

Smoking Cessation: Where are We Now?

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Primary Care Internal Medicine CME 2015

OVERVIEW

- The challenge for treatment
- US Public Health Service Clinical Guideline (2008)
- Newer evidence
 - Safety of varenicline
 - Combining drugs to improve success
 - Electronic cigarettes
- Treating Tobacco as a Chronic Disease

Take Home Message

Treat Tobacco Use Like a Chronic Disease

It needs long-term management and
as much of your attention as
treating hypertension and diabetes

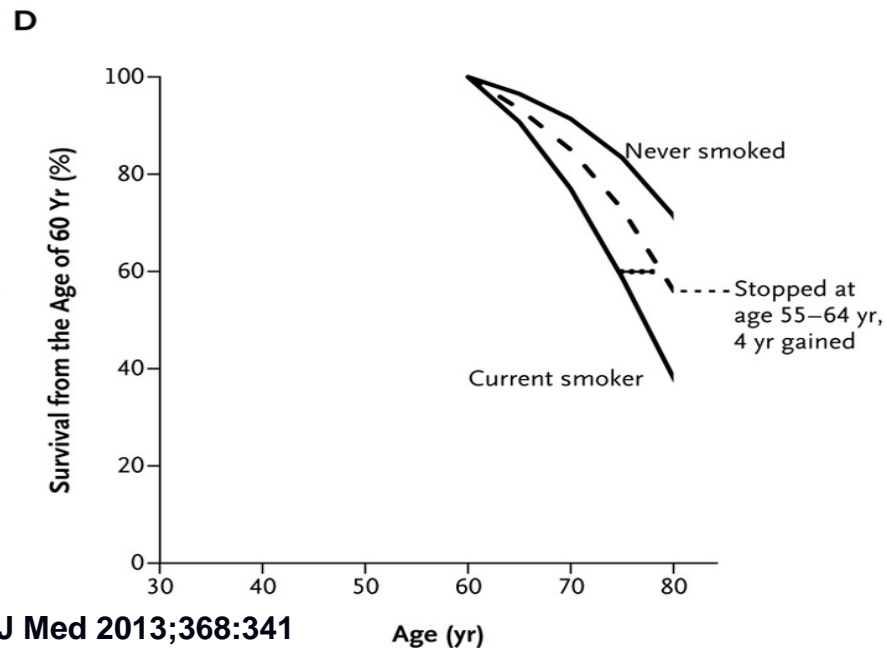
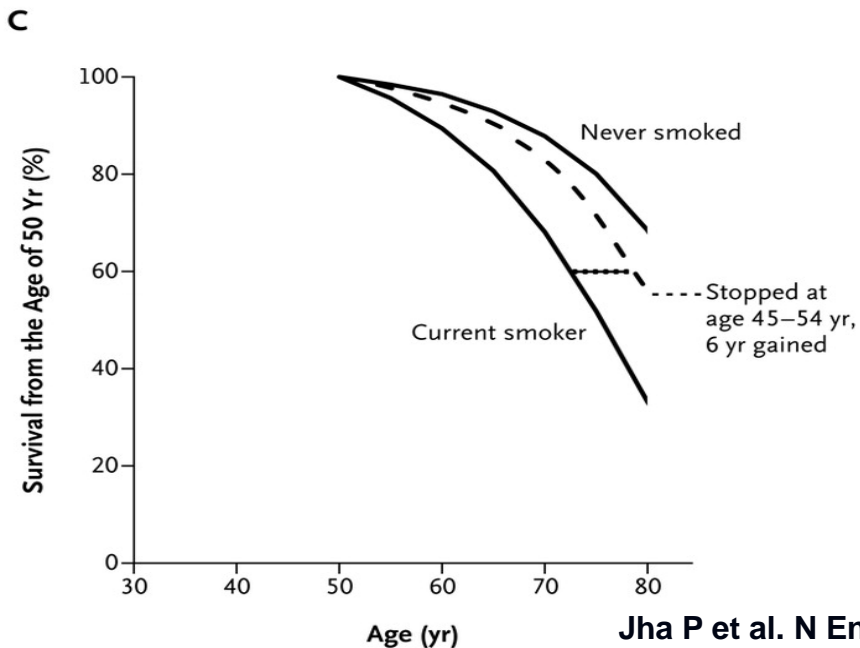
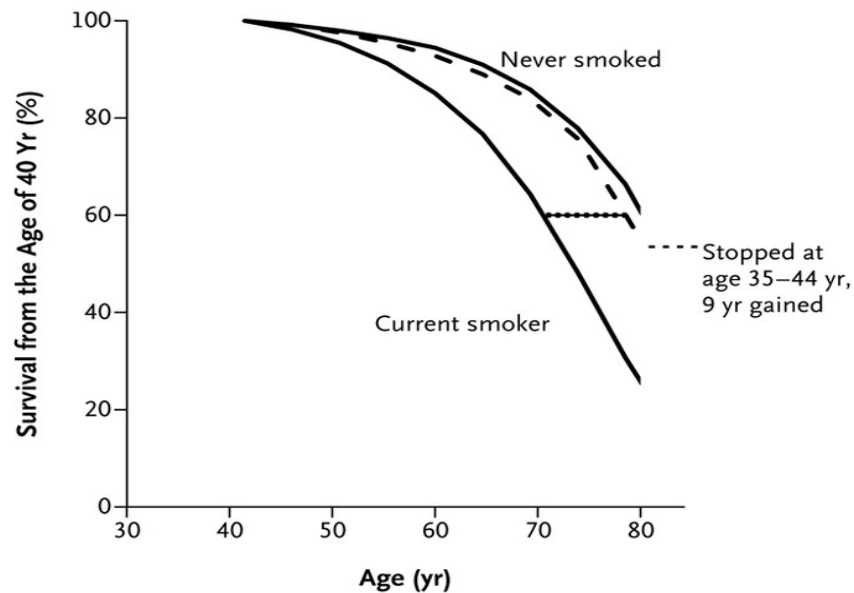
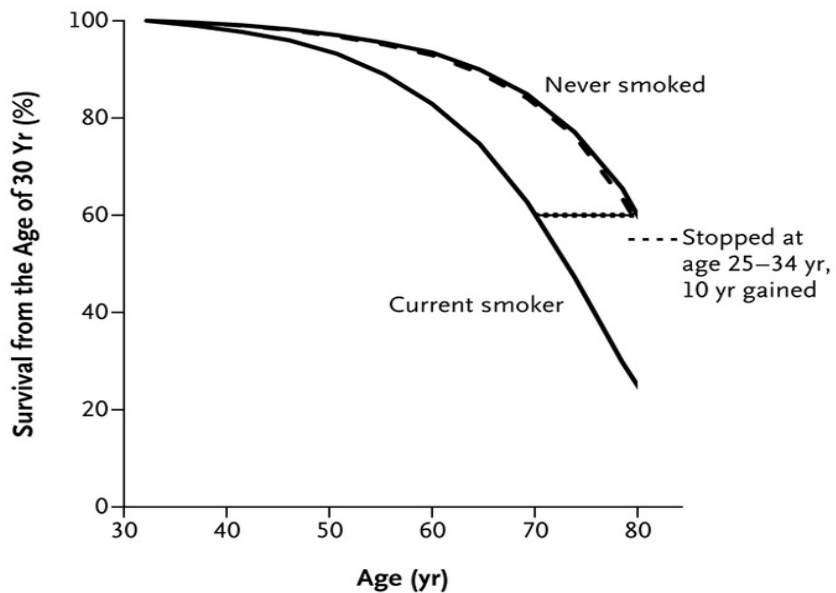
WHY TREATING TOBACCO USE MATTERS

