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Pending legislation to include e-cigarettes in Los Angeles smokefree law

1 message

Glantz, Stanton A <glantz@medicine.ucsf.edu>

Mon, Mar 3, 2014 at 9:25 PM

To: "mayor.garcetti@lacity.org" <mayor.garcetti@lacity.org>, "councilmember.cedillo@lacity.org" <councilmember.cedillo@lacity.org>, "councilmember.krekorian@lacity.org" <councilmember.krekorian@lacity.org>, "councilmember.blumenfield@lacity.org" <councilmember.blumenfield@lacity.org>, "councilmember.Labonge@lacity.org" <councilmember.Labonge@lacity.org>, "paul.koretz@lacity.org" <paul.koretz@lacity.org>, "councilmember.martinez@lacity.org" <councilmember.martinez@lacity.org>, "councilmember.fuentes@lacity.org" <councilmember.fuentes@lacity.org>, "councilmember.parks@lacity.org" <councilmember.parks@lacity.org>, "councilmember.parks@lacity.org" <councilmember.parks@lacity.org>, "councilmember.price@lacity.org" <councilmember.price@lacity.org>, "councilmember.wesson@lacity.org" <councilmember.wesson@lacity.org>, "councilmember.bonin@lacity.org" <councilmember.bonin@lacity.org>, "councilmember.bonin@lacity.org" <councilmember.bonin@lacity.org>, "councilmember.englander@lacity.org" <councilmember.englander@lacity.org>, "councilmember.huizar@lacity.org" <councilmember.huizar@lacity.org>, "councildistrict15@lacity.org" <councildistrict15@lacity.org>, "councildistrict15@lacity.org" <councildistrict15@lacity.org>, "councilmember.ofarrell@lacity.org" <councilmember.ofarrell@lacity.org> Cc: "maria.espinoza@lacity.org" <maria.espinoza@lacity.org>

I would like to submit the attached letter supporting the proposed ordinance. The letter is attached as a PDF file and the text is pasted into this email below:

March 3, 2014

Mayor Eric Garcetti

Members, Los Angeles City Council

via email

Dear Mayor Garcetti and Council Members,

I am writing to support pending legislation you are considering that would include e-cigarettes in Los Angeles' current smokefree ordinance. This is a sensible piece of legislation that mirrors what cities large and small are doing all over the country (and the world).

Last December two colleagues at UCSF and I prepared an extensive review of the scientific evidence at the request of the World Health Organization, "Background Paper on E-cigarettes (Electronic Nicotine Delivery Systems)" (copy attached).

While the scientific evidence is still accumulating, there is no question that e-cigarettes pollute the air breathed by bystanders with nicotine, ultrafine particles, volatile organic compounds, and other pollutants and that bystanders take these chemicals into their bodies. Having spent decades cleaning up the indoor air, there is

no reason to reintroduce a new form of indoor air pollution.

In particular, it is my understanding that you have been provided with a technical report prepared for the e-cigarette advocacy group CASAA by Igor Burstyn entitled "Peering through the mist" that concludes that "there is no evidence that vaping produces inhalable exposures to contaminants of the aerosol that would warrant health concerns by the standards that are used to ensure safety of workplaces."

The problem with this study is that it employs occupational threshold limit values (TLVs) to evaluate the potential risks posed by various toxins in e-cigarettes. TLVs are used to assess health effects for occupational chemical exposures that are generally much higher (often orders of magnitude higher) than levels considered acceptable for ambient or population-level exposures. (Employing an occupational standard to evaluate risk to the general population is the same approach to risk assessment as those conducted for secondhand smoke by those affiliated with the tobacco industry decades ago, which also concluded that secondhand tobacco smoke could not produce any adverse health effects.) TLVs also do not consider exposure to sensitive subgroups, such as people with medical conditions, children and infants, who might be exposed to secondhand e-cigarette emissions, most notably nicotine. You should not rely on this study as justification for allowing the citizens of Los Angeles to be involuntarily exposed to e-cigarette pollution.

