January 19, 2016

The Honorable Julián Castro
Secretary
Department of Housing and Urban Development
451 Seventh Street SW
Washington, DC 20410

Re: Instituting Smoke-Free Public Housing; Docket No. FR 5597-P-02 RIN 2577-AC97

The undersigned organizations hereby submit the following comment on the Regulatory Impact Analysis ("Analysis") accompanying the proposed rule in the above-designated docket. The Analysis correctly concludes that benefits of the proposed rules substantially outweigh the costs. Despite this conclusion, however, the Analysis understates the benefits of the proposed rule and overstates the costs of the proposed rule in numerous respects:

A. The Analysis improperly ignores any benefit to smokers who will quit smoking as a result of its adoption or to governmental entities that would otherwise incur costs to treat such smokers.

B. The Analysis improperly ignores any public health benefits from the reduction in thirdhand smoke.

C. The Analysis improperly ignores any public health benefit from the reduction in the incidence and severity of asthma attacks.

D. HUD's monetization of the behavior change due to smoke-free policies is erroneous and should be excluded from the Analysis.

E. HUD's estimate of a 33-percent utility loss associated with the activity of smoking is erroneous.

F. The Analysis overstates the cost of the rule attributable to inconvenience to public housing residents who will continue to smoke.

The following discussion elaborates these points.

Discussion

A. The Analysis Improperly Ignores Any Benefit to Smokers Who Will Quit Smoking as a Result of its Adoption or to Governmental Entities that Would Otherwise Incur Costs to Treat Such Smokers.

Although the Regulatory Impact Analysis accompanying the Proposed Rule acknowledges that a substantial number of smokers will quit smoking as a result of its adoption and will therefore reduce their risk of death and disease and improve their health as a result, it accords no value whatsoever to this reduction. The failure to include this extremely important and undeniable benefit in the Analysis substantially and improperly understates the benefits attributable to the Proposed Rule.

1. Adoption of smoke-free policies would cause a significant number of smokers to quit smoking.

The Analysis admits that the only published evaluation of smoke-free policies in subsidized multiunit housing concluded that such policies resulted in increased cessation as a result of the policy.[1] In the study cited in the Analysis, 29 percent of the smokers who quit during a seventeen-month period following adoption of the smoke-free policy did so as a result of the policy.

Moreover, a large literature demonstrates that adoption of smoke-free policies in other contexts, such as smoke-free workplaces, bars, restaurants, and public buildings increases smoking cessation.[2] The Analysis correctly concludes that " Smoking bans. . .have the potential to increase smokers' incentive to quit as well as prevent relapse due to fewer cues from others' smoking in the building. Given what we know about smoke free policies in other settings ,a smoking ban would lead to more cessation. . . ."[3] Although there are distinctions in the degree to which such policies increase cessation depending on the venue, the fact that adoption of smoke-free policies in every one of such venues increases cessation is sufficient to demonstrate that adoption of such policies in multi-unit residential public housing would increase the number of smokers who quit smoking and will also decrease relapse.

Adoption of smoke-free policies increases the likelihood that smokers will quit smoking because approximately 70% of smokers would prefer to quit rather than continuing to smoke.[4]

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[1] Analysis, p. 36, citing Pizacani, B.A., et al. (2012). Implementation of a smoke-free policy in subsidized multiunit housing: effects on smoking cessation and secondhand smoke exposure. *Nicotine and Tobacco Research* 14, 2017-34.

[2] Fichtenberg, C.M. & Glantz, S.A. (2002). Effect of smoke-free workplaces on smoking behavior; systematic review. *BMJ* 325, 188. See also, Pizacani, B., supra, note 1. Cited in Analysis at 39, no. 131.

[3] Analysis at 34, citing Fowkes, F., et al. (2008). Scottish smoke-free legislation and trends in smoking cessation. *Addiction* 103.11 1888-1895.

