

# “Risky Business: Kids, E-cigs, Vaping, and New Tobacco Products”

*Special guest speaker:*

Terry Pechacek, PhD

Deputy Director for Research Translation in CDC's  
Office on Smoking and Health



# Today's Moderator



**Steve Kelder, PhD, MPH**

Co-Director and Professor  
Michael & Susan Dell Center for Healthy Living  
The University of Texas School of Public Health  
Austin Regional Campus

Today's webinar will be recorded and  
available online next week at

**[TexasTCORS.org](http://TexasTCORS.org)**

# The Texas TCORS

- Funded in September 2013 – one of 14 Centers in the U.S.
- Funded by N.I.H. to provide scientific evidence and a new generation of scientists to focus on tobacco regulatory science to guide the FDA.
- The Food and Drug Administration (FDA) has the authority (2009) to regulate the manufacturing, distribution, and marketing of tobacco products.

# The Texas TCORS

- Our Center's research focuses on:
  - Texas as a demographic bellwether state
  - Youth and young adults as vulnerable populations
  - New and emerging tobacco products
  - Marketing to youth and young adults
  - Communication methods to inform young adults of the risks and harms of tobacco use

# The Texas TCORS

- Three large R01 research projects
- Four “cores” to support research (Training, Development, Data, Administrative)
- Speaker Series with Annual Invited Speaker
- Partners include: UT School of Public Health, UT Austin, UT MD Anderson Cancer Center, and Rutgers SPH

# Today's Guest



## Terry Pechacek, PhD

Deputy Director for Research Translation  
Office on Smoking and Health  
Center for Disease Control and Prevention



**Centers for Disease  
Control and Prevention**  
Office on Smoking  
and Health

# "Risky Business: Kids, E-cigs, Vaping, and New Tobacco Products"

## Electronic Nicotine Delivery Systems (ENDS)

**Terry F. Pechacek, Ph.D**

**Deputy Director for Research Translation  
Office on Smoking and Health**

*The findings and conclusions in this presentation are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention.*

*The responsibility for all of the presented material rests exclusively with the author.*

# Tobacco Smoke is Deadly



**“The burden of death and disease from tobacco use in the United States is overwhelmingly caused by cigarettes and other combusted tobacco products; rapid elimination of their use will dramatically reduce this burden.”**

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.



# Overview

- 1 What are Electronic Nicotine Delivery Devices (ENDS)?
- 2 Who is using ENDS?
- 3 Where do ENDS fit in tobacco control?
- 4 Which policy approaches are appropriate for ENDS?

# Electronic Cigarettes and Vaping Devices



Disposable



Rechargeable



Tank



Novelty

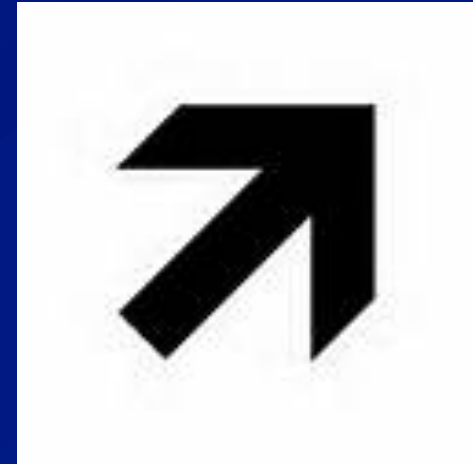
# ENDS Aerosol is Not Harmless Water Vapor

- ❑ A tobacco product
- ❑ ENDS aerosol contains nicotine and other potentially harmful constituents
- ❑ Some ENDS can be altered to deliver other psychoactive substances



## **The ENDS Market is Growing**

- ❑ **Unregulated**
- ❑ **Over 466 brands**
- ❑ **7764 unique flavors**
- ❑ **Range of players**
- ❑ **\$1.5 - 2 billion in annual sales**



# **ENDS Advertising Expenditures across media markets**

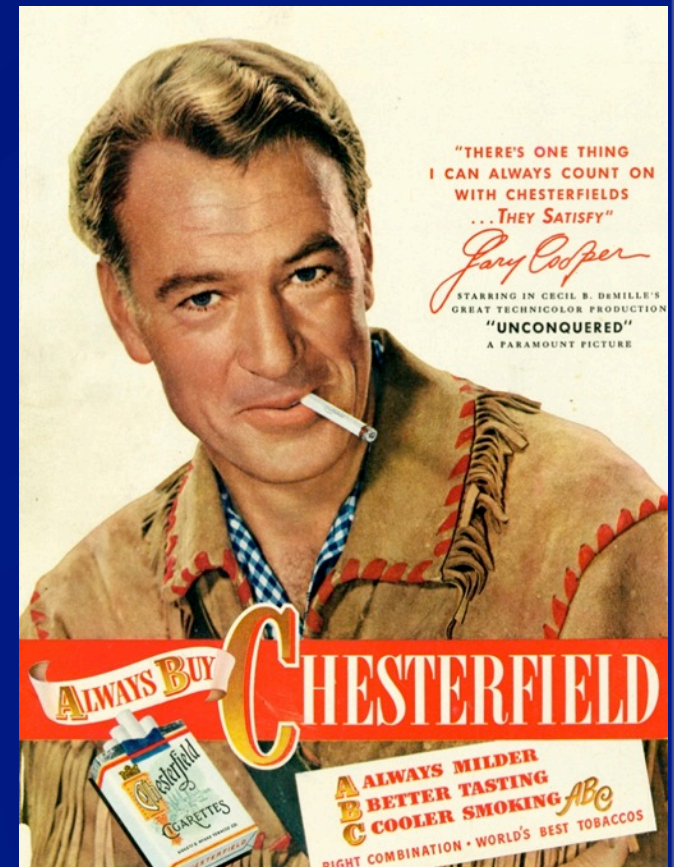
- ❑ 2011: \$6.4 million**
- ❑ 2012: \$18.3 million**
- ❑ 2013: >\$80 million**