- #1 preventable cause of death in the U.S.
- Many people still smoke (18% in US, 15% in MA)
 - Especially people with less education, lower income, psychiatric illness, substance abuse
 - Patterns of tobacco use are changing
 - Many light smokers (<10 cig/day)
 - 22% of cigarette smokers do not smoke every day
 - Small cigars, roll your own (*cheaper than cigarettes*)
 - Dual use (*>1 type of product*)

WHY TREATING TOBACCO USE MATTERS

- #1 preventable cause of death in the U.S.
- Many people still smoke
- Cessation reduces mortality

Effect of Smoking Cessation on Survival to 80 Years of Age, By Age at the Time of Quitting Smoking



WHY TREATING TOBACCO USE MATTERS

- #1 preventable cause of death in the U.S.
- Many people still smoke (18% of US adults)
- Cessation reduces mortality
 - After MI, smoking cessation → 36% ↓ in CVD mortality ¹
 - Even after age 65 ²
 - **It's never too early or too late to quit**

WHY TREATING TOBACCO USE MATTERS

- #1 preventable cause of death in the U.S.
- Many people still smoke (18% of US adults)
- Cessation reduces mortality
- Tobacco treatment delivered in practice works

A Case

- 55 yo man with HTN, BMI 30, depression (*stable SSRI*)
- Smokes 20 cigarettes/day since age 18
- *“I know I should quit, but I’ve tried everything and nothing works.”*
- Used nicotine patch for 3 days → *“I still wanted a cigarette”*
- Used bupropion for 1 month → *“I didn’t want to smoke as much...cut down but couldn’t quit”*
- *“What do you think about the electronic cigarette?”*

QUESTIONS

- What's an electronic cigarette?
- Has he really tried everything?
- What are options for your next step?

QUITTING IN PERSPECTIVE

National Health Interview Survey - 2010

- 69% of current smokers want to quit
- 52% of smokers try to quit each year
- Few succeed long-term (*quit for 1 year*)
 - ~ 6% succeed without help
 - 25-30% succeed long-term with best treatment
 - Only 32% of those trying to quit seek help

THE CHALLENGE FOR TREATMENT

- We have effective treatments, but...
- We need better treatments
- We need to deliver the treatments we have to more smokers

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SMOKING CESSATION METHODS

2008 US Public Health Service Guideline

- Effective treatments exist
 - *Counseling (individual / group / telephone)*
 - *Pharmacotherapy*
 - ***Combination*** is better than either one alone
- More is better but even brief intervention works

PHARMACOTHERAPY

1st Line - 2008 US Public Health Service Guideline

■	Nicotine replacement	OR
●	Skin patch (OTC)	1.9
●	Gum (OTC)	1.5
●	Lozenge (OTC)	2.0
●	Oral inhaler (Rx)	2.1
●	Nasal spray (Rx)	2.3
■	Bupropion SR (Zyban, Wellbutrin SR)	2.0
■	Varenicline (Chantix)	3.1

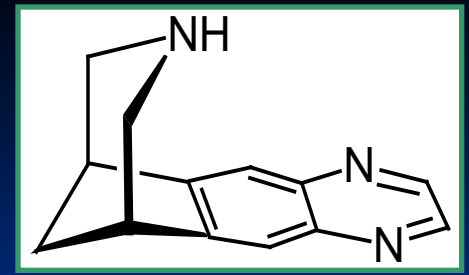
NICOTINE REPLACEMENT

- **Goal = reduce nicotine withdrawal**
- **All products about equally effective**
- **FDA approved use – NEW**
 - Can combine NRT products
 - Don't stop NRT if you smoke
 - Use >12 wks? → Ask your doctor

BUPROPION SR

- Atypical antidepressant - ↑ dopamine in CNS
- Increases cessation rate independent of its antidepressant effect
- **Clinical use**
 - Start 1 week before quit day (*150 mg qd*→*bid*)
 - Treat for 3-6 months
 - Increases seizure risk (*Risk <0.1%*)
 - Blunts weight gain temporarily

VARENICLINE



- Partial agonist at $\alpha 4 \beta 2$ nicotinic receptor
Receptor subtype that mediates nicotine dependence
- Dual mechanism of action
 - Partial agonist
Stimulates receptor to treat craving, withdrawal
 - Antagonist
Prevents nicotine from binding to the receptor →
Blocks reward, reinforcement of smoking

VARENICLINE

- Clinical use
 - Start 1-4 weeks before quit day
 - Dose ramps up over 1 week to avoid nausea (*to 1 mg bid*)
 - Treat for 3-6 months
 - Most common side effect – nausea, vivid dreams
 - Effective in smokers who are not ready to quit now
 - Concern about adverse psychiatric effects

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FDA Public Health Advisory

July 2009

■ “[Varenicline] or [bupropion] has been associated with reports of changes in behavior such as hostility, agitation, depressed mood, and suicidal thoughts or actions.”