[4] Centers for Disease Control and Prevention (CDC. "Quitting smoking among adults--United States, 2001-2010." *MMWR. Morbidity and mortality weekly report* 60.44 (2011): 1513

Adoption of a policy that discourages smoking creates an additional incentive for smokers to quit. Moreover, many smokers experience increased craving for nicotine when they are in the presence of others who are smoking;[5] in the absence of others who are smoking, a smoker wishing to resist his addiction may find it easier to abstain.

The Analysis cites evidence from the literature on voluntary smoking bans in which a household chooses to restrict the smoking behavior of its members to outdoors and concedes that "a large majority of results indicate strong and consistent evidence that a smoke-free policy in the home is associated with increased smoking cessation as well as reduced relapse for smokers who have quit." [6] Although the Analysis concludes that the demographics of those living in public housing differ from the demographics of those in private housing who quit smoking as a result of a voluntary ban, there is no reason to believe that such differences would be sufficient to negate the conclusion that adoption of a mandatory no-smoking policy in public housing units would lead to increased cessation.

The Analysis posits that there are 139,000 smokers in public housing units that are currently not subject to no-smoking policies.[7] Even a small increase in cessation would result in thousands of smokers quitting. The fact that it may be difficult to specify precisely how many thousand smokers would quit does not justify ignoring this extremely important and beneficial result. Estimating the precise number of smokers who would quit smoking as a result of the adoption of this policy is no more speculative than any number of assumptions actually utilized in the Analysis. In any event, an Analysis that ignores this fact altogether is clearly erroneous and should not be adopted.

2. A significant reduction in the number of smokers confers a substantial benefit.

It is undisputed that smoking causes numerous diseases to smokers and accounts for a massive number of premature deaths. The 2014 Report of the Surgeon General reaffirms the widespread consequences of smoking, notes that smoking affects nearly every organ of the body and enumerates no fewer than 12 cancers and 20 chronic diseases caused by smoking and concludes that smoking causes 480,000 premature deaths per year.[8] Moreover, smokers lose an

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5 Carter, Brian L., and Stephen T. Tiffany. "Meta-analysis of cue-reactivity in addiction research." *Addiction* 94.3 (1999): 327-340; Zhou, Xiaolei, et al. "Attempts to quit smoking and relapse: factors associated with success or failure from the ATTEMPT cohort study." *Addictive behaviors* 34.4 (2009): 365-373; Shiffman, Saul, et al. "First lapses to smoking: within-subjects analysis of real-time reports." *Journal of consulting and clinical psychology* 64.2 (1996): 366

6 Analysis at 36.

7 Analysis at 62.

8 U.S. Department of Health and Human Services. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. http://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html at 4 and 69

average of ten years of life as a result of smoking.[9] Furthermore, as noted in the Analysis, smokers suffer a degradation in health and productivity while they are alive.[10] It is also undisputed that smokers who quit smoking altogether experience a decreased risk of smoking-related disease and death and improve their health and their productivity.[11] There is no question that a smoker who quits gains a substantial benefit. The Analysis itself concludes that "although the value of longevity and quality of life is difficult to quantify, estimates are usually positive and significant."[12] Beyond the benefit conferred on the smoker, governmental entities that pay for the treatment of diseases caused by smoking also benefit thereby from cessation.

3. The analysis improperly ignores the benefit attributable to the fact that a significant number of smokers will quit smoking as a result of the adoption of the rule.

Despite the fact that adoption of the smoke-free policy contained in the rule would certainly cause a significant number of smokers to quit smoking and despite the fact that a significant reduction in the number of smokers would confer a substantial benefit on both smokers and governmental entities who pay for the treatment of smoking-related disease, the Analysis totally ignores this benefit. In doing so, it massively and erroneously understates the benefits resulting from the rule.