# They have celebrity spokespeople



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

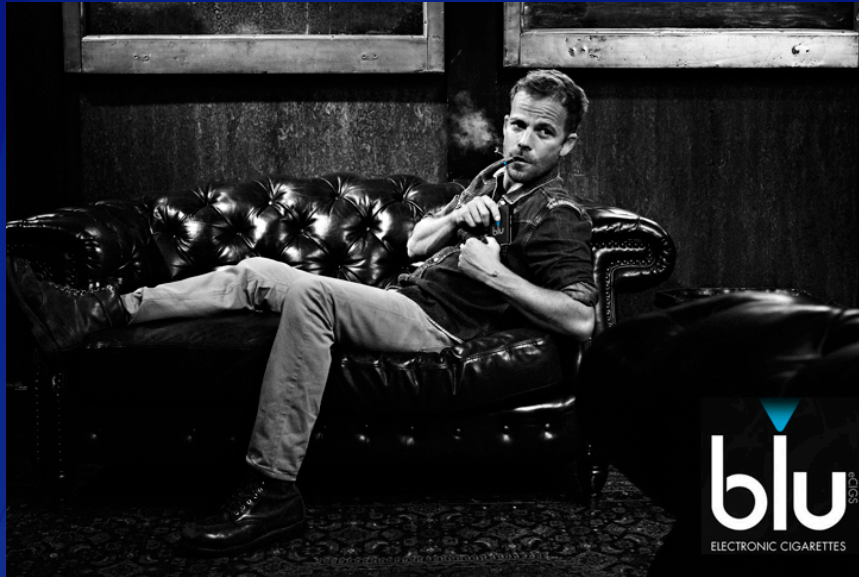
<https://www.youtube.com/watch?v=5BbVXQk9nNk>



[http://tobacco.stanford.edu/tobacco\\_main/main.php](http://tobacco.stanford.edu/tobacco_main/main.php)



# Their magazine ads feature rugged men ...



# ... and glamorous women

**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 (Sales 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 sneak 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," 0.6 mg nicotine av. per cigarette, FTC Report Feb '95.

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



# Sex Appeals

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 Warnings: This product contains nicotine, a chemical known to the state of California to cause birth defects or other reproductive harm.



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.brownandwilliamson.com](http://www.brownandwilliamson.com)

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

# What factors lead to youth smoking?

- Exposure to ads
- Themes in advertising that resonate with youth
- Low prices and price-reducing promotions
- Ease of access to a product
- Candy and fruit-flavored products
- Health claims
- Products that are easier to use

