

Health Concerns Related to Onsite Marijuana Consumption

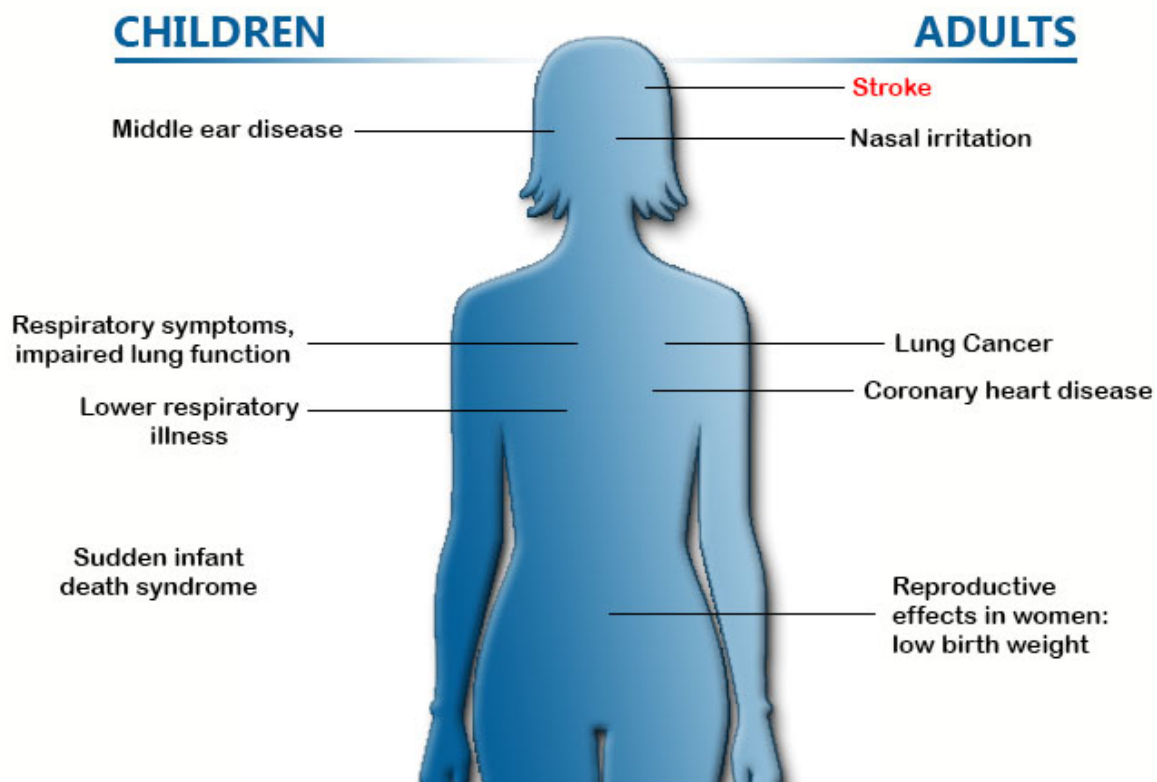
State of Alaska Department of Health & Social Services
Division of Public Health

Marijuana Control Board Meeting
May 15, 2017

Introductions

- Joe McLaughlin, MD, MPH
State Epidemiologist and Section Chief,
State of Alaska Section of Epidemiology
- Eliza Muse, MSc Health Care Policy & Management
Deputy Program Manager
State of Alaska Tobacco Prevention & Control Program
- Katie Reilly, MPH
Injury Prevention Program Manager
State of Alaska Injury Prevention Program

Health Effects of Secondhand Exposure to Tobacco Smoke



Source: 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.

Secondhand Marijuana Smoke

- Secondhand MJ smoke contains many of the same cancer-causing toxic chemicals as secondhand tobacco smoke
 - E.g., acetaldehyde, ammonia, aromatic amines, arsenic, benzene, cadmium, chromium, formaldehyde, hydrogen cyanide, isoprene, lead mercury, nickel, N-heterocycles, PAHs
- In 2009, the CA OEH Hazard Assessment added MJ smoke to its Proposition 65 list of carcinogens and reproductive toxins
 - It reported that at least 33 individual constituents present in both marijuana smoke and tobacco smoke are carcinogens

Sources:

Moir D, Rickert WS, Levasseur G, et al. A comparison of mainstream and sidestream marijuana and tobacco cigarette smoke produced under two machine smoking conditions. *Chem Res Toxicol.* 2008; 21(2):494-502

“Evidence on the Carcinogenicity of Marijuana Smoke.” Reproductive and Cancer Hazard Assessment Branch, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. August 2009.

