level of exposure to SHS. The 2006 report also found that SHS can cause or exacerbate a wide range of adverse health effects, including lung cancer, heart disease, respiratory infections, sudden infant death syndrome (SIDS) and asthma. The 2014 Surgeon General's report, *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General* found that SHS is also a cause of stroke.<sup>4</sup>

The evidence supporting the association of SHS exposure of children with respiratory illnesses is strong. Increased rates of lower respiratory illness, middle-ear infections, tonsillectomy and adenoidectomy, cough, asthma and asthma exacerbations, hospitalizations, and SIDS have been reported. It has been estimated that SHS exposure causes asthma symptoms in 200,000 to one million children. One study indicated that children with asthma who were exposed to SHS had additional co-morbid conditions including higher levels of obesity and less healthcare usage compared with unexposed children. The scope of these illnesses is huge: SHS exposure exacerbates many chronic diseases. Children with sickle cell disease who are exposed to SHS have a higher risk of crises that require hospitalization than do unexposed children. Finally, in addition to the exacerbating chronic conditions, SHS is immediately lifethreatening, especially among vulnerable populations such as infants. In one year alone, SHS exposure resulted in the death of 900 infants.

Another effect of SHS exposure is increased school absenteeism. Analysis of data from the National Health Interview Survey (NHIS) indicated that 24 to 36 percent of school absenteeism was related to SHS exposure in children ages 6 to 11. The study also showed that the number of days that a child was absent from school predictably increased with the number of active smokers in the household.<sup>10</sup> Even very low levels of SHS exposure, such as those seen in a child with a parent who smokes only outside,<sup>11</sup> have been associated with decreases in reading and math scores.<sup>12</sup>

In addition to SHS exposure for developing children and adolescents, prenatal exposure to SHS has been associated with low birthweight, prematurity<sup>13</sup>, and future susceptibility to nicotine addiction as well as significant adverse events in childhood development. One of the significant consequences of prenatal tobacco exposure is sensitization of the fetal brain to nicotine, which results in increased likelihood of addiction when the brain is exposed to nicotine at a later age. Studies of rodents<sup>14</sup> and primates<sup>15,16</sup> that were exposed prenatally to tobacco have demonstrated subtle brain changes that persist into adolescence and are associated with tobacco use, nicotine addiction, and reduced cognitive function.<sup>17</sup> Population-based human studies have demonstrated associations between prenatal tobacco exposure and early tobacco experimentation<sup>18</sup> as well as increased likelihood of tobacco use in adolescence and adulthood.<sup>19</sup> In addition, further research has indicated adverse developmental effects on infants,

children, and adolescents including lessened perceptual skills, deficits in information processing, and a significantly higher likelihood of being diagnosed with attention deficit hyperactivity disorder (ADHD).<sup>20</sup>

Smoking materials are also one of largest causes of injuries, deaths and direct property damage from fires. National Fire Protection Association data from 2014 show that smoking materials, including cigarettes, pipes and cigars started as an estimated 17,200 fires in the U.S. causing 570 deaths, 1,140 injuries and \$426 million in direct property damage. When compared to fire injuries and deaths overall, smoking materials are responsible for 21 percent of home fire deaths and 10 percent of home fire injuries.<sup>21</sup>

## **Smokefree Housing Policies Save Money**

Smokefree policies also have collateral benefits for building managers as nonsmoking units are significantly less expensive to turn over than smoking units when a tenant moves out. Turnover costs are two to seven times higher in homes when smoking is allowed, smokefree policies in public housing can result in millions of dollars in savings to PHAs and property managers annually.<sup>22,23</sup> A 2014 study found that prohibiting smoking in all government subsidized housing would produce cost savings of almost \$500 million per year, including over \$133 million in renovation expenses and over \$52 million in smoking-attributable fire losses.<sup>24</sup> Because the risk of fire is also reduced when smokefree policies are implemented, some insurance companies offer discounts on property casualty insurance.<sup>25</sup> Reductions in SHS will also lead to lower costs to society, both from decreased health care costs and improved productivity. Smokefree policies may also encourage existing smokers to quit.