## Preventing Tobacco Use Among Youth and Young Adults

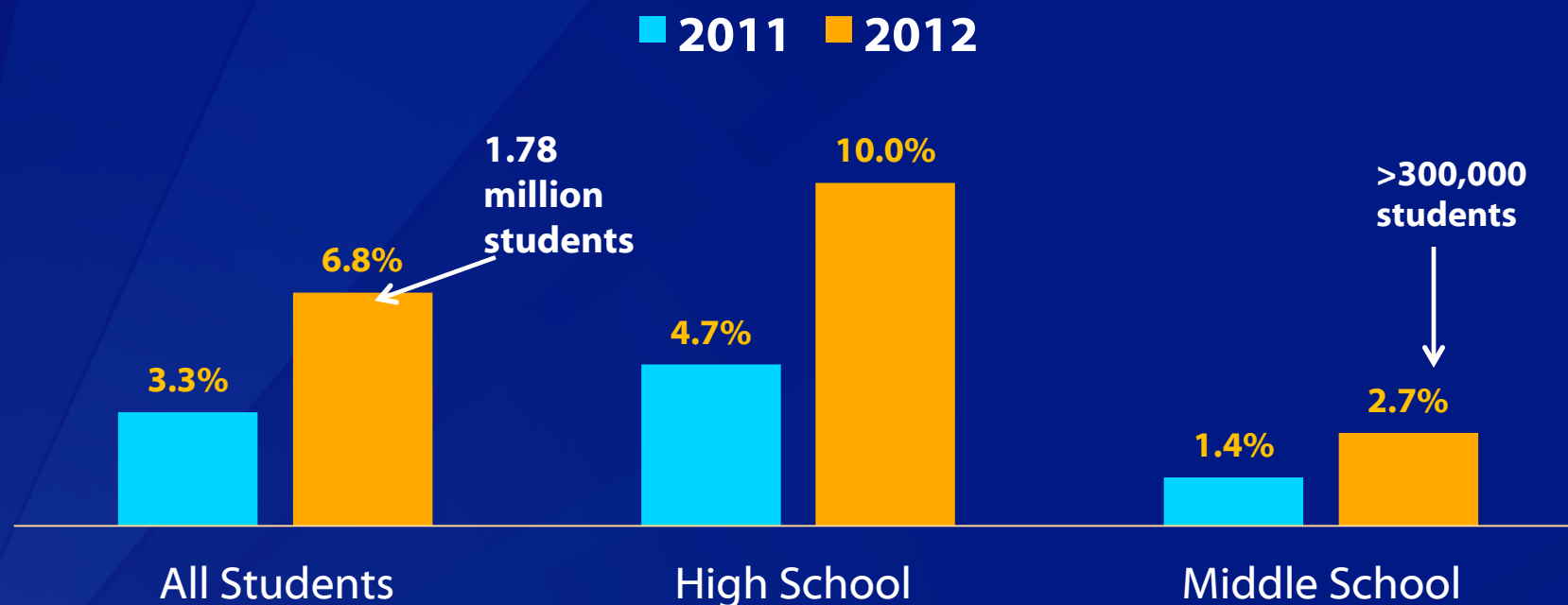
A Report of the Surgeon General



U.S. Department of Health and Human Services

# E-cigarette ever use more than doubled\* between 2011 and 2012 among students

## *Youth E-cigarette Ever Use, National Youth Tobacco Survey, United States*

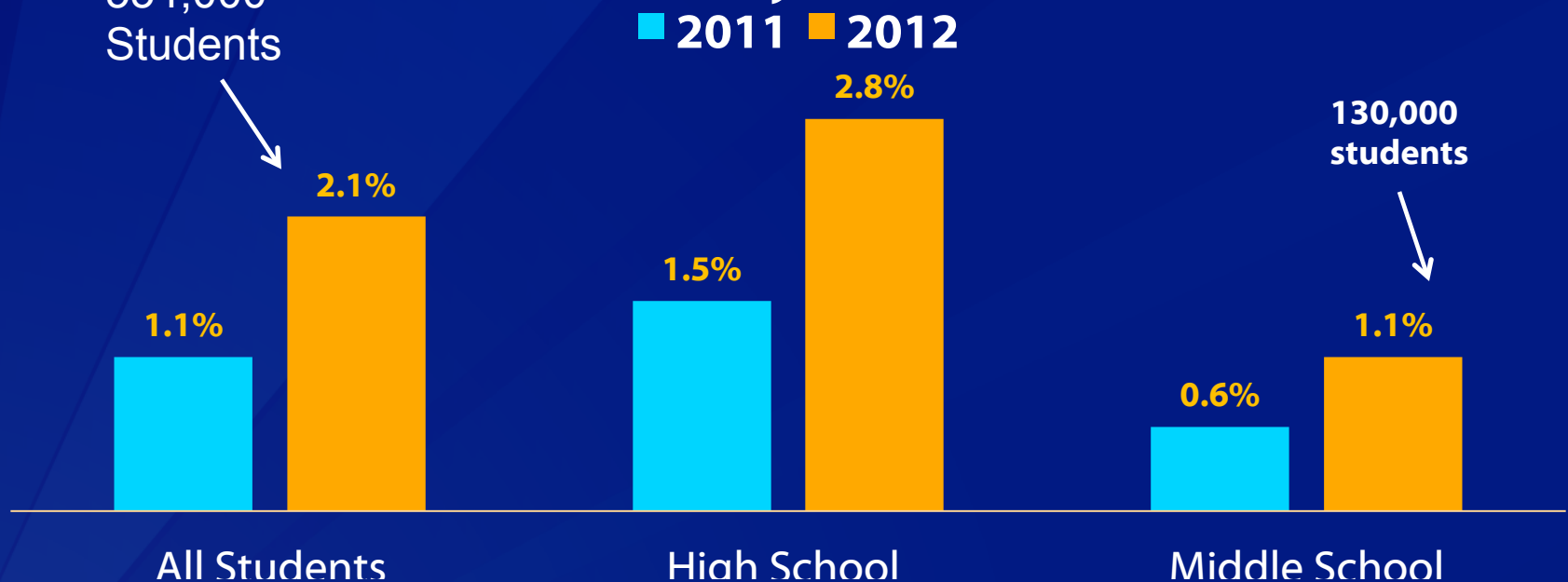


\*Statistically different ( $p < 0.05$ )

Centers for Disease Control and Prevention (2013). "Notes from the Field: Electronic Cigarette Use Among Middle and High School Students — United States, 2011–2012." *Morbidity and Mortality Weekly Report* 62(35): 729-730.

# Current e-cigarette use among students more than doubled between 2011 and 2012

## *Current E-Cigarette Use\*, National Youth Tobacco Survey, United States*



\* Current use is defined as use on one or more days in the last 30 days

Centers for Disease Control and Prevention (2013). "Notes from the Field: Electronic Cigarette Use Among Middle and High School Students — United States, 2011–2012." *Morbidity and Mortality Weekly Report* 62(35): 729-730.