HUD concedes if the rule were to lead to a reduction in smoking, the value of health benefits conferred on smokers would be significant, citing not only the lower mortality risk for non-smokers, but also the fact that a nonsmoking population spends fewer years with disability and spends less on cigarettes.[13] Despite this conclusion, the Analysis completely disregards these facts. HUD seeks to justify ignoring these facts because consideration of the effects of the rule on smokers "would distract from the more likely and more direct effects of the rule."[14]

HUD's reasoning does not withstand analysis. The health impacts on smokers are no more "indirect" than the health impacts on non-smokers. Both the effects on smokers and the effects on non-smokers stem from the same thing: exposure of the human body to toxins and carcinogens in tobacco smoke. If anything, the exposure of smokers is even more "direct." Moreover, Executive Order 12866 requires the agency to consider all the benefits of the rule.[15] It does not permit an agency to disregard benefits because they might somehow "distract" from other effects of the rule. Moreover, nowhere does HUD explain how considering the effect of the rule on smokers would "distract from" considering the effect on non-smokers as well. The

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9 Id. at 639.
10 Analysis at 35.
11 Analysis at 71.
12 Analysis at 40.
13 Analysis at 35
14 Id.
15 Executive Order 12866, September 30, 1993.

opposite is true. Considering the effect of the rule on smokers as well as on non-smokers reinforces rather than distracts from its positive effects.

Moreover, HUD's analysis is inconsistent because although it chooses to disregard entirely the substantial benefits that the rule would provide to smokers it nevertheless calculates the costs imposed on them by the added inconvenience of seeking a smoking venue outside the residential unit. (See sections E and F, *infra*)

HUD states that the Analysis omits consideration of any such benefits because "fully recognizing the magnitude of this potential benefit, HUD is reluctant to include a detailed analysis given that the realization of this indirect benefit depends completely on how smokers elect to comply with the rule."[16] HUD's conclusion is erroneous. HUD's characterization of the benefit as "indirect"—even if it were correct— provides no reason to ignore it. If, as HUD admits, the policy would result in an increase in the number of smokers who reside in public housing quitting smoking, a real and tangible benefit would occur. The fact HUD would have to base its analysis on an estimate the number of those who would quit is no justification for ignoring this important benefit. The Analysis, like most Regulatory Impact Analyses, is replete with estimates.

HUD's difficulty in making this calculation may be related to its confounding of the effects of cessation (quitting smoking altogether) with mere reduction in the number cigarettes smoked per day. Smokers who quit smoking altogether do thereby reduce their risk of death and disease.[17] However, merely reducing the number of cigarettes smoked does not have a similar effect on the disease risk for the smoker.[18] In quantifying the benefits that result from the rule, HUD should estimate the number of smokers who will quit smoking entirely as a result of the rule and quantify the benefits inuring to those who quit and to governmental entities who pay for the treatment of tobacco-related disease. Because mere reduction in the number of cigarettes smoked per day does not confer a clear benefit on smokers or on governmental entities who pay for their treatment, it would be neither necessary nor appropriate to calculate an effect based on such a reduction. Recognition of this distinction would both simplify the calculation of the benefit and more accurately reflect the benefits resulting from cessation.

Elsewhere in the Analysis, HUD posits the value of a statistical life at $8 million.[19] If the policy stated in the rule resulted in one percent of smokers in currently non-smoke-free public

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16 Analysis at 40-41.

17 U.S. Department of Health and Human Services. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. http://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html at 639

18 *Id.*

19 Analysis at 33.

housing units quitting, utilizing this value the benefit of adopting the rule would be increased by many hundreds of millions if not billions of dollars.

B. The Analysis improperly ignores any public health benefit from the reduction of thirdhand smoke.

The Analysis fails to take account of another significant benefit that will flow from the rule: the health impact that results from the reduction in thirdhand smoke residues. Thirdhand tobacco smoke (also known as residual or aged tobacco smoke) consists of material remaining on surfaces and in dust in areas where smoking has taken place. Thirdhand smoke consists of three elements: aged tobacco smoke pollutants that remain for long periods on surfaces and in dust after tobacco has been smoked; pollutants that are remitted back into the gas phase; and pollutants that react with oxidants and other compounds in the environment to yield secondary pollutants.[20] These pollutants include potent tobacco-specific lung carcinogens that are present in mainstream and sidestream smoke and include the highly virulent carcinogen, NNK. Children in homes occupied by smokers are exposed to NNK not only from secondhand smoke, but from thirdhand smoke residues as well. Tobacco specific nitrosamines (TSNAs), a carcinogen, occur in tobacco smoke. In addition, nicotine adsorbed on surfaces can react with nitrous acid to form NNK subsequent to smoking.[21] Moreover, the hazards created by thirdhand smoke are long lasting. Toxic residues from tobacco smoke remain on surfaces after occupants move out and can endanger the health of new and unsuspecting occupants.[22]

Implementation of the policies contained in the proposed rule would benefit the public health by eliminating thirdhand smoke residues. Comments filed in this docket by Professor Stanton Glantz of the University of California at San Francisco cite the abundant literature demonstrating that significant health hazards are created by thirdhand smoke. We urge HUD to acknowledge in the regulatory impact analysis benefits that would result from the elimination of thirdhand smoke.

C. The Analysis improperly ignores any public health benefit from the reduction in the incidence and severity of asthma attacks.

In addition, the Analysis fails to take account of the benefits, both direct and indirect, that would flow from adoption of the policy due to a decrease in the incidence of asthma attacks. The Surgeon General found that, "secondhand smoke exposure causes children who already have asthma to experience more frequent and severe attacks."[23] A reduction in the incidence of

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[20] Thomas, J.L. et al. Thirdhand Tobacco Smoke: A Tobacco-Specific Lung Carcinogen on Surfaces in Smokers' Homes. Nicotine Tob Res. 2014 Jan;16(1):26-32.doi:10.1093/ntr/ntt110.Epub 2013 Jul 26.

[21] Martins-Green, M, et al., Cigarette Smoke Toxins Deposited on Surfaces: Implications for Public Health. PLoS One. 2014 Jan. 29;9(1):e86391.doi: 10.1371/journal.pone.0086391.eCollection 2014.

[22] Id.

[23] U.S. Department of Health and Human Services. 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,

asthma attacks for residents of public housing would reduce healthcare costs attributable to this disease. In addition, asthma is one of the nation's leading causes of school absenteeism and when children miss school, their parents miss work.[24] As a result, asthma exacts a tremendous indirect economic toll –$3.8 billion annually– caused by lost productivity resulting from missed school and work days.[25] Adoption of the proposed rule would reduce the incidence and severity of asthma attacks in children and would therefore reduce absenteeism both in school and at the workplace. The Regulatory Impact Analysis should take account of the substantial economic benefits that would result from the reduction in the incidence of asthma attacks in residents of public housing as a result of the adoption of the rule.

D. HUD's Monetization of the Behavior Change Due to Smoke-Free Policies is Erroneous and Should be Excluded from the Analysis.

A portion of the Analysis attempts to assign a cost of $209 million to the policy by analogizing it to a policy that actually increases the cost of cigarettes. This analogy is wholly inappropriate.

1. HUD's monetization of the cost smoke-free policies impose on smokers is invalid because the mechanisms by which such policies affect smoker behavior are different from those by which price affects smoker behavior

The Analysis first makes a tortured and unconvincing attempt to compare the per-smoker behavior resulting from a smoke-free housing policy to that resulting from a one-dollar increase in the price of cigarettes and concludes that "a smoke-free housing policy could influence per-smoker behavior 2.19 times as much as a one-dollar increase in the price of cigarettes. It then illogically concludes that if such a smoke-free policy causes 2.19 times the behavior change "the cost of the policy driving that change is likely to be approximately 2.19 times the cost due to the price increase."[26]