# Residents of Public Housing are Involuntarily Exposed to Secondhand Smoke

SHS is clearly a significant public health hazard, and maintaining a smokefree home is a wise decision to decrease a family's exposure to SHS. Unfortunately, this step alone is often not sufficient to prevent all exposure to SHS for residents of multi-unit buildings. Tobacco smoke does not stay confined within a single room nor does it stay confined within a single unit in multi-family apartment buildings. Ventilation systems can distribute SHS throughout a building. <sup>26</sup> SHS can seep through walls and cracks. <sup>27</sup>

Data clearly demonstrate that the residents of smokefree units in multi-family buildings without smokefree policies are not safe from tobacco smoke exposure. A Boston-based study published in 2009 measured levels of nicotine, an indicator of SHS exposure, in 49 low-income units in multi-unit buildings. Overall, 94 percent of units had detectable nicotine levels, including 89 percent of units where no one smoked in the home.<sup>28</sup>

A 2011 nationally representative study, conducted through the Social Climate Survey, found that among individuals who lived in multi-family housing where no one smokes inside the home, 31 percent smelled smoke in their building. Of these respondents that reported smelling smoke in their building, approximately half (49 percent) reported smelling smoke in their own units, 38 percent reported smelling smoke in their unit at least once per week, and 12 percent reported smelling smoke in their unit at least once per day. This nationally representative study confirms the results of several state-and community-level studies measuring prevalence of smoke incursions into smokefree units. This trend is echoed in a 2012 study that indicated that although 63 million of the 79 million Americans who live in multi-unit housing do not allow smoking in their homes approximately 28 million of those reported secondhand smoke infiltration in their home. Finally, a 2016 study that analyzed data from

the 2013-2014 National Adult Tobacco Survey, found that one-third of multi-unit housing residents that voluntarily prohibited smoking in the home were still exposed to secondhand smoke.<sup>32</sup>

Studies published in 2011 and 2012 confirmed that children who live in multi-unit housing have significantly higher exposure to SHS than those who live in detached housing, and that 15 million children aged 3-11 years were exposed to SHS, representing the highest prevalence of SHS exposure among all age groups. The studies, using data from the National Health and Nutrition Examination Survey (NHANES), showed that levels of cotinine, a chemical marker of nicotine in the blood, among children living in multi-unit housing were significantly higher than those of children living in detached housing, and that SHS prevalence was second-highest among adolescents aged 12 to 19, only superseded by young children.<sup>33,34</sup>

## **Prevention of Secondhand Smoke Exposure Requires Smokefree Policies**

The above evidence clearly demonstrates that residents of multi-family housing are exposed to SHS even if they live in a unit where no one smokes. Therefore, the only way to fully protect children and adults who live in multi-family housing from secondhand exposure is to implement building-wide smokefree policies. In 2007, the World Health Organization (WHO) presented its clear conclusion that "implementing 100 percent smokefree environments [is] the only effective strategy to reduce exposure to tobacco smoke to safe levels in indoor environments and to provide an acceptable level of protection from the dangers of SHS exposure."<sup>35</sup> The organization reaffirmed its recommendation in 2014 and called for a prohibition on the use of ENDS indoors due to the risks presented by secondhand exposure to the devices.<sup>36</sup>

Partial smokefree policies, such as those that prohibit smoking in common areas such as hallways, do not protect all residents from SHS. The 2011 Social Climate Survey showed that multi-unit residents in buildings with the strongest smokefree air policies were the least likely to report smelling smoke. The data also showed that policies that only prohibited smoking in common spaces—and not individual units—did little to prevent residents from smelling smoke.<sup>37</sup> Research published in the *American Journal of Public Health* has further shown that SHS exposure for nonsmokers persists despite separating smokers from nonsmokers within housing, indicating that partial smokefree policies are not effective in protecting nonsmokers from harm.<sup>38</sup>

Experts in building ventilation agree that keeping individual units smokefree is not sufficient to remove health risks. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) explained in a policy statement in 2010 and reaffirmed in 2016 that the only means of effectively eliminating the health risks associated with indoor exposure to SHS is to make the entire indoor area smokefree.<sup>39</sup> Recent research by public health professionals has reinforced the fact that scrubbing and ventilating the air in buildings, cannot completely eliminate exposure SHS and the other harmful substances associated with it.<sup>40</sup>

## **HUD Must Maintain a Nationwide Smokefree Policy**

Our organizations commend the Department of Housing and Urban Development (HUD) for expanding its efforts over the last several years to better protect the health of residents of federally assisted housing by requiring broader adoption of smokefree policies in public housing. Previously, HUD pursued a voluntary approach that left many residents, including 775,000 children, unprotected from the

dangers of tobacco smoke in their own homes. Our organizations strongly supported HUD's proposed rule to make all public housing smokefree because the only way to protect all residents of public housing is to adopt a nationwide smokefree policy.

