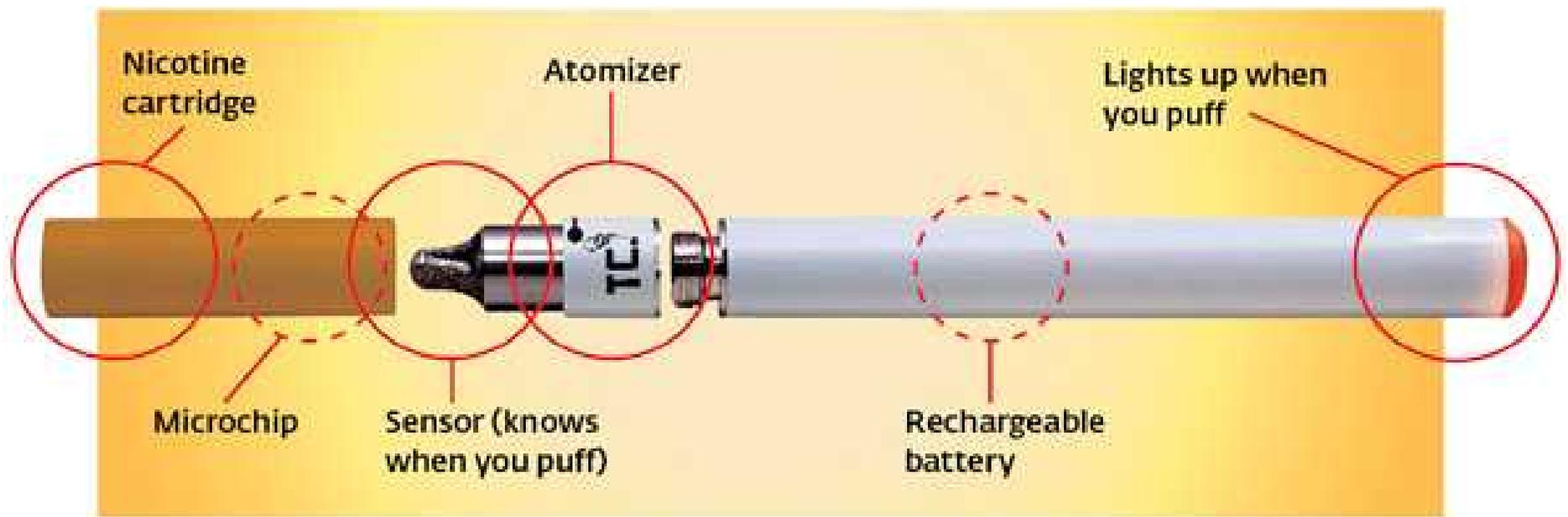




E-Cigarettes: Where we are in 2015

Melodie Tilson, Director of Policy
Non-Smokers' Rights Association

BC CLEAN AIR COALITION, 15 December 2015



First Generation ('cigalikes')

- Disposable
- Rechargeable with pre-filled cartridges



Second Generation—Tanks

- Rechargeable
- Refillable with e-liquid



Third Generation—Mods

- Rechargeable
- Refillable with e-liquid



Usage by regular users



Average duration: 10 months

n = 1347	%
Product type	
‘Cigarette-like’	18
‘Second generation’	72
‘Mods’	9
Strengths used	
18mg/ml	49
11mg/ml	33
Combine strengths	21
0 mg/ml only	1
Preferred flavour	
Tobacco	53
Fruit	33
Mint/menthol	28

(Dawkins et al., Addiction, 2013)

The Controversy

- ▶ E-cigarettes are unproven cessation aids: should have to undergo same rigorous testing for safety/ efficacy as other NRTs
- ▶ E-cigs pose health risks to user/others
- ▶ E-cigs have potential to undermine major tobacco control gains

Opponents

- ▶ E-cigarettes are clean drug delivery devices that can satisfy smokers' addiction to nicotine and to smoking behaviours
- ▶ Even if not fully known, health risks of e-cigarettes are dramatically lower (95%?) than risks of cigarettes