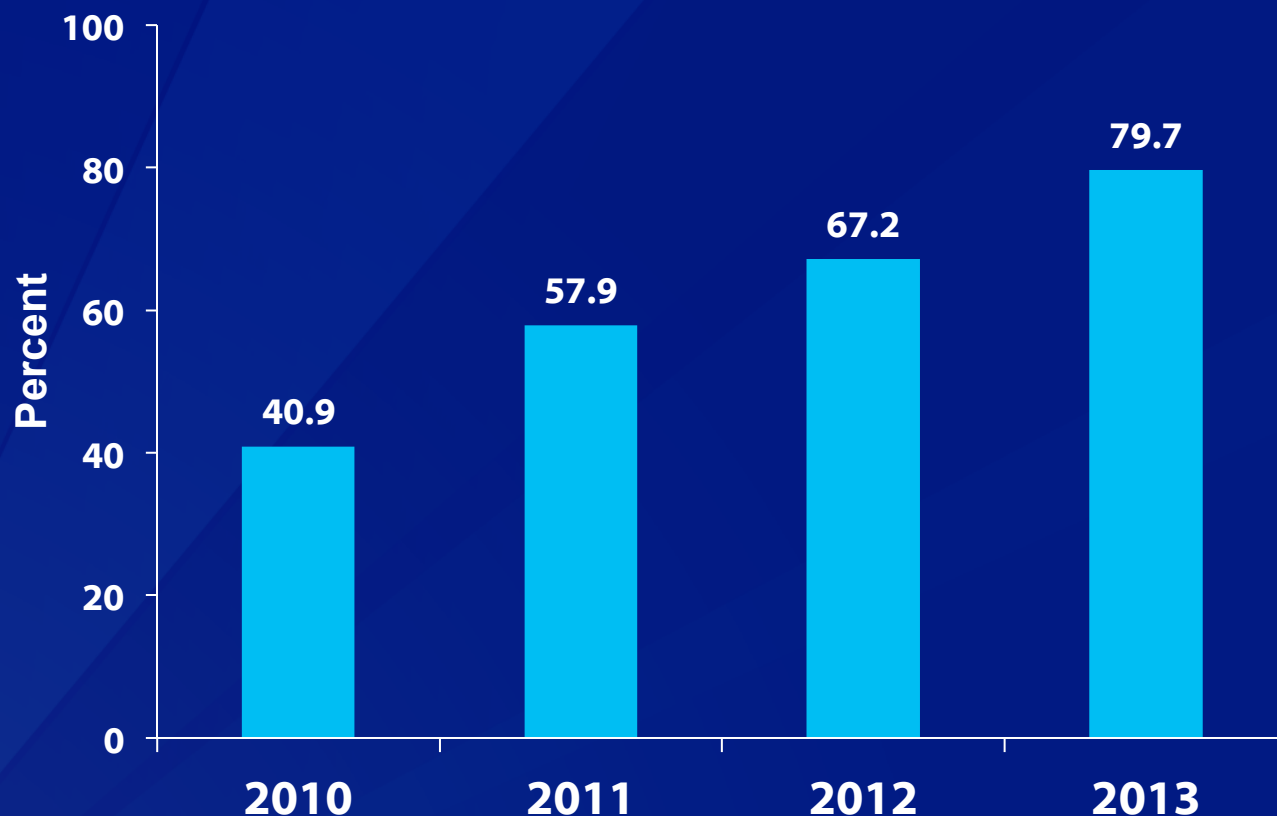
## **E-cigarettes and Nonsmoking Youth**

- ❑ **From 2011-2013 the number of non-smoking youth who used an e-cigarette increased three-fold**
- ❑ **In 2013, over ¼ of a million non-smoking youth used e-cigarettes**
- ❑ **Intention to smoke cigarettes was higher among e-cigarette users**

Rebecca E. Bunnell, Israel T. Agaku, Rene Arrazola, Benjamin J. Apelberg, Ralph S. Caraballo, Catherine G. Corey, Blair Coleman, Shanta R. Dube, and Brian A. King. Intentions to smoke cigarettes among never-smoking U.S. middle and high school electronic cigarette users, National Youth Tobacco Survey, 2011-2013 *Nicotine Tob Res* ntu166 first published online August 20, 2014 doi: 10.1093/ntr/ntu166 .