All people, regardless of income, should be able to enjoy healthy housing, free of SHS and other dangerous conditions. As private, higher-rent, market-rate buildings increasingly go smokefree, it is important that our poorest and most vulnerable citizens not be left out. The absence of smokefree air policies disproportionately impacts lower-income families who cannot move due to economic, health or other reasons. Higher-income individuals are better able to relocate their families to remove them from an unhealthy environment. Public housing residents are more likely to be members of vulnerable populations: 38 percent are children, 31 percent are seniors, 30 percent are disabled, and 89 percent are classified by HUD as "very low income." Further, many residents in multi-family public housing are renters from low-income populations and are more likely to be racial or ethnic minorities, disproportionately exposing these populations to the dangers of SHS exposure. The 2011 Social Climate Survey showed that multi-family housing residents were more likely to smell smoke in their building if they received government subsidies for their housing. Rolling back HUD's smokefree policy would discriminates against vulnerable populations.

Multi-unit housing residents consistently report that they desire smokefree air policies. A majority of residents want smokefree air policies implemented where they live.<sup>44</sup> One study examined the 2012 voluntary implementation of a smokefree policy by the Boston Housing Authority in its housing, indicating that a year after implementation 91 percent knew of the policy prohibiting smoking indoors and 82 percent were strongly supportive of such a policy in their building.<sup>45</sup> Additionally, a survey of heads of household before and after a Colorado public housing authority implemented a smokefree policy found 87 percent of respondents before implementation and 89 percent of respondents after implementation strongly or somewhat supportive of the policy.<sup>46</sup>

Smoking inside buildings discriminates against the majority of nonsmoking disabled individuals because they cannot escape tobacco smoke infiltrating their own apartments. Smoking is not a basic human need. Nicotine addiction can be addressed using available, safe, FDA-approved options to help smokers quit. These include five forms of nicotine replacement therapy available as gum, patch, lozenge, nasal spray, and inhaler as well as two non-nicotine medications, buproprion and varenicline. With assistance, every smoker can quit and research has shown that almost 70 percent of smokers say they want to quit and approximately half have made a quit attempt in the past year. Overall, the rights of the disabled population, including disabled children, veterans, and those with respiratory disabilities, are best protected by smokefree building policies that ensure a safe environment for all residents.

Thank you for your leadership on this critical public health issue. This rule is innovative, effective, and is not excessively burdensome to implement. It has represented a major step forward in protecting the millions of Americans who currently live in federally-owned public housing from the harms of tobacco. We look forward to continuing to work with HUD to promote healthy living environments, free of exposure to SHS, for all children and adults. If you have any questions, please contact James Baumberger at the American Academy of Pediatrics (202.347.8600) or Erika Sward at the American Lung Association (202.785.3355).

Sincerely,

Action on Smoking & Health

American Academy of Family Physicians

American Academy of Oral & Maxillofacial Pathology

American Academy of Otolaryngology—Head and Neck Surgery

American Academy of Pediatrics

American Association for Dental Research

American Association for Respiratory Care

American Cancer Society Cancer Action Network

American College of Physicians

American Congress of Obstetricians and Gynecologists

**American Heart Association** 

American Lung Association

American Public Health Association

Association of State and Territorial Health Officials

Big Cities Health Coalition

Campaign for Tobacco-Free Kids

Children's Health Alliance of Wisconsin

ClearWay Minnesota

**COPD Foundation** 

Eta Sigma Gamma - National Health Education Honorary

Grand Rapids Urban League

GASP of Colorado (Group to Alleviate Smoking Pollution)

Hawai`i Public Health Institute

International Association for the Study of Lung Cancer

Live Smoke Free, Association for Nonsmokers MN

March of Dimes

National African American Tobacco Prevention Network

National Association of County & City Health Officials

National Center for Health Research

National Hispanic Medical Association

National Network of Public Health Institutes

North American Quitline Consortium

North Carolina Alliance for Health

North Carolina Association of Local Health Directors

**Oncology Nursing Society** 

**Perceptions** 

**Prevention Institute** 

**Public Health Solutions** 

**Respiratory Health Association** 

Society for Public Health Education

Society for Research on Nicotine & Tobacco

**Students Against Destructive Decisions** 

The Society of State Leaders of Health and Physical Education

Tobacco Control Legal Consortium

Tobacco Free Alliance of Virginia

Trust for America's Health

Truth Initiative

Wisconsin Association of Local Health Departments and Boards

Wisconsin Association of School Nurses Wisconsin Asthma Coalition Wisconsin Public Health Association

<sup>1</sup> US Department of Health and Human Services. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. Atlanta, GA: US 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; 2006.