Another common claim is that e-cigarettes are helping people quit smoking and any restriction on where people can use e-cigarettes would undermine this benefit. The evidence from large population-based studies is just the opposite: overall e-cigarette use is associated with *less quitting* cigarettes. Moreover, even if the claims that e-cigarettes help people quit smoking were true, there is absolutely no evidence that creating e-cigarette zones would interfere with quitting smoking.

I am also very concerned about two exceptions in the legislation, one for theatrical productions and another for vaping lounges.

The seemingly minor amendment to exempt theatrical productions will have big effects given the fact that LA is a center for producing television programs and motion pictures, because it will make it legal to use e-cigarettes in these venues, which could end up influencing youth all over the world to start using e-cigarettes and begin a life of nicotine addiction. And the e-cigarette companies have been very aggressive in using Hollywood to promote their products.

In terms of vaping lounges, it is important to ensure that *all* they are selling is e-cigarettes and associated paraphernalia and that they not be allowed to sell food or drink so as to prevent opening up a serious loophole in the law. Even better, I suggest that you consider grandfathering existing vaping lounges (as long as they only sell e-cigarettes) and prohibit opening new such businesses.

I had the privilege of appearing before the Los Angeles City Council decades ago when it was considering legislation to limit and, eventually, prohibit smoking in workplaces and public places. I have to say that the current debate over e-cigarettes makes me feel like I have got in a time machine and returned to the 1980s. There are calls for "more science" and "protecting rights," pro-tobacco interests are hiring political consultants, running advertisements and placing robocalls and well-organized "vapers' rights" groups are pressuring the Council.

The fact is that Los Angeles, like hundreds of other places, saw past the controversy that pro-tobacco forces generated (and today the e-cigarette companies are being taken over by the tobacco industry) and passed its smokefree legislation. And the public loved it.

Now is the time to do the same thing and take the simple step of adding e-cigarettes to your smokefree ordinance.

If I can provide any additional information, feel free to contact me.

Best wishes,

/S/

Stanton A. Glantz, PhD
Professor of Medicine
American Legacy Foundation Distinguished Professor of Medicine
Director, Center for Tobacco Control Research and Education

2 attachments

 [Glantz-letter-e-cig-LosAngeles.pdf](#)
67K

 [ecig_Report_Dec2013.pdf](#)
1513K

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Members, Los Angeles City Council
via email

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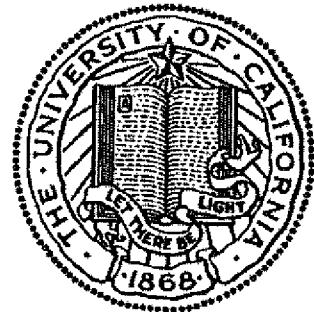
If I can provide any additional information, feel free to contact me.

Best wishes,



Stanton A. Glantz, PhD
Professor of Medicine
American Legacy Foundation Distinguished Professor of Medicine
Director, Center for Tobacco Control Research and Education

Background Paper on E-cigarettes (Electronic Nicotine Delivery Systems)



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Prepared for
World Health Organization
Tobacco Free Initiative

December 2013

EXECUTIVE SUMMARY

- E-cigarettes are evolving rapidly and being marketed like cigarettes were in the 1950s and 1960s
 - Marketing is back on television and radio
 - Aggressive placement in convenience stores (next to candy) and in other stores (next to medications)
- Youth are rapidly adopting e-cigarettes
 - E-cigarettes contain candy flavors (e.g., cherry, chocolate, turkish delight)
 - High levels of dual use
 - Youth who use e-cigarettes are heavier (not lighter) smokers
 - Youth who use e-cigarettes are much less likely to have stopped smoking (OR 0.1-0.2)
 - The temporal and causal relationships between e-cigarette use and smoking have not been determined
- E-cigarettes have not been proven to help people quit smoking
 - Longitudinal population studies show that e-cigarette use is associated with a lower odds of quitting
 - The randomized trial comparing e-cigarettes to nicotine patch shows that in the context of low level behavioral support, the quit rate for those using e-cigarettes is low and similar to those using a nicotine patch
- There is a high level of dual use of e-cigarettes and conventional cigarettes among adults
- The hope that e-cigarettes will reduce harm by delivering "clean" nicotine will not be realized in continuing dual users
 - Continuing to smoke any conventional cigarettes confers essentially the full cardiovascular risk
 - Cancer risk may only be modestly affected because smoking duration is more important than intensity
- E-cigarettes deliver lower levels of toxins than conventional cigarettes, but they still deliver some toxins
- E-cigarettes pollute the air less than conventional cigarettes, but they pollute the air
 - They do not just emit "harmless water vapor"
- People passively exposed to e-cigarette aerosol absorb nicotine (measured as cotinine), with one study showing levels comparable to passive smokers
- There is little research on direct health effects
 - One study shows short-term pulmonary effects
 - Evidence of cytotoxicity in animal and human *in vitro* test systems
- While the original e-cigarette companies were competing with conventional cigarette companies, all the major cigarette companies are now in the e-cigarette business