Even if the behavior changes resulting from the two policies were accurately measured, it would be inappropriate to conclude that the costs driving the changes would be proportional to the behavior change. For smokers not quitting due to a price increase, a price increase in cigarettes diminishes smokers' ability to buy other goods and services because they pay more for cigarettes. By contrast, institution of a smoke-free policy does not reduce smokers' ability to buy other goods and services. In fact, a smoker who reduces his consumption in response to the policy will have more—not less—money to spend for other goods and services. And even if a

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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. At iv

[24] Centers for Disease Control and Prevention. "Asthma and Schools." http://www.cdc.gov/healthyschools/asthma/index.htm. Accessed January 7, 2016.

[25] Barnett SBL, Nurmagambetov TA. Costs of asthma in the United States: 2002–2007. *J Allergy Clin Immunol* 2011;127:145–52.

[26] Analysis at 65.

smoker chooses not to diminish his cigarette consumption in response to a smoke-free policy, unlike a smoker subject to a price increase, he would still have the same amount to spend on other goods and services. In short, the mechanisms by which smoke-free policies may reduce consumption are sufficiently different from the mechanisms by which price increases may reduce consumption as to render invalid any attempt to monetize the costs of one in proportion to the other based on the behavioral outcomes. The calculation in the Analysis of a $209 million cost allegedly attributable to smoke-free policies on the basis of an analogy to a price increase is wholly arbitrary and invalid.

2. Inclusion of such costs in the analysis is inconsistent with the exclusion elsewhere in the Analysis of any benefit to smokers

Even if it were otherwise appropriate to calculate a cost to smokers based on the methodology used in the Analysis, including such a cost in the Analysis would be inappropriate because elsewhere in the Analysis HUD explicitly refuses to consider any benefits to smokers flowing from such a behavior change as part of the Analysis despite the fact that HUD concedes that the benefits to smokers "could be economically significant."[27] Thus, the Analysis attributes substantial costs to smokers as a result of the alleged behavior change but fails to consider any benefit they might receive from the same behavior change. The result thus substantially and arbitrarily understates the net benefits that are expected to result from the policy. A methodology that quantifies costs allegedly associated with a behavior change but excludes benefits resulting from the change has no validity.

3. Even if it were otherwise appropriate to monetize a cost on the basis of behavioral change, the calculations used in the Analysis would not be valid.

The methodology of the Analysis begins with consideration of a 2006 paper by Markowitz that includes both an estimate of the effect of both price increases and smoke-free workplace policies on cigarette consumption. According to the Analysis, the Markowitz analysis indicates that "switches to statewide workplaces smoking bans from workplace smoking policies that would have existed in the absence of state legislation could be expected to have 35 percent of the effect on smoking behavior as a one-dollar increase in the price of a pack of cigarettes."[28].

Moreover, as noted above, the calculation of the relationship between behavioral changes attributable to smoke-free policies and such changes attributable to price increases is methodologically flawed. The calculation is based on an alleged behavioral change attributable to a $1-dollar-per-pack increase in price. As Chaloupka, et al., have demonstrated,[29] however, the effect of prices on consumption is determined not by the absolute amount of the price

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[27] Analysis at 33, 40.

[28] Analysis at 63.

[29] Chaloupka, FJ, "Macro-Social Influences: The Effects of Prices and Tobacco Control Policies on the Demand for Tobacco Products," *Nicotine and Tobacco Research* 1(Suppl 1):S105-9, 1999

increase but rather by the percentage increase in the price. A $1-dollar per pack price increase that increases the price of cigarettes from $3 to $4 per pack will have a different effect than a $1-dollar per pack price increase that increases the price of cigarettes from $9 per pack to $10 per pack. Thus, the comparison of smoke-free housing policy to a $1-dollar per pack cigarette price increase is not meaningful in the absence of knowing the percentage increase in price. Because the price of cigarettes during the period of the Markowitz study was much lower than today's price, a $1-dollar price increase would have represented a much higher percentage increase. As a result, the Analysis substantially overstates the expected effect of such a policy change on smoker behavior. This error causes the Analysis to overestimate greatly the cost attributable to the policy.