Cardiovascular Disease and Lung Irritation

- Secondhand MJ exposure impairs blood vessel function
 - Even brief exposure to secondhand MJ smoke has been shown to have immediate, adverse effects on the heart
 - Secondhand MJ smoke exposure had a greater and longer-lasting effect on blood vessel function than exposure to secondhand tobacco smoke
 - Secondhand MJ and tobacco smoke are likely to have similar harmful health effects, including atherosclerosis, heart attack, and stroke
- Fine particulates in MJ smoke → lung irritation and increased risk for asthma attacks, respiratory infections, bronchitis, and COPD exacerbations

Sources:

Wang X, et al. One Minute of Marijuana Secondhand Smoke Exposure Substantially Impairs Vascular Endothelial Function. *J Am Heart Assoc.* 2016;5:e003858

Wang X., et al. Brief Exposure to Marijuana Secondhand Smoke Impairs Vascular Endothelial Function. *Circulation.* 2014;130:A19538

Ventilation and Air Filtration Insufficient

- “No other engineering approaches, including current and advanced dilution ventilation, ‘air curtains’ or air cleaning technologies, have been demonstrated or should be relied upon to control health risks from ETS exposure in spaces where smoking occurs”
- “The only means of eliminating health risks associated with indoor exposure is to ban all smoking activity”
- In 2006, the US Surgeon General concluded that there is no risk-free level of exposure to secondhand smoke

Sources:

1. American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc ([ASHRAE](http://www.ashrae.org)). Position paper: environmental tobacco smoke. Atlanta, GA: ASHRA; 2005, reaffirmed in 2016. Available at: http://www.ashrae.org/doclib/20058211239_347.pdf
2. 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, 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.

Precautionary Principle

- Given
 - Well-established causal relationship between secondhand tobacco smoke exposure and serious adverse health outcomes
 - Similarities in MJ and tobacco secondhand smoke composition
 - Ventilation/air filtration do not prevent exposure
- The burden of proof and responsibility
 - Should not be placed on public health to establish a causal link between secondhand MJ smoke and serious adverse health consequences before laws are enacted to prevent occupational exposure
 - Should be placed on anyone in favor of onsite public consumption to prove that secondhand MJ smoke is safe to their employees (and customers) before laws are enacted to allow secondhand MJ smoke exposure in the workplace

Note: Under the Occupational Safety and Health Administration Act, employers have a general duty to provide a safe workplace free of recognized hazards.

Lessons from Tobacco Control

- Smokefree policies have been proven to reduce prevalence and exposure to secondhand smoke
- Marijuana regulations related to smoking should be modeled on tobacco control which has successfully worked to protect workers from harmful exposure to secondhand smoke

Smokefree Policies in AK

- Many local communities have strong local laws protecting Alaskans from exposure to SHS
- These local laws also help people quit tobacco by making it more difficult to use these products
- Therefore, these laws are changing social norms and acceptability of smoking in public

Tobacco Smokefree Policies

Currently the vast majority of Alaskans, including those who smoke, agree with the following:

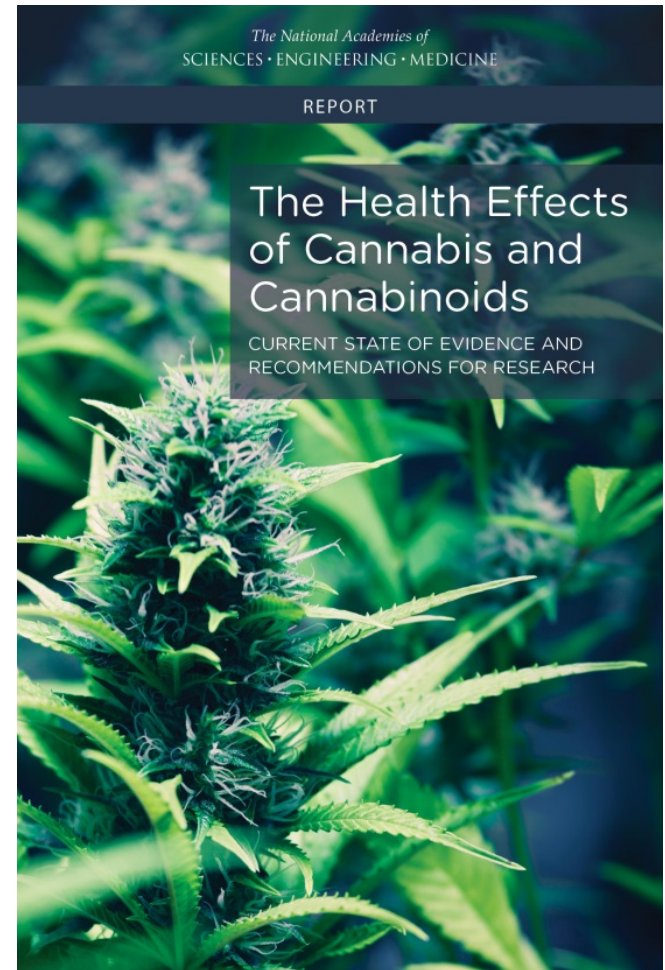
- Secondhand smoke is harmful (93% all adults and 85% smokers)
- ALL indoor work areas should be smokefree (88% and 76%)
- People should be protected from secondhand smoke (90% and 84%)
- Smoking is not allowed anywhere inside the home (91% and 75%)
- Enforcement challenges

How does marijuana affect driving?