- E-cigarette companies are using the same political and public relations strategies as cigarette companies (most notably organizing users, similar to how the cigarette companies organized smokers)
- E-cigarette policy making in many countries is dominated by assumptions about their use (utility as a smoking cessation aid or for harm reduction) that are not supported by the evidence available to date

At minimum, these policies should be implemented immediately:

- Prohibit the use of e-cigarettes anywhere where the use of conventional cigarettes is prohibited
- Apply the same restrictions on e-cigarette advertising and promotion as apply to conventional cigarettes
- Ban the use of characterizing flavors in e-cigarettes
- Prohibit claims that e-cigarettes are effective smoking cessation aids until such time as there is convincing scientific evidence that such claims are true for e-cigarettes as they are actually used in the general population.
- Regulate e-cigarettes to set standards for product performance in order to minimize risks to users and bystanders

Because the product, the market, and the associated scientific evidence surrounding e-cigarettes are all evolving rapidly:

- All legislation and regulations related to e-cigarettes should allow for flexibility to adapt regulations expeditiously in response to new science, including evaluation of different models for regulating e-cigarettes, as it accumulates
- No country or subnational jurisdiction should be compelled to permit the sale of e-cigarettes
- Legislation and regulations regarding e-cigarettes need to take into account the fact that, unlike conventional cigarettes and other tobacco products and medicinal nicotine replacement therapies, e-cigarettes can be altered by users to change the nicotine delivery and be used to deliver other drugs
- There should be transparency in the role of the e-cigarette and tobacco companies in advocating for and against legislation and regulation, both directly and through third parties
- FCTC Article 5.3 should be respected when developing and implementing legislation and regulations related to e-cigarettes

TABLE OF CONTENTS

BACKGROUND	6
METHODS	10
PRODUCTS (TYPES, ENGINEERING).....	12
PRODUCT PERFORMANCE AND POTENTIAL RISKS TO USERS AND BYSTANDERS	15
MARKETING AND MEDIA RESEARCH.....	17
Conclusion.....	25
PREVALENCE.....	26
Adults	26
<i>International Samples</i>	26
<i>United Kingdom</i>	26
<i>Switzerland</i>	27
<i>United States</i>	28
<i>U.S. Regional Samples</i>	30
<i>Convenience Samples of Users: Prevalence, User perceptions</i>	31
Youth.....	34
Conclusion.....	37
ANALYSES OF E-CIGARETTE E-FLUID AND AEROSOL.....	39
Chemical Constituents.....	39
Particulate Matter	45
Cytotoxicity.....	50
Conclusion.....	51
BIOLOGICAL EFFECTS	53
Nicotine Absorption	53
Abuse Liability.....	59
Conclusion.....	60
HEALTH EFFECTS	61
Conclusion.....	64
EFFECTS ON CESSATION OF CONVENTIONAL CIGARETTES.....	64
Population-based studies	64
Clinical trials	66

Conclusion.....	69
HEALTH IMPLICATIONS OF CIGARETTE REDUCTION IN THE CONTEXT OF DUAL USE	71
TOBACCO INDUSTRY INVOLVEMENT.....	72
CURRENT STATE OF GLOBAL REGULATION (NOVEMBER 2013)	76
European Union Draft Tobacco Product Directive.....	76
<i>The European Commission Draft(December 2012)</i>	77
<i>The EU Parliament Amendments (October 2013)</i>	78
<i>The Situation as of November 2013</i>	81
United Kingdom.....	82
United States	84
Convention on Tobacco Control (FCTC) Conference of the Parties Report on national e-cigarette policies and regulations	85
<i>Updated Information</i>	86
OVERALL SUMMARY	87
RESEARCH NEEDS.....	88
POLICY RECOMMENDATIONS	89
ACKNOWLEDGEMENTS	91
REFERENCES	92

