

CDC PUBLIC HEALTH GRAND ROUNDS

E-cigarettes: An Emerging Public Health Challenge



Accessible version: <https://youtu.be/ZqOPbiX0mxU>

October 20, 2015



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Patterns of E-cigarette Use Among U.S. Adults and Youth



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Office on Smoking and Health

National Center for Chronic Disease Prevention and Health Promotion



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Electronic Nicotine Delivery Systems (ENDS)



E-Cigarettes



Hookah Pens

E-Cigars



Vape Pens



E-Pipes



E-Hookahs



At least 450 brands

Types of E-Cigarettes

“Minis” or “Cigalikes”



“Mid-Sized”



“Tanks” or “Mods”



Smaller and
not customizable by user

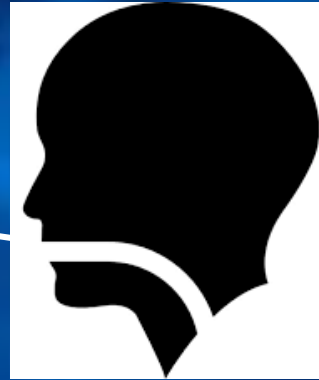


Larger and
customizable by user

Nicotine content can vary across e-cigarette products

Anatomy of an E-Cigarette

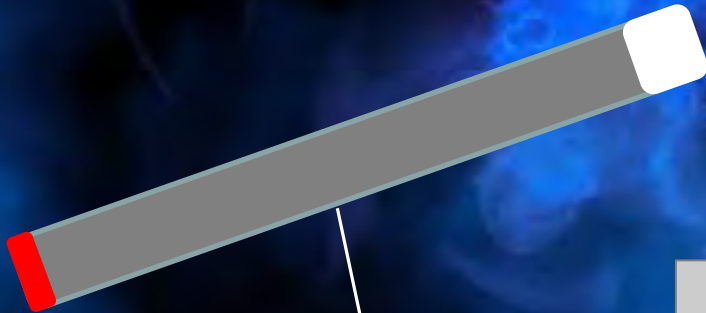
User inhales aerosol



Liquid Cartridge
(holds a liquid nicotine, propylene glycol, and/or glycerin solution)

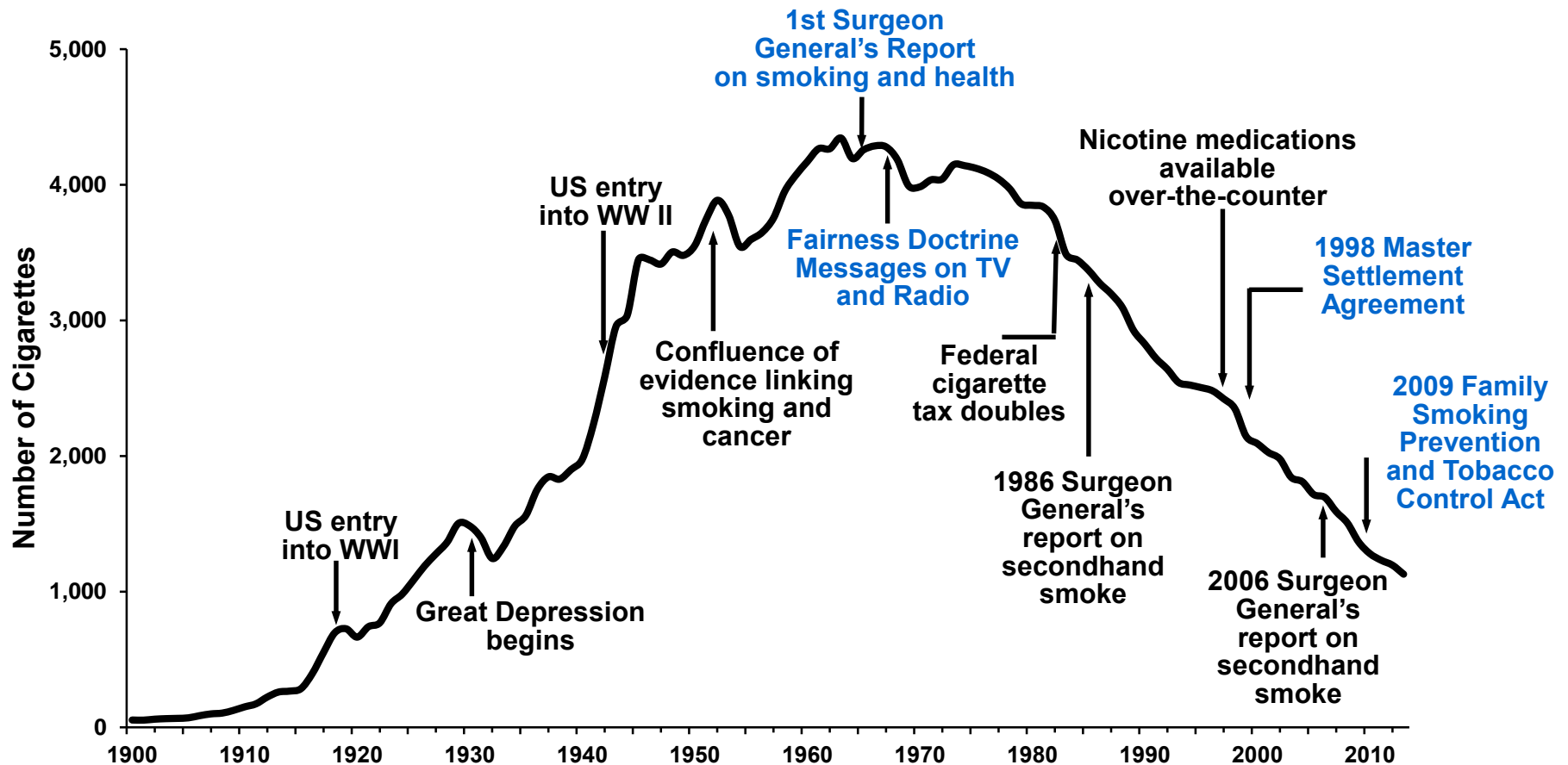


Atomizer
(heats the solution)



Battery
(power source)

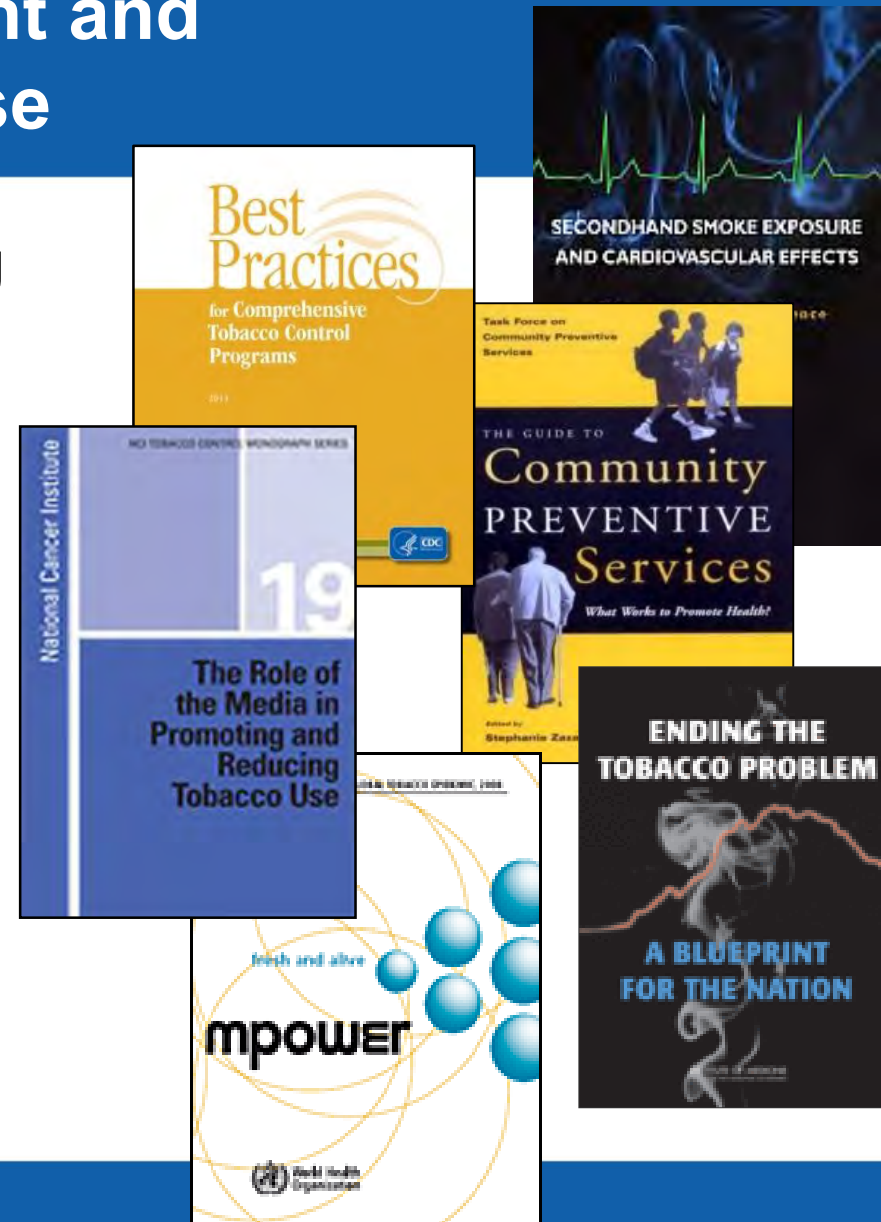
U.S. Adult Per Capita Cigarette Consumption and Major Smoking and Health Events, 1900–2013



Adapted from Warner 1985 with permission from Massachusetts Medical Society, ©1985
U.S. Department of Health and Human Services 1989; Creek et al. 1994; U.S. Department of Agriculture 2000;
U.S. Census Bureau 2013; U.S. Department of the Treasury 2013

Best Practices to Prevent and Reduce Tobacco Use

- ❑ Counteract industry marketing with sustained, high-impact mass media campaigns
- ❑ Raise the price of tobacco products
- ❑ Provide access to tobacco cessation treatment
- ❑ Fully fund statewide tobacco control programs
- ❑ Extend comprehensive smoke-free indoor protections



Family Smoking Prevention and Tobacco Control Act (2009)

- ❑ **Granted the Food and Drug Administration (FDA) authority to regulate the manufacturing, marketing, and sale of tobacco products**
- ❑ **“Tobacco product” is any product made or derived from tobacco that is intended for human consumption**
 - The nicotine in e-cigarettes is typically derived from tobacco
- ❑ **In April 2014, FDA proposed to regulate e-cigarettes as tobacco products**



Photo: AFP/GETTY

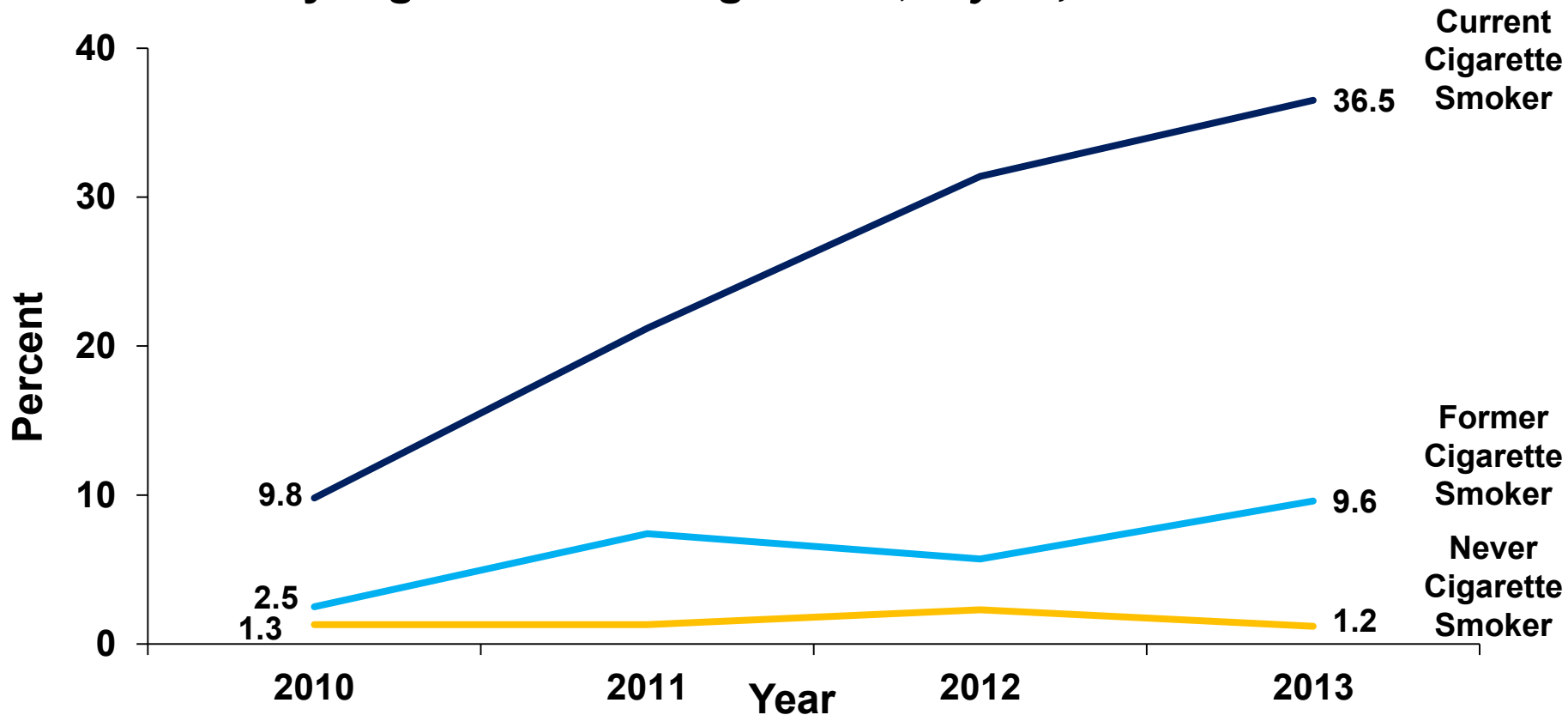
Potential Impact of E-cigarettes on Combustible Tobacco Use



“This shift in patterns of tobacco use could have a number of potential impacts, ranging from the positive effect of accelerating the rate at which smokers quit smoking cigarettes completely to a negative effect of slowing down the decrease in the use of all tobacco products, especially cigarettes.”