Proponents

The Role of Big Tobacco

- ▶ Imperial Tobacco launches Jai–Feb 15; pending medical licence for Puritane–Feb 15; buys Blu–14; buys Dragonite–Sept 13
- ▶ BAT division Nicoventures Voke inhaler granted UK medical licence–Sept 14; launches Vype–July 13
- ▶ PMI buys Nicocigs–June 2014
- ▶ Japan Tobacco acquires Ploom intellectual property—Feb 2015; buys E-Lites–Jun 14; markets Ploom–2012
- ▶ Altria buys Green Smoke–Feb 14; Altria subsid NuMark launches MarkTen brand–Aug 13
- ▶ Lorillard buys Skycigs–Oct 13; Blu–2012
- ▶ Reynolds American subsidiary RJ Reynolds Vapor launches Vuse–Jun 13





"Voke is a nicotine inhaler for smokers who want to reduce, replace or stop smoking."



Health Canada's position

All electronic products for administration of inhaled doses of nicotine are new drugs under Food and Drugs Act ; require market authorization from Health Canada before sale

E-cigarettes for nicotine use	Illegal
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Nicotine cartridges/liquid	Illegal
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E-cigarettes not for nicotine use that make a health claim	Illegal
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E-cigarettes not for nicotine use that do not make a health claim	Legal
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Unchecked

Sales

- Gas stations
- Pharmacies
- Convenience stores
- Head shops
- Flea markets
- Mall kiosks
- Vape shops
- Internet