This document served as one input for discussion on ENDS at the WHO Study Group on Tobacco Product Regulation (TOBREG) meeting in Rio in December, 2013. The interpretation of results and recommendations in the present document represent the opinions of the authors and not necessarily WHO or TOBREG.

BACKGROUND

E-cigarettes (also known as electronic nicotine delivery systems or ENDS) are a class of products intended to deliver nicotine-containing aerosol (incorrectly commonly called "vapor") to a user by heating a solution typically comprised of propylene glycol and/or glycerol (glycerin), nicotine and flavoring agents (Figure 1). E-cigarettes without nicotine are also available. The first of these devices that started the trend in use we describe in this report was invented by a Chinese pharmacist, Hon Lik, in 2003. The U.S. patent application for the device states that the product is "An electronic atomization cigarette that functions as substitutes (sic) for quitting smoking and cigarette substitutes." (Patent #8,490,628 B2) E-cigarette sales have risen rapidly since they entered the marketplace in 2007.(Pauly et al., 2007, Cobb et al., 2010) These products are marketed as healthier alternatives to tobacco smoking, useful in quitting smoking and reducing cigarette consumption, and a method for circumventing smokefree laws and enabling users to "smoke anywhere."(Grana and Ling, in press) Interest in the products has been increasing(Ayers et al., 2011) and an exponential rise in sales over the past 3 years (2010-2013) has been due, at least in part, to widespread advertising via television commercials and print advertisements, that often feature celebrities, for the most popular brands, including those owned by tobacco companies.(Felberbaum, 2013)

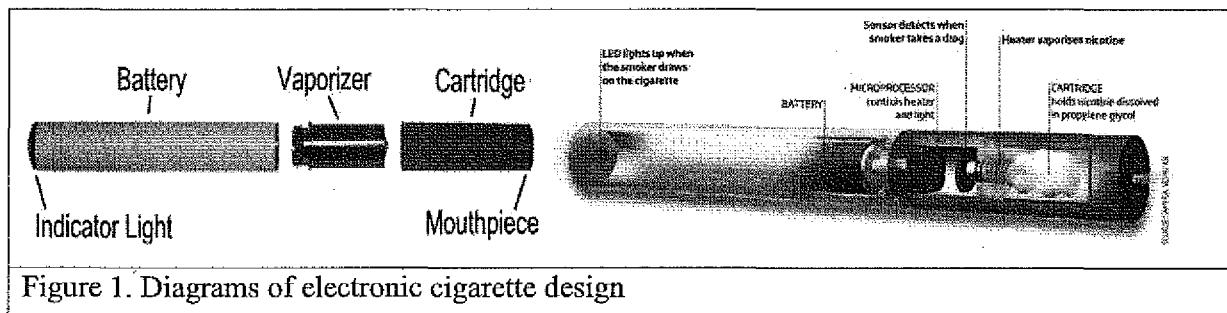


Figure 1. Diagrams of electronic cigarette design

In 2009, the WHO Study Group on Tobacco Product Regulation (TobReg) addressed the emerging regulatory issues pertaining to e-cigarettes. TobReg noted that there was very little published scientific evidence on the health effects of e-cigarettes, or their efficacy for smoking cessation (stated in TobReg Report 955)(World Health Organization, 2009) and that there was not sufficient evidence to support the cessation and health claims made by companies and those in the public health community who were advocating e-cigarettes for harm reduction. The report states (p. 7), "In addition to nicotine dependence, the sensory effects of the product, social and

marketing forces and perceptions of harmfulness and potential benefits should be considered in examining the initiation, patterns of use and development of addiction."(World Health Organization, 2009) Meanwhile, e-cigarette prevalence has increased dramatically (Table 1, bottom of document)

Both the 2009 TobReg Report 955 and the 2012 World Health Organization Framework Convention on Tobacco Control (FCTC) Conference of the Parties report on e-cigarettes (November 2012)(FCTC/COP/5/13, 2012) articulated concerns about how the products may create interference with implementation of the FCTC articles that address non-price measures to reduce demand for tobacco products, particularly Articles 8(protection from tobacco smoke exposure), 9 (tobacco product content regulation), 10 (regulation of tobacco product disclosures), 11 (regulation of tobacco product packaging), 13 (tobacco advertising, promotion and sponsorship), because e-cigarettes mimic tobacco cigarettes, and thus may interfere with limits on the indirect promotion of tobacco use/products. E-cigarettes may hinder protection from exposure to tobacco smoke (Article 8) because, while the limited published research suggests that e-cigarettes emit much less and lower levels of toxicants into the environment than conventional cigarettes, they still subject bystanders to passive exposure (called "passive vaping" in Schripp et al., 2012)(Schripp et al., 2012) E-cigarettes are widely advertised and promoted (often inaccurately) as being exempt from clean indoor air laws. The similar appearance of people using e-cigarettes and those using conventional cigarettes can complicate enforcement of restrictions on smoking conventional cigarettes. Moreover, the e-cigarette aerosol has not been proven safe for inhalation by bystanders. A main concern with the products stated in the 2009 WHO report was lack of data on the safety of the ingredients in the e-cigarette solution, especially the safety of repeated inhalation of a heated mixture of propylene glycol and other chemicals.(World Health Organization, 2009) In 2009, TobReg recommended that if e-cigarettes were to be considered medicines or tobacco products, they would be subject to the labeling and warnings requirements in Articles 10 and 11. The TobReg report placed great emphasis on the products' potential interference with Article 13, which addresses advertising and sponsorship by industry. Both Articles 8 and 13 can have the effect of denormalizing the use of tobacco products and indirect promotion of tobacco products through limiting exposure to tobacco smoke in public places (Article 8) and thus the modeling of smoking behavior in public and limiting advertising

Table 1. Prevalence of e-cigarette use in various countries as measured by published population-based surveys

Authors	Country, sample description, n	Ever use among general population (%)				Ever use among smokers (%)			
		2009	2010	2011	2012	2009	2010	2011	2012
Regan et al. 2013	U.S., Adults 18+, n=10587 (2009); n=10328 (2010), ConsumerStyles nationally-representative survey	0.6	2.7	--	--	Not report ed	18.2	--	--
King et al. 2012	U.S., Adults, 18+, HealthStyles survey nationally-representative, mail-back (n=4,184) and online (n=2505) modes n=6689 in 2010, online only n=4050 in 2011	--	2.1 mail, 3.3 online	6.2 online	--	--	6.8 mail, 9.8 online	21.2 online	--
Pearson et al. 2012	U.S., Adults 18+, 2 samples	--	--	--	--	--	11.4	--	--
	Nationally-representative online sample (Knowledge Networks), 2010, n=2649	--	3.4	--	--	--	11.4	--	--
	Legacy Longitudinal Study of Smokers (smokers and former smokers), 2010, n=3648	--	--	--	--	--	6.4	--	--
McMillen et al. 2013	U.S., Adults 18+, nationally-representative samples recruited via 2 survey modes: telephone-based (n=1504) and online (n=1736), Social Climate on Tobacco Control survey, 2010	--	1.8	--	--	--	14.4	--	--
Dockrell et al. 2013	U.K., Adults 18+, nationally-representative online panel (YouGov), 2010; n=12597 adults, 2010 n=12432	--	--	--	--	--	--	--	21.6
Adkison et al. 2013	ITC 4-country survey, Adults 18+, * July 2010-June 2011*	--	--	--	--	--	--	--	21.6
	U.S. (n=1520)	--	--	--	--	--	20.4	--	--
	Canada (n=1581)	--	--	--	--	--	10.0	--	--
	U.K. (n=1325)	--	--	--	--	--	17.7	--	--
	Australia (n=1513)	--	--	--	--	--	11.0	--	--

Popova and Ling 2013	U.S., Adults 18+, nationally-representative online sample (Knowledge Networks), current and former smokers, n=1836	--	--	--	--	--	--	--	20.1	--
Cho et al. 2011	Korea, Adolescents, middle school and high school, n=4,341, national survey in 2008*	0.5*	--	--	--	--	--	--	--	--
Lee et al. 2013 (in press)	Korea, Adolescents, middle school and high school, grades 7-12, ages 13-18, (Korean Youth Risk Behaviour Study) n=75,643			9.4%						
CDC NYTS 2013	U.S., Adolescents, middle and high school, 2011, 2012 National Youth Tobacco Survey (n's not reported)	--	--	MS: 1.4 HS: 4.7	MS: 2.7 HS: 10.0	--	--	--	--	--

1 and sponsorship by tobacco companies (Article 13). These policy measures could be undermined
2 by the permitted use of a cigarette-like product that produces a smoke-like aerosol in public and
3 widespread, unrestricted advertising of such products in ways that have been restricted for
4 cigarettes and other tobacco products by the implementation of Article 13.

5 There has been rapid e-cigarette product innovation in the marketplace despite many
6 unanswered questions about their safety, efficacy for harm reduction and cessation, and total
7 impact on public health. Several commentaries and editorials have been published in the
8 scientific press debating these issues (e.g.,(Britton, 2013, Benowitz and Goniewicz, 2013,
9 Chapman, 2013, Cobb et al., 2010, Etter, 2013, Wagener et al., 2012)) and the number of
10 scientific studies on e-cigarettes is growing. Both the individual risks and benefits and the total
11 impact of these products occur in the context of the widespread and continuing availability of
12 conventional cigarettes and other tobacco products, with high levels of “dual use” of e-cigarettes
13 and conventional cigarettes at the same time among both adults(Adkison et al., 2013, King et al.,
14 2013, Dockrell et al., 2013, Pearson et al., 2012, Regan et al., 2013) and youth.(Centers for
15 Disease Control and Prevention, 2013) This dual use raises questions about the possible harm
16 reduction benefits. It is important to assess e-cigarette toxicant exposure and individual risk as
17 well as health effects of e-cigarettes as they are actually used in order to ensure safety and to
18 develop evidence-based policies and a regulatory scheme that protects the entire population,
19 children and adults, smokers and non-smokers, in the context of how the tobacco industry is
20 marketing and promoting these products.

21 This report reviews the literature on e-cigarettes available as of September 2013, as well
22 as an update of tobacco industry involvement in the e-cigarette market, research
23 recommendations, global regulations pertaining to e-cigarettes, and potential options for
24 regulation.

25

26 METHODS

27 Initial searches were conducted via the PubMed electronic database using keywords to
28 identify studies describing electronic cigarettes (electronic cigarette, e-cigarette, electronic
29 nicotine delivery systems). The initial searches yielded 153 studies, of which 125 were identified
30 as relevant to electronic cigarettes (Figure 1). Seventy-eight published papers retrieved from
31 those searches were formally reviewed to meet the aims of the present report. Seventy-five