In addition, the Markowitz study made no attempt to differentiate between reductions in consumption attributable to smokers who quit smoking altogether as a result of the policy and smokers who merely reduced their consumption. The Analysis implicitly assumes that the entire change would have been attributable to the latter group, thus again making an erroneous assumption that results in overestimating the cost attributable to the policy.

In addition, the assumption that workplace bans on cigarettes affect only smoking at the workplace may be incorrect. Smokers—the large majority of whom would like to quit smoking altogether-- who give up smoking at the workplace may find that they are also able to give up or reduce smoking in other contexts. Therefore, assuming that workplace restrictions affecting 46.7% of workers reduced smoking by only 1.6 cigarettes per smoker per day may not accurately reflect the full impact of such restrictions on smoking behavior. This in turn may substantially affect any calculation that purports to compare the influence of smoke-free policies in the workplace with smoke-free housing policy. This uncertainty even further calls into question the conclusion that a smoke-free housing policy would cause 2.19 times the behavior change as a one-dollar per pack increase in the price of cigarettes.

Even if these problems were corrected, however, it would be inappropriate to include the cost identified in the Analysis. Corrections in the details of the calculation do not address the fundamental problem that the mechanisms by which smoke-free policies affect smoker behavior are so different from the mechanisms by which price affects smoker behavior that they render the comparison inappropriate. Nor would corrections in the details of the calculation address the fundamental inappropriateness of considering the imposition of costs on smokers while excluding any consideration of benefits to smokers. For all these reasons, the $209 million cost calculation should be eliminated from the Analysis.

E. HUD's Estimate of a 33-percent Utility Loss Associated with the Activity of Smoking is Erroneous.

Although the Analysis fails to account for any benefit to smokers as a result of the policy, it observes that "the net benefit to smokers who reduce tobacco consumption would be lower

than [the total] health and longevity benefit due to loss of utility associated with the activity of smoking" and estimates the loss of utility at 33 percent of the total health and longevity benefit (thus reducing an estimated $100 million net benefit to $67 million). This estimate is based on a recently based article cited at note 137.

Significantly, however, this analysis is inconsistent with other, more authoritative analyses. In a 2014 analysis, Chaloupka et al. concluded that "nearly all of the lost pleasure from tobacco use, as represented by conventionally measured consumer surplus, should not be included as a cost in the analysis of the economic impact of tobacco regulations."[30] Another 2014 study demonstrated that a number of fundamental assumptions in FDA's analysis of consumer surplus were erroneous.[31] An even more recently published analysis, prepared by a panel of economists at the request of the Assistant Secretary for Policy Evaluation of the U.S. Department of Health and Human Services, concluded that the utility loss attributable to tobacco control measures should be something close to 5 percent and criticized approaches such as that incorporated in the paper cited by the HUD analysis.[32] In light of the fact that the Cutler paper was prepared at the request of the Assistant Secretary for Policy Evaluation and published after submission to him, it is likely that the Department of Health and Human Services will adopt the approach taken in the Cutler paper in its analysis of future tobacco regulations. The reference in the HUD Analysis to a different approach that incorporates a far higher reduction in the net benefit of tobacco regulations in order to take account of consumer surplus is erroneous and should be rejected in the Analysis that accompanies the final rule.

F. The Analysis Overstates the Cost of the Rule Attributable to Inconvenience to Public Housing Residents Who Will Continue to Smoke.