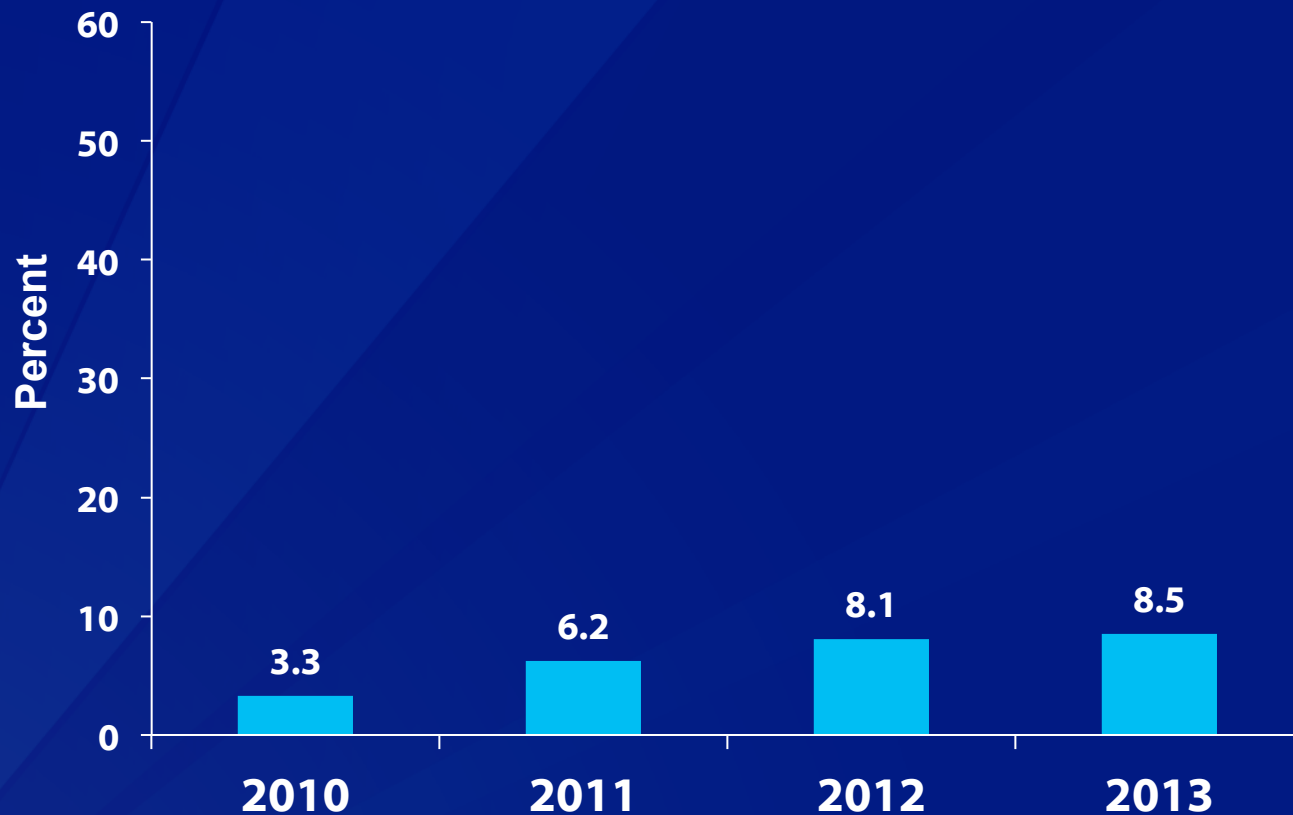


# Awareness of electronic cigarettes among U.S. adults – *HealthStyles*, 2010-2013



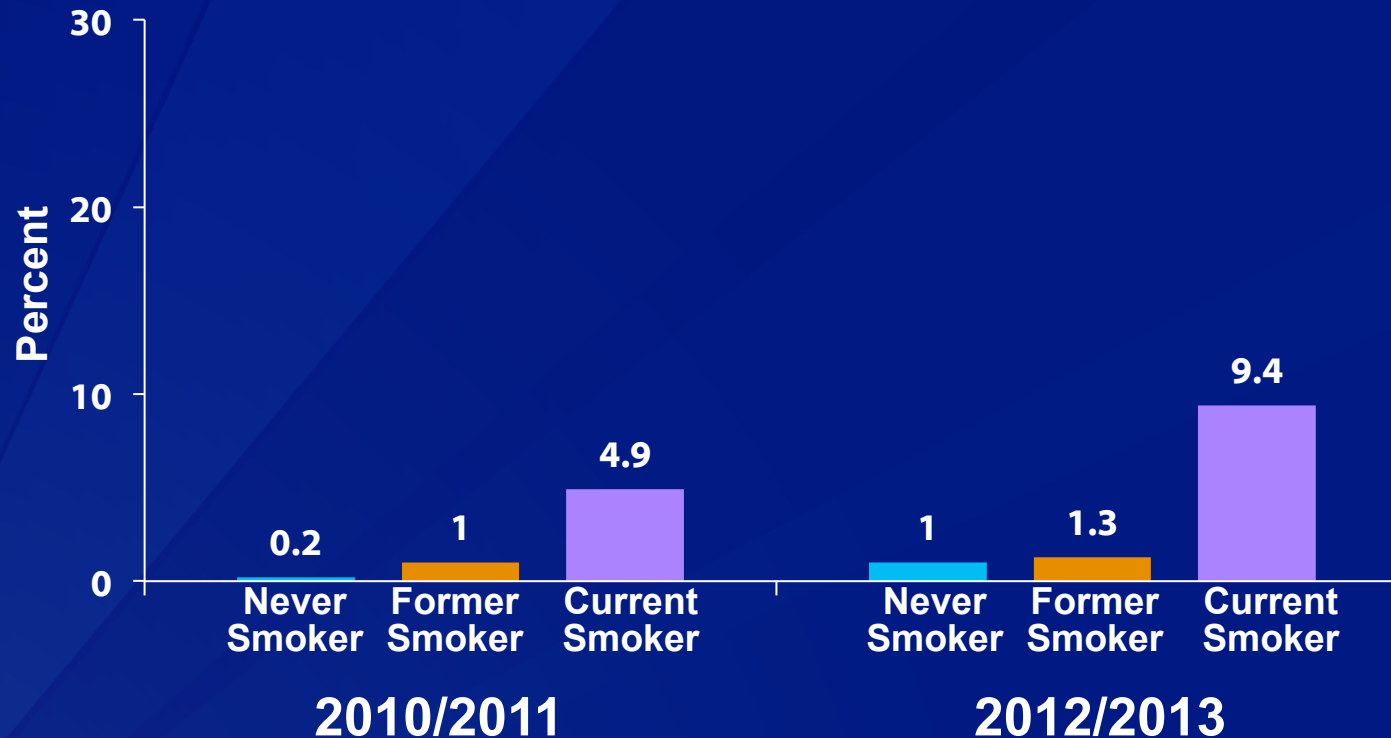
Source: Brian A. King, Roshni Patel, Kimberly Nguyen, and Shanta R. Dube. Trends in Awareness and Use of Electronic Cigarettes among U.S. Adults, 2010-2013 *Nicotine Tob Res ntu191* first published online September 19, 2014 doi:10.1093/ntr/ntu191