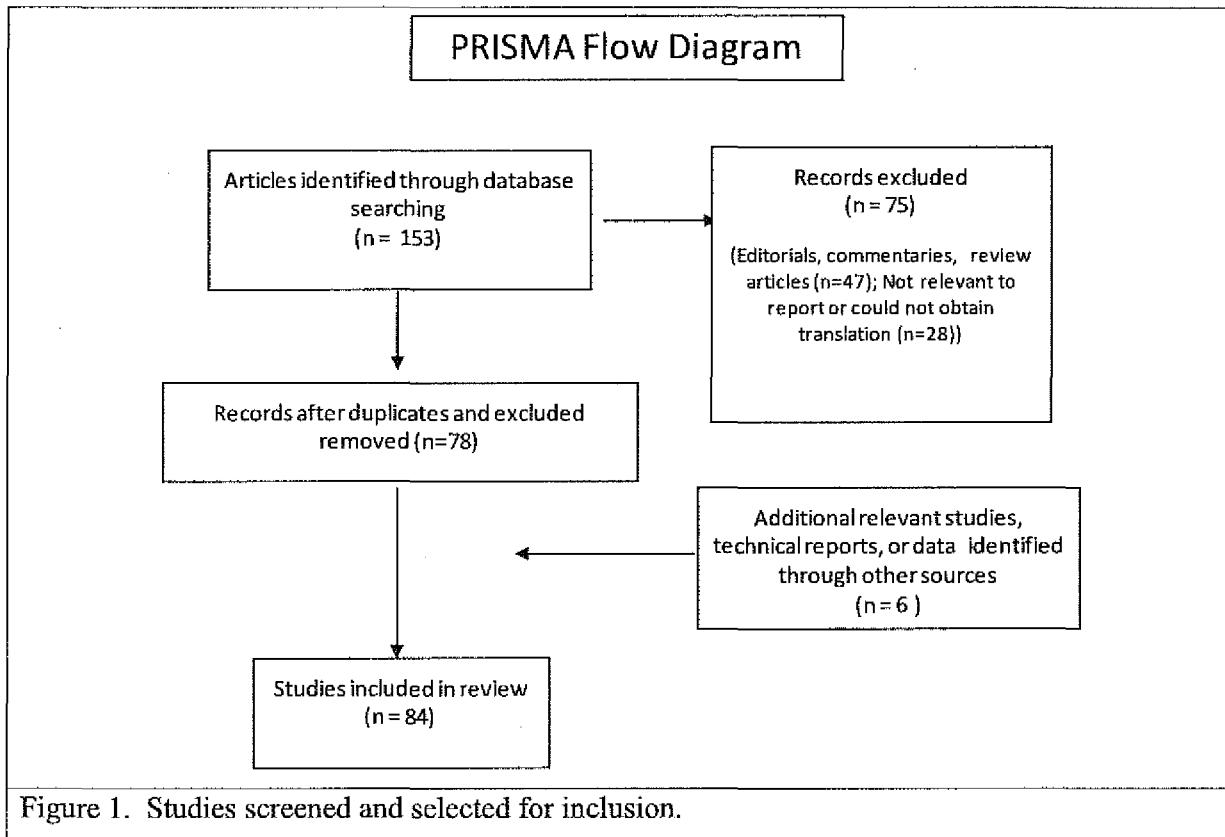


Figure 1. Studies screened and selected for inclusion.

- 1
- 2 studies were excluded from systematic review were commentaries that did not provide original
- 3 data, (they are cited to provide background and context.) Searches using the same search terms
- 4 as above were conducted in the WHO regional databases (electronic cigarette, e-cigarette,
- 5 electronic nicotine delivery systems). Relevant papers were located in only one database,
- 6 BIBLIOTECA Virtual em Salude Latin America and Caribbean, and all of the results were
- 7 already retrieved by the initial searches in PubMed. In addition, the authors, working with WHO,
- 8 reached out to investigators in the field in an effort to locate studies that had not yet been
- 9 published (submitted or in press). Each study included in the systematic review was analyzed for
- 10 content, quality and industry funding (tobacco or e-cigarette companies). After review, each
- 11 study was categorized according to the main subject headings: marketing and media, prevalence,
- 12 chemical analyses, biological effects, cessation of conventional cigarettes. Some articles were
- 13 discussed in other sections of the report: product engineering and product performance and risks
- 14 to users and bystanders.

1 Authors also reviewed and included non-peer-reviewed documents, including the World
2 Health Organization Study Group on Tobacco Product Regulation, Technical Report Series
3 955,(World Health Organization, 2009) a FCTC Conference of the Parties report: "Electronic
4 nicotine delivery systems, including electronic cigarettes. Report by the Convention
5 Secretariat,"(FCTC/COP/5/13, 2012) German Cancer Research Center report, "Electronic
6 Cigarettes – An Overview,"(German Cancer Research Center, 2013)a technical report: "Peering
7 through the mist: What does the chemistry of contaminants in electronic cigarettes tell us about
8 health risks?"(Burstyn, 2013) Several published news articles and relevant websites are cited to
9 provide supporting documentation and context to the scientific review.