- Slows reaction time and decision-making abilities
- Impairs coordination, distorts perception, memory loss, and problem solving difficulty
- Greater risk if MJ and alcohol combined

Source: CDC, What You Need to Know About Marijuana Use and Driving Fact Sheet, 2017
<https://www.cdc.gov/marijuana/pdf/marijuana-driving-508.pdf>

“Substantial evidence of the statistical association between cannabis use and increased risk of motor vehicle crashes”



Source: National Academies of Sciences, Engineering, and Medicine. 2017. *The health effects of cannabis and cannabinoids: Current state of evidence and recommendations for research*. Washington, DC: The National Academies Press.

Fast Facts

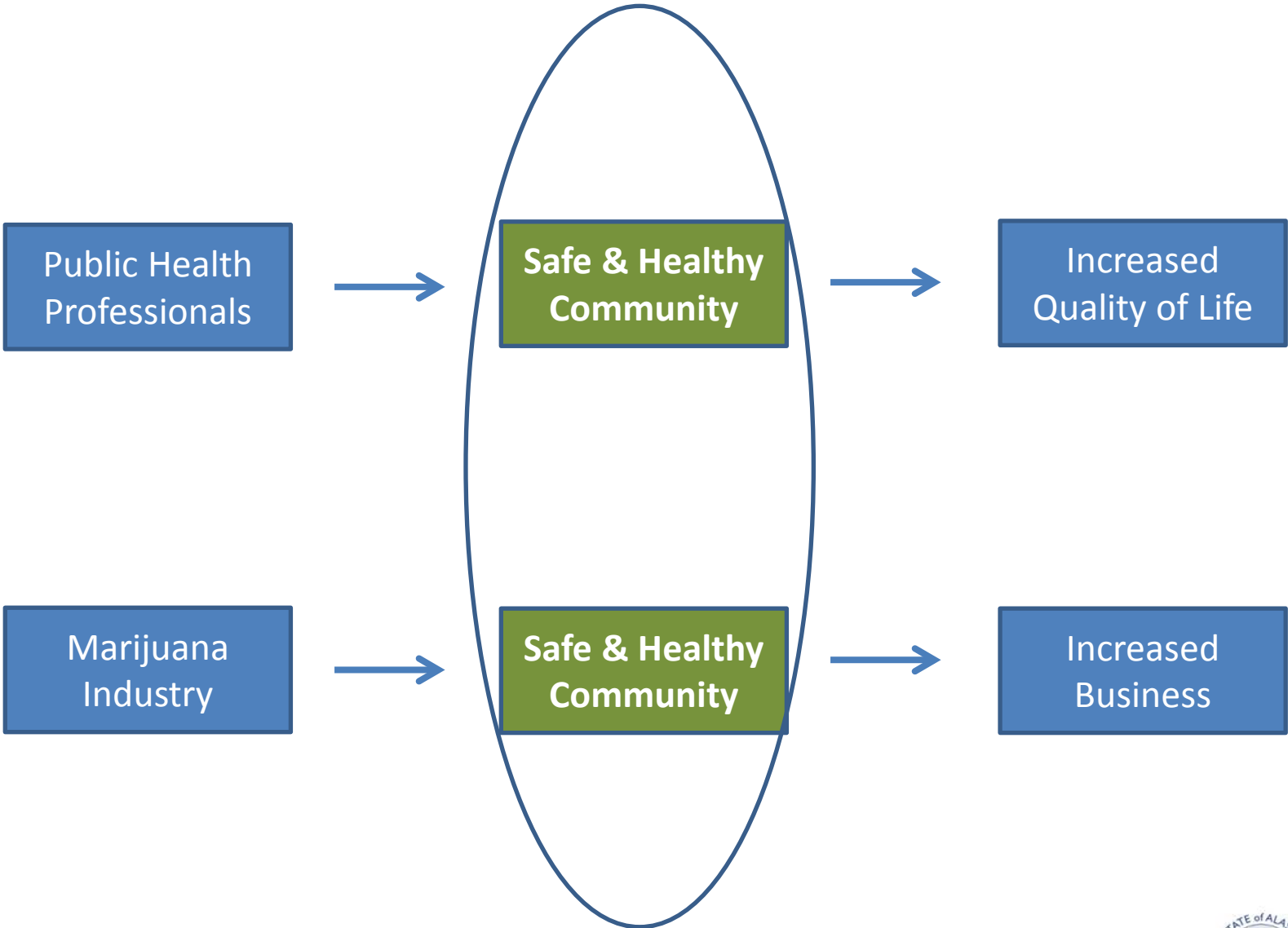
- The number of self-reported marijuana users is increasing. In 2014, there were 7,000 new users of marijuana per day.⁴
- 13% of nighttime, weekend drivers have marijuana in their system; this is up from 9% in 2007.⁵
- After alcohol, marijuana is the drug most often linked to drugged driving.⁶



Source: CDC, What You Need to Know About Marijuana Use and Driving Fact Sheet, 2017
<https://www.cdc.gov/marijuana/pdf/marijuana-driving-508.pdf>

Driving Under the Influence of Cannabis

- Marijuana impairs skills needed to drive safely
→ increase the risk for motor vehicle crashes
- The National Roadside Survey reported an increase of drivers with marijuana in their system during 2007–2014



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