Ever Use (Even Just One Time) of E-cigarettes Has Increased Among Current and Former Smokers

Ever Use of E-cigarettes Among U.S. Adults, by Cigarette Smoking Status, *Styles*, 2010–2013



Current Smoker = Smoked at least 100 cigarettes in lifetime, and now smokes “every day” or “some days”

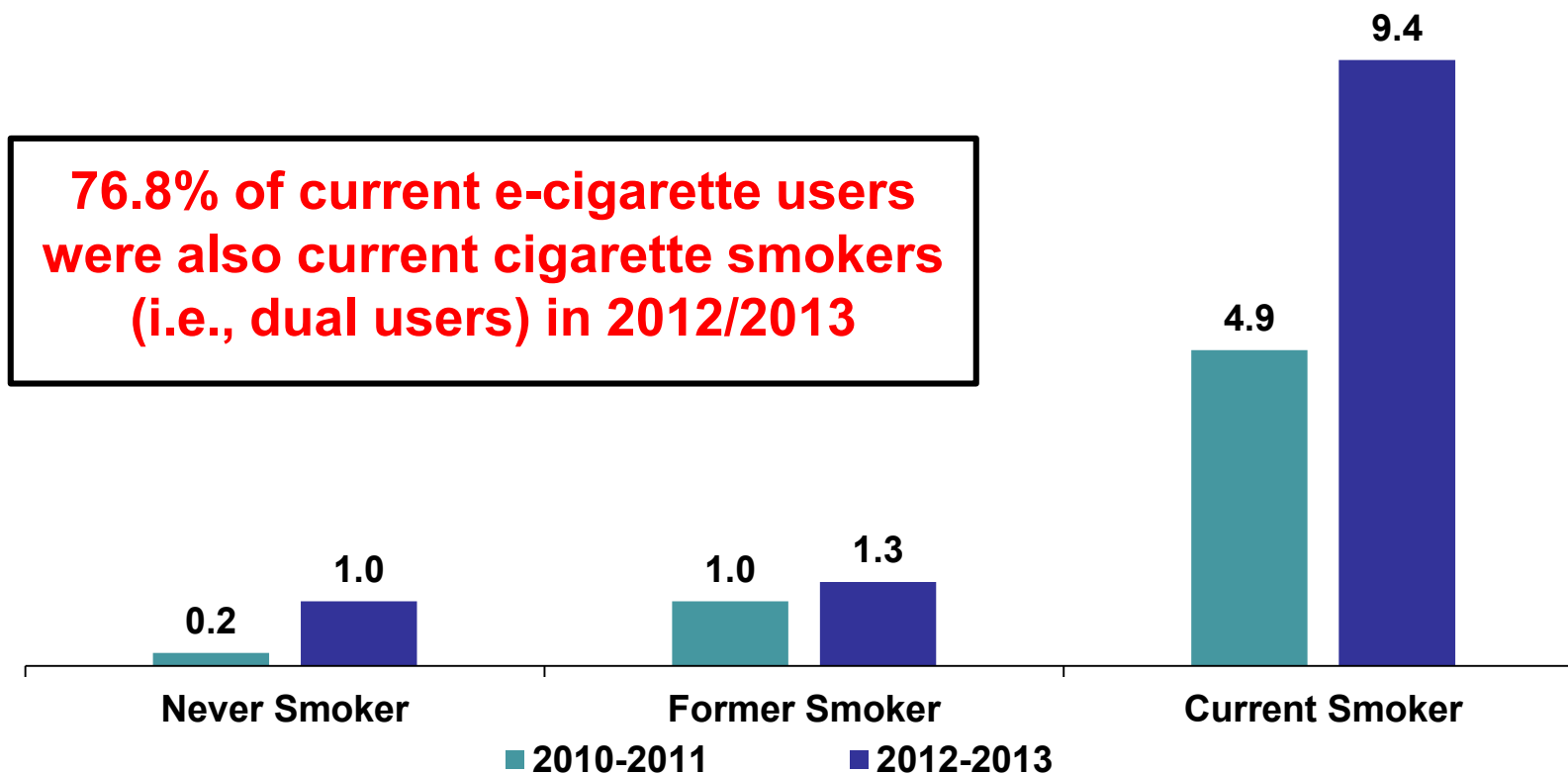
Former Smoker = Smoked at least 100 cigarettes in lifetime, and now smokes “not at all”

Never Smoker = Not smoked at least 100 cigarette in lifetime

King BA, Patel R, Nguyen KH, Dube SR. Nicotine Tob Res 2015

Current Use (At Least Once in Past 30 Days) of E-cigarettes Is Highest Among Current Smokers

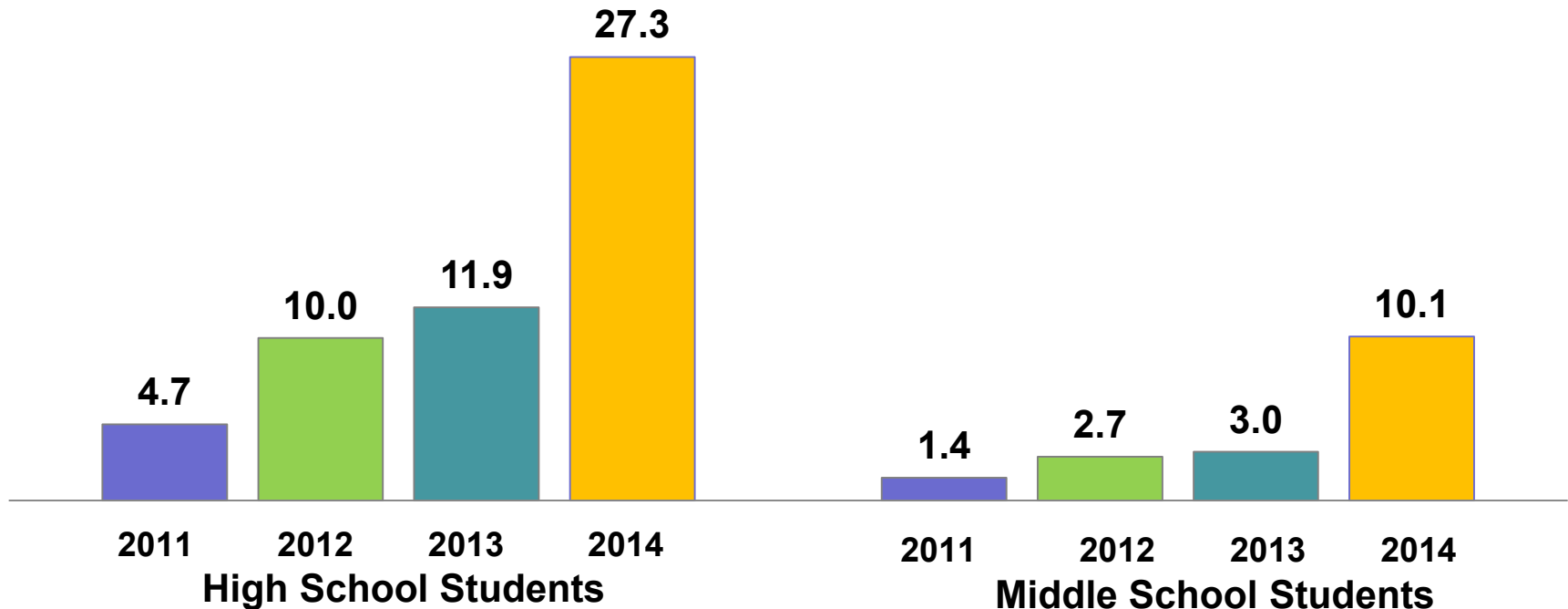
Current Use of E-cigarettes Among U.S. Adults, by Cigarette Smoking Status – *Styles*, 2010/2011 and 2012/2013



Current Smoker = Smoked at least 100 cigarettes in lifetime, and now smokes “every day” or “some days”
Former Smoker = Smoked at least 100 cigarettes in lifetime, and now smokes “not at all”
Never Smoker = Not smoked at least 100 cigarette in lifetime
King BA, Patel R, Nguyen KH, Dube SR. Nicotine Tob Res 2015

Continued Rise In U.S. High and Middle School Students Reporting Ever Use of E-cigarettes

Percent of *Ever Use** of E-cigarettes Among U.S. High and Middle School Students, 2011-2014

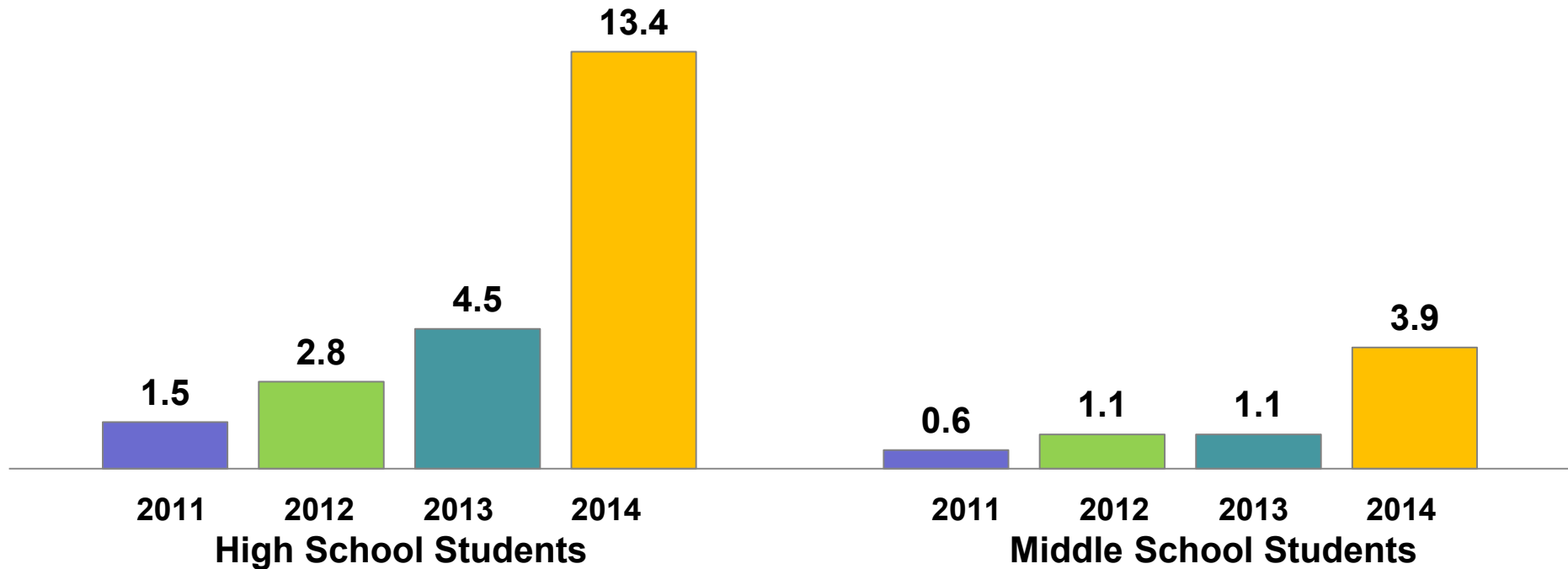


*Used, even just one time

Centers for Disease Control and Prevention, U.S. Food and Drug Administration. 2011-2014 National Youth Tobacco Survey

More U.S. High and Middle School Students Are Currently Using E-cigarettes

Percent of *Current Use** of E-cigarettes Among U.S. High and Middle School Students, 2011–2014



*Used an e-cigarette in past 30 days

Centers for Disease Control and Prevention and U.S. Food and Drug Administration. 2011-2014 National Youth Tobacco Survey

E-cigarettes and Nonsmoking Youth



Among nonsmoking youth, those that have ever used e-cigarettes have greater intentions to smoke conventional cigarettes than those who have never used e-cigarettes

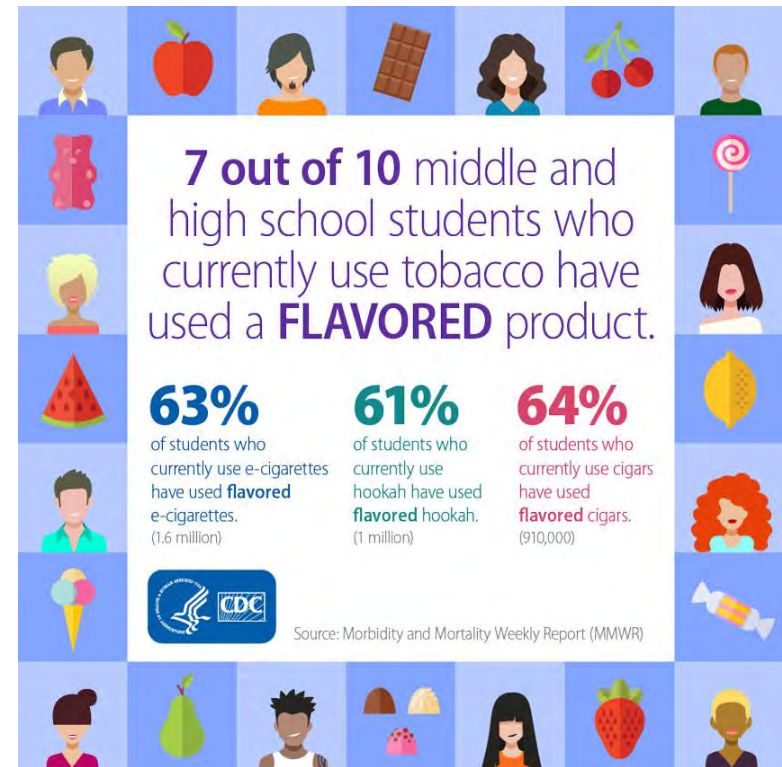
Among Youth, E-cigarette Use May Lead to Conventional Cigarette Use

- ❑ **High school students who had never smoked but reported ever using e-cigarettes at baseline were 2.7 times more likely to start using combustible tobacco after 1 year compared with high school students who never used e-cigarettes**
- ❑ **U.S. adolescents and young adults who had never smoked but used e-cigarettes at baseline were 8.3 times more likely to progress to cigarette smoking after 1 year than nonusers of e-cigarettes**



A Majority of Current Youth E-cigarette Users Report Using Flavored E-cigarettes

Among
U.S. middle and high school
students who
currently use* e-cigarettes,
63% have used
flavored e-cigarettes
or
– 1.58 million U.S. youth



*Used an e-cigarette in past 30 days

Corey CG , Ambrose BK, King BA, and Apelberg BJ. MMWR October 2015

Conclusions



- ❑ **E-cigarettes are currently unregulated in the U.S.**
 - Product landscape is rapidly growing and diversifying
- ❑ **Among adults, e-cigarette use has increased steadily**
 - Most adult users are current or former cigarette smokers
- ❑ **Among youth, an alarmingly sharp increase in e-cigarette use has occurred since 2011**
 - Emerging data suggest e-cigarette use might lead to subsequent combustible tobacco smoking among youth
 - In 2014, 1.58 million current youth e-cigarette users had used a flavored e-cigarette

Health Consequences of Electronic Cigarettes



Jonathan M. Samet, MD, MS

Distinguished Professor and Flora L. Thornton Chair,

Department of Preventive Medicine,

USC Keck School of Medicine

Key Aerosol Components

- ❑ **Aerosol vehicle**—mainly propylene glycol and some vegetable glycerin
- ❑ **Nicotine**—delivered at varying concentrations and doses, depending on the device and its operation
- ❑ **Flavorings**—a variety of flavorings are used
- ❑ **Other contaminants with known potential risks**
 - Tobacco-specific nitrosamines
 - Metals
 - Formaldehyde
 - Acrolein

What Do Electronic Cigarettes Deliver?