with
nicotine



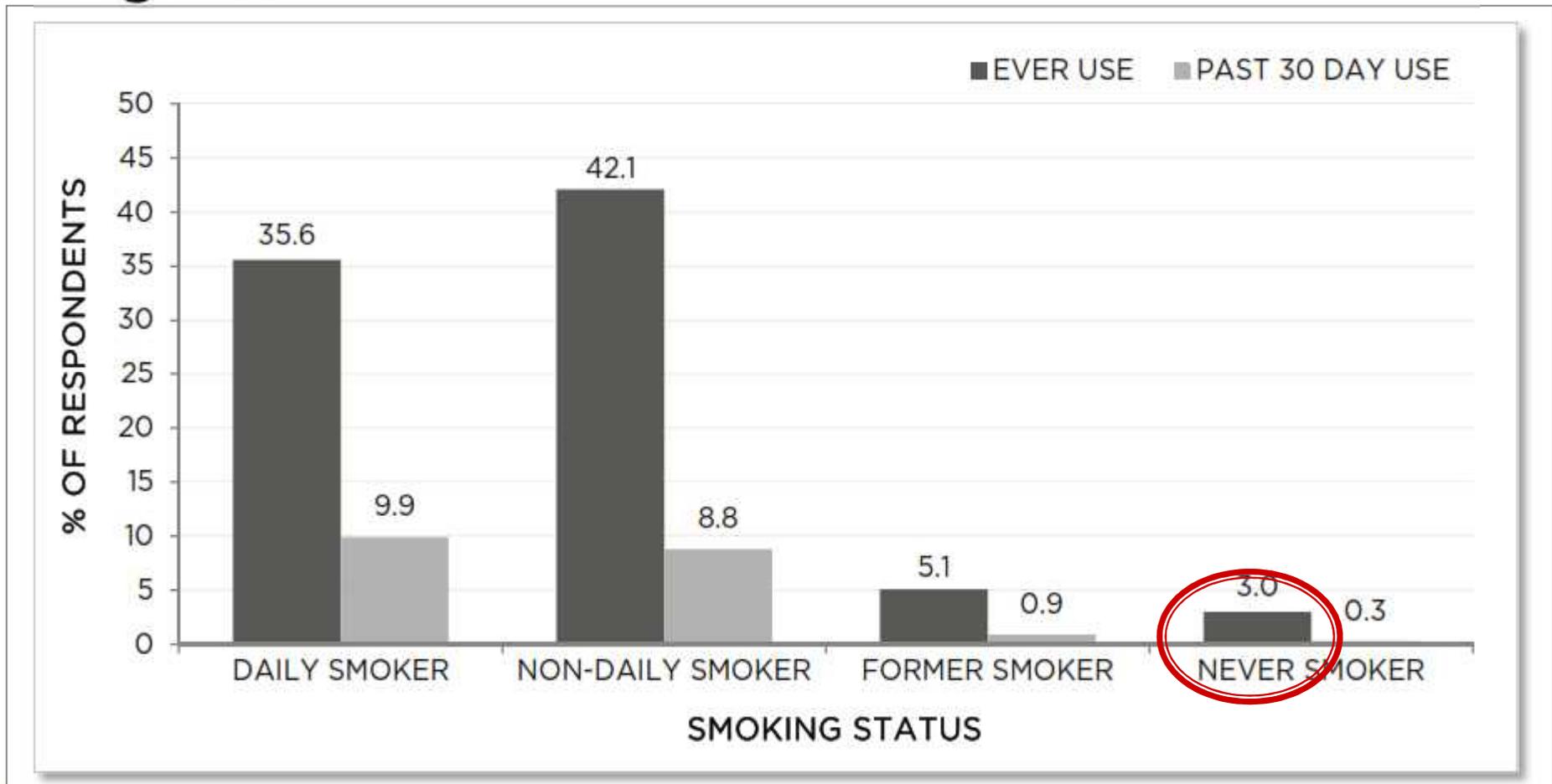
Promotion

- Countertop displays
- POS signage, billboards
- Ads in magazines, newspapers
- Retail trade journal ads, articles
- Celebrity endorsements
- Sponsorships
- Branded merchandise
- Product placements
- Price discounting
- Company brochures
- Internet

Changing retail landscape



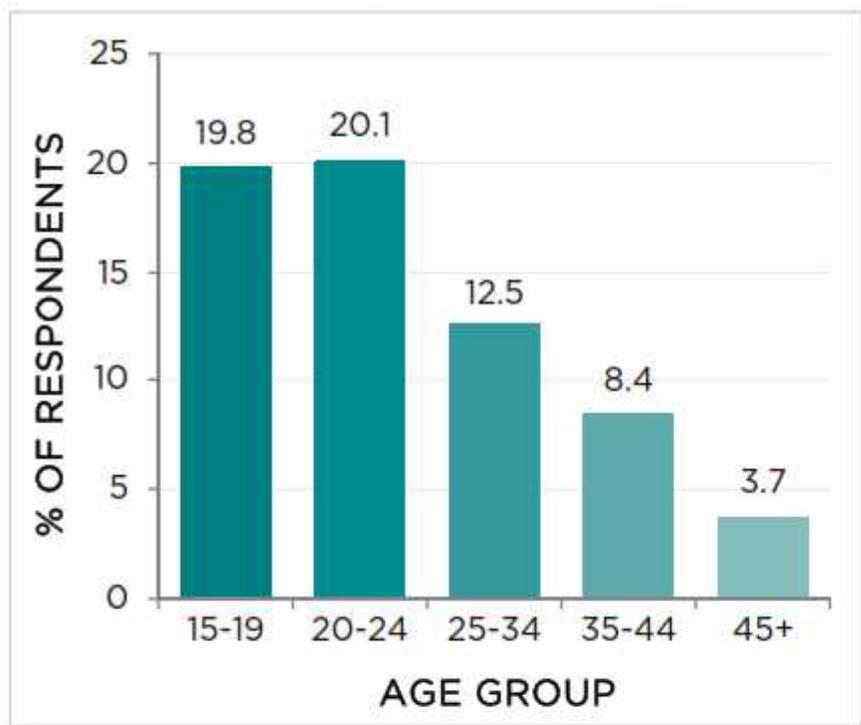
Use among Canadians by smoking status, age 15+



(CTADS 2013; Propel, Tobacco Use in Canada, Special Supplement: E-cigarettes, 2015)