■ “FDA is requiring the manufacturers of both products to add a new **Boxed Warning**:

People whoexperience any serious and unusual changes in mood or behavior or who feel like hurting themselves or someone else should stop taking the medicine and call their healthcare professional right away.”

VARENICLINE SAFETY

The dilemma

- Stopping smoking produces nicotine withdrawal symptoms (*depressed mood, anxiety, and irritability*)
- When these symptoms occur in a smoker who is stopping smoking on varenicline, did the drug or did quitting smoking cause the symptom?
- Case reports cannot answer this question
- 2015 meta-analysis of 39 double-blind RCTs of varenicline → no excess of depression or suicidal thoughts (but few had patients with mental illness).*

*Thomas KH, BMJ 2015;350:h1109

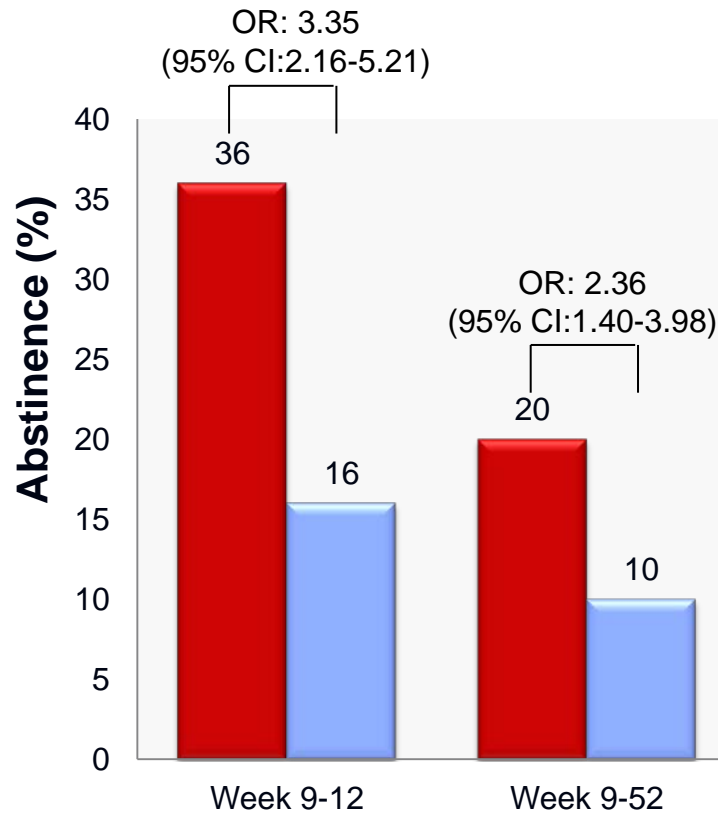
VARENICLINE SAFETY

Trials in patients with psychiatric co-morbidity

Williams JM et al. J Clin Psychiatry. 2012; 73:654

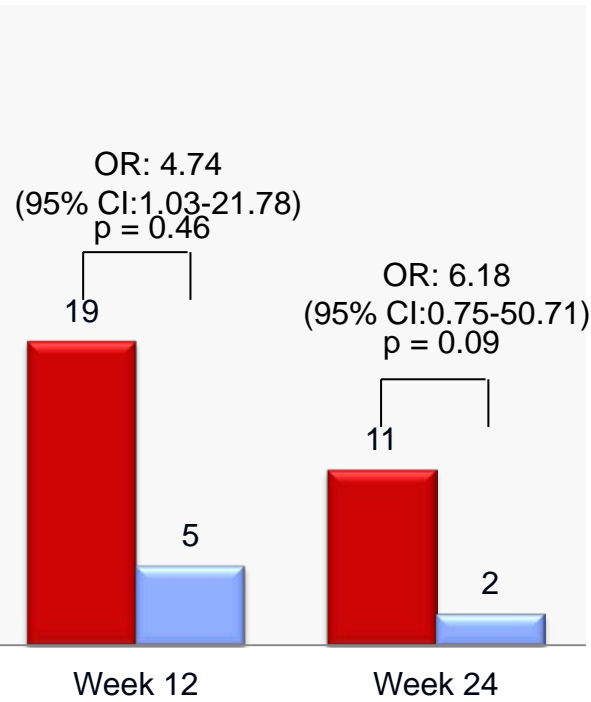
Depression¹

(n=525)



Schizophrenia²

(n=127)



In Both Studies:

Varenicline was well tolerated

Did not worsen psychiatric symptoms

Did not increase suicidal ideation

■ Varenicline ■ Placebo

VARENICLINE SAFETY

Observational Study (Thomas et al, BMJ 2013)

- **UK Clinical Practice Research Datalink**
 - Population based data: 5.4 million patients (8.5% of UK)
 - EHR data linked to UK mortality data and hospital data
- **Patients starting smoking medication (9/06 – 10/11)**
 - NRT ($n=81,545$)
 - Bupropion ($n=6741$)
 - Varenicline ($n=31,260$)
- **Outcome:** fatal and non-fatal self-harm (suicide), new antidepressant prescription over 3 months follow-up
- **Result:** No evidence of increased risk of suicidal outcomes for varenicline vs NRT, bupropion vs NRT

VARENICLINE SAFETY

Population-based Observational Study (Molero et al, BMJ 2015)

- **Entire population of Sweden over age 15 (~8 million)**
 - 69,757 people prescribed varenicline from 2006-2009
 - Compared outcomes in them vs. rest of the population
- **No difference in main outcomes**
 - New psychiatric diagnoses
 - Suicidal behavior
 - Traffic accidents, criminal offenses
- **Small increase**
 - Anxiety (HR 1.23, 95% CI 1.01-1.51)
 - Depression (HR 1.31 (95% CI 1.06-1.63)
 - **But only in those with pre-existing diagnoses**

VARENICLINE SAFETY

Bottom Line

- Varenicline may increase risk of psychiatric symptoms in some patients. The risk is not well defined.
- Prescribing any drug requires balancing risks and benefits.
 - Varenicline is one of the most effective drugs available to treat tobacco dependence
 - Continuing to smoke is clearly hazardous
- ***FDA Drug Safety Communication*** – October 2011
“The Agency continues to believe that the drug’s benefits outweigh the risks.”
- **Bottom line:** Patients given varenicline must be followed

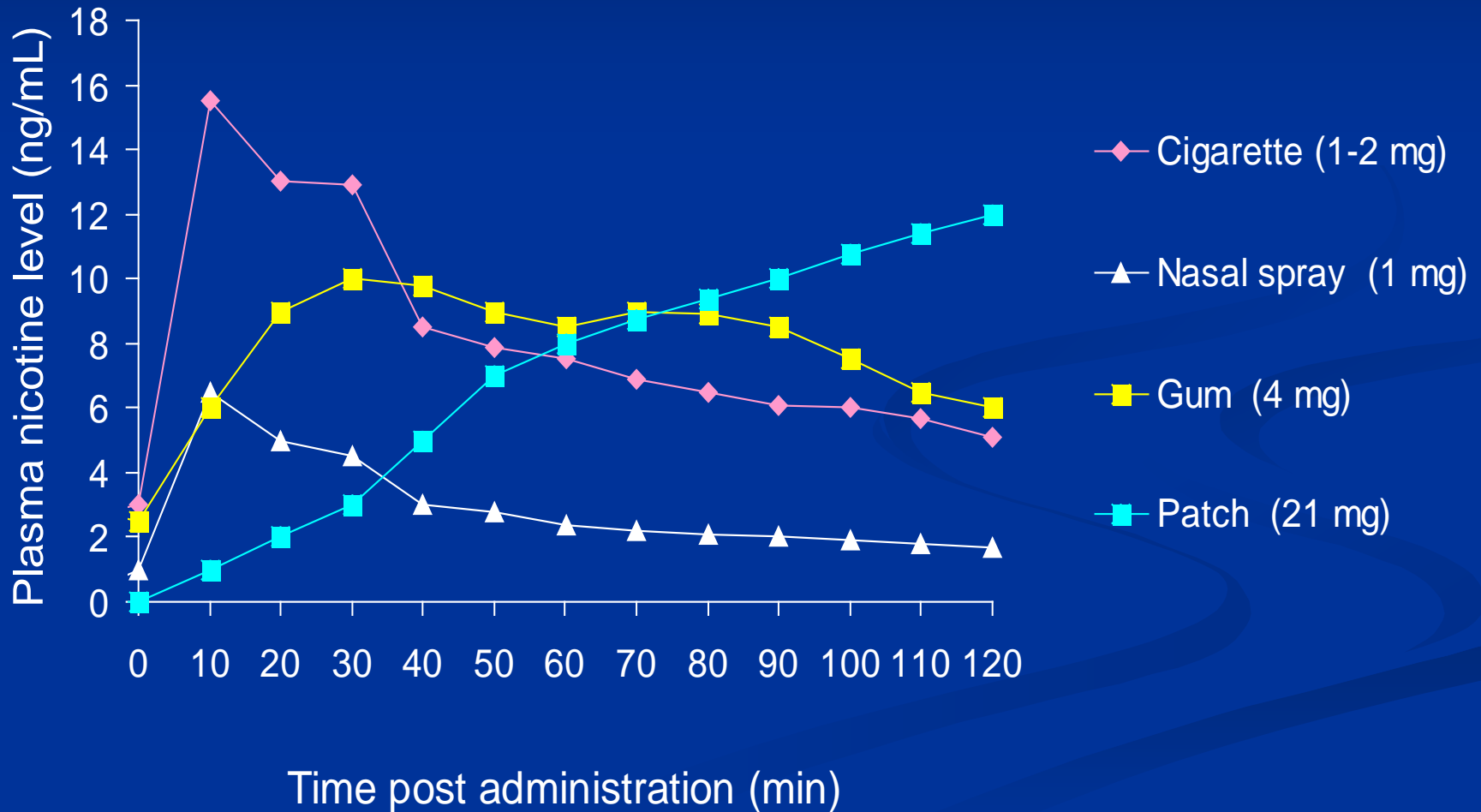
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PLASMA NICOTINE LEVELS

Cigarettes vs. Nicotine Replacement Products



NICOTINE REPLACEMENT

Long-acting, slow onset → *skin patch*

- Constant nicotine level to avoid withdrawal
- Simplest to use, best compliance
- User has no control of dose

Short-acting, faster onset

→ **oral** (*gum, lozenge, inhaler*)

→ **nasal** (*spray*)

