

## PROTECTING OUR COMMUNITY'S RIGHT TO BREATHE SMOKE-FREE INDOOR AIR AND PREVENT INITIATION OF NICOTINE ADDICTION IN OUR YOUTH

### ISSUE

Physicians are uniquely aware of the adverse effects of secondhand smoke. Elimination of secondhand smoke in public places and workplaces remains one of our top health priorities. The increasing prevalence of alternative tobacco products and nicotine delivery systems merits specific inclusion of these threats to public health in new and existing secondhand smoke laws and ordinances.

### BACKGROUND

Peer reviewed scientific publications (we are happy to provide references upon request) have established all of the following facts:

#### **Youth usage of e-cigarettes and hookah have surpassed usage of conventional cigarettes since 2011.**<sup>1</sup>

According to the CDC the 2014 National Youth Tobacco Survey found current usage rates of electronic cigarettes at 13.4% in high school students (3.9% in middle school) and 9.4% current usage of hookah (2.5% in middle school) compared to 9.2% current high school usage of cigarettes (2.5% for middle school). Social norms of acceptable use of conventional cigarettes have been successfully reduced by enforcement of comprehensive secondhand smoke laws. Social acceptance of these alternative tobacco products is now on the rise as public prevalence and consumption is increasing.<sup>2</sup>

**Hookah usage of both tobacco-containing and tobacco-free waterpipes have significant health risks.** Direct comparisons of hookah smoke from waterpipes with tobacco and those with tobacco-free products have found no less disease risk in the tobacco-free smoke. The only significant difference in measured toxicants is the additional presence of nicotine in the tobacco smoke. Both types of waterpipe smoke contain significantly higher amounts of carbon monoxide, nitric oxide, tar, and carcinogenic polycyclic aromatic hydrocarbons (PAH) than found in a conventional cigarette.<sup>3,4,5</sup>

**Air quality studies in hookah lounges show dangerously high levels of respirable particulate matter.** Both published and local air quality studies in hookah lounges found levels of aerosolized respirable particulate matter (PM2.5) directly comparable to those in establishments that allow cigarette smoking which far exceed the ambient air quality standards established by the EPA.<sup>6,7</sup>

**Electronic cigarettes are highly addictive and their ingredients, manufacturing methods, marketing and delivery systems are completely unregulated by any organization. This incredible variability make it very difficult to determine specific health risks associated with these products.** As with any unregulated product, the immense variability between e-cigarette brands, products and even within different production cycles of the same company makes it very challenging to generalize health risks about the products. However, as their usage increases, particularly among youth and new consumers, it is important to identify and measure known toxicants and carcinogens in order to begin to identify potential health risks. Compounding this is the relatively recent development of these products which has not yet allowed for long-term, longitudinal studies and the lack of a standardized method to sample the multiple designs. Various e-cigarette brands have been found to have levels of nicotine, formaldehyde, acrolein and ultrafine particulates comparable with conventional cigarettes. Studies have also found increased dynamic pulmonary air-way resistance in e-cigarette users. Several e-cigarette refill fluids were shown to be cytotoxic to pulmonary fibroblasts, human embryonic stem cells and mouse neural stem cells.<sup>8</sup>

### GLMS RECOMMENDATION

The Greater Louisville Medical Society urges all advocates of public health and members of the Metro Council of Louisville to support an amendment to the current Louisville Metro Smoke Free Law (Lou. Metro Am. Ord. No. 1-2008, approved 1-11-2008) that specifically includes the use of hookah, all alternative tobacco products and novel nicotine delivery systems in the prohibition of their consumption in public places as defined in the ordinance.

## REFERENCES

- <sup>1</sup>Centers for Disease Control and Prevention: National youth Tobacco Survey, [http://www.cdc.gov/tobacco/data\\_statistics/surveys/nyts/index.htm](http://www.cdc.gov/tobacco/data_statistics/surveys/nyts/index.htm).
- <sup>2</sup>EA Akl, KD Ward, D Bteddini, R Khaliel, AC Alexander, t Lotfi, H Alaouie, RA Afifi (2015) The allure of the waterpipe: a narrative review of factors affecting the epidemic rise in waterpipe smoking among young persons globally. *Tobacco Control* 24:i13-i21.
- <sup>3</sup>A Shihadeh, R Salman, E Jaroudi, N Saliba, E Sepetdjian, MD Blank, CO Cobb, T Eissenberg (2102) Does switching to a tobacco-free waterpipe product reduce toxicant intake? A crossover study comparing CO, NO, PAH, volatile aldehydes, tar and nicotine yields. *Food and Chemical Toxicology* 50(5):1494-1498.
- <sup>4</sup>MD Blank, CO Cobb, B Kilgalen, J Austin, MF Weaver, A Shihadeh, T Eissenberg (2011) Acute effects of waterpipe tobacco smoking: A double-blind, placebo-control study. *Drug and Alcohol Dependence* 16:102-109.
- <sup>5</sup>A Shihadeh, J Schubert, J Klaiany, M El Sabban, A Luch, NA Saliba (2015) Toxicant content, physical properties and biological activity of waterpipe tobacco smoke and its tobacco-free alternatives. *Tobacco Control* 24:i22-i30.
- <sup>6</sup>SR Kumar, S Davies, M Weitzman, S Sherman (2014) A review of air quality, biological indicators and health effects of second-hand waterpipe smoke exposure. *Tobacco Control* 0:1-6.
- <sup>7</sup>CM Torrey, KA Moon, DL Williams, T Green, JE Cohen, A Navas-Acien, PN Breyse (2015) Waterpipe cafes in Baltimore, Maryland: Carbon monoxide, particulate matter, and nicotine exposure. *Journal of Exposure Science and Environmental Epidemiology* 25, 405–410.
- <sup>8</sup>R Grana, N Benowitz, SA Glantz (2014) Electronic Cigarettes: A Scientific Review. *Circulation* 129:1972-1986.