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VAPING: TOWARDS A REGULATORY FRAMEWORK FOR E-CIGARETTES

Report of the Standing Committee on Health

Ben Lobb
Chair

MARCH 2015

41st PARLIAMENT, SECOND SESSION

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THE STANDING COMMITTEE ON HEALTH

has the honour to present its

NINTH REPORT

Pursuant to its mandate under Standing Order 108(2), the Committee has studied E-cigarettes and has agreed to report the following:

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VAPING: TOWARD A REGULATORY FRAMEWORK FOR E-CIGARETTES

INTRODUCTION

On 29 September 2014, a letter from the Minister of Health to the Chair of the House of Commons Standing Committee on Health (the Committee) stated: "Due to a lack of evidence on the benefits or harms of e-cigarettes, it would be helpful for the Standing Committee on Health to study their potential risks and benefits, seek advice from a variety of health stakeholders, and provide a report."[1]

On 7 October 2014, the Committee adopted the following motion:

> That, immediately following the Committee's consideration of the draft report on marijuana's health risk and harms, the Committee undertake a study of no fewer than five (5) meetings on e-cigarettes beginning with a briefing from government officials and that this study focus on the following areas:
>
> a) The potential risk, benefits and challenges associated with these products domestically, including the renormalization of smoking, and use as smoking cessation aids;
>
> b) The pros and cons of ways in which different jurisdictions both domestically and internationally have chosen to regulate these products; and
>
> c) Options for realizing any benefits and addressing any significant health and safety risks.
>
> While recognizing that business referred to the Committee by the House such as Government legislation or Estimates will take precedence in scheduling over this study.
>
> And that the Committee report its findings to the House.

The Committee held eight meetings with 33 witnesses, including federal government officials, health officials from other levels of government, manufacturers of electronic cigarettes and related devices, users of the devices, stakeholder organizations, and medical experts. This report serves as a summary of evidence received from these witnesses and other interested stakeholders and the Committee's recommendations based on that evidence.

1 Letter from the Minister of Health to the Chair of the Standing Committee on Health, 29 September 2014.

BACKGROUND

The Committee heard from several witnesses that electronic devices intended to replace combustible cigarettes are not new, having first been introduced in 2007. However, as also described by witnesses, the technology surrounding these devices has changed over time, and continues to evolve rapidly.

Health Canada officials told the Committee[2] that although these devices are not regulated, those that contain nicotine have not received the necessary approvals from Health Canada. A warning from Health Canada to consumers to avoid use of such devices was issued in 2009.

The Department reported that 741 shipments containing electronic cigarettes were "recommended for refusal" at the Canada-United States border between 1 April and 30 June 2014, while many retail outlets received "cease and desist" letters related to the sale of such devices from the Department.

In recent months, however, there has been increased attention given to electronic cigarettes, with a number of provincial and municipal jurisdictions having considered regulation, some legislation having been introduced and/or enacted, and data suggesting that use of these devices is increasing, including by young Canadians.

In addition, the World Health Organization (WHO), of which Canada is a member, reported on an October 2014 Conference of the Parties to the WHO Framework Convention on Tobacco Control,[3] inviting members dealing with electronic nicotine delivery systems (ENDS) "to consider taking measures … in order to achieve at least the following objectives, in accordance with national law:"

> a) prevent the initiation of ENDS/ENNDS by non-smokers and youth with special attention to vulnerable groups;
>
> b) minimize as far as possible potential health risks to ENDS/ENNDS users and protect non-users from exposure to their emissions;
>
> c) prevent unproven health claims from being made about ENDS/ENNDS; and
>
> d) protect tobacco-control activities from all commercial and other vested interests related to ENDS/ENNDS, including interests of the tobacco industry.[4]

The WHO also issued an invitation to the signatories of the framework convention "to consider prohibiting or regulating ENDS/ENNDS, including as tobacco products, medicinal products, consumer products, or other categories, as appropriate, taking into

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2 Officials appeared before the House of Commons Standing Committee on Health (HESA) on 21 October 2014.

3 Canada ratified this Convention in 2004, but was not represented at this conference. See the list of participants here.

4 World Health Organization (WHO), *Report of the sixth session of the Conference of the Parties to the WHO Framework Convention on Tobacco Control*, 13-18 October 2014, p. 76.

account a high level of protection for human health."[5] In their appearance before the Committee, Health Canada officials suggested that current research results are not sufficient as a basis for determining appropriate regulatory responses.

Witnesses before the Committee addressed the issues identified in the original motion, covering the effectiveness of the status quo in Canada and in other countries with respect to regulating electronic cigarettes, the extent to which these devices are known to put users and others at risk in health terms, the extent to which they are effective in reducing harm to users and others, whether and to what extent they may serve as a "gateway" for users to combustible tobacco, concerns with access to the devices by youth and other non-smokers, and whether they may be effective in reducing or eliminating the use of combustible tobacco now and in the future. Additional issues raised frequently by witnesses were the need for more extensive research to provide sufficient evidence on the impact of electronic cigarettes, and how electronic cigarette use could impact tobacco control, particularly on whether it would "renormalize" smoking. Each of these topics is discussed in greater detail in the subsequent sections of this report. Virtually all witnesses called for greater federal regulation of these products; specific recommendations with respect to what forms regulation could or should take are addressed in a later section of this report, entitled "Regulating electronic cigarettes," which also reviews the existing regulatory instruments available to the federal government and what alternatives might exist to those currently in place.

THE STATUS QUO

A. The status quo in Canada

As noted above, the current regulatory regime for electronic cigarettes has been in place since 2009, when Health Canada issued a notice cautioning consumers that electronic cigarettes may pose health risks and that "no electronic smoking product has yet been authorized for sale in Canada."[6] In addition, the Department's interpretation of nicotine delivered by these devices as a drug results in an effective prohibition of their importation or sale if they contain nicotine. Despite seizures at the border and letters to retail outlets in violation of such regulations, most witnesses agreed that current regulatory efforts are not restricting access to electronic cigarettes containing nicotine.[7] In addition, the Committee heard that some devices available in Canada that are advertised as not containing nicotine do, in fact, