



Public Health
Prevent. Promote. Protect.

Electronic Cigarettes

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Tobacco Use Prevention and Cessation

- Overview of Problem
- Tobacco use, primarily cigarette smoking, is the leading cause of preventable morbidity and mortality in the United States.
- Pharmacology and Neurobiology
 - Addiction - affects the reward pathways (and dopamine levels) providing psychoactive properties, addiction potential, and withdrawal symptoms



What Are e-cigarettes?

Drug delivery device OR Tobacco product?



A means to help quitting or an entry point for new customers?

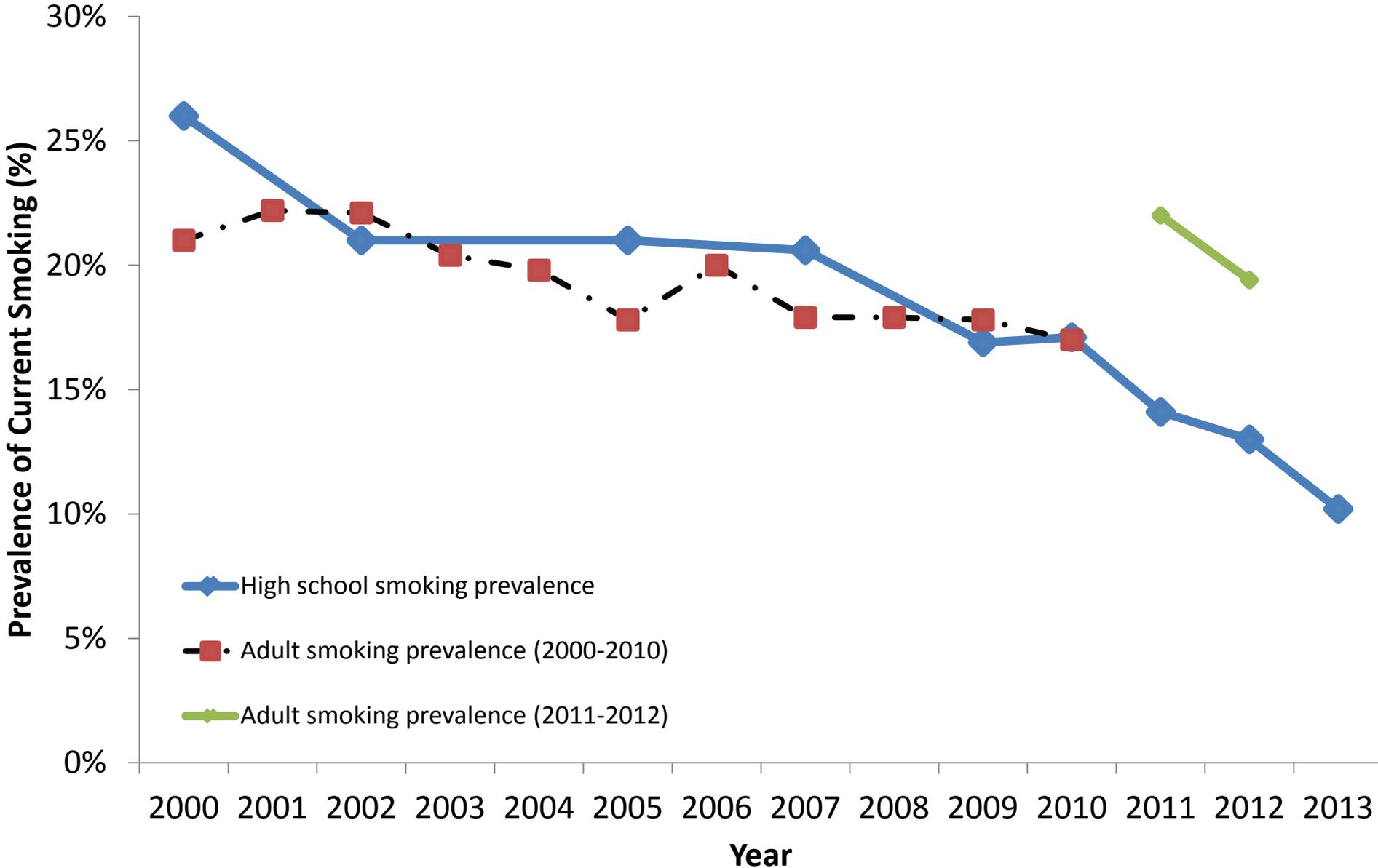


Kansas Prevalence Data

High school students who smoke	14.4% (23,500)
Male high school students who use smokeless or spit tobacco	14.1% (females use much lower)
Kids (under 18) who become new daily smokers each year	2,800
Packs of cigarettes bought or smoked by kids each year	5.9 million
Adults in Kansas who smoke	19.4% (419,300)



Current Smoking Prevalence Among Kansas Adults and Kansas High School Students - YTS, YRBS & BRFSS, 2000-2013



High school smoking prevalence plotted using combination of Kansas Youth Risk Behavior and Youth Tobacco Surveys
Due to change in Behavioral Risk Factor Surveillance System (BRFSS) methodology in 2011, 2011 and later data are not comparable to prior data.