The Analysis greatly overestimates the cost of the rule attributable to the time spent by smokers to reach outdoor areas adjacent to their residences in order to smoke. The Analysis assumes that a smoker who continues to smoke will smoke ten cigarettes daily at a location adjacent to the residence. The time spent consists of twenty one-way trips averaging approximately ninety seconds each way between the smoker's residence and the location of smoking. Assuming these estimates to be correct, the aggregate time spent in transit is thirty minutes per day and the value is computed as if there were a continuous block of thirty minutes. The value of twenty discontinuous ninety-second intervals is not comparable to that of a continuous block of thirty minutes. Although a continuous block of thirty minutes might

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30 Chaloupka, Frank J., et al. "An evaluation of the FDA's analysis of the costs and benefits of the graphic warning label regulation." *Tobacco Control* (2014): published online December 30, 2014.

31 Song, A.V., et al. "When health policy and empirical evidence collide: the case of cigarette package warning labels and economic consumer surplus." *Am. J. Public Health, (*2014) Feb; 104(2):e42-51.

32 Cutler, David M., et al. "Valuing Regulations Affecting Addictive or Habitual Goods." *Journal of Benefit-Cost Analysis* (2015), 6: 247-280.

conceivably constitute a period of time in which a useful activity could be performed, twenty discontinuous ninety-second intervals present little or no opportunity for useful activity. Given the shortness of these discrete intervals, it seems inappropriate to accord them any value at all.

The Analysis errs not only in treating the intervals as equivalent to a continuous block of thirty minutes daily but also in valuing them in accordance with wages. Valuing time in accordance with wages might be appropriate if time spent displaced wage-earning activity. However, by definition, the smokers are located not at their workplaces but rather at home. The ninety-second intervals thus do not displace work and, as noted above, it is questionable whether such short, discontinuous intervals can accurately be said to displace anything at all of value. To estimate a "shadow wage" for a ninety-second interval seems preposterous. Moreover, given the fact that the smoking at issue does not displace work even for those who are employed, there seems no justification for concluding that the opportunity cost for the employed is nearly three times the opportunity cost for the unemployed.[33] Furthermore, there seems no reason to believe that traveling to and from the place where smoking occurs is any more or less pleasurable than whatever activity the smoker might fit into a ninety-second interval. It is therefore inappropriate to treat the time so spent as a cost.

Moreover, smokers who do not quit but simply reduce the number of cigarettes they smoke as a result of the policy will save, in the aggregate, not only the transit time for trips avoided, but also—more significantly—the time saved by not smoking the cigarettes. Thus, it is quite possible that smokers who reduce their smoking by one or two cigarettes per day would actually experience an increased net amount of useful time as a result of the policy even after taking account of transit time. Such "recovered" time could be used to engage in an activity not compelled by addiction and thus might well be valued as time well spent. Such smokers would also save not only the value of the time, but the cost of the cigarettes not smoked.

In addition, it is inappropriate for the Analysis to attempt to accord a value—and calculate a cost—for the time attributable to traveling from a smoker's residence to the place of smoking while according no value whatsoever to the time saved by those who quit smoking as a result of the policy. Smokers who quit will recover not only the travel time to and from the smoking venue, but also the time it takes to smoke ten cigarettes daily. Thus, each smoker who quits will recover several multiples of the aggregate time spent in transit by those who continue to smoke.

The decision to attempt to value transit time for those who continue to smoke but to ignore other factors of at least equal value and validity is an arbitrary one. Unless all conceivable elements are valued, it makes no sense—and unfairly prejudices the Analysis—to include some and exclude others. The attempt to place a dollar value on discrete ninety-second

[33] Analysis at 61, concluding that wage earners bear an opportunity cost of $913 annually while those whose primary source of income is not wages incur an opportunity cost of $327 annually.

segments of time that do not displace time spent earning money while ignoring other elements of at least equal significance is misplaced and should be excluded from the Analysis.

Sincerely,

American Academy of Pediatrics

American Cancer Society Cancer Action Network

American Heart Association

American Lung Association

Campaign for Tobacco-Free Kids