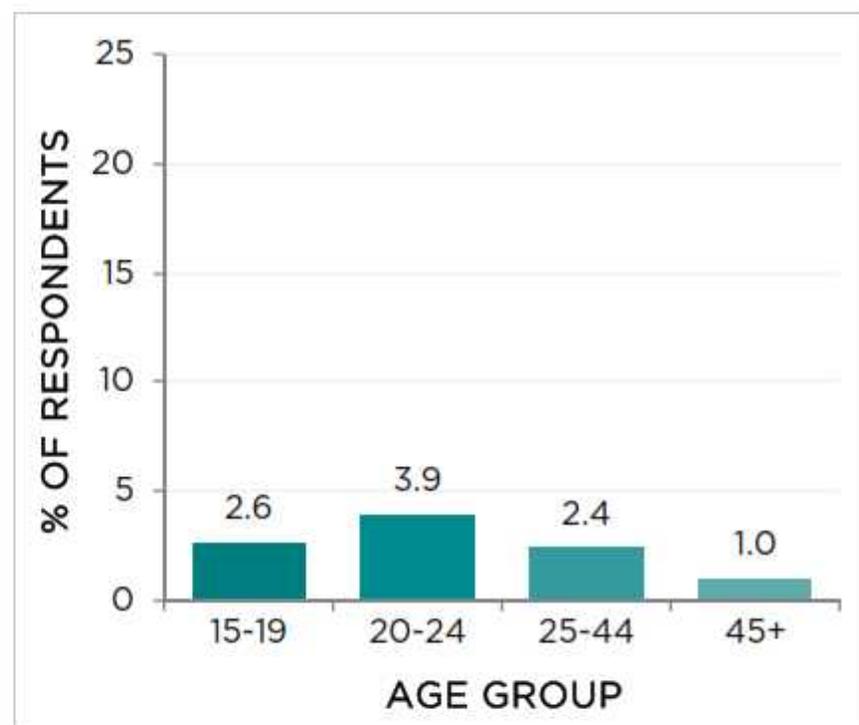
Use by age group

FIGURE 9: EVER USE OF E-CIGARETTES AMONG CANADIANS AGE 15+, BY AGE GROUP, 2013



DATA SOURCE: CTADS, 2013

FIGURE 10: PAST 30-DAY USE OF E-CIGARETTES AMONG CANADIANS AGE 15+, BY AGE GROUP, 2013



NOTE: AGES 25-34 AND 35-44 WERE COMBINED DUE TO LOW NUMBERS
DATA SOURCE: CTADS, 2013

(CTADS 2013; Propel, Tobacco Use in Canada, Special Supplement: E-cigarettes, 2015)

Research—overarching concerns

- ▶ Most studies lack scientific rigour; small sample sizes, short duration of use
- ▶ Most studies involve first generation devices
- ▶ Only 3 RCTs, all small studies
- ▶ Bias—industry funding; self-report survey data; analysis
- ▶ Lack of quality controls/ manufacturing standards means study results cannot be generalized

“Any research only applies to the specific EC brand, model and batch tested, with no certainty that the findings will apply to other or future brands, models or batches. ECs are subject to frequent modifications, and there are currently more than 460 brands.” (Pisinger, *Preventive Med*, 2014)

Health and safety risks

▶ Long-term health risks not yet known

- Adverse impact on lung function
(Schweitzer 2015; Gennimata 2012; Vardavas 2012)
- Tobacco-specific nitrosamines (TSNA), volatile organic compounds (VOC), aldehydes, heavy metals in liquid/vapour of some products
(Kosmider 2014; Goniewicz 2014; Hutzler 2014; Kim & Shin 2013; Williams 2013; McAuley 2012; Lauterbach 2012; Laugesen 2008)
- Health effects of inhaling propylene glycol (PG) and/or vegetable glycerin (VG) for months/years unknown



▶ Lack of quality controls, manufacturing standards

- Huge variety of devices, components, e-liquids/ cartridges in largely unregulated marketplace