Kansas Data

- Youth
 - During the 2011/2012 school year
 - 5.9% of Kansas high school students had ever tried e-cigarettes
 - 1.8% had used them in the past month
 - 2/27/2014 in the Journal of the American Medical Association Pediatrics a study reported:
 - Young people who tried electronic cigarettes had a greater likelihood of smoking conventional cigarettes, raising concerns over whether the e-cigarette devices serve as a gateway to teen tobacco use.

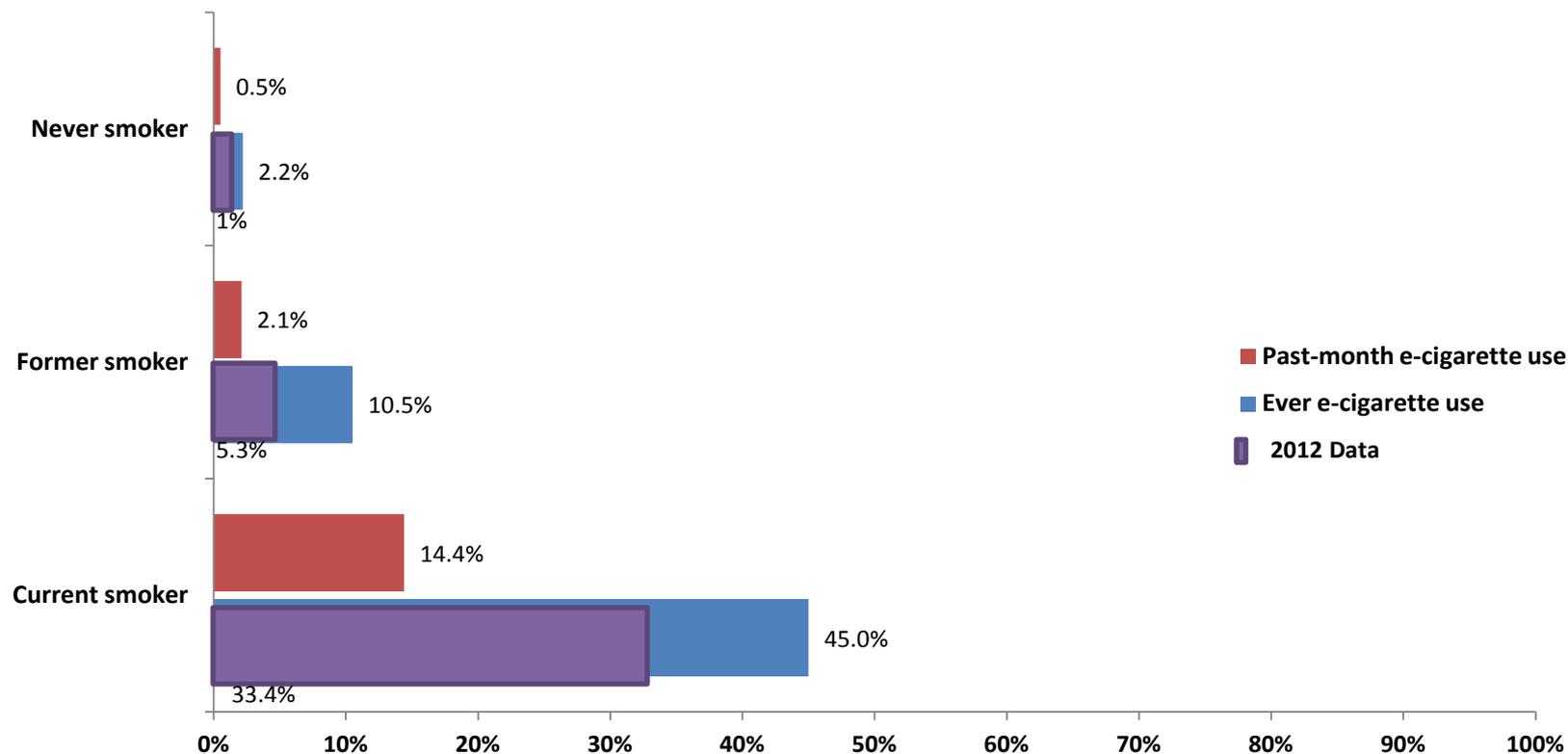


Kansas Data

- Adults
 - 2012 BRFSS survey found 8.6% of adults had ever tried e-cigarettes but less than a year later, the KS Adult Tobacco Survey showed a higher prevalence of 11.8%
 - 33.4% of current smokers had tried e-cigarettes
 - 5.3% of former smokers had tried e-cigarettes
 - only 1% of adults who had never-smoked had tried e-cigarettes.