# Ever use of electronic cigarettes among U.S. adults – *HealthStyles*, 2010-2013



Source: Source: Brian A. King, Roshni Patel, Kimberly Nguyen, and Shanta R. Dube. Trends in Awareness and Use of Electronic Cigarettes among U.S. Adults, 2010-2013 *Nicotine Tob Res ntu191* first published online September 19, 2014  
doi:10.1093/ntr/ntu191

# Past 30 day use of e-cigarettes among U.S. adults – *HealthStyles*, 2010/2011 and 2012/2013



Source: Source: Brian A. King, Roshni Patel, Kimberly Nguyen, and Shanta R. Dube. Trends in Awareness and Use of Electronic Cigarettes among U.S. Adults, 2010-2013 *Nicotine Tob Res ntu191* first published online September 19, 2014 doi:10.1093/ntr/ntu191



# Potential Health Impacts of ENDS

- ❑ **Could have negative and positive individual and population health impact**

*“The promotion of electronic cigarettes and other innovative tobacco products is much more likely to be beneficial in an environment where the appeal, accessibility, promotion, and use of cigarettes are being rapidly reduced”*

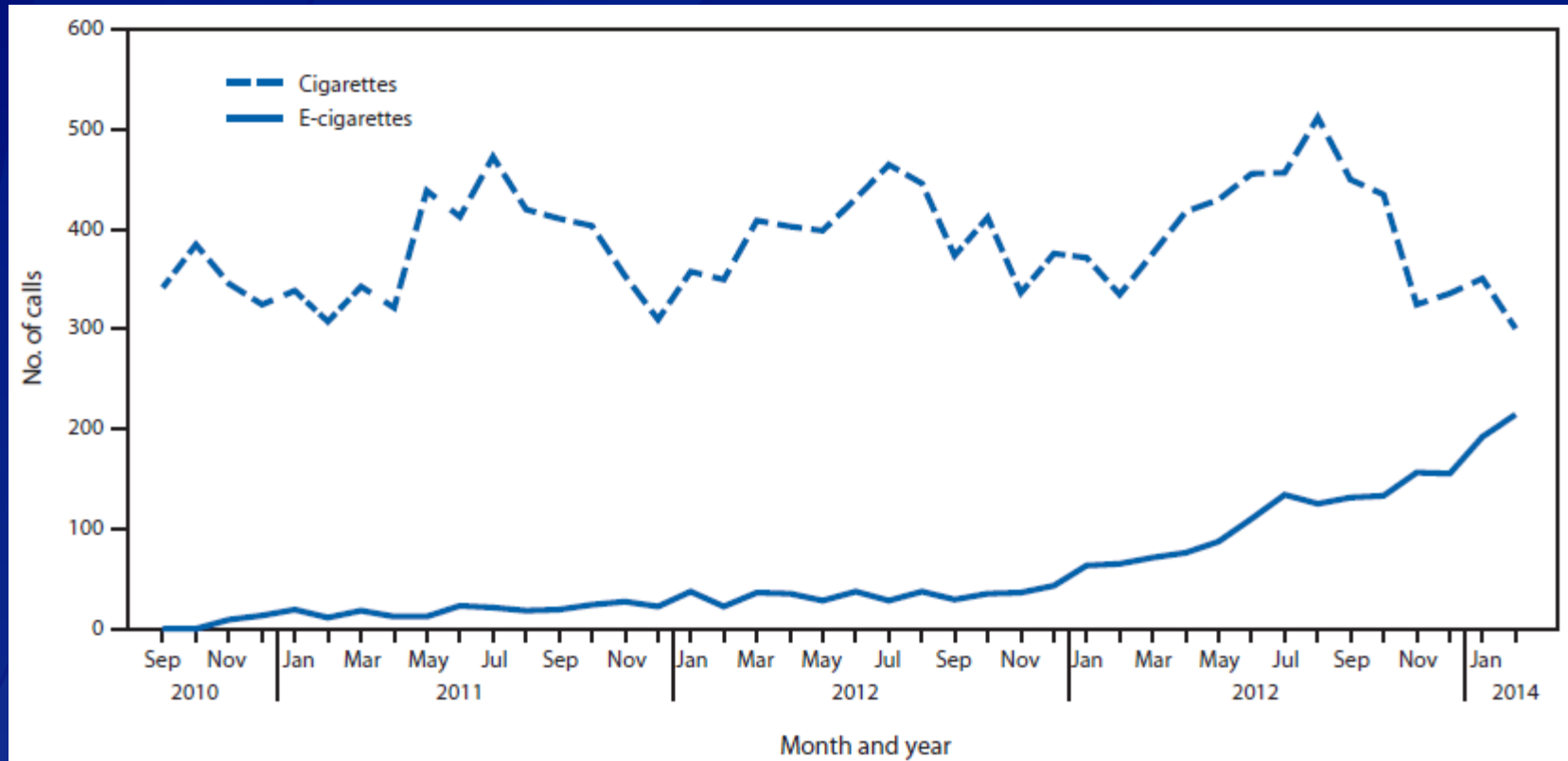


## **ENDS Potential for Harm**

### **❑ Direct harm**

- ❑ Expose children and adolescents, pregnant women, and non-smokers to 2<sup>nd</sup> hand aerosol or psychoactive substances**
- ❑ Result in poisonings among users or non-users**
- ❑ Uncertain health effects of long term exposure**
  - ❑ Pulmonary delivery of propylene glycol, nicotine, (State guidance)**
    - Lower toxin burden than cigs, but not water vapor**

# Number of calls to poison centers for cigarette or e-cigarette exposures, by month — United States, September 2010–February 2014