Risks to tobacco control

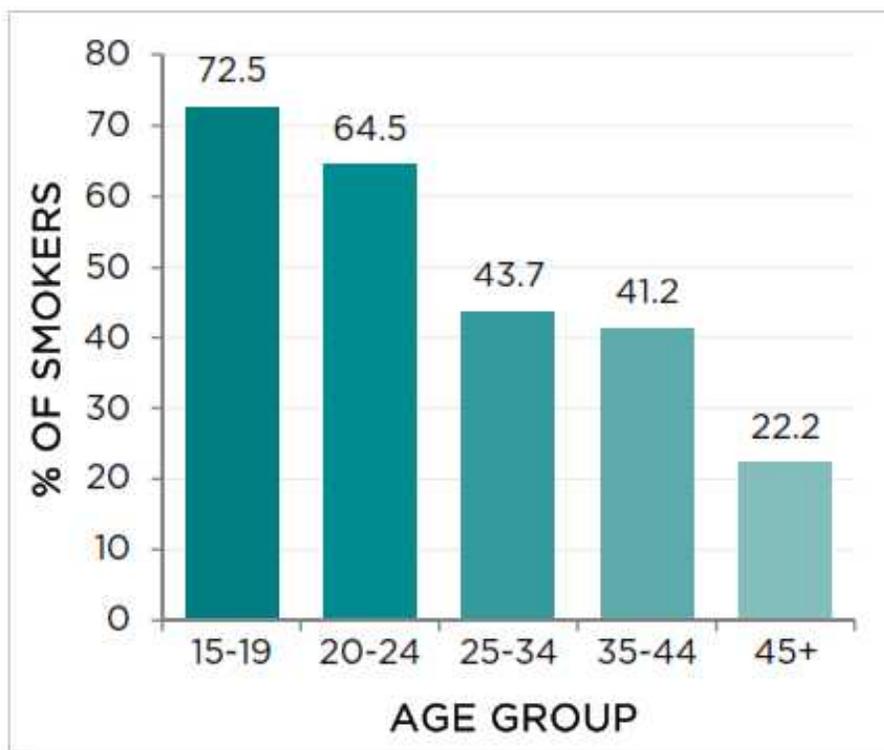
- ▶ Will e-cigarette experimentation and use serve as gateway to nicotine addiction and/or to smoking among youth?
- ▶ Will e-cigarette promotion and use undermine quitting?



Gateway to nicotine addiction?

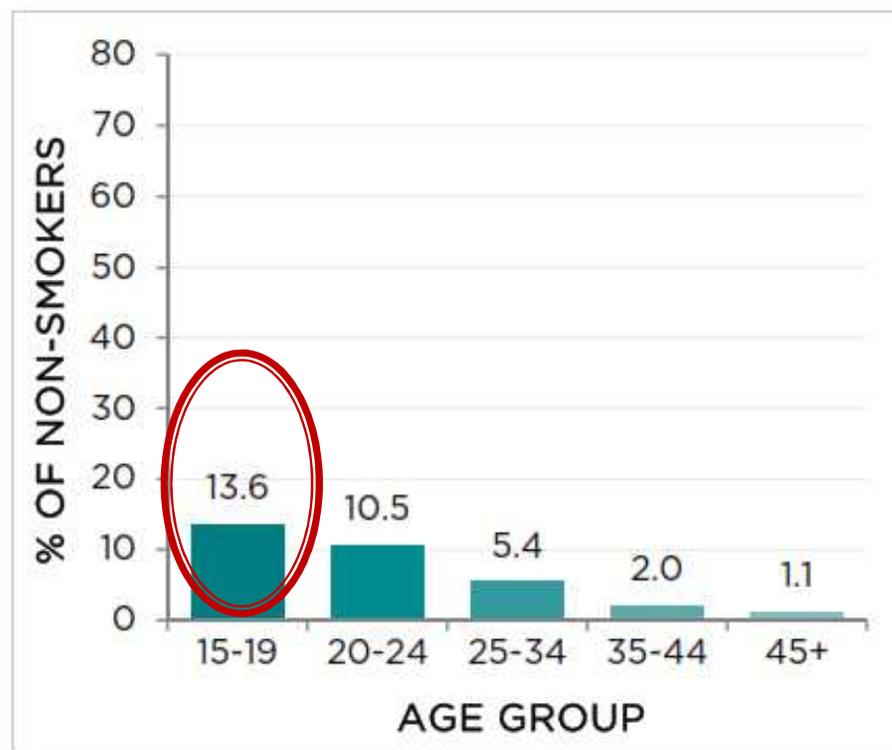
Ever use of e-cigarettes by age and smoking status, Canada, 2013