2013 Adult Data from ATS

Adult ever and past-month e-cigarette use by cigarette smoking status, Kansas, 2013
ATS





Medicine or Therapeutic Device?

- In 2013 - past-month e-cigarette use among current smokers who made a quit attempt in the past year was 22%
 - more than double that of current smokers who did not make a quit attempt in the past year (9.2%).
- In 2013 - 30.5% of Kansas adult current smokers who made a quit attempt in the past 12 months used nicotine replacement therapy or medication to help them quit smoking
 - 20% used smokeless tobacco or e-cigarettes in their attempt to quit smoking.



Tobacco Use Cessation

- Rates of Success using Various Methods (6 months out)
 - Provider Recommendation, Telephone counseling, and Self help materials succeed at around 3-7%
 - Nicotine Replacement Products
 - help smokers stop ranging from 8%-24% (includes the patch, gum, inhaler, spray, and lozenge and combinations)
 - Bupropion SR - 15% -30%
 - Varenicline - 19% - 44%



E-Cigarettes as Therapeutic Devices?

- Very few ideal studies
- Longitudinal Study –
 - Daily e-cigarette users at start, 89% still using at 1 year
 - New e-cigarette users at start, 81% still using at 1 year
 - Dual Users at baseline, 46% had stopped smoking at 1 year (Much higher than RCT studies report) and those still smoking, cigarette consumption decreased by 5 cigarettes/day
 - Former smokers relapsed to smoking at 6% at 1 year
- Randomized Controlled Trial
 - Electronic cigarettes for smoking cessation: a randomised controlled trial –**
Lancet 2013 Bullen, C. et al
 - At 6 months, verified abstinence was 7.3% with nicotine e-cigarettes, 5.8% with patches, and 4.1% with placebo e-cigarettes

Product Quality and Safety



Content depends on manufacturer

Nicotine levels by volume range up to 10% NBV and volumes available up to 32oz

The fatal dose of pure nicotine for adults is approximately 40-60 mg (0.6-1.0 mg/kg, 1-2 drops) i.e. the quantity contained in 2 g of tobacco (equivalent to 2 common blend cigarettes; 15-25 mg of nicotine per cigarette).

No Child-proof packaging



Kansas Poison Control Center

- 24 cases of e-cigarette exposures in 2013 to date
 - Children accounted for 11 of these exposures
- No reported cases of e-cigarette exposures in 2012
- Saving grace for children who accidentally consume tobacco is the first symptoms are N/V – self decontamination occurs which helps
 - Concentrated liquid can even be absorbed effectively through the skin



Safety of E-Cigarette Ingredients

- Delivery Fluids
 - Initial FDA studies revealed that one of the ingredients in e-cigarette vapor is polyethylene glycol
 - An FDA-approved food additive commonly found in deodorants, moisturizers, and toothpaste.
 - FDA analyses of at least 2 brands of e-cigs revealed detectable levels of known carcinogens and toxic chemicals, such as diethylene glycol, formaldehyde, as well as small amounts of tobacco-specific nitrosamines.
- A 2013 study in *Tobacco Control* analyzed vapors from a dozen brands
 - also found some toxic substances, but at levels 9 to 450 times lower than in regular cigarette smoke implying that vaping may be safer than smoking.
- Still, the impact of e-cigs on long-term health needs further study.



LEGAL STATUS & REGULATION

- The FDA attempted to regulate e-cigarettes as drug-delivery devices
 - courts determined that e-cigarettes were properly regulated under the FDA's tobacco authority pursuant to the 2009 Family Smoking Prevention and Tobacco Control Act (FSPTCA) and not the FDA's drug delivery device authority.
- In April 2011, the FDA issued a statement announcing that they intend to regulate e-cigarettes as “tobacco products.”
 - (1) marketing restrictions,
 - (2) mandated ingredient listing, and
 - (3) pre-market review

However, to date, FDA has not asserted its authority over e-cigarettes and they remain unregulated.



Policy Considerations

- Policies to protect youth
 - Marketing
 - Same bans that apply to tobacco products
 - Proper labeling and child-proof containers
- Policy considerations to address Public Health Concerns of tobacco use in Kansas
 - Safety of use unknown, especially all the ingredients besides nicotine currently being marketed
- **ATTORNEY GENERAL OPINION NO. 2011- 015**
 - Synopsis: An individual using an electronic cigarette inside a public building is not “smoking” within the meaning of the Kansas Indoor Clean Air Act.