## **Potential harmful interaction with cigarettes**

- ❑ Lead to regular use of nicotine and/or use of cigarettes in youth or adult non-smokers**
- ❑ Delay quitting and/or diminish the chances a smoker will quit by leading to long-term dual use**
- ❑ Discourage smokers from using proven quit methods**
- ❑ Increase former smoker relapse**
- ❑ Glamorize and renormalize tobacco use**

# Not Approved as a Cessation Device

❑ In 8 years companies have not approached FDA for approval



Original Article

## Electronic Cigarette Use Among Patients With Cancer

Characteristics of Electronic Cigarette Users and Their Smoking Cessation Outcomes

Sarah P. Borderud, MPH<sup>1</sup>; Yuelin Li, PhD<sup>2</sup>; Jack E. Burkhalter, PhD<sup>3</sup>; Christine E. Sheffer, PhD<sup>2</sup>; and Jamie S. Ostroff, PhD<sup>1\*</sup>

**BACKGROUND:** Given that continued smoking after a cancer diagnosis increases the risk of adverse health outcomes, patients with cancer are strongly advised to quit. Despite a current lack of evidence regarding their safety and effectiveness as a cessation tool, electronic cigarettes (E-cigarettes) are becoming increasingly popular. To guide oncologists' communication with their patients about E-cigarette use, this article provides what to the authors' knowledge is the first published clinical data regarding E-cigarette use and cessation outcomes among patients with cancer. **METHODS:** A total of 1074 participants included smokers (patients with cancer) who recently enrolled in a tobacco treatment program at a comprehensive cancer center. Standard demographic, tobacco use history, and follow-up cessation outcomes were assessed. **RESULTS:** A 3-fold increase in E-cigarette use was observed from 2012 to 2013 (10.6% vs 38.5%). E-cigarette users were more nicotine dependent than nonusers, had more prior quit attempts, and were more likely to be diagnosed with thoracic and head and neck cancers. Using a complete case analysis, E-cigarette users were as likely to be smoking at the time of follow-up as nonusers (odds ratio, 1.0; 95% confidence interval, 0.5-1.7). Using an intention-to-treat analysis, E-cigarette users were twice as likely to be smoking at the time of follow-up as nonusers (odds ratio, 2.0; 95% confidence interval, 1.2-3.3). **CONCLUSIONS:** The high rate of E-cigarette use observed is consistent with recent articles highlighting increased E-cigarette use in the general population. The current longitudinal findings raise doubts concerning the usefulness of E-cigarettes for facilitating smoking cessation among patients with cancer. Further research is needed to evaluate the safety and efficacy of E-cigarettes as a cessation treatment for patients with cancer. *Cancer* 2014;000:000-000. © 2014 American Cancer Society.

Borderud, S. P., Li, Y., Burkhalter, J. E., Sheffer, C. E. and Ostroff, J. S. (2014), Electronic cigarette use among patients with cancer: Characteristics of electronic cigarette users and their smoking cessation outcomes. *Cancer*. doi: 10.1002/cncr.28811

# ENDS and Cessation Might be helpful?

| Used Like NRT  | Decrease Consumption   |
|--|--|
| Dr. Christopher Bullen MBChB, Colin Howe PhD, Murray Laugesen MBChB, Hayden McRobbie MBChB, Varsha Parag MSc, Jonathan Williman PhD, Natalie Walker PhD. <b>Electronic cigarettes for smoking cessation: a randomised controlled trial</b> <i>The Lancet</i> - 16 November 2013 ( Vol. 382, Issue 9905, Pages 1629-1637 ) DOI: 10.1016/S0140-6736(13)61842-5 | Polosa, R., Caponnetto, P., Morjaria, J.B., Papale, G., Campagna, D., Russo, C., 2011. <b>Effect of an electronic nicotine delivery device (e-cigarette) on smoking reduction and cessation: a prospective 6-month pilot study</b> (786-2458-11- 786). BMC Public Health 11, 786.                                    |
| Etter JF, Bullen C. <b>Saliva cotinine levels in users of electronic cigarettes</b> . <i>European Respiratory Journal</i> . 2011, Nov 1, vol 38, 1219-1220.  | Peter Hajek, Jean-François Etter, Neal Benowitz, Thomas Eissenberg & Hayden McRobbie. <b>Electronic cigarettes: review of use, content, safety, effects on smokers and potential for harm and benefit</b> . <i>Addiction</i> . doi:10.1111/add.12659   |
| Brown, J., Beard, E., Kotz, D., Michie, S., West ,R.,2014. <b>Real world effectiveness of e-cigarettes when used to aid smoking cessation: across-sectional population study</b> . <i>Addiction</i> 109,1531–1540.   | Maria Rosaria Gualano, Stefano Passi, Fabrizio Bert, Giuseppe La Torre, Giacomo Scaioli, Roberta Siliquini. <b>Electronic cigarettes: assessing the efficacy and the adverse effects through a systematic review of published studies</b> . <i>Journal of Public Health Advance Access</i> published August 9, 2014. |