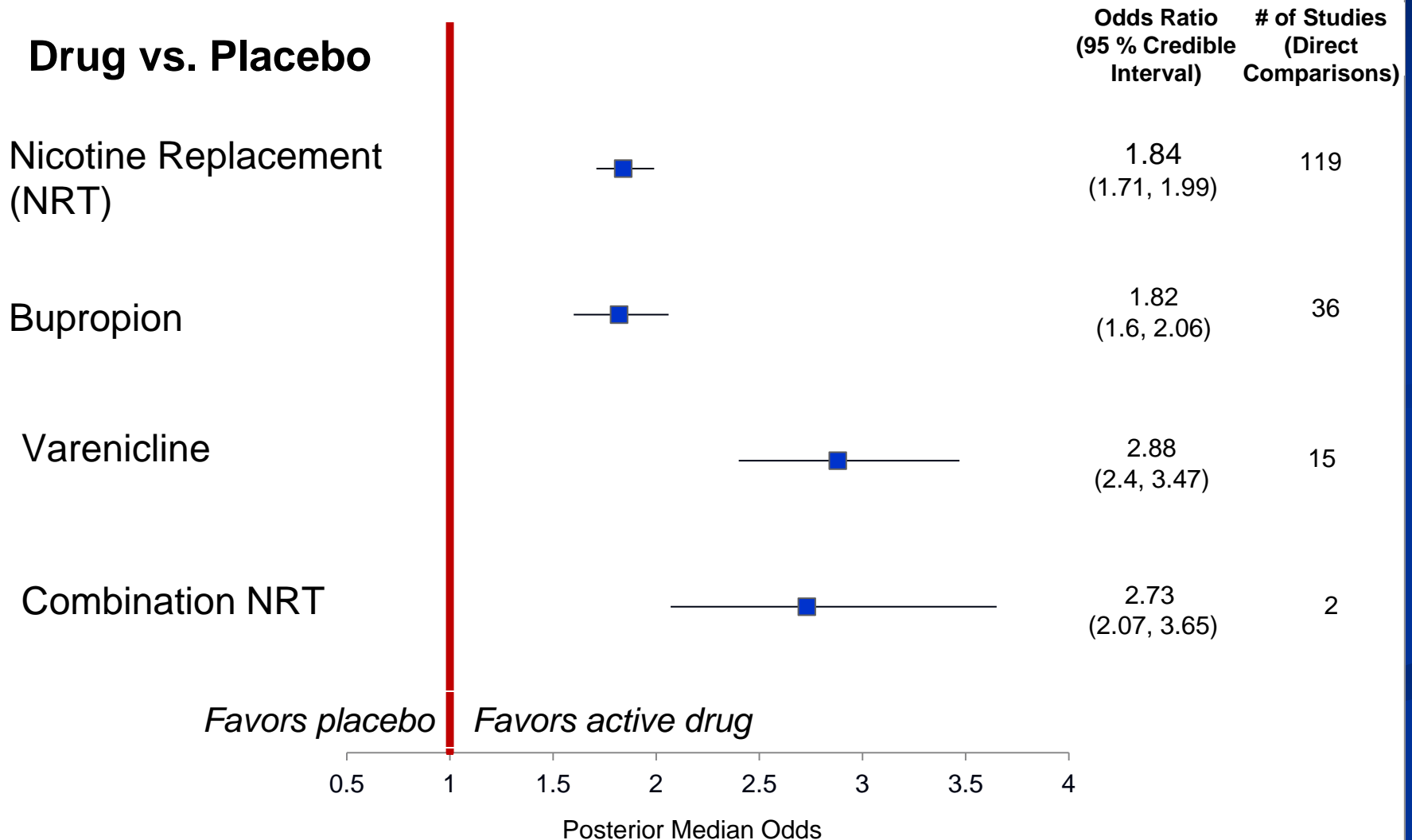
- User controls dose
- Nicotine blood levels fluctuate more
- Requires more training to use properly

New Ways to Use NICOTINE REPLACEMENT

- Combine short- and long-acting forms¹
- Treat longer to prevent relapse¹
- Continue patch after a “slip”²
- Start patch before quit day²
- “Reduce to quit” (gradual reduction)³

Current Pharmacotherapy Options

Cochrane meta-analysis, 2013 (JAMA. 2014;311:193-194)



Current Pharmacotherapy Options

Cochrane meta-analysis, 2013 (JAMA. 2014;311:193-194).

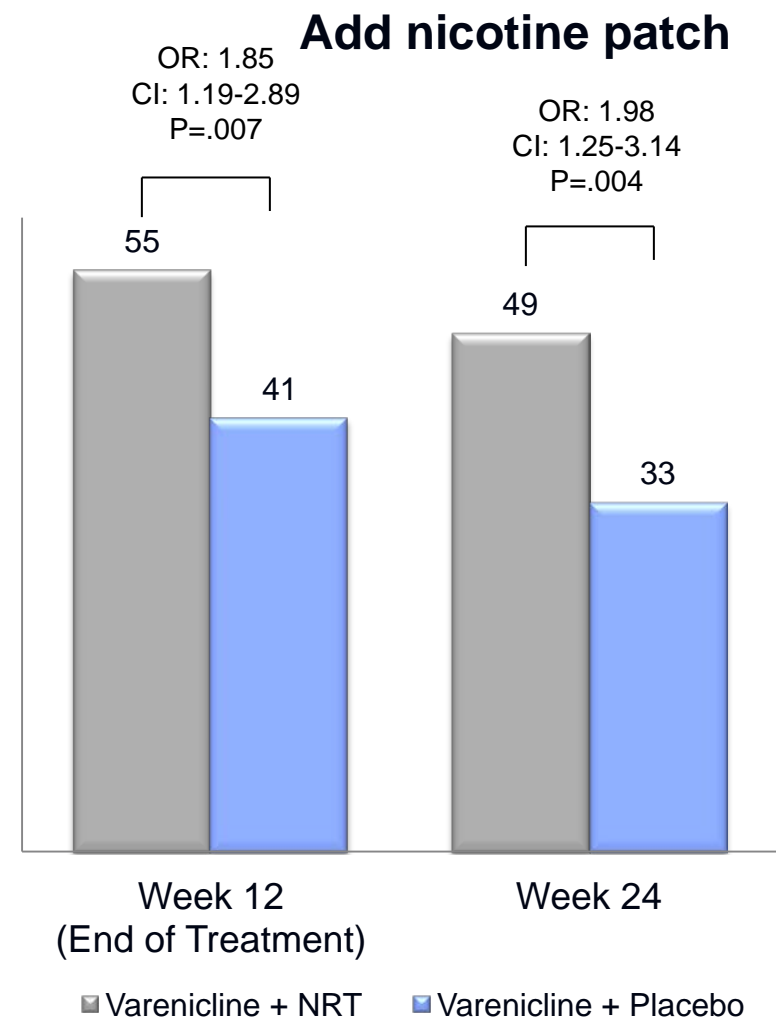
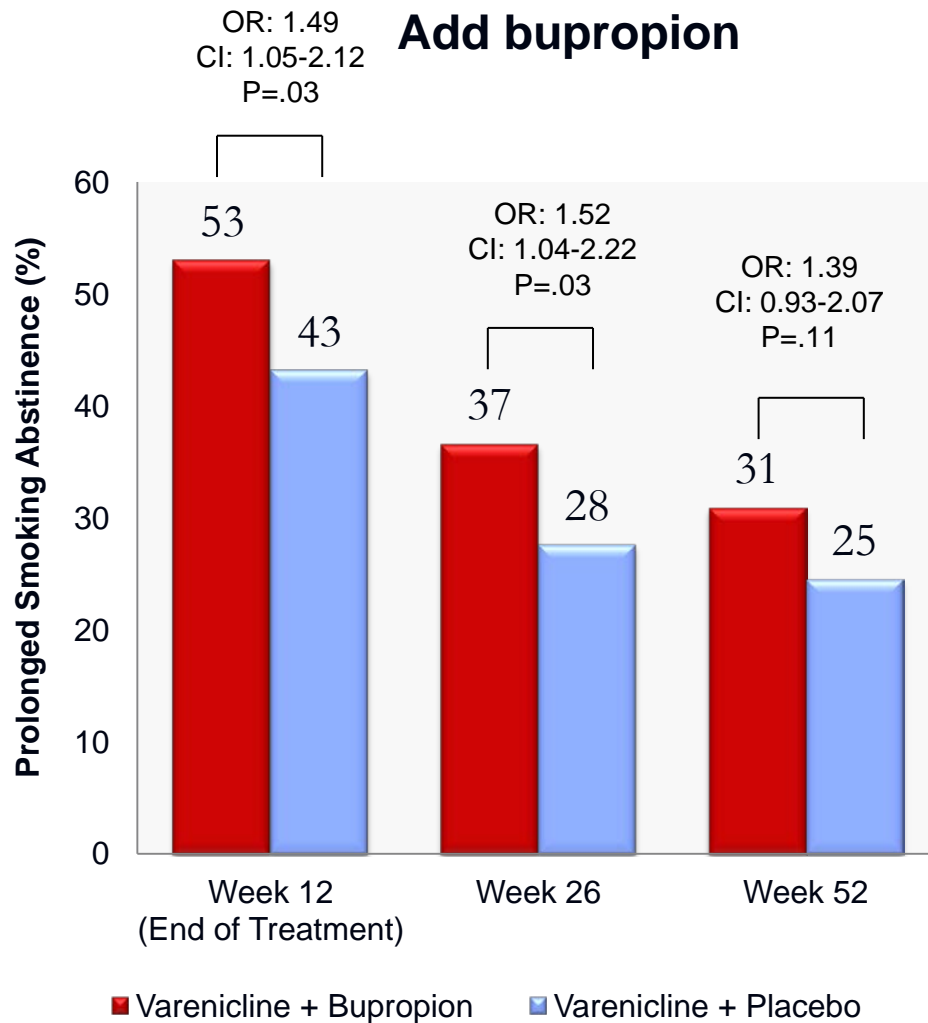
- All drugs > placebo
 - Single NRT, combination NRT, varenicline, bupropion
- **Tier 1: Single NRTs, bupropion**
- **Tier 2: Varenicline, combination NRT**
 - Varenicline ~ combination NRT? *No direct trial evidence*
- **Is there a Tier 3?**