10 **PRODUCTS (TYPES, ENGINEERING)**

11 E-cigarettes have many names, including electronic cigarettes, ENDS and e-hookah. For
12 the purposes of this report all these products will be referred to as e-cigarettes. Product
13 engineering has been evolving since the first e-cigarettes were documented as arriving on the
14 global market in 2007(Pauly et al., 2007). As of late 2013, there was wide variability in product
15 engineering, including varying concentrations of nicotine in the solution that e-cigarette use to
16 generate the aerosol (also called "e-liquid"), varying volumes of solution in the product, different
17 carrier compounds (most commonly propylene glycol with or without glycerol (glycerin), a wide
18 range of additives and flavors, and battery voltage. Battery voltage differences and unit circuitry
19 can result in great variability in the products' ability to heat and convert the nicotine solution to
20 an aerosol and, consequently, may affect actual nicotine delivery and other chemicals delivered
21 to users and emitted in the exhaled aerosol. Products come in a variety of nicotine strengths
22 (including some without nicotine), usually expressed in mg/ml of solution or percent
23 concentration. Williams and Talbot (2011) measured e-cigarette products' performance across
24 three indicators: airflow rate required to generate aerosol, pressure drop , and aerosol density via
25 three different protocols, finding that air flow and pressure drop required to activate e-cigarette
26 products is quite variable between brands.(Williams and Talbot, 2011) Moreover, the products
27 are "smoked" differently than cigarettes. Hua and colleagues conducted an analysis of 9 videos
28 with tobacco smoking and 64 with e-cigarette "vaping" to assess differences in "smoking"
29 topography between e-cigarette users and conventional cigarette users. Authors found that
30 average length of a puff taken from an e-cigarette was significantly longer than that of tobacco

1 users (4.3 seconds vs. 2.4 seconds, respectively) and there was a wide range in puffing duration
2 for e-cigarettes (2 to 8.3 seconds). (Hua et al., 2013b)

3 Quality of product functioning and performance is highly variable and
4 inconsistent, (Trtchounian and Talbot, 2011) and users can modify many of the products. In
5 addition, as the types and design of products and their contents continue to evolve rapidly, it is
6 increasingly difficult to determine what an e-cigarette "is," what it may contain, and what it is
7 delivering to the user and the surrounding environment. The rapid and continual evolution of
8 products makes it difficult to conduct research on the products and generalize study findings to
9 all products because they may become quickly outdated.

10 The first e-cigarettes were cigarette-shaped, plastic or metal devices comprising three
11 parts: a battery, a reservoir for e-cigarette solution (usually containing nicotine) often with a
12 fibrous material on which the solution is placed, and a heating element (sometimes referred to as
13 an atomizer) which attaches to the battery and converts the liquid into an aerosol (Figure 1). In
14 subsequent models the cartridge was called a cartomizer, which combined the e-liquid reservoir
15 with the wick/fiber and heating element into a single unit (Figure 2). The cigarette-shaped and
16 sized devices are often called "mini" e-cigarettes or "cig-a-likes" by users (who often call
17 themselves "vapers"). There are disposable and rechargeable e-cigarette models (Figure 2). More
18 recent designs are larger models that are pen-shaped and sized with cartomizers (Figure 2) that
19 often hold more nicotine solution to reduce the amount of times a user needs to refill throughout
20 the day. Some cartridges, called clearomizers and "tank systems," hold several ml of e-liquid, are
21 transparent, and allow the user to monitor the level of fluid they contain. There are also much
22 larger capacity and technologically sophisticated tank system devices (Figure 2) that have
23 various mechanical and/or digital display features. One such feature is a larger metal casing for
24 the batteries, which is able to be opened and the batteries replaced according to user preferences.
25 In some tank devices the heating elements and batteries can be replaced with more powerful
26 batteries or lower electrical resistance heaters that allow the user to control how the e-liquid is
27 vaporized (these devices are often referred to as variable voltage devices by users). Furthermore,
28 since the first e-cigarette products appeared on the market, users have been modifying the
29 devices and creating their own; instructions to do so are widely available on the Internet on e-
30 cigarette forum sites and YouTube. A concerning trend that has been occurring at least in the
31 U.S. and is owed largely to the refillable nature of e-cigarettes, is the use of the devices to smoke