- ❑ **An aerosol composed of droplets of the vehicle and its components**
- ❑ **The aerosol particles are in the size range that penetrates into the lung**
- ❑ **Materials in deposited particles reach the cells of the airways**
- ❑ **Some components (e.g., nicotine) move across the lining of the lung and enter the circulation**

Health Risks of Nicotine: Key Conclusions of the 2014 Surgeon General's Report (1)

□ **The evidence is sufficient to infer that**

1. At high-enough doses, nicotine has acute toxicity
2. Nicotine activates multiple biological pathways through which smoking increases risk for disease
3. Nicotine exposure during fetal development, a critical window for brain development, has lasting adverse consequences for brain development
4. Nicotine adversely affects maternal and fetal health during pregnancy, contributing to multiple adverse outcomes such as preterm delivery and stillbirth

Health Risks of Nicotine: Key Conclusions of the 2014 Surgeon General's Report (2)

❑ The evidence is suggestive that

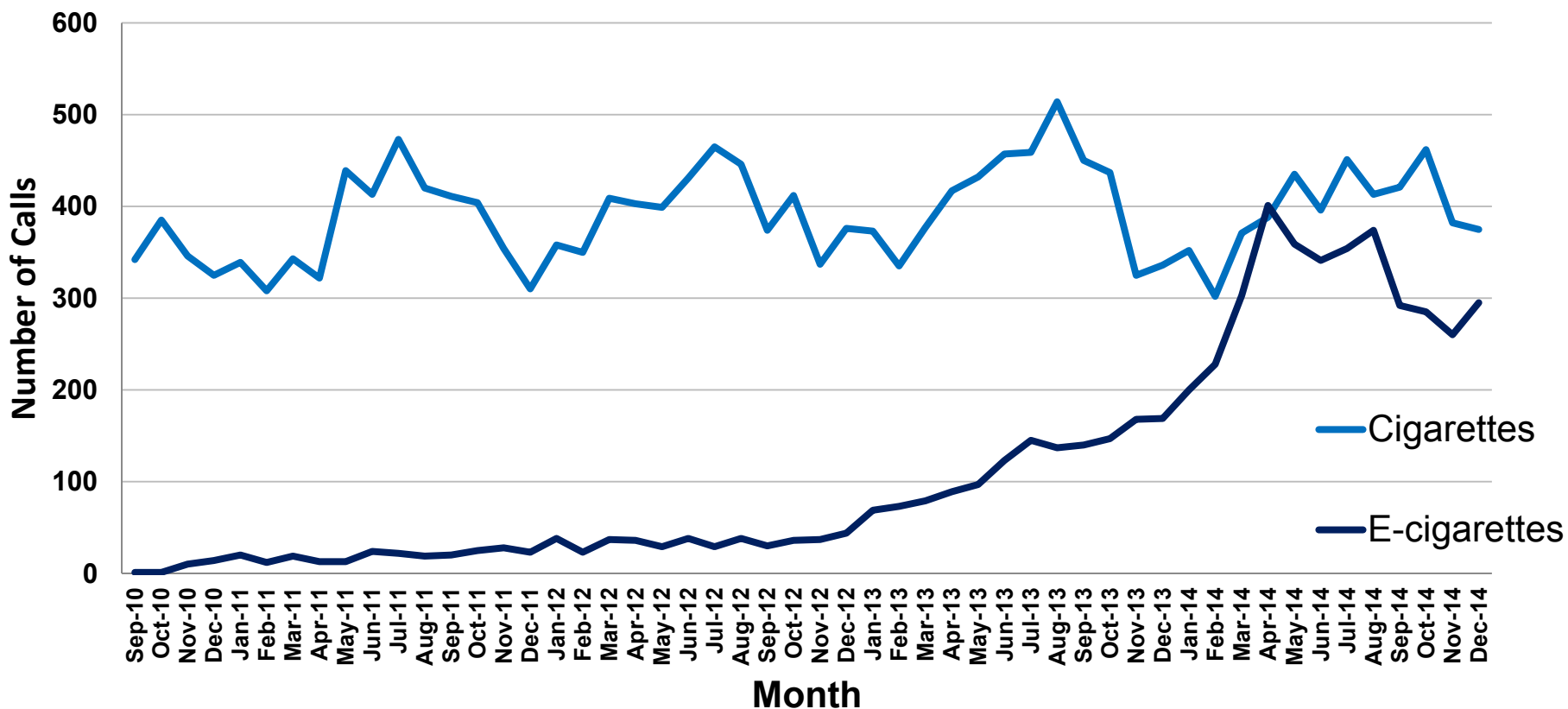
- Nicotine exposure during adolescence, a critical window for brain development, may have lasting adverse consequences for brain development
- Adolescents have an increased risk because their brains are still developing and are particularly sensitive to nicotine

❑ Nicotine has adverse effects on health across the full life course—extending from gestation through adulthood

**From the 1988 Surgeon General's Report:
“Nicotine is the drug in tobacco that causes addiction.”**

Nicotine Poisoning Has Risen

Calls to Poison Centers for Exposures to Cigarettes and Electronic Cigarettes — U.S., September 2010–December 2014



www.cdc.gov/mmwr/preview/mmwrhtml/mm6313a4.htm and aapcc.org unpublished data

Flavorings

- ❑ Numerous flavorings used in electronic cigarettes
- ❑ The flavorings are GRAS for ingestion, but not for inhalation

GRAS: “Generally recognized as safe” is U.S. Food and Drug Administration (FDA) designation that a substance added to food is considered safe by qualified experts, and so is exempted from the usual Federal Food, Drug, and Cosmetic Act (FFDCA) food additive tolerance requirements



Flavoring Is Linked to Permanent Scarring of the Airways in the Lungs

- ❑ **One flavoring, diacetyl, is linked to bronchiolitis obliterans**
 - Scarring of the bronchioles
- ❑ **Some flavorings in use are structurally similar to diacetyl**

MMWR[™]

Morbidity and Mortality Weekly Report

April 27, 2007 / Vol. 56 / No. 16

Fixed Obstructive Lung Disease Among Workers in the Flavor-Manufacturing Industry — California, 2004–2007

Bronchiolitis obliterans, a rare and life-threatening form of fixed obstructive lung disease, is known to be caused by exposure to noxious gases in occupational settings and has been described in workers in the microwave-popcorn industry who were exposed to artificial butter-flavoring chemicals, including diacetyl (1,2). In August 2004, the California Department of Health Services (CDHS) and Division of Occupational Safety and Health (Cal/OSHA) received the first report of a bronchiolitis obliterans diagnosis in a flavor-



Current employee protective wear for working with diacetyl

Adolescent E-cigarette Use Associated with Increased Risk of Chronic Cough

- ❑ **Among 2,100 11–12th graders**
 - **502 students reported ever use of e-cigarettes**
 - 212 reported no history of combustible tobacco use (never smokers)
 - **196 students reported current use of e-cigarettes**
 - 78 reported no history of combustible tobacco use (never smokers)
- ❑ **Ever users had 2-fold increased risk for bronchitic symptoms (i.e., chronic cough)**
- ❑ **The more often current users used e-cigarettes, the greater their risk for bronchitic symptoms**
- ❑ **Even for e-cigarette users who never smoked, there was 1.6 increased risk for bronchitic symptoms**

Electronic Cigarettes and Smoking Cessation

- ❑ **Anecdotes and testimonials are abundant**
- ❑ **Very few clinical trials conducted to date**
- ❑ **Available evidence from recent Cochrane systematic review suggests**
 - Electronic cigarettes may help to reduce the number of cigarettes smoked
 - Little evidence on efficacy compared with proven cessation therapies

E-cigarette Risk Assessment

Potential Harms

For youth

- ❑ Increased exposure to nicotine and greater initiation of conventional cigarettes
- ❑ Long-term consequences on brain development
- ❑ Future disease risks

For current smokers

- ❑ Slowing cessation
- ❑ Increased disease risk vs. complete cessation

For former smokers

- ❑ Return to nicotine addiction

For society and nonsmokers

- ❑ Renormalization of nicotine and smoking
- ❑ Secondhand aerosol exposure

Potential Benefits

For current smokers

- ❑ Reduced disease risk for those who switch to e-cigarettes, and reduce or quit cigarettes
- ❑ Reduced disease morbidity for those already with heart and lung disease who switch to e-cigarettes, and reduce or quit cigarettes

Critical Research Needs

- ❑ **Surveillance for emergent patterns of e-cigarette use with attention to nicotine addiction**
- ❑ **Monitoring for sentinel events, including nicotine poisoning and respiratory complications**
- ❑ **Toxicological screening of components, particularly flavorings**
- ❑ **Investigation of abuse liability of electronic cigarettes and role of flavorings**
- ❑ **Studies of effects in key possibly susceptible groups: adolescents, people with heart and lung disease**

E-cigarettes in Washington State: On the Front Lines



John Wiesman, DrPH, MPH
Secretary of Health
Washington State Department of Health

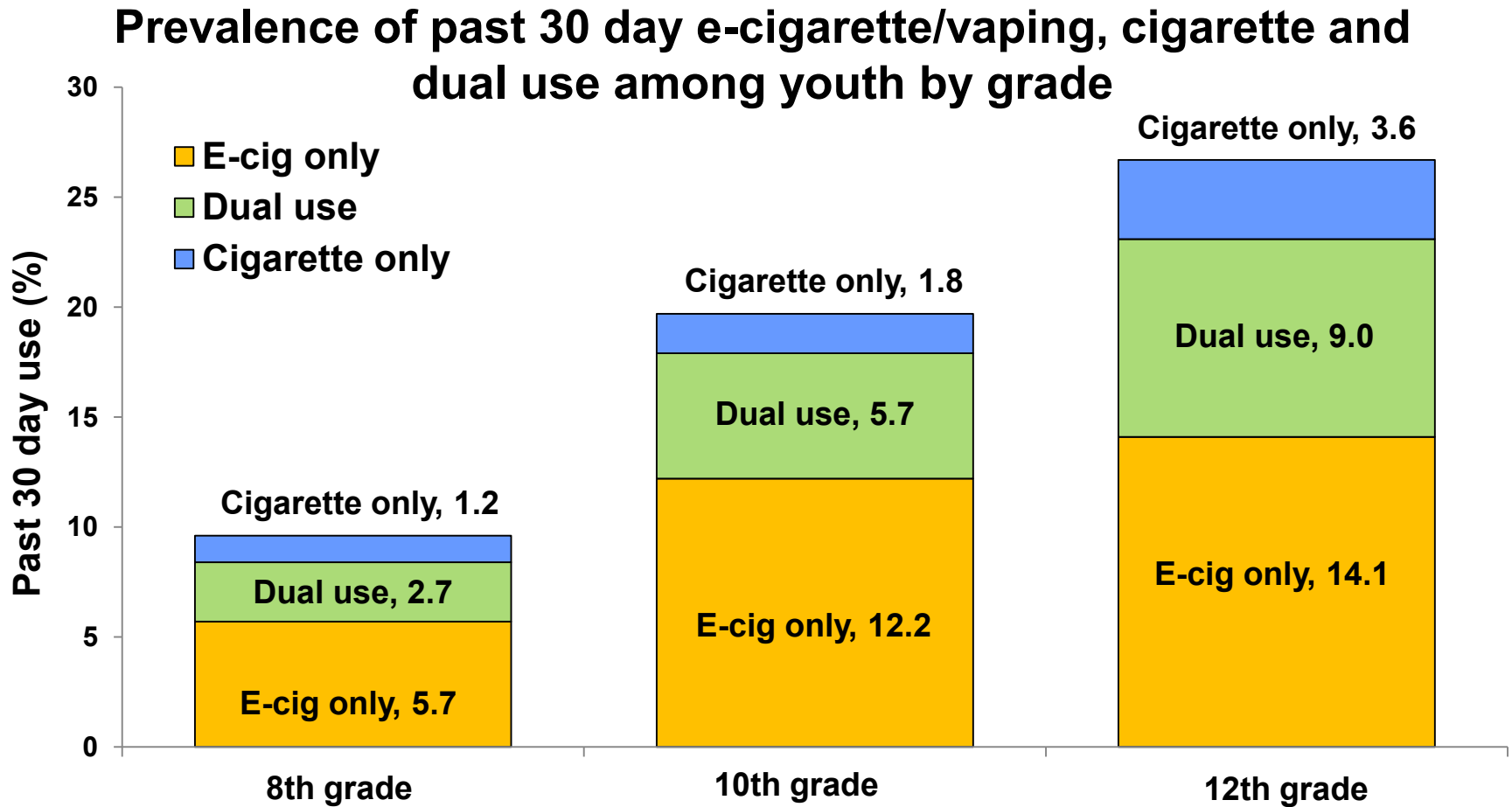
A Challenge in Public Health Practice

❑ **Public health perspective**

- For adults who already smoke, switching to e-cigarettes is probably less harmful than continuing to smoke, but they have to quit smoking cigarettes completely
- For adults who never smoked or are former smokers, or are pregnant women, e-cigarette use could be harmful to their health
- For youth, e-cigarette use is unsafe for their health and should not be done at all

❑ **Challenges to simultaneously implement in terms of the public policy of e-cigarette regulation**