FIGURE 14: EVER USE OF E-CIGARETTES BY AGE GROUP AMONG SMOKERS, 2013



DATA SOURCE: CTADS, 2013

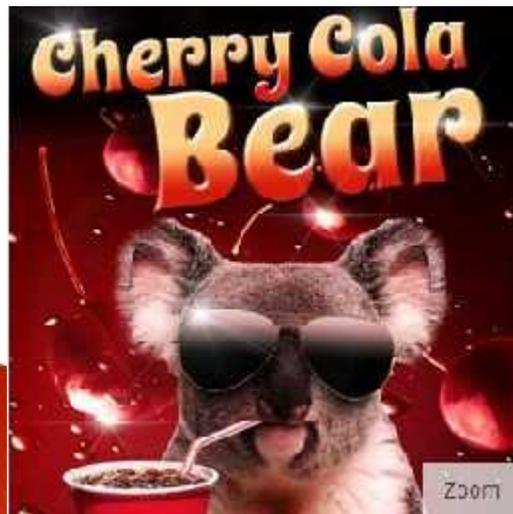
FIGURE 15: EVER USE OF E-CIGARETTES BY AGE GROUP AMONG NON-SMOKERS, 2013



DATA SOURCE: CTADS, 2013

(CTADS 2013; Propel, Tobacco Use in Canada, Special Supplement: E-cigarettes, 2015)

Gateway to nicotine addiction?



Gateway to nicotine addiction?

29 April 2015



Vape Tricks - Jelly Fish & Force Fields

E-CIGARETTES: Vapers get together for a few puffs and a friendly competition

They're proud of their cloud



CRAIG GLOVER/THE LONDON FREE PRESS

Customers Jimi Whitcroft, left, Travis Legge-MacDougall and Digg Zine discuss modifications to Zine's vaporizer as the three vape at The Vaper Store on Wellington St. in London.

Promote dual use or cessation?

- ▶ Most e-cigarette users also smoke
 - More than 80% are dual users (West, Smoking Toolkit Study, 2015)
 - ▶ “For college student smokers...repeated e-cig use is a predictor of continued smoking” (Sutfin, AJPH, 2015)
 - ▶ But dual use may be a step toward quitting
 - UK surveys show vast majority of smokers use e-cigs to reduce cigarette consumption (West, Smoking Toolkit Study, 2015)
 - Studies show e-cigs can help smokers reduce their cigarette consumption (Brose 2015; Adriaens 2014; West 2014; Adkison 2013; Caponnetto 2013; Etter 2011)
 - Dual use of NRT + smoking assoc. with higher quit rates (Moore, BMJ, 2009)
- 

Effectiveness as cessation aid

- ▶ E-cigarettes can deliver nicotine effectively

- ✓ Experienced users

- ✓ Using tank or mod

(St Helen, Addiction, 2015; Spindle, NTR, 2014; Farsalinos 2014; Dawkins 2013; Vansickel 2013; Etter 2011; Bullen 2010)

- ▶ “E-cigarettes can deliver levels of nicotine that are comparable to or higher than typical tobacco cigarettes, with similar systemic retention”

(St Helen, Addiction, 2015)



Effectiveness as cessation aid

- ▶ E-cigarettes can help smokers quit smoking
 - 3 RCTs (Adriaens, IJERPH, 2014; Bullen, Lancet, 2013; Caponnetto, PLOS, 2013)
 - E-cig users 60% more likely to report continued abstinence than those using OTC NRT or no aid (Brown 2014)
 - Intensive users of e-cigs (daily use for > one month) 6 times more likely to have quit than non-users/tryers (Biener, N&TR, 2014)
 - “E-cigs may have helped approx. 20,000 smokers to stop in 2014 who would not have stopped otherwise” (West 2015)
 - Large multi-country survey (n=3587) 96% of former smokers said e-cigs helped them quit (Etter 2011)
 - < 15 surveys of e-cig users report high quit rates (Dawkins 2013; Etter 2011; Siegel 2011; Polosa 2011)
- 