Combining Drugs Across Classes

Is there a Tier 3?

- Does combining drugs of different classes improve quit rates?
- 2 placebo controlled randomized trials were published in 2014
 - Each started with varenicline
 - 1 added bupropion (vs. placebo)
 - 1 added nicotine patch (vs. placebo)

Adding Bupropion or NRT to Varenicline



OVERVIEW

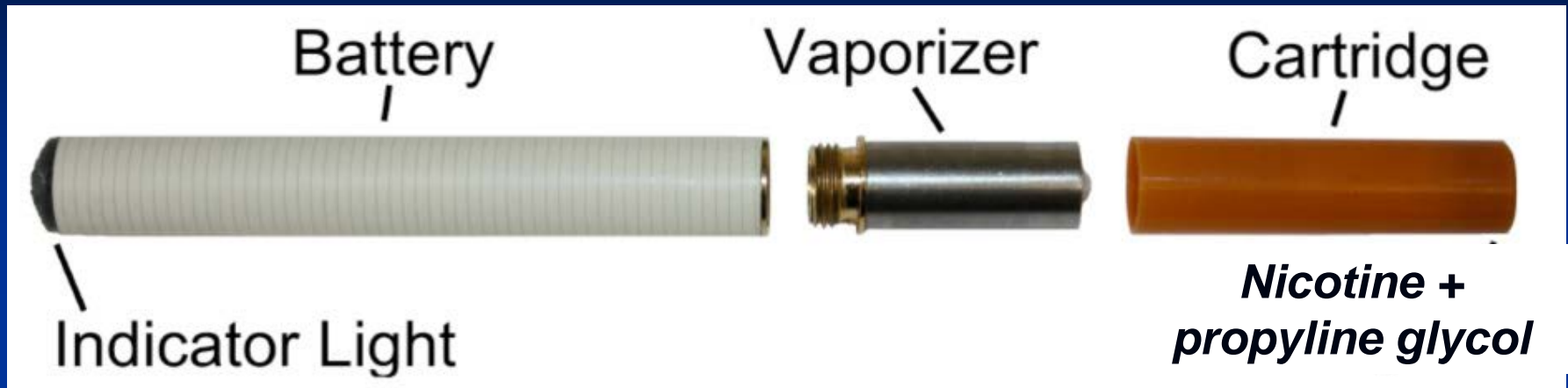
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What is this woman doing?



No, she's not smoking a cigarette.
She's vaping.

ELECTRONIC CIGARETTE



A nicotine delivery device that looks like a cigarette

- Invented in China in 2003
- Rapid growth in US sales since ~ 2010
- Not FDA regulated as device or drug
- The products are evolving to look less like cigarettes

2nd generation devices



ELECTRONIC CIGARETTES

Many Questions, Few Answers

- How much nicotine do they actually deliver?
- Who is using them?
 - Current smokers >> exsmokers, rarely nonsmokers
- How many people are using them?
 - No good national data for adults.
 - Apparent rapid increase in prevalence, especially in 2013
- Why are they using them?
 - To quit smoking or reduce health risk
 - Use where they can't smoke cigarettes

ELECTRONIC CIGARETTES

Many Questions, Few Answers

- They should be less harmful cigarettes that burn tobacco, but are they harmless?
 - What else is in the heated vapor?
- Will they help people stop smoking?
 - 1 randomized controlled trial so far *
 - E-cig vs. nicotine patch in smokers who wanted to quit
 - Both treatments had similar low quit rates
- If not, will they be harm reduction products?
 - Is long-term e-cig use or or “dual use” less risky?