Washington Healthiest Youth Survey Results



Reduce Impact on Youth

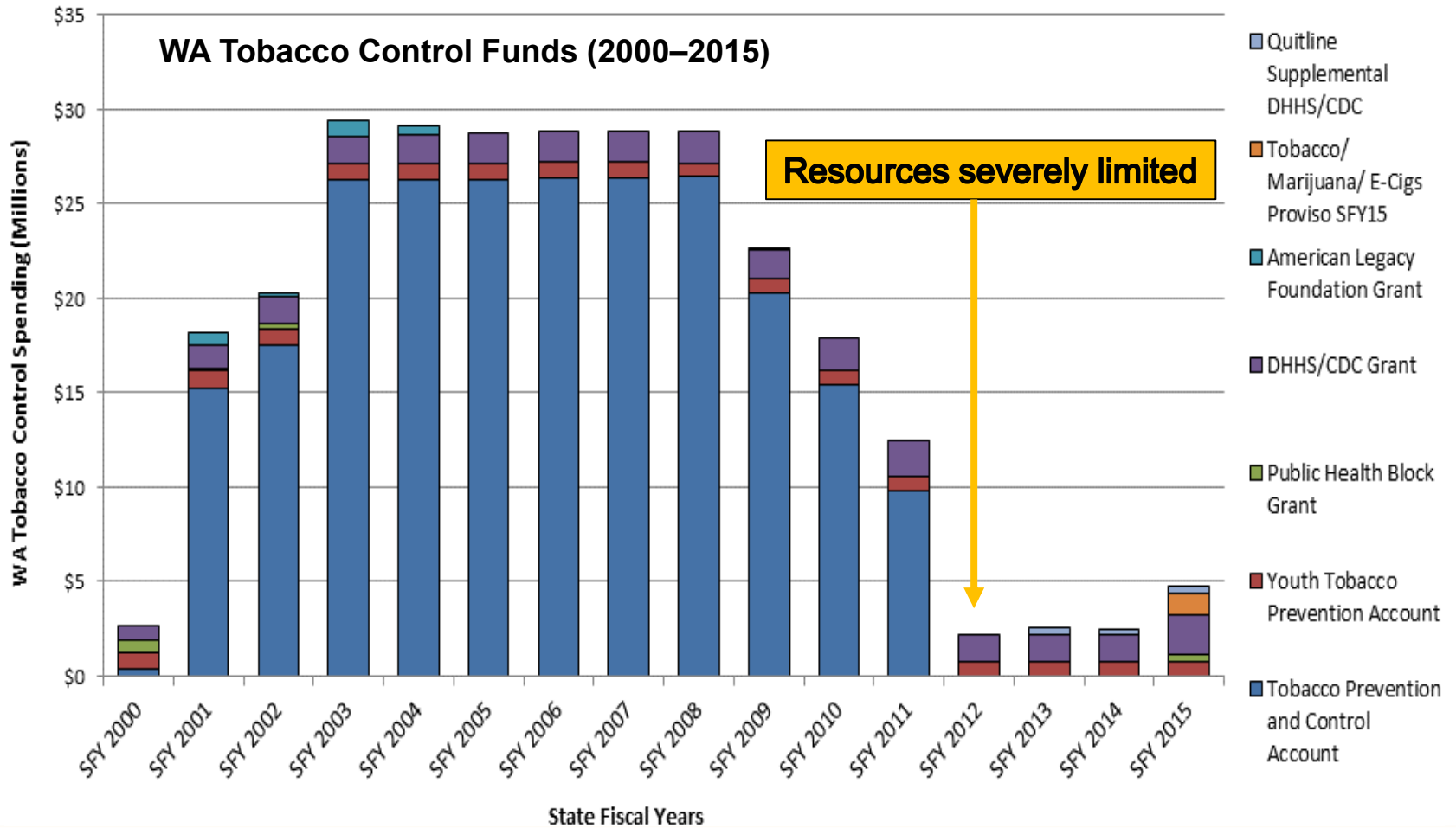
Goal : Protect our young people from the impact of e-cigarettes and tobacco

Strategy: Reduce supply and demand

- ✓ Adequate funding
- ✓ Health promotion and education
- ✓ Policy, systems, and environment changes



Reduce Demand: Education



Reduce Demand: Public Education and Health Promotion

Most Youth Rise Above the Influence

Send a selfie showing how you live drug free and enter to win Seahawks tickets or other prizes.



Contest rules at 206rising.org



Logos at the bottom include: Neighborhood Voice, Seattle City Attorney's Office, King County Alcohol and Other Drug Treatment Program, SE Seattle PEACE Coalition, and Clear Channel.

NOPE.

Pierce County isn't fooled by e-cigarettes.

THINKAGAINPIERCECOUNTY.COM | 



THINK AGAIN, PIERCE COUNTY.
E-cigarettes are harmful, just like cigarettes.



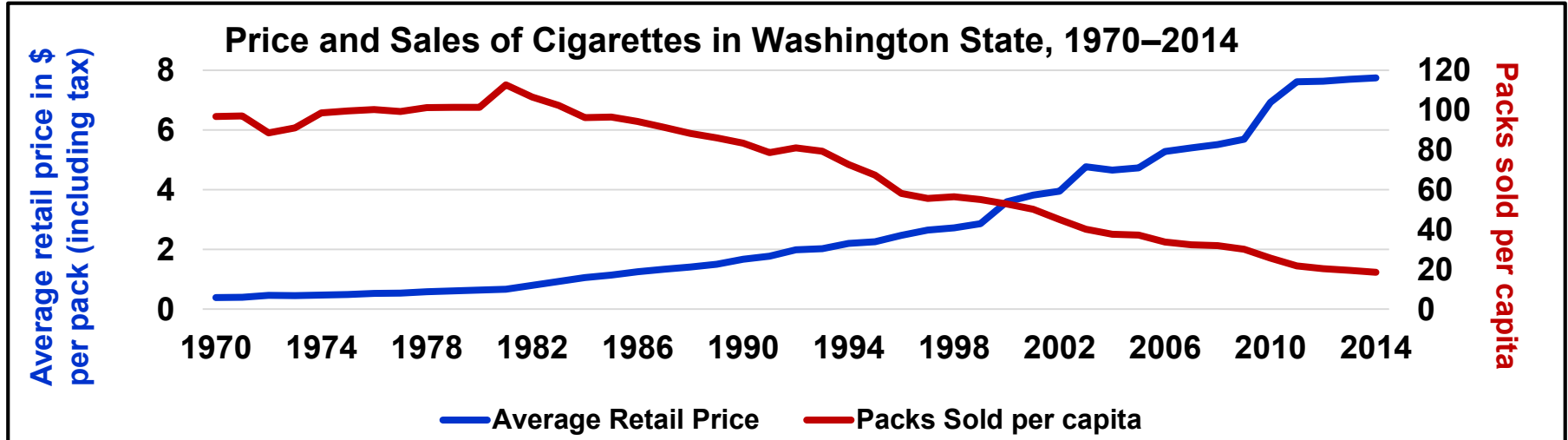
THINKAGAINPIERCECOUNTY.COM | 

Tacoma-Pierce County Health Department, Tacoma, WA

www.206rising.org/
www.thinkagainpiercecouny.com/

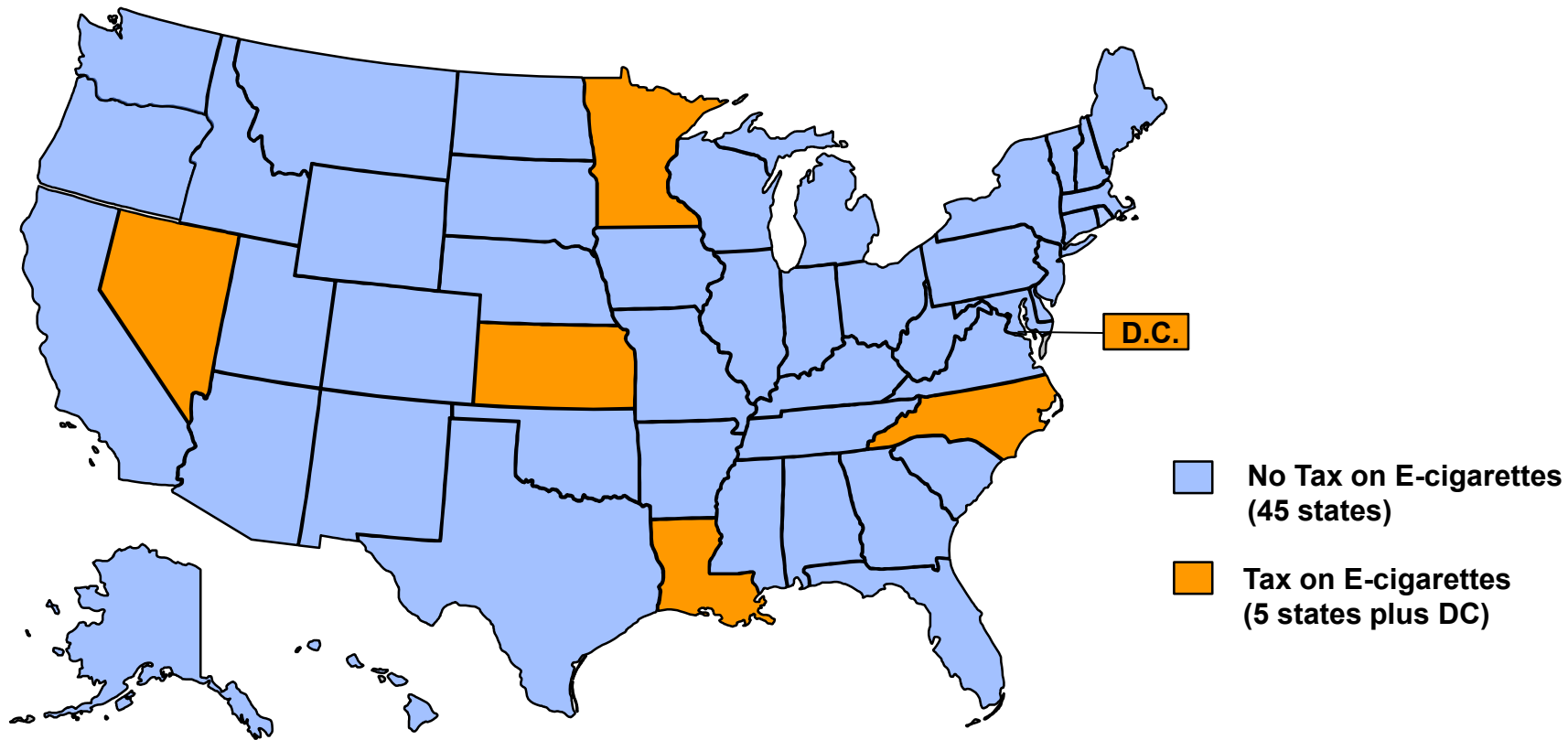
Reduce Demand: Tax E-cigarettes

- ❑ Impact of raising taxes on cigarettes has been shown, but impact on e-cigarettes is not known
- ❑ In Washington
 - Pack of cigarettes costs \$8.31
 - E-cigarettes – starter kit costs \$50-200
 - On average, liquid nicotine costs half as much as cigarettes



Reduce Demand: Tax E-cigarettes

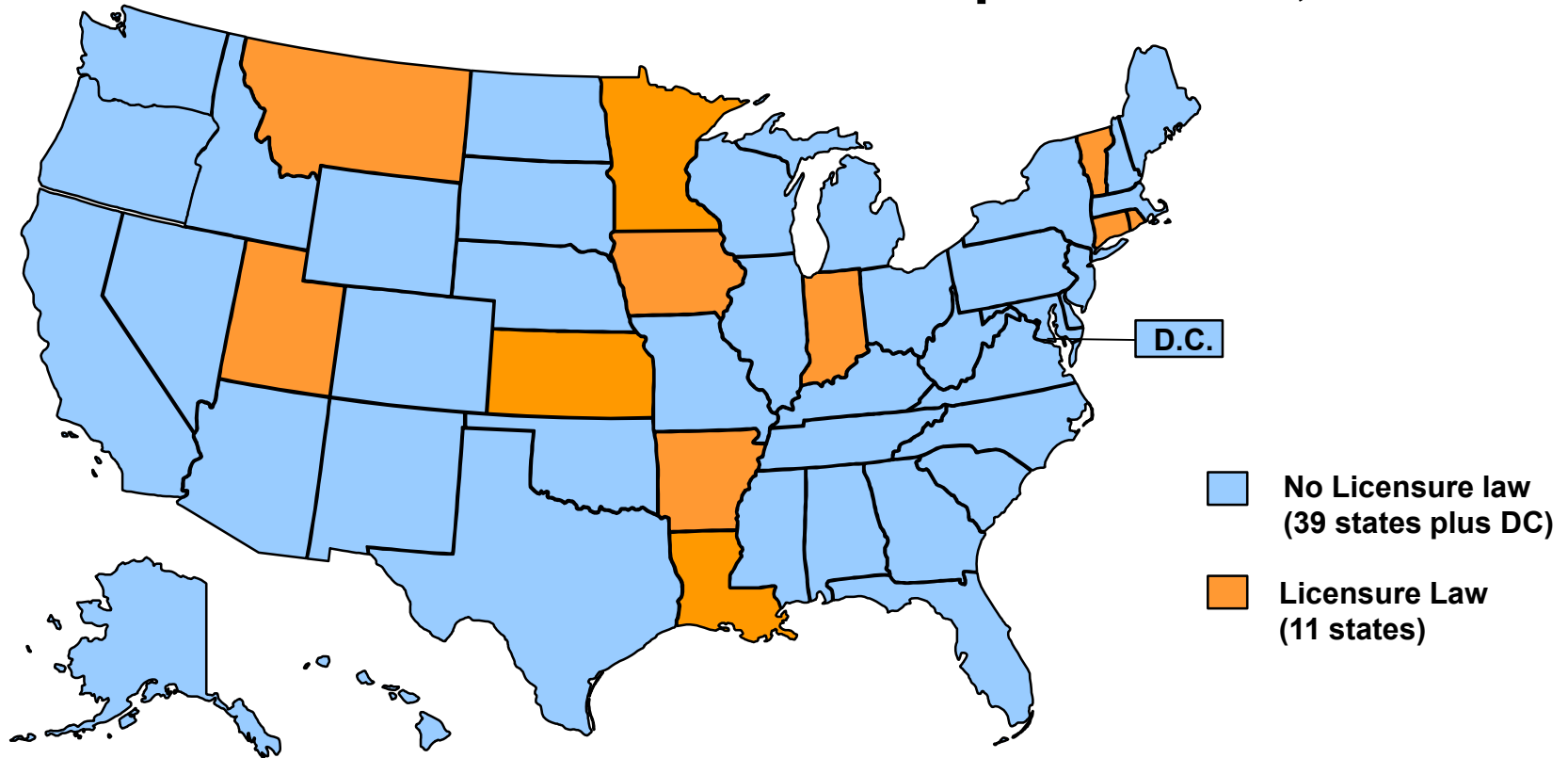
State Laws Enacted to Tax ENDS – September 30, 2015