<sup>&</sup>lt;sup>2</sup> US Environmental Protection Agency. *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*. Washington, DC: US Environmental Protection Agency, Office of Research and Development, Office of Air and Radiation; 1992.

<sup>&</sup>lt;sup>3</sup> US Department of Health and Human Services. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General, 2006.* 

<sup>&</sup>lt;sup>4</sup> US Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General, 2014.* 

<sup>&</sup>lt;sup>5</sup> US Department of Health and Human Services. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. California Environmental Protection Agency, Air Resources Board, Office of Environmental Health Hazard Assessment. *Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant*. Sacramento, CA: California Environmental Protection Agency; 2005.

<sup>&</sup>lt;sup>6</sup> California Environmental Protection Agency, Air Resources Board, Office of Environmental Health Hazard Assessment. *Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant*.

<sup>&</sup>lt;sup>7</sup> Pyle RC et al. Asthma-associated comorbidities in children with and without secondhand smoke exposure. *Annals of Allergy, Asthma & Immunology*. 2015;115(3):205-210.

<sup>&</sup>lt;sup>8</sup> West DC, Romano PS, Azari R, Rudominer A, Holman M, Sandhu S. Impact of environmental tobacco smoke on children with sickle cell disease. *Arch Pediatr Adolesc Med*. 2003; 157(12):1197–1201.

<sup>&</sup>lt;sup>9</sup> Max W et al. Deaths from secondhand smoke exposure in the United States: Economic implications. *American Journal of Public Health*. 2012:102(11):2173-80.

<sup>&</sup>lt;sup>10</sup> Levy DE, JP Winicokoff, and NA Rigotti. School absenteeism among children living with smokers. *Pediatrics*. October 2011;128(4);650-656.

<sup>&</sup>lt;sup>11</sup> Matt GE, Quintana PJ, Hovell MF, et al. Households contaminated by environmental tobacco smoke: sources of infant exposures. Tobacco Control 2004;13(1):29-3.

<sup>&</sup>lt;sup>12</sup> Yolton K, Dietrich K, Auinger P, Lanphear BP, Hornung R. Exposure to environmental tobacco smoke and cognitive abilities among U.S. children and adolescents. *Environ Health Perspect*. 2005;113(1):98 –103.

<sup>&</sup>lt;sup>13</sup> Winickoff JP, Klein JD. Prevention of preterm parturition. N Engl J Med. 2014 May 8;370(19):1860.

Abreu-Villac,a Y, Seidler FJ, Tate CA, Cousins MM, Slotkin TA. Prenatal nicotine exposure alters the response to nicotine administration in adolescence: effects on cholinergic systems during exposure and withdrawal. Neuropsychopharmacology. 2004;29(5): 879–890. Abreu-Villac,a Y, Seidler FJ, Slotkin TA. Does prenatal nicotine exposure sensitize the brain to nicotine-induced neurotoxicity in adolescence? Neuropsychopharmacology. 2004;29(8):1440–1450. Nordberg A, Zhang XA, Fredriksson A, Eriksson P. Neonatal nicotine exposure induces permanent changes in brain nicotinic receptors and behaviour in adult mice. Brain Res Dev Brain Res. 1991;63(1–2):201–207.

<sup>&</sup>lt;sup>15</sup> Slotkin TA, Seidler FJ, Qiao D, et al. Effects of prenatal nicotine exposure on primate brain development and attempted amelioration with supplemental choline or vitamin C: neurotransmitter receptors, cell signaling and cell development biomarkers in fetal brain regions of rhesus monkeys. *Neuropsychopharmacology*. 2005;30(1):129–144.

<sup>&</sup>lt;sup>16</sup> Golub M, Slotkin T, Tarantal A, et al. Visual recognition memory and auditory brainstem response in infant rhesus monkeys exposed perinatally to environmental tobacco smoke. *Brain Research*. 2007;1151:102–106.