ELECTRONIC CIGARETTES

Public Health Concerns

- Will they appeal to youth, who transition to cigarettes?
“Gateway hypothesis”

What's Your Taste?

Choose E-cigarette Cartridge From 7
Delicious Flavors by XEO E-cigarettes !!

World's Most Powerful E-cigarette
Available in 7 Flavors!!



Tastes your Mouth Crave For,
Which Flavor you Smoke?



XEO

Sports Illustrated

Zoom In



**SLIM. CHARGED.
READY TO GO.**

**AVAILABLE
NATIONWIDE!**

Visit us at blucigs.com/store-locator



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.



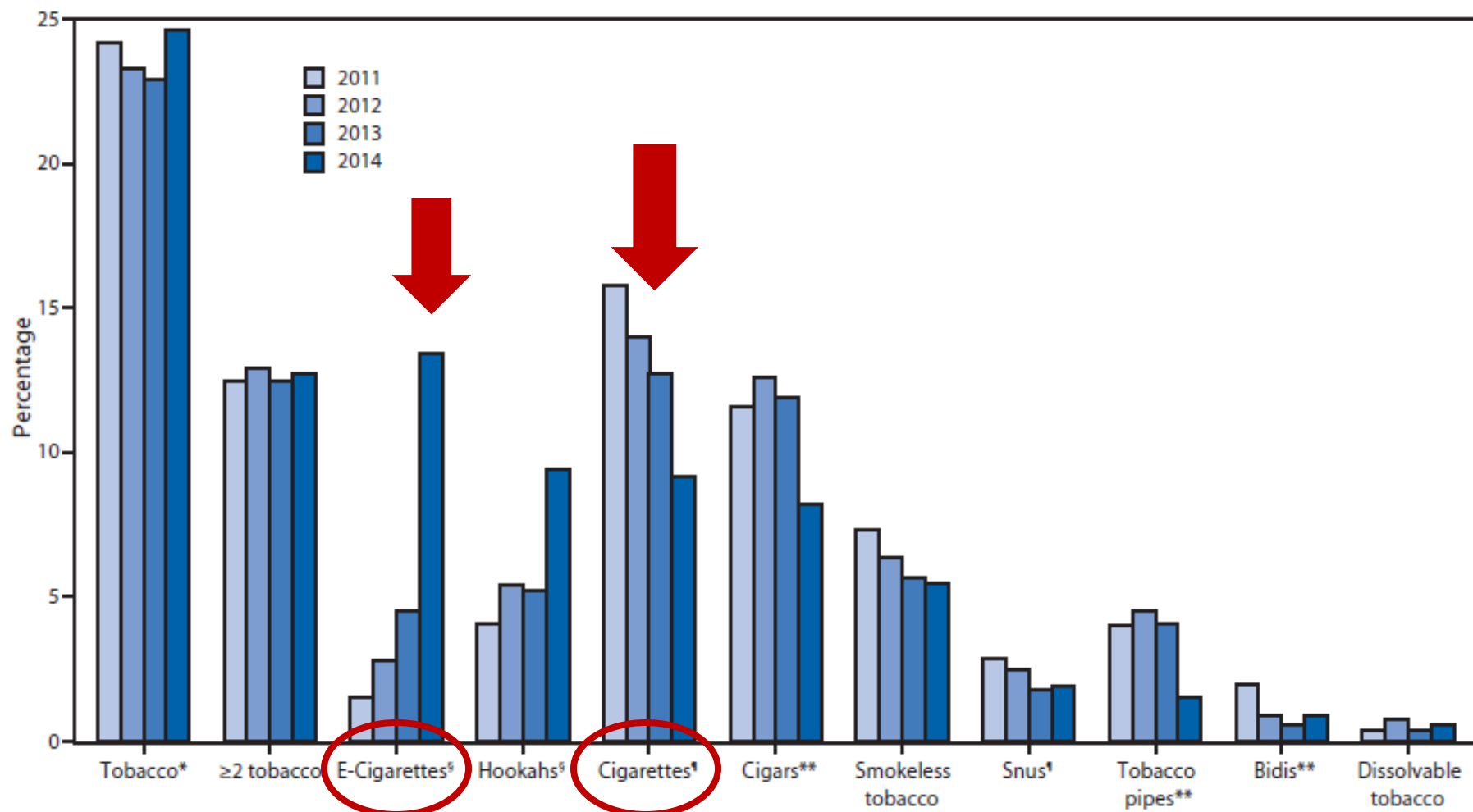
Now Available in Retail Stores Nationwide

NOTICE: blu eCigs are not tobacco cigarettes and do not deliver nicotine products and have not been evaluated by the Food and Drug Administration. Use and sale restricted to persons 21 years of age or older. ©2010 blu eCigs, Inc. blu[®] and blu eCigs[®] are trademarks of blu eCigs, Inc.

blucigs.com/store-locator/

Past 30 day tobacco product use by high school students

U.S. National Youth Tobacco Survey, 2011–2014



ELECTRONIC CIGARETTES

Public Health Concerns

- Will they appeal to youth, who transition to cigarettes?
- Will their use undermine no-smoking norms?
 - Should they be allowed where smoking is prohibited?



www.dailymail.co.uk/tvshowbiz/article-2538725/Leonardo-DiCaprio-Julie-Louis-Dreyfus-puff-away-INSIDE-Golden-Globes-legal-electronic-cigarettes.html

ELECTRONIC CIGARETTES

Public Health Concerns

- Will they appeal to youth, who transition to cigarettes?
- Will their use undermine no-smoking norms?
 - Should they be allowed where smoking is prohibited?
- Will they distract smokers who could quit from doing so?

WHY QUIT? SWITCH TO BLU

blu is the smart choice for smokers wanting a change. Take back your freedom to smoke when and where you want without ash or smell.

blu is everything you enjoy about smoking and nothing else.

Nobody likes a quitter, so make the switch today.