ENDS: Electronic nicotine delivery systems
CDC Office on Smoking and Health

Reduce Supply: License Retailers

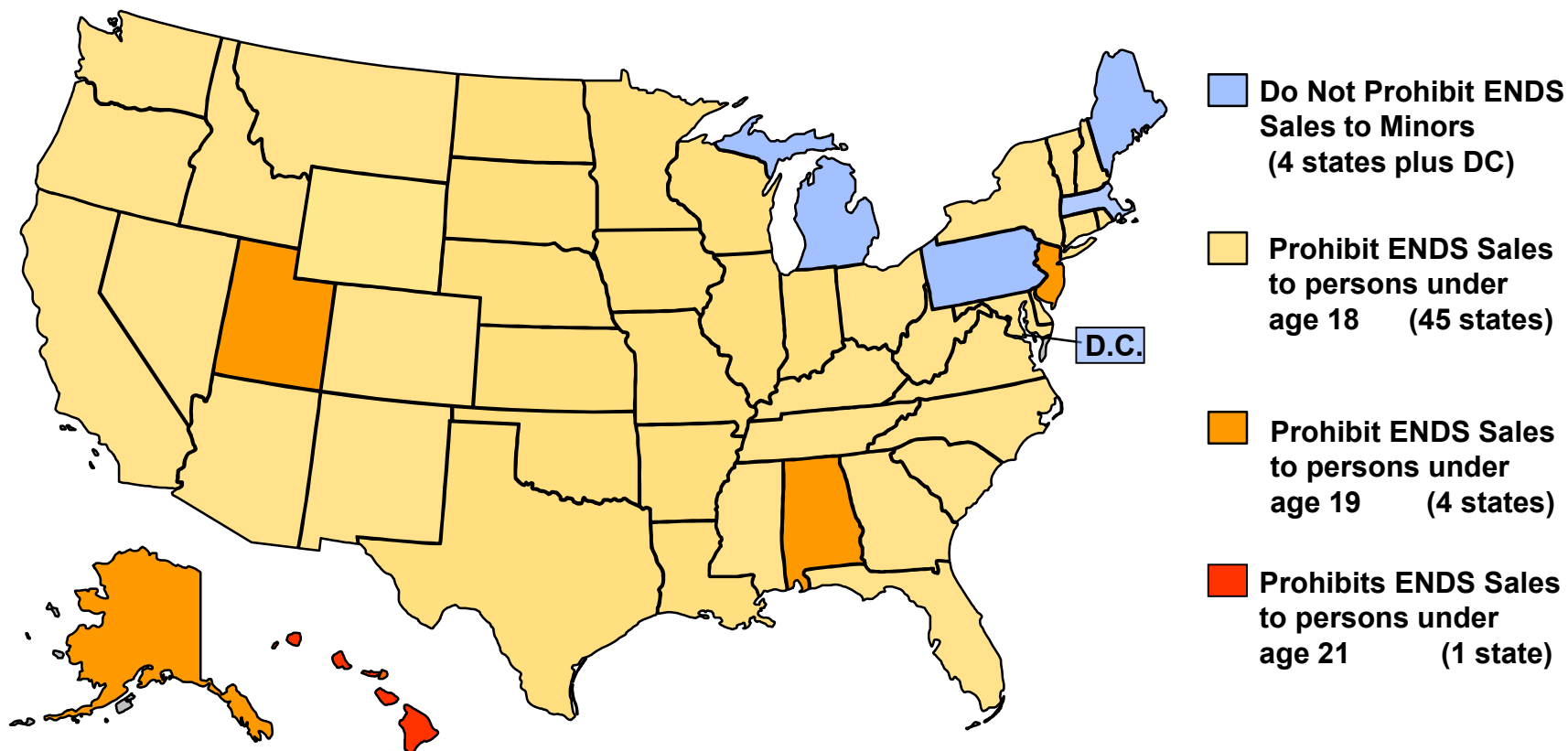
State Laws Enacted to Require a License for Over-the-Counter Retail Sales of ENDS – September 30, 2015



ENDS: Electronic nicotine delivery systems
CDC Office on Smoking and Health

Reduce Supply: Raise the Legal Age to Purchase

State Laws Prohibiting Sales of ENDS to Minors* – September 30, 2015



*Minors are defined by statute as persons <18 years, except in four states (Alabama, Alaska, New Jersey, and Utah) where they are defined as persons aged <19 years

ENDS: Electronic nicotine delivery systems

CDC Office on Smoking and Health

Additional Policy Choices

- ❑ **Require child-resistant containers**
- ❑ **Require warnings on bottles or points of sale**
- ❑ **Prohibit specific flavors**
 - (New York proposal – only tobacco, menthol, mint, wintergreen)
- ❑ **Prohibit indoor and public use**



CLARK COUNTY
Public Health
Always working for a safer and healthier community

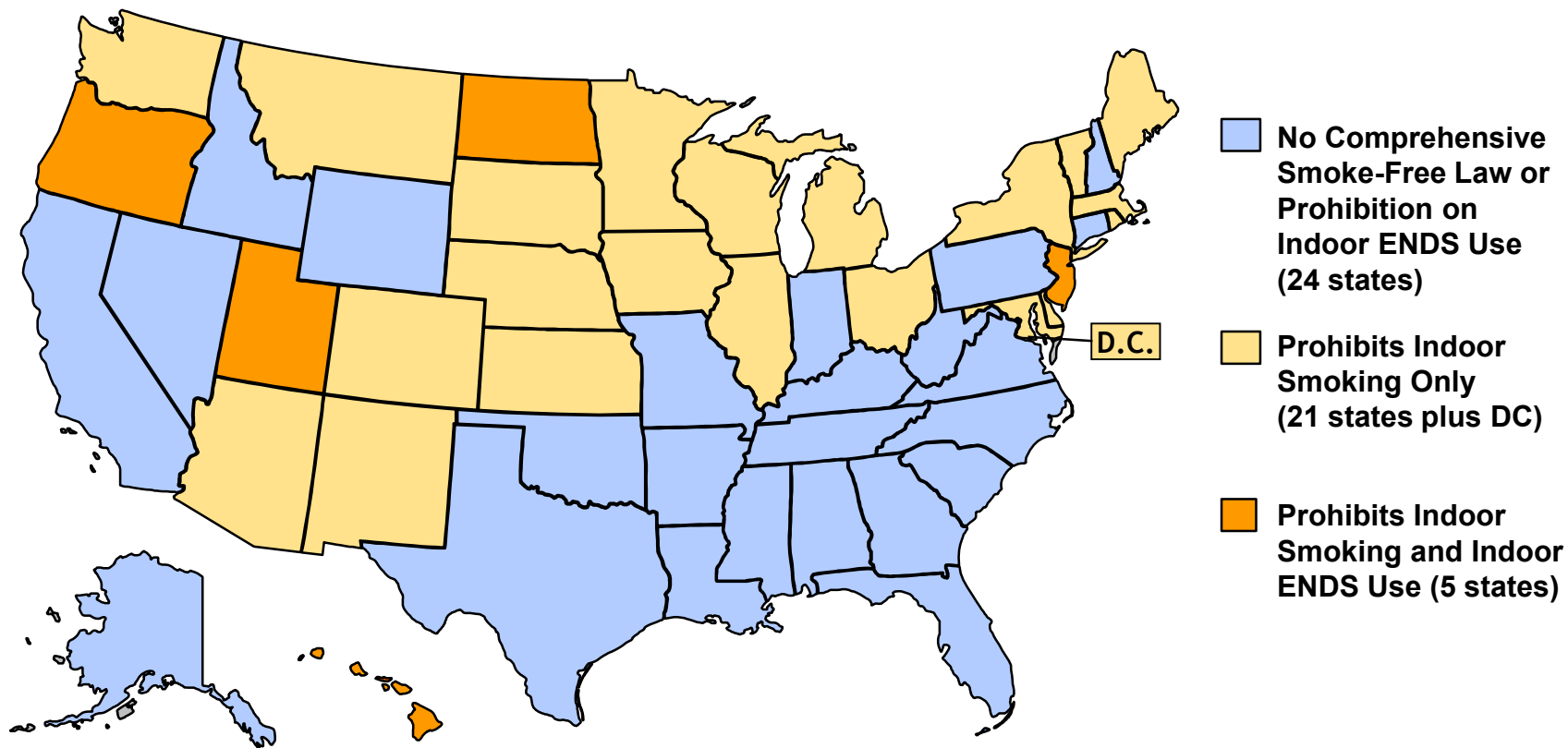
Washington Smoking in Public Places Law and Clark County Ordinance 2015-04-18

In 2005 the people of Washington State voted to expand the state Clean Indoor Air Act, now called Smoking in Public Places Law, making all indoor public places and workplaces smokefree. The law prohibits smoking in any indoor enclosed public places. The law applies everywhere, all the time.

In April 2015, the Clark County Board of Health amended Clark County Ordinance 2015-04-18 which codifies the state Smoking in Public Places Law and prohibits the use on inhalant delivery systems where smoking is prohibited by state law. The sole exception to the code is in stores that exclusively sell, market and/or distribute inhalant delivery systems. Sampling of inhalant delivery systems sold in these stores is permitted by persons age 18 and older.

Prohibit Smoking and Use of E-cigarettes in Public and Indoor Places

State Laws Prohibiting Smoking and Use of ENDS in Indoor Areas of Private Worksites, Restaurants and Bars – May 2015



ENDS: Electronic nicotine delivery systems
CDC Office on Smoking and Health

Rapidly Emerging Challenge

- ❑ Sale of e-cigarettes pre-loaded with THC (marijuana) in states that have legalized or decriminalized the recreational or medical use of marijuana
- ❑ Devices look similar to e-cigarettes



THC: Tetrahydrocannabinol, the psychoactive component of marijuana
www.ncsl.org/research/civil-and-criminal-justice/marijuana-overview.aspx
www.ncsl.org/research/health/state-medical-marijuana-laws.aspx

WA State's Attempt at Comprehensive Legislation

Washington Governor's proposal:

- License retailers
- Require labeling of nicotine and other contents
- Restrict displays, OTC sales, and flavors
- Prohibit internet sales
- Prohibit use on school grounds
- Ensure child-safe packaging
- Tax vapor products



Proposals failed in 2015,
will continue in 2016

Washington Attorney General's proposal:

- Raise age of purchase to 21

Attaining a Tobacco-Free Generation and the Emergence of E-Cigarettes



Matthew L. Myers
President, Campaign for Tobacco-Free Kids

Progress Towards Creating a Tobacco-Free Generation

- ❑ **There has been substantial progress both in reducing youth initiation and use of cigarettes**
- ❑ **Reduction in cigarette use has been accompanied by a change in attitudes among youth**
 - Smoking is no longer cool, chic or sexy
- ❑ **Progress in places that have adopted CDC's Best Practices demonstrate that available tools can drive youth tobacco use even lower – much lower**

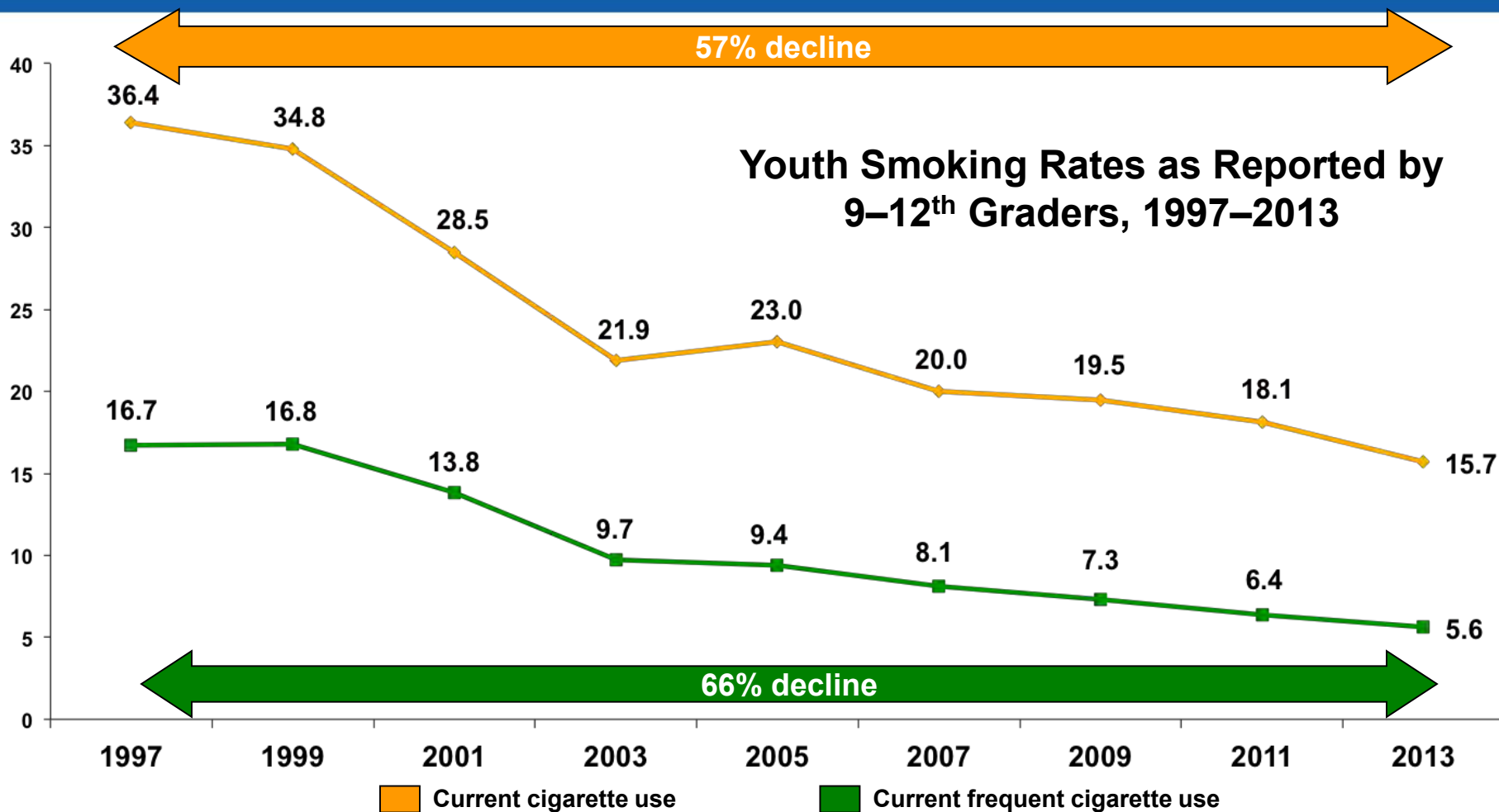
ENDS Are Not Critical to Preventing Youth From Smoking

Therefore, ENDS are not critical to achieving a Tobacco-Free Generation.