Effectiveness as cessation aid

- ▶ Most smokers who try e-cigarettes do not continue to use (~1 in 3) (Public Health England 2015; Adkison 2013)
- ▶ Overall, the research to date is inconclusive regarding the effectiveness of e-cigarettes as cessation aids (OTRU 2015-unpublished; Brose 2015; Borderud 2014; Grana 2014; Adkison 2013)
- ▶ However,
 - Most studies are of poor quality
 - Most studies have used first generation devices
 - Few studies assess frequency of use
 - Many studies define any experimentation—even if only once—as e-cigarette use



Legislative developments

Provinces

- BC
- NS
- NB
- PEI
- MB
- QC
- ON

In effect

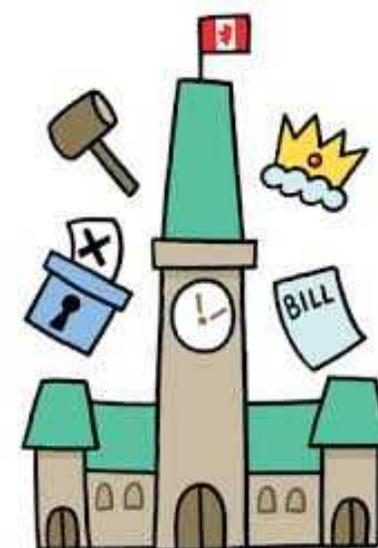
14 May 2015
31 May 2015
1 July 2015
1 Oct 2015
5 Nov 2015
26 Nov 2015
1 Jan 2016

Federal government

- Standing Cte on Health hearings, fall 2014
- Report tabled Mar 2015; no government response

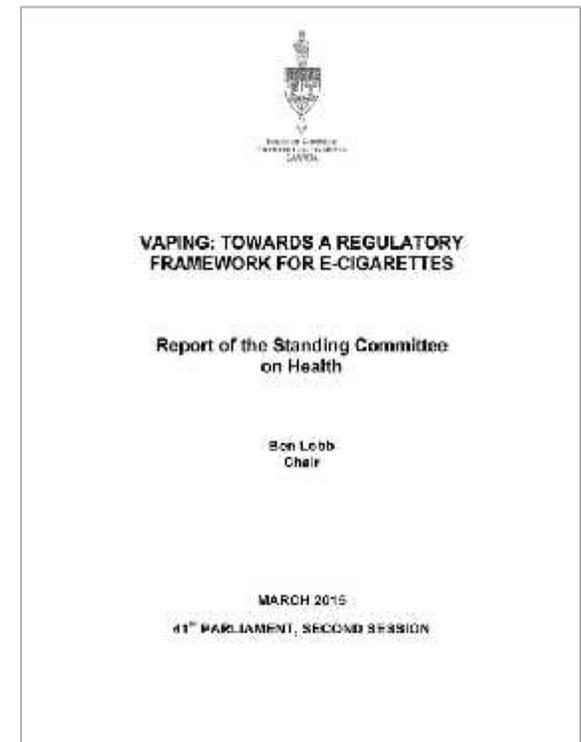
US

- North Dakota
- New Jersey
- Utah
- 225 municipalities



Health Committee recommendations

- ▶ New legislative framework or regulated under Tobacco Act –e-cigs with/without nicotine
- ▶ Product standards
- ▶ Accurate labelling; no unproven health claims; child-safe packaging
- ▶ Ban on sales to minors
- ▶ Ban on use in federal workplaces
- ▶ Restrictions on advertising/promotion
- ▶ No cross branding
- ▶ Ban on flavours targeting youth
- ▶ Funding for research



Conclusions

- ▶ More research—high quality; longitudinal studies
- ▶ Balanced, accurate reporting of the research; meaningful relative risk information
- ▶ Adequate, enforced manufacturing standards
- ▶ No sales to minors; controls on promotion; no use in indoor public places/workplaces
- ▶ Legalized sale of e-cigarettes with nicotine





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