Visit blucigs.com



* New blu Smart Pack

ELECTRONIC CIGARETTES

Public Health Concerns

- Will they appeal to youth, who transition to cigarettes?
- Will their use undermine no-smoking norms?
 - Should they be allowed where smoking is prohibited?
- Will they distract smokers who could quit from doing so?
- Is the nicotine in e-cigs a poison risk for young children?
- Could products be adapted to deliver other drugs?

ELECTRONIC CIGARETTES

The bottom line

- E-cigarettes are a “disruptive technology” *
- Will they be a net public health benefit or harm?
- Research to answer the question is needed
 - Long-term effects on health
 - Efficacy as a cessation tool
 - Monitor patterns of use nationally
- FDA regulations are urgently needed

ELECTRONIC CIGARETTES

Question for you

■ **Should you recommend them to smokers?**

- Many unanswered questions about safety, efficacy for quitting
- Tell smokers that they are not FDA approved
- Probably less harmful than combustible cigarettes
- Recommend trying “clean nicotine” first
- Don't recommend but don't discourage if smokers insist

■ **Do not permit use in hospitals or health care facilities**

E-cig use is not permitted at MGH

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TREATING TOBACCO IN HEALTH CARE

2008 U.S. Public Health Service Guidelines – 5A's

- Routine advice to quit is effective
- Brief counseling is more effective
 - **ASK** all patients about smoking
 - **ADVISE** all smokers to quit
 - **ASSESS** smoker's readiness to quit
 - **ASSIST** smokers to quit
 - **ARRANGE** follow-up care

MOVING BEYOND THE 5A MODEL

- The model of ambulatory practice is changing
 - A team effort
 - Create a system of care
 - Embed it into routine practice flow
 - Link to resources outside the office

TREATING TOBACCO IN THE OFFICE

U.S. Public Health Service Guidelines – 5A's

- **ASK** Done by office staff (*vital sign*)
- **ADVISE** Core clinician role
- **ASSESS**
- **ASSIST** Fax / email referral to Quitline
- **ARRANGE** or health system resource

ASK

- About smoking “Do you ever smoke cigarettes?”

“Meaningful use” of electronic health records requires smoking status documentation

Select Response:

- Never smoker
- Current every day smoker
- Current some day smoker
- Former smoker
- Smoker, current status unknown
- Unknown, if ever smoked

- About secondhand smoke exposure

A NEWER WAY TO 'ASSESS'

- Don't ask a if a smoker is ready to quit
- Just offer treatment

“Quitting smoking can be hard, but there is good treatment and I can help you. Would you like to try?”

REFERRAL RESOURCES

■ Telephone Quitline

- *Proactive* multisession counseling
- Convenient, private, free
- **1-800-QUIT NOW**

■ Text messaging

<http://smokefree.gov/smokefreetxt>

■ Websites (www.trytostop.org)

■ Smartphone apps

QUITWORKS system

Staff fax referral
form to Quit line

Quit line calls
smoker to offer
counseling + NRT

Quit line gives
doctor feedback on
patient

QUITWORKSSM

A Service of the Massachusetts Smokers' Helpline

In Collaboration with the Massachusetts Department of Public Health and Massachusetts Health Plans

- If a patient is interested in quitting smoking, fill out this form with them.
- Fax **completed** form to 1-866-560-9113.
- The Massachusetts Smokers' Helpline will contact the patient, offer free cessation services, and send feedback reports to the provider listed below.
- This program is free for all Massachusetts residents regardless of insurance status.
- Important: Hospitals Refer at Discharge

Patient Stamp, Label or Info (Name, Record Number/DOB, Date)

QuitWorks is moving to e-news updates. Health care providers, please enter your email to receive QuitWorks updates and special offers for your patients!

Provider Email Address

Massachusetts Referral Form

Patients: Complete this section

First Name _____	Last Name _____	Are you 18 or older? <input type="checkbox"/> Yes <input type="checkbox"/> No
Mailing Address _____ () _____		City _____ State _____ Zip _____
Phone Number _____		
When should we call? (check all that apply) <input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> No preference		
Language Preference: <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Other (specify) _____		
May we leave a message? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Primary Insurance of Tobacco User: <input type="checkbox"/> Blue Cross Blue Shield MA <input type="checkbox"/> Tufts Health Plan <input type="checkbox"/> Harvard Pilgrim	<input type="checkbox"/> MassHealth/Medicaid <input type="checkbox"/> Other <input type="checkbox"/> None	
I authorize this provider to release the information on this referral form to QuitWorks so that I may be contacted and participate in the QuitWorks program. I also authorize QuitWorks to disclose information about my progress in attempting to quit smoking to the health care provider listed on this form.		
Patient Signature _____	Date _____	

Health Care Providers: Complete this section

Referring Provider: _____	() _____ Phone Number
Facility: _____	() _____ Fax Number
Address: _____	
Send feedback report to: <input type="checkbox"/> Same as above or _____ Name Phone Number Fax Number	
PEDIATRICS ONLY: Patient's relationship to child: <input type="checkbox"/> Mother <input type="checkbox"/> Father <input type="checkbox"/> Other (specify) _____	
Child/Children's name: (to help with recordkeeping) _____	

This form can be downloaded from WWW.QUITWORKS.ORG

Fax this form toll-free to 1-866-560-9113

MEDICATION COVERAGE BY HEALTH INSURERS

Massachusetts

- **Medicaid – all FDA-approved meds!**
 - Even OTC nicotine gum, patch, lozenge
 - Requires prescription but no prior approval
- **Private insurance**
 - Most cover Rx only but that will be changing

A Case: Revisited

- What's an electronic cigarette?
- Has he really tried everything?
 - NRT at adequate dose or in combination
 - Bupropion + NRT
 - Varenicline (if psychiatric status stable)
 - Behavioral support – key to bolster self-confidence
- Candidate for lung cancer CT screening

SUMMARY

- Treating smoking = chronic disease management
- Use combinations
 - Drugs + counseling
 - Combine drugs
- Use the systems being built to help you
 - Quitline **(1-800-QUIT NOW)**
 - QuitWorks fax referral system
- **Keep trying**
- New harm reduction products are here to stay