The issue is:

***ARE THEY A THREAT TO ACHIEVING
THAT GOAL?***

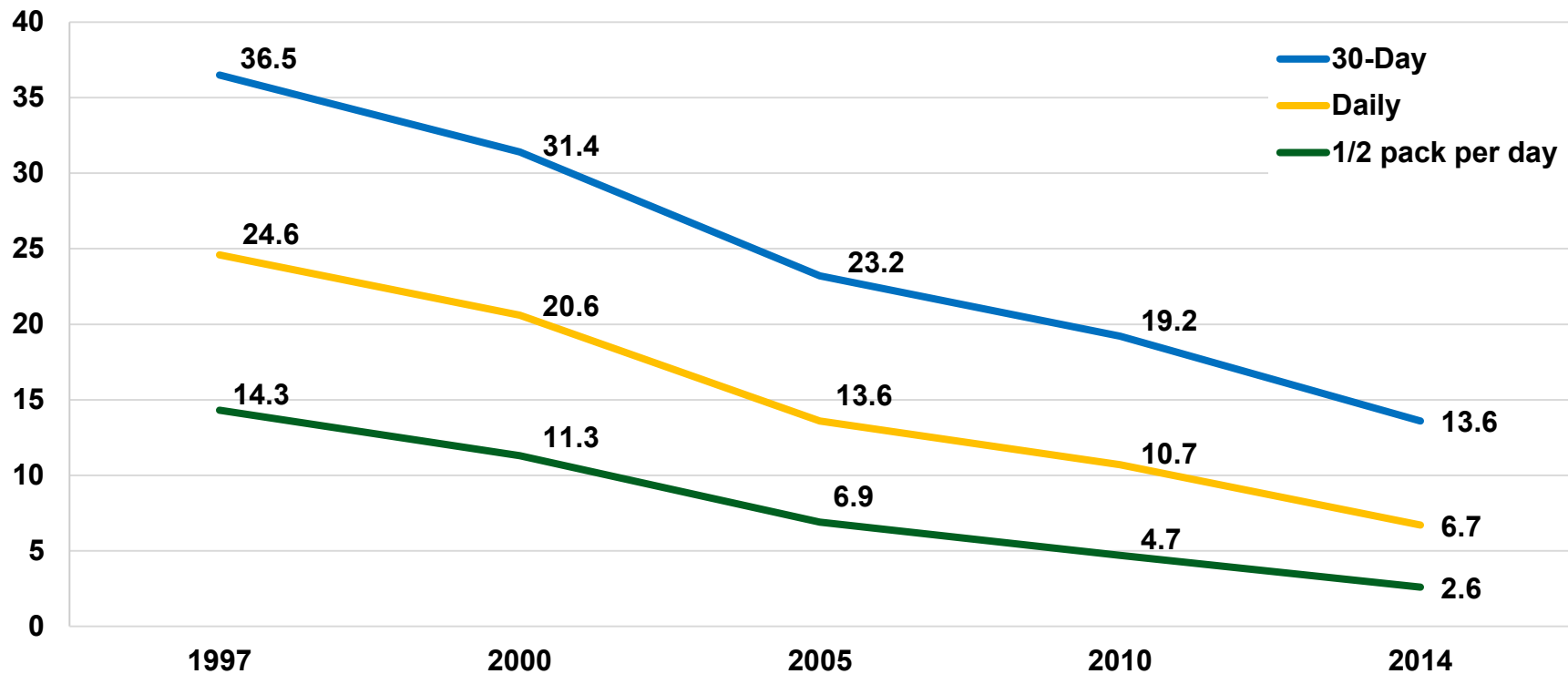
Prior to the Emergence of E-cigarettes, Youth Smoking Rates Were Falling



Current cigarette use: Smoked cigarettes on at least 1 day during the 30 days before the survey
Current frequent cigarette use: Smoked cigarettes on 20 or more days during the 30 days before the survey
Youth Risk Behavior Surveillance System

Prior to the Emergence of E-cigarettes, Amount and Frequency of Use Were Falling

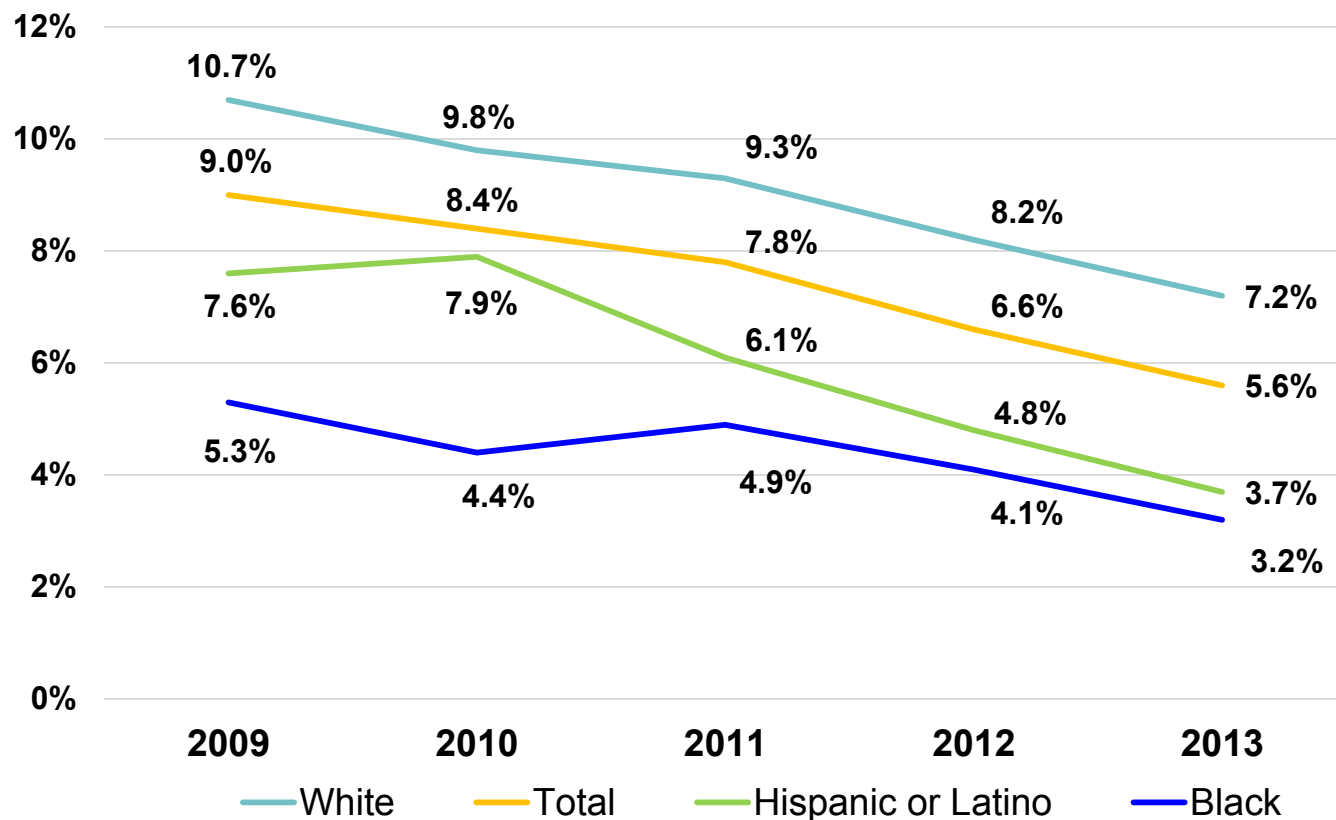
Use of Cigarettes as Reported by 12th Graders, 1997–2014



30-Day: Ever used in past 30 days
www.monitoringthefuture.org/data/14data.html#2014data-cigs

Decline in Youth Tobacco Use is Broad

Past-Month Cigarette Use Among Adolescents Aged 12–17, by Race and Ethnicity, 2009–2013



In 2013, the percentage of cigarette use was higher among adolescents who lived in nonmetropolitan areas (8.4%) than adolescents who lived in metropolitan areas (5.1%).

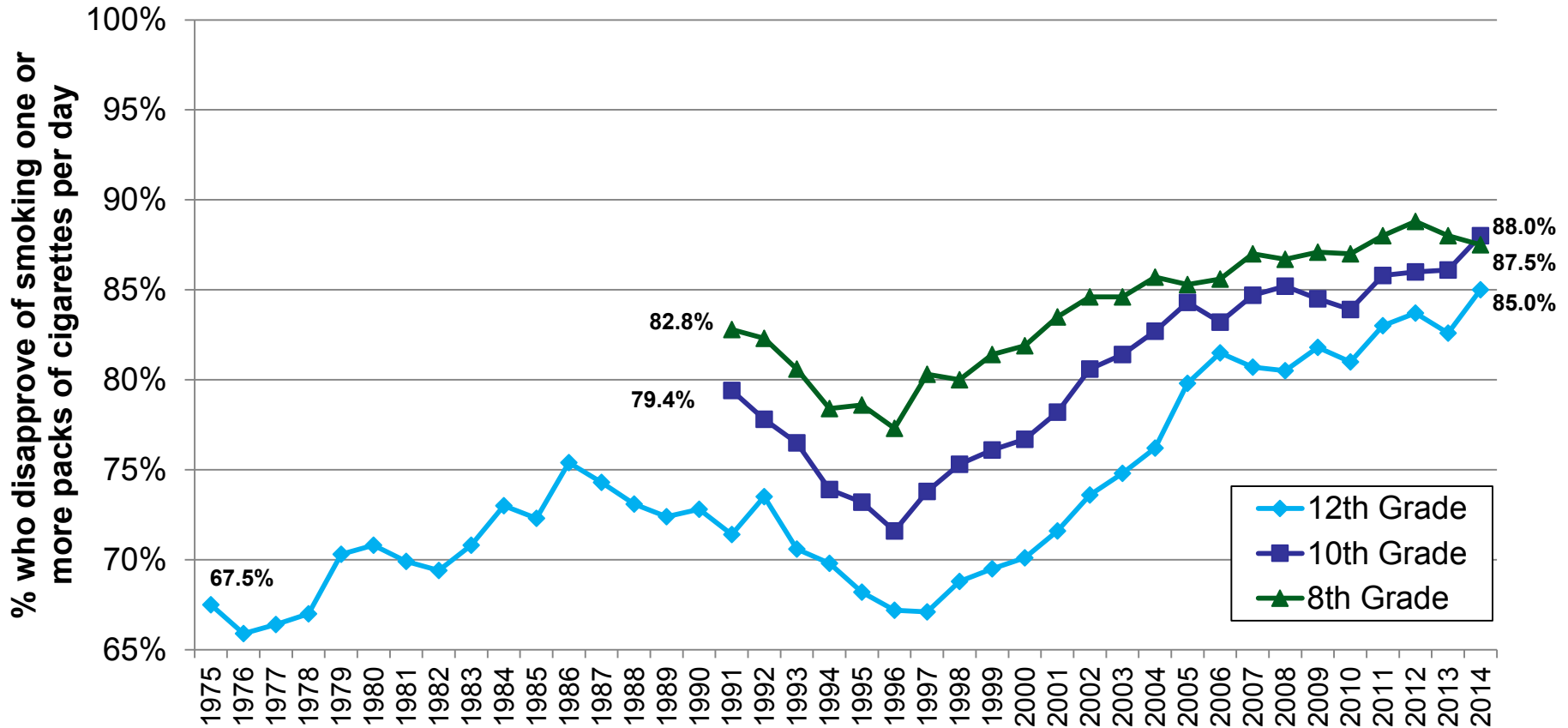
From 2009 to 2013, the percentage of U.S. adolescents using cigarettes decreased from 9.0% to 5.6%. There were significant decreases for whites, blacks and Hispanics.

Evidence that Current Policies Can Reduce Youth Tobacco Use Further

- ❑ **U.S. youth smoking rates vary from 4.4% to 19.5%**
- ❑ **While the national average is 15.7%**
 - 16 states have youth smoking rates under 11%
 - 6 states are already under 10%
 - New York is 7.3%
 - Florida is 6.9%
 - Utah is 4.4%
- ❑ **Except Utah, the states and cities with the lowest youth smoking rates have had mass media campaigns**
 - Sustained
 - Hard-hitting and explicit
 - Creative

Disapproval of Cigarette Use Increased in Youth After Marketing Restrictions and Other Changes

Increasing Disapproval of Cigarette Use, 1975–2014



E-Cigarette Companies Are Copying Big Tobacco's Playbook

Rewrite The Rules.

FIN
Electronic Cigarettes

REDEEM YOUR **\$5 OFF** COUPON AT FINCIGS.COM/NEWYORK

FIN
Electronic Cigarettes

Now Available in
NEW YORK



in cigarettes, as in naval patrol planes, it's modern design that makes the big difference!

*"You'll like Pall Mall's modern design —
it filters the smoke — lessens throat irritation!"*



Modern Design. That's the keynote as national defense moves ahead on land, sea and in the air. For instance, modern design makes the big difference in today's stream-lined naval patrol planes — a style difference when there are no make.

Talk with the men who fly these planes. They'll tell you that in cigarettes, as in naval patrol planes, it's modern design that makes the big difference.

Pall Mall's modern design marks the greatest forward step in smoking pleasure in thirty years. For this streamlined cigarette is deliberately designed to give you a smoother, less irritating smoke. It is a scientific fact that tobacco is its own natural filter.

And they, in Pall Mall, the smoke is unusually filtered — filtered naturally over a 20% longer extent of Pall Mall's traditionally fine tobacco.

Pall Mall's modern design also creates a definitely crisper smoke. The additional length travels the smoke further — gets it off the lips and fast on the way.

Now, at last — thanks to modern design — a truly fine cigarette provides as fast what other cigarettes claim to theory — a smoother, less irritating smoke — Pall Mall.