<sup>&</sup>lt;sup>17</sup> Ernst M, Moolchan ET, Robinson ML. Behavioral and neural consequences of prenatal exposure to nicotine. *J Am Acad Child Adolesc Psychiatry*. 2001;40(6):630–641. Slotkin TA, Tate CA, Cousins MM, Seidler FJ. Prenatal

- nicotine exposure alters the responses to subsequent nicotine administration and withdrawal in adolescence: serotonin receptors and cell signaling. *Neuropsychopharmacology*. 2006;31(11):2462–2475.
- <sup>18</sup> Cornelius MD, Leech SL, Goldschmidt L, Day NL. Prenatal tobacco exposure: is it a risk factor for early tobacco experimentation? *Nicotine Tob Res.* 2000;2(1):45–52.
- <sup>19</sup> Al Mamun A, O'Callaghan FV, Alati R, et al. Does maternal smoking during pregnancy predict the smoking patterns of young adult offspring? A birth cohort study. *Tob Control*. 2006;15(6):452–457. Roberts KH, Munafo MR, Rodriguez D, et al. Longitudinal analysis of the effect of prenatal nicotine exposure on subsequent smoking behavior of offspring. *Nicotine Tob Res*. 2005; 7(5):801–808.
- <sup>20</sup> Cornelius MD and NL Day. Developmental consequences of prenatal tobacco exposure. *Curr Opin Neurol*. April 2009; 22(2):121-5. See also Weitzman M, S Gortmaker, A Sobol. Maternal smoking and behavior problems of children. *Pediatrics*. Sep 1992, 90 (3) 342-349.
- <sup>21</sup> National Fire Protection Association. NFPA's Latest Estimates of Smoking Material Fires 2014. http://www.nfpa.org/~/media/files/news-and-research/fire-statistics/latest-estimates/latestestimatessmokingmaterials.pdf?la=en; Accessed 5-26-2017.
- <sup>22</sup> National Center for Healthy Housing. "Reasons to Explore Smoke-free Housing." Available at http://www.nchh.org/Portals/0/Contents/Green%20Factsheet\_Smokefree.pdf.
- <sup>23</sup> Ong MK et al. Estimates of smoking-related property costs in California multiunit housing. *American Journal of Public Health*. March 2012; 102(3):490-493.
- <sup>24</sup> King BA, Peck RM, Babb SD. National and State Cost Savings Associated With Prohibiting Smoking in Subsidized and Public Housing in the United States. Prev Chronic Dis 2014;11:140222.

DOI: http://dx.doi.org/10.5888/pcd11.140222.

- <sup>25</sup> National Center for Healthy Housing. "Reasons to Explore Smoke-free Housing." Available at http://www.nchh.org/Portals/0/Contents/Green%20Factsheet\_Smokefree.pdf.
- <sup>26</sup> Spengler JD. Buildings operations and ETS exposure. *Environ Health Perspect*. 1999; 107(suppl 2):313–317.
- <sup>27</sup> American Cancer Society. "Health Risks of Secondhand Smoke." 2015. Available at http://www.cancer.org/cancer/cancercauses/tobaccocancer/secondhand-smoke.
- <sup>28</sup> Kraev TA et al. Indoor concentrations of nicotine in low-income, multi-unit housing: Associations with smoking behaviours and housing characteristics. *Tob Control*. 2009 Dec;18(6):438-44.
- <sup>29</sup> Wilson, et al. Tobacco Smoke Incursions in Multi-Unit Housing. Pediatric Academic Societies Meeting. 29 April 2012. Boston, MA. E-PAS2012:2410.4.
- <sup>30</sup> King BA et al. Multiunit housing residents' experiences and attitudes toward smoke-free policies. Nicotine Tob Res. 2010 Jun;12(6):598-605. Hennrikus, D. et al. Preferences and practices among renters regarding smoking restrictions in apartment buildings. Tob Control. 2003 June; 12(2): 189–194. Hewett MJ et al. Secondhand Smoke in Apartment Buildings: Renter and Owner or Manager Perspectives. Nicotine & Tobacco Research. 2007 Jan;9 Suppl 1:S39-47.
- <sup>31</sup> Fallin et al. A short online community readiness survey for smoke-free policy. *Nicotine & Tobacco Research*. 2012; 14(12): 1494.
- <sup>32</sup> Nguyen et al. Tobacco Use, Secondhand Smoke, and Smoke-Free Home Rules in Multiunit Housing. *American Journal of Preventive Medicine*. Nov. 2016; 51(5): 682-692.
- <sup>33</sup> Wilson et al. Tobacco-Smoke Exposure in Children Who Live in Multiunit Housing. *Pediatrics*. 2011; 127(1): 85-92.
- <sup>34</sup> Homa DM et al. Disparities in nonsmokers' exposure to secondhand smoke-United States, 1999-2012. *Morbidity and Mortality Weekly Report*. 2015;64(4):103-108.
- <sup>35</sup> World Health Organization (WHO). Protection from exposure to secondhand tobacco smoke: Policy recommendations. *WHO Press*. 2007.
- <sup>36</sup> Lacobucci G. WHO calls for ban on e-cigarette use indoors. *British Medical Journal*. Aug. 2014; 349:g5335.
- <sup>37</sup> Wilson, et al. Tobacco Smoke Incursions in Multi-Unit Housing. Pediatric Academic Societies Meeting. 29 April 2012. Boston, MA. E-PAS2012:2410.4.
- <sup>38</sup> Wilson KM et al. Tobacco smoke incursions in multiunit housing. *American Journal of Public Health*. 2014 Aug;104(8):1445-1453.
- <sup>39</sup> American Society of Heating, Refrigerating and Air-Conditioning Engineers. "ASHRAE Position Document on Environmental Tobacco Smoke." 2016. Available at

- https://www.ashrae.org/File%20Library/docLib/About%20Us/PositionDocuments/ASHRAE\_PD\_Environment al\_Tobacco\_Smoke\_2016.pdf.
- <sup>40</sup> Homa DM et al. Disparities in nonsmokers' exposure to secondhand smoke-United States, 1999-2012. *Morbidity and Mortality Weekly Report*. 2015;64(4):103-108.
- <sup>41</sup> National Center for Health in Public Housing "Demographic Facts: Residents Living in Public Housing," http://www.healthandpublichousing.org/pdfs/Demographics%20Fact%20Sheet.pdf.
- <sup>42</sup> Secondhand smoke and multi-unit housing in Gilroy: A desktop health impact assessment. Santa Clara Public Health Department. January 2014: https://www.sccgov.org/sites/sccphd/en-us/Partners/Data/Documents/Tobacco/report Secondhand Smoke Gilroy jan2014.pdf.
- <sup>43</sup> Wilson, et al. Tobacco Smoke Incursions in Multi-Unit Housing. Pediatric Academic Societies Meeting. 29 April 2012. Boston, MA. E-PAS2012:2410.4.
- <sup>44</sup> King BA et al. Multiunit housing residents' experiences and attitudes toward smoke-free policies. *Nicotine Tob Res*. 2010 Jun;12(6):598-605. Hennrikus, D. et al. Preferences and practices among renters regarding smoking restrictions in apartment buildings. *Tobacco Control*. 2003 June; 12(2): 189–194. Hewett MJ et al. Secondhand Smoke in Apartment Buildings: Renter and Owner or Manager Perspectives. *Nicotine Tob Res*. 2007 Jan;9 Suppl 1:S39-47.
- <sup>45</sup> Rokicki S et al. Assessment of residents' attitudes and satisfaction before and after implementation of a smoke-free policy in Boston multiunit housing. *Nicotine &Tobacco Research*. 2015 Oct.;1-8.
- <sup>46</sup> Young W, Karp S, Bialick P, Liverance C, Seder A, Berg E, et al. Health, Secondhand Smoke Exposure, and Smoking Behavior Impacts of No-Smoking Policies in Public Housing, Colorado, 2014–2015. Prev Chronic Dis 2016;13:160008. DOI: <a href="http://dx.doi.org/10.5888/pcd13.160008">http://dx.doi.org/10.5888/pcd13.160008</a>.
- <sup>47</sup> US Department of Health and Human Services. "Treating Tobacco Use and Dependence: 2008 Update." May 2008. Available at http://www.ahrq.gov/clinic/tobacco/treating\_tobacco\_use08.pdf.
- <sup>48</sup> Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey, 2015. Analysis performed by the American Lung Association Epidemiology and Statistics Unit using SPSS software.
- <sup>49</sup> Winickoff JP, Gottlieb M, Mello MM. Regulation of smoking in public housing. *NEJM*. 2010;362:2319-25.