# ENDS and Cessation Not Helpful ?

| Do Not Result in Quitting  | High Levels of Dual Use  |
|--|--|
| Vickerman, K.A., Carpenter, K.M., Altman, T., Nash, C.M., Zbikowski, S.M., 2013. <b>Use of electronic cigarettes among state tobacco cessation quitline callers.</b> <i>Nicotine Tob. Res.</i> 15, 1787–1791.  | Rachel Grana, Neal Benowitz and Stanton A. Glantz. <b>E-Cigarettes: A Scientific Review.</b> <i>Circulation.</i> 2014;129:1972-1986 doi: 10.1161/. |
| Popova, L., Ling, P.M., 2013. <b>Alternative tobacco product use and smoking cessation: A National Study.</b> <i>Am. J. Public Health</i> 103, 923–930. <a href="http://dx.doi.org/10.2105/AJPH.2012.301070">http://dx.doi.org/10.2105/AJPH.2012.301070</a> .  |  |
| Adkison, S.E., O'Connor, R.J., Bansal-Travers, M., Hyland, A., Borland, R., Yong, H.H., Cummings, K.M., McNeill, A., Thrasher, J.F., Hammond, D., Fong, G.T., 2013. <b>Electronic nicotine delivery systems: International Tobacco Control Four- Country Survey.</b> <i>Am. J. Prev. Med.</i> 44, 207–215. <a href="http://dx.doi.org/10.1016/j.amepre.2012.10.018">http://dx.doi.org/10.1016/j.amepre.2012.10.018</a> . |  |
| Grana, R.A., Popova, L., Ling, P.M., 2014. <b>A longitudinal analysis of electronic cigarette use and smoking cessation.</b> <i>J. Am. Med. Assoc.</i> 174, 812–813.   |  |

# Interaction with End Game scenarios

- ❑ **End Game scenarios that rise to the top for the U.S.**
  - FDA regulation to
    - reduce nicotine content to make cigarettes non-addictive
    - establish strict standards for levels of toxicants in tobacco products
    - standards to make some or all tobacco products less appealing
  - Sales restrictions such as local and state product bans

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.



## **ENDS Potential for Benefit**

### **❑ Only under three circumstances:**

**Complete long-term substitution by established smokers**

**Assist in rapid transition to a society with little or no use of burned products**

**Short-term use if shown to produce successful and permanent cessation of burned products**

## ENDS Policy Approaches

- ❑ **Not tolerated:** Marketing or sales that result in youth use
- ❑ **Prohibited:** In all places where smoking is
- ❑ **Eliminate:** Use of combusted tobacco
  
- ❑ FDA regulation is **fundamental** to minimizing harms
- ❑ States and communities can also take action

## **FDA Proposed Rule**

- ❑ Extend authority to regulate additional tobacco products, including ENDS**
- ❑ If finalized required approaches include:**
  - Requirements to register and submit product and ingredient listings;**
  - Prohibition on new tobacco product marketing without FDA review;**
  - Prohibition of direct and implied claims of reduced risk without FDA review and authorization based on scientific evidence;**
  - Prohibition of free samples;**

## **States and Communities—Rationale for prohibiting ENDS use in all places where smoking is not allowed**

- ❑ Compare to clean air, not cigarette smoke**
- ❑ Aerosol contains nicotine and may contain other psychoactive substances and toxins**
- ❑ Wild west--no manufacturing standards**
- ❑ Potential to expose youth, pregnant women, and non-smokers to aerosolized nicotine and other toxins**
- ❑ No evidence public use is necessary for smokers to “switch” – could enable dual use**

## State Action on ENDS

- ❑ No sales to minors (34 states)
- ❑ No use where smoking is not allowed (3 states)
- ❑ Additional promising strategies may include retailer licensing, marketing restrictions, taxation
- ❑ CDC will soon track ENDS legislation on [http://www.cdc.gov/tobacco/state\\_system/](http://www.cdc.gov/tobacco/state_system/)

## 2014 SGR Recommendations

- ❑ Fully fund **comprehensive statewide tobacco control** programs at CDC-recommended levels
- ❑ Sustain high-impact **media campaigns** such as Tips for 12 mo/year for 10+ years
- ❑ Raise **excise taxes** -- at least \$10 per pack most effective
- ❑ Fulfill opportunity of the ACA to provide access to barrier-free proven tobacco use **cessation** treatment
- ❑ Expand **cessation** in primary and specialty care settings

## **SGR Recommendations *(Continued)***

**As endgame strategies are developed:**

- ❑ **Effectively implement FDA's authority for tobacco product **regulation** to reduce product addictiveness and harmfulness**
- ❑ **Expand tobacco control and **prevention research** to increase understanding of the ever changing landscape**
- ❑ **Extend comprehensive **smokefree indoor protections** to 100% of the U.S. population**



# Key Take Away Points



## *Summary*

- ✓ ENDS are not “safe”
- ✓ Unregulated sale and distribution is driving demand
- ✓ Cessation claims are unproven...CDER is avenue
- ✓ Potential for harm and benefit depends on the context of combusted tobacco products

## *Policy Approaches*

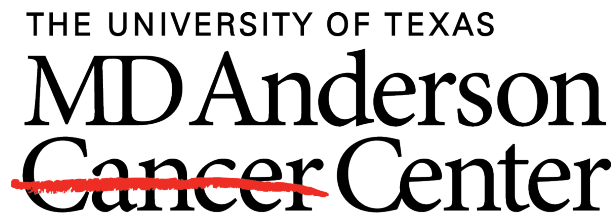
- ✓ No marketing or sales to kids
- ✓ Clean air is the standard
- ✓ Comprehensive approach is warranted
- ✓ Pedal to the metal on combusted tobacco

# Thank You!

## Questions?

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The responsibility for all of the presented material rests exclusively with the author.*

# Questions?



Making Cancer History®



*Today's webinar was recorded  
and will be available online at*

**TexasTCORS.org**