Prove it! Yourself, try Pall Mall critically. You'll like Pall Mall's Modern Design — it filters the smoke — lessens throat irritation!

"WHEREVER PARTICULAR PEOPLE CONGREGATE"

Copyright 1939 American Tobacco Co. Inc. N.Y.

Here's how →

1. Celebrity Spokespeople

They have celebrity spokespeople

Like cigarette ads of old, television, online and print ads for e-cigarettes feature catchy slogans and celebrity endorsers



Stephen Dorff's Rise From the Ashes- Brought to you by blu Cigs

www.youtube.com/watch?v=VZishwAt_RM



tobacco.stanford.edu/tobacco_main/main.php

... and TV personalities

... Jenny McCarthy for blu eCigs



The image shows a YouTube video player interface. The video content is a still from a commercial featuring Jenny McCarthy. She is a blonde woman with long hair, wearing a dark top, looking towards the camera while holding a black e-cigarette. The video player includes a progress bar at 0:19 / 1:01, a volume icon, and standard YouTube controls. Below the video, the title reads "blu eCigs 2013 TV Commercial: 'Freedom' featuring Jenny McCarthy for blu Electronic Cigarettes". The channel name "BluCigs" is shown with 43 videos and a subscriber button with 1,566 subscribers. The video has 306 views and 5 likes. Navigation buttons for Like, About, Share, Add to, and a flag icon are visible at the bottom.



This is a vintage advertisement for Lucky Strike cigarettes. At the top, in red text, it reads: "Scientific tests prove Lucky Strike milder than any other principal brand!". Below this, in smaller black text, it says: "These scientific tests, confirmed by independent consulting laboratory, prove Lucky Strike mildest of 6 major brands tested!". The central figure is Marlene Dietrich, depicted in a classic Hollywood style. She is wearing a white, off-the-shoulder dress with a black sash and is sitting in a black chair with red and white trim. She is holding a cigarette in her right hand and looking towards the camera. To her right is a pack of Lucky Strike cigarettes. The text "MARLENE DIETRICH says:" is placed above her, followed by her quote: "I smoke a smooth cigarette—Lucky Strike!". At the bottom of the advertisement, it says: "Let your own taste and throat be the judge! For the rich taste of fine tobacco — for smoothness and mildness . . . THERE'S NEVER A ROUGH PUFF IN A LUCKY!". The bottom-most text reads: "L.S./M.F.T. — Lucky Strike Means Fine Tobacco" and "So round, so firm, so fully packed—so free and easy on the draw".

www.youtube.com/watch?v=A5rBDwliN8E

tobacco.stanford.edu/tobacco_main/main.php

2. Magazine Advertisements

Their magazine ads feature rugged men ...



EXCLUSIVE: Demise of the Red Sox Empire
BY TERRY FRANCONA

20 REASONS TO CARE ABOUT THE NHL

Sports Illustrated

HOLY...

SHOUT IT FROM THE MOUNTAINTOP, JIM — YOU WERE DEAD ON ABOUT COLIN KAEPERNICK

JANUARY 2012 \$5.99

Hasn't even a big game...
...with Kaepernick's
historic clanking
of the Peeters

blu ELECTRONIC CIGARETTES

Take back your freedom with blu eCigs™, the new alternative to traditional cigarettes.

- Smoke Virtually Anywhere
- No Tobacco Smoke, Only Vapor
- Flavors Made in the U.S.A.

Now Available in Retail Stores Nationwide

NOT FOR SALE TO MINORS. blu eCigs electronic cigarettes are not a smoking cessation product and have not been evaluated by the Food and Drug Administration, nor are they intended to treat, prevent or cure any disease or condition. ©2012 ORC, Inc. blu™ are trademarks of Lorillard Technologies, Inc.

... and glamorous women

These ads feature today's equivalents of the Marlboro Man and the Virginia Slims woman, depicting e-cigarette use as masculine, sexy or rebellious. E-cigarette ads have appeared in magazines that reach millions of teens, including *Rolling Stone*, and *Sports Illustrated*.

SMOKE IN STYLE
With blu Electronic Cigarettes

Freedom never goes out of fashion. Control when and where you want to smoke with blu electronic cigarettes. blu produces no tobacco smoke and no ash, only vapor, making it the ultimate accessory and the smarter alternative to regular cigarettes. Step out in style with blu.

Like' us on Facebook
facebook.com/blucigs

blu

blucigs.com

* Introducing the World's First Smart Pack (Deluxe Only)

18+ ID required. | blu eigs are not a smoking cessation product and have not been evaluated by the Food and Drug Administration, nor are they intended to treat, prevent or cure any disease or condition.

In 1904, Mrs. George Hubbard found a clever way to smoke a cigarette while her husband still got the attention he demanded.

You've come a long way, baby.

Philip Morris Inc. 1999
8 mg "tar," 0.8 mg nicotine av. per cigarette, FTC Report Feb. '95.

SURGEON GENERAL'S WARNING: Cigarette Smoke Contains Carbon Monoxide.

3. They know sex sells

Like cigarette companies have long done, e-cigarette makers portray use of their products as sexually attractive.



2012
Only Comes
Once

MAKE THE SWITCH TO blu ELECTRONIC CIGARETTES

This year, resolve to make the most of your opportunities by making the switch to blu. With only five ingredients, blu produces no ash, no smell, only vapor, which means it's perfect for restaurants, bars and your trip around the bases. You control the nicotine. You control when and where you want to smoke. The rest is up to her.

FLAVORS: Classic Tobacco, Magnificent Menthol, Cherry Crush, Vivid Vanilla & Java Jolt

blucigs.com

Available Now at These and Other Fine Retailers:



18+ only. CALIFORNIA PROPOSITION 65 Warning: This product contains nicotine, a chemical known to the state of California to cause birth defects or other reproductive harm.

New blu Smart Pack



Box Kings, 16 mg. "tar", 1.2 mg. nicotine av. per cigarette by FTC method. Actual deliveries will vary based on how you hold and smoke your cigarette. For more product information, visit our website at www.brownandwilliams.com

SURGEON GENERAL'S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight.

Placement Within Magazines

ARIEL MEREDITH
 STYLING BY
 D'NEILL
 MAKEUP BY
 NATALIE B. JEWELRY BY
 ESTHER TASSER

Classifieds

MISSED CONNECTION
READY TO SATISFY
 Hey Smoker -
 We've crossed paths before,
 and it's time we meet again.
 I'm all about satisfying like a
 cigarette without the baggage.
 I've changed for the better.
FIND ME AT: www.blucigs.com/PLUS

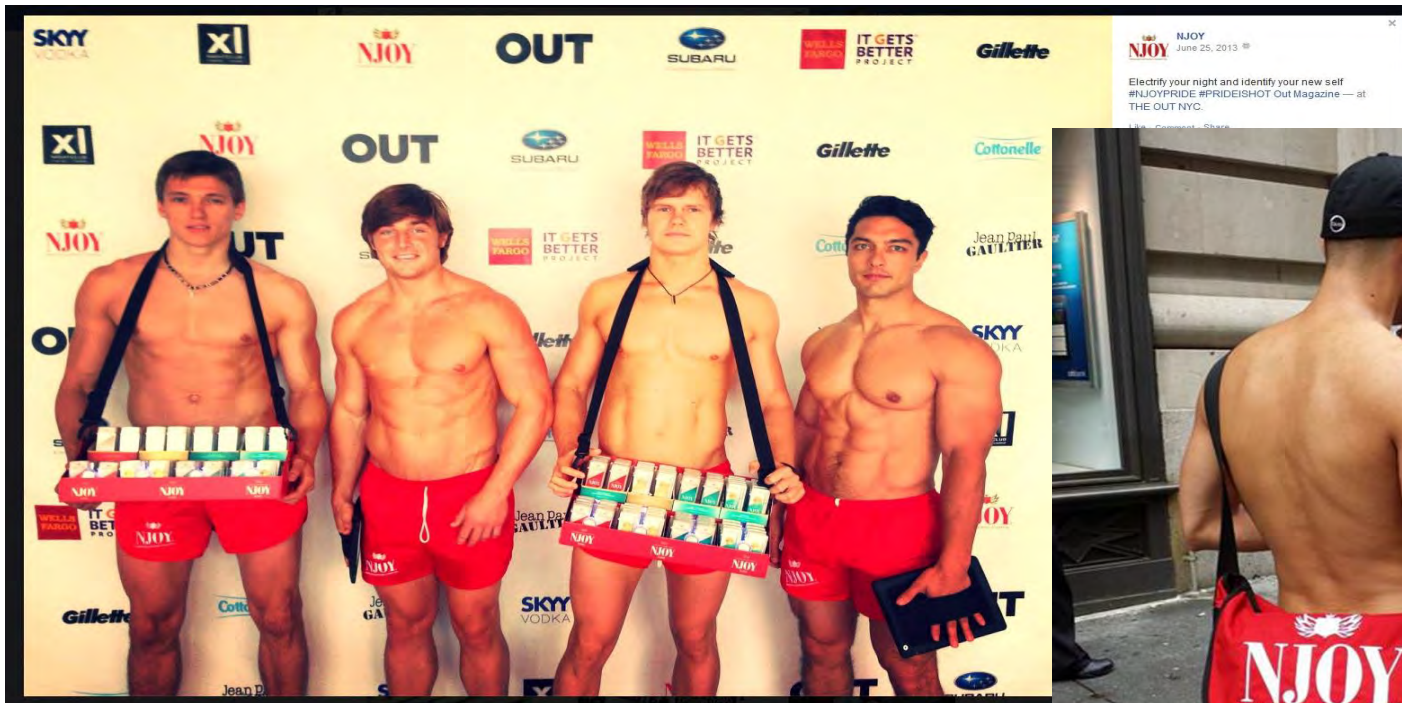
NEW & IMPROVED
Get MORE with PLUS+
 + Bigger Battery, Lasts 2x Longer
 + Pre-filled blu Tanks™
 + Rapid Battery Charging
 + Enhanced Flavor and Draw

blu PLUS
 RECHARGEABLE
 HIGH 2.4% NICOTINE CLASSIC TOBACCO

NOT FOR SALE TO MINORS. ©2015 LOEC, Inc. WARNING: This product contains nicotine derived from tobacco. Nicotine is an addictive chemical. blu™, blu eCigs®, the blu logo, blu Plus™ and the Plus+ logo are trademarks of Lorillard Technologies, Inc.

blu e-cigarettes advertisement (on right) placed opposite magazine content, *Sports Illustrated Swimsuit Edition*, February 20, 2015

Offering Free Samples



www.facebook.com/NJOYecigs, May 19, 2014



Handing out free samples at the New York City Gay Pride Parade, 2013

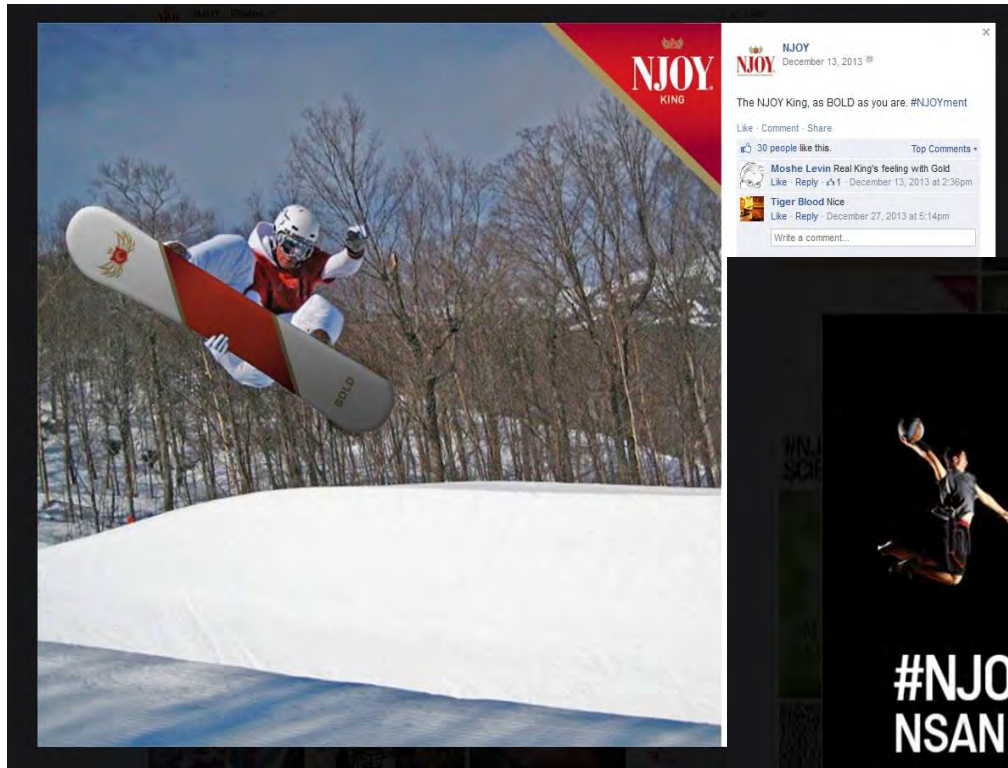
4. They sponsor sports ...



**Cigarette sponsorship of sports
has been prohibited since 1998**



Especially Sports that Appeal to Youth



www.facebook.com/NJOYecigs,
May 19, 2014



... and music festivals

For decades, tobacco companies used sponsorships of sports and entertainment events, especially auto racing and music festivals, to promote cigarettes to huge audiences, including kids. Cigarette sponsorships are now banned, but e-cigarette brands have auto racing sponsorships of their own.

blu ELECTRONIC CIGARETTES
PRESENTS

electric lounge

MARCH 14-16, 2013 • 418 E. 6th St. • AUSTIN, TX

thursday	friday	saturday
DAY NOON - 7:30 DIM MAK KEYS N KRATES WILL BRENNAN THE DEATH SET SCANNERS NEW IVORY BONES DJ SET	DAY NOON - 8PM FUTURE CLASSIC/ BOND MUSIC FLUME RAC CLASSIXX MITZI BICEP VICEROY GROUNDISLAVIA	DAY NOON - 7:30PM OM RECORDS/ LAVISH HABITS BODY LANGUAGE VOLTA BUREAU FRENCH HORN REBELLION MYSTERY SKULLS GOLDROOM GIRAFFAGE NANOSAUR SEATRAFFIC
NIGHT 8PM - 1AM FIREPOWER DAYSIK DELTA HEAVY BARE NOIZE MAYHEM GETTER SUB ANVIX	NIGHT 8PM - 1AM STYLES & COMPLETE TEAM BAYSIDE HIGH TERRY URSAN SILVER MEDALLION BENZLI	NIGHT 8PM - 1AM SHINY TOY GUNS DJ SET CHERUB D.VELOPED **SPECIAL GUEST**

Note that space is limited, 21+ and line ups subject to change.
MEDIA AND SUPPORTING PARTNERS

40,000 creative allies | thissongssick | digitalblue | BUENIN

Come and listen to the most famous names in Jazz. Some time this year, somewhere near you, they'll be playing and singing their unforgettable sounds. Don't miss them.

KOOL JAZZ FESTIVAL

KOOL JAZZ FESTIVAL DATES

Washington D.C.	May 29-31
San Diego	May 30-Aug 9
Las Vegas	July 8-15
Philadelphia	June 9-17
Memphis	June 17-20
Denver	June 21-27
San Antonio, TX	June 24-27
New York	June 26-29
San Francisco	July 13-16
Chicago	July 13-21
Portland	July 30-Aug 6
Atlanta	July 17-20
Phoenix, AZ	July 20-22
Chicago	July 27-31
Las Vegas	Aug 1-16
San Antonio	Aug 17-19
Las Vegas	Aug 18-21
Chicago	Aug 18-21
San Antonio	Aug 22-26
San Francisco	Aug 23-28
San Francisco	Aug 24-28
San Francisco	Aug 24-28

There's only one way to play it.

Warning: The Surgeon General Has Determined That Cigarette Smoking is Dangerous to Your Health.

Vintage Security

ENTER THE FREEDOM PHOTO CONTEST!
WIN THE ULTIMATE VIP EXPERIENCE
 THE PHOTO WITH THE MOST VOTES WINS!

SPONSORED BY **blu** ELECTRONIC CIGARETTES

HOW DO YOU EXPRESS YOUR FREEDOM?

THE WINNER OF THE **ULTIMATE VIP EXPERIENCE** FROM BLU WILL RECEIVE:

2 VIP PASSES TO BUKU
 BACKSTAGE TOUR DURING FESTIVAL +
 ON-STAGE VIEWING (SELECT ARTISTS)

- VIP ONLY PREMIUM VIEWING AREAS OF THE THREE MAIN STAGES
- ACCESS TO THE VIP ONLY S.S. BLU-KU, A NEW ORLEANS-STYLE RIVER BOAT DOCKED ON THE MISSISSIPPI RIVER ALONG THE FESTIVAL GROUNDS, FEATURING:
 - OPEN BAR
 - VIEWS OF THE MAIN STAGE AND FESTIVAL GROUNDS FROM THE BOAT'S TOP DECK
 - EXCLUSIVE VIP-ONLY ARTIST PERFORMANCES
 - BUKU 2015 POSTER

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BUKU Music & Art Project
 February 28

Show us how you express your freedom and you could WIN THE ULTIMATE VIP EXPERIENCE from blu eCigs!

BUKU and blu eCigs® are giving away the Ultimate Experience passes to #BUKU2015. All you have to do is take a picture showing blu and BUKU how you express your freedom. Do you show off your freedom by what you wear? Maybe it's the car you drive? Take a picture and upload it through BUKU's Facebook page. The photo with the most votes wins!

Enter Here → <http://on.fb.me/17DODWc>

Adult smokers, check out blucigs.com to take your freedom back today.

5. Their products come in sweet flavors

A 2009 federal law banned fruit- and candy-flavored cigarettes, but many e-cigarette companies gleefully pitch similar flavors ...





blucigs

FOLLOWING

52 likes

5w

blucigs #SundayFunday: what's better during a long weekend than a #PinaColada with a side of Piña Colada?! Not much. #bluNation #blucigs #MybluFlavor #Relax
jaleasa712 #blunation
tygerlily18 make in disposable #blunation
underdeconstruction #blunation
kgberry09 #blunation
youngog50 #blunation
mikestory65 #blunation #newflavor



Add a comment...



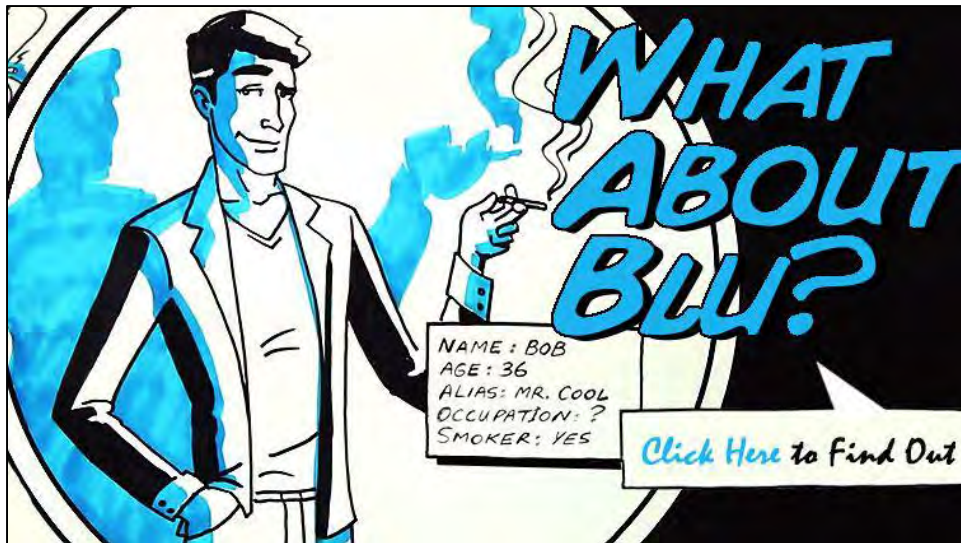


Resemblance to liquid candy products:



6. They use cartoons

The website for Blu e-Cigs has featured a cartoon pitchman named “Mr. Cool” reminiscent of the Joe Camel cartoon character that so effectively marketed cigarettes to kids in the 1990s and was prohibited in the Master Settlement Agreement



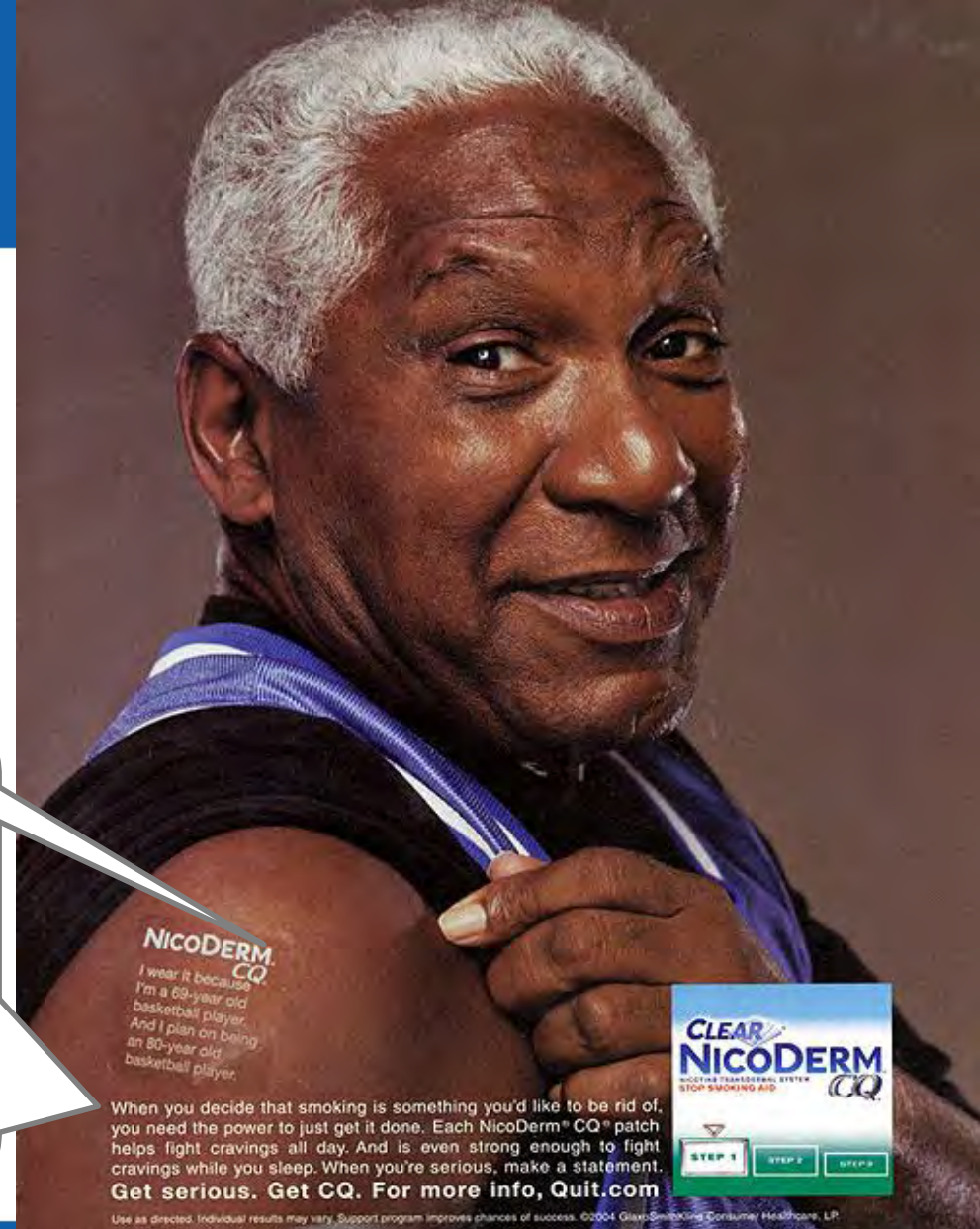
Marketing of ENDS vs. FDA Approved NRT

- ❑ **A comparison of marketing for nicotine replacement therapy (NRT) with marketing for ENDS**
- ❑ **It is possible to**
 - Target smokers without a major impact on youth
 - Using images that appeal to adult smokers for the purpose of encouraging or assisting them to quit smoking without appealing to youth

Magazine Advertisement of NRT

Text on patch:
**"I wear it because
I'm a 69-year old
basketball player.
And I plan on being
an 80-year old
basketball player."**

Bottom Text:
"When you decide that smoking is something you'd like to be rid of, you need the power to just get it done. Each NicoDerm CQ patch helps fight cravings all day. And is even strong enough to fight cravings while you sleep. When you're serious, make a statement. Get serious. Get CQ. For more info, Quit.com."



The advertisement features a close-up portrait of an elderly African American man with white hair, wearing a blue and black basketball jersey. He is smiling slightly and looking towards the camera. On his left shoulder, a NicoDerm CQ patch is visible, with the text from the speech bubble printed on it. In the bottom right corner, there is a box of Clear NicoDerm CQ Nicotine Transdermal System patches, showing the three-step process (STEP 1, STEP 2, STEP 3). Below the box, there is a small line of text: "Use as directed. Individual results may vary. Support program improves chances of success. ©2004 GlaxoSmithKline Consumer Healthcare, LP."

NicodermCQ in Woman's Day, October 4 and May 10, 2005; People, June 13, March 7, and January 31, 2005; Cosmopolitan, April and January 2005; Redbook, March 2005; Newsweek, January 17, 2005, June 25, 2015, Trinkets and Trash, www.trinketsandtrash.org/viewImage.php?file_name=210563.jpg



Do it for your family. Do it for yourself. Don't do it alone.



Give yourself a better chance to quit, with NicoDerm® CQ: Just one CQ patch provides a steady stream of medicine to help you fight cravings all day. So instead of spending all your energy on quitting, you can spend it on the people you care about. And with CQ, you'll gradually step down the doses until you're free. NicoDerm CQ. You're not a superhero. You don't have to be.

quit.com

*Use as directed. Individual results may vary. Support program can improve the chances of success vs. cold turkey. The American Cancer Society supports the use of a stop-smoking aid and counseling as effective tools when quitting smoking but does not endorse any specific product. GlaxoSmithKline gives a fee to the American Cancer Society for the use of its seal.

Bottom text: "Do it for your family. Do it for yourself. Don't do it alone. Give yourself a better chance to quit, with NicoDerm CQ. Just one CQ patch provides a steady stream of medicine to help you fight cravings all day. So instead of spending all your energy on quitting, you can spend it on the people you care about. And with CQ, you'll gradually step down the doses until you're free. Nicoderm CQ. You're not a superhero. You don't have to be."

FDA and E-cigarettes

- ❑ **Government at every level has a role to play**
- ❑ **2009 Family Smoking Prevention and Tobacco Control Act:**
 - FDA authority over cigarettes, cigarette tobacco, roll-your-own tobacco and smokeless tobacco
- ❑ **FDA may “deem” other “tobacco products” subject to statute**
- ❑ **FDA announced its intention to assert jurisdiction over e-cigarettes in 2010 but did not issue a “Proposed” Rule until April 25, 2014**
- ❑ **Awaiting Final Rule**

FDA – Proposed Sales Rules

- ❑ Prohibits sales to persons under 18 and requires age verification by retailers
- ❑ Prohibits sales through vending machines except in adult-only facilities
- ❑ Bans free samples



FDA Has Authority Over Marketing

Rule does not restrict

- ❑ E-Cigarette marketing
- ❑ Self-service displays
- ❑ Brand sponsorship of athletic and musical events
- ❑ Distribution of non-tobacco merchandise with brand logos
- ❑ On-line sales
- ❑ TV or Internet ads



Self-service NJOY products in a store at Ronald Reagan Washington National Airport, Washington, DC, July 30, 2014



www.facebook.com/FINCigs, July 1, 2013

FDA and Flavorings

- ❑ Proliferation of flavored e-cigarette products
- ❑ Product standard governing characterizing flavors to prevent flavors that appeal to youth
- ❑ If any flavors help smokers quit, industry should demonstrate it scientifically



FDA – The Power to Develop a Comprehensive Nicotine Policy

FDA can develop an effective comprehensive nicotine policy that:

**drives tobacco use
from products that are the most lethal
to those that are the least harmful
— and protects our youth**

Conclusion

- ❑ **Difficult to know the impact of current use of e-cigarettes among youth on long term ENDS use or on the use of cigarettes**
- ❑ **However, it is not too early to be concerned that current ENDS marketing practices and the use of flavorings that make these products attractive to youth pose a threat – to the progress that has been made**
- ❑ **Places that have adopted Best Practices have shown that in the absence of ENDS, we do have the ability to create a Tobacco-Free Generation**

CDC PUBLIC HEALTH GRAND ROUNDS

E-cigarettes: An Emerging Public Health Challenge



October 20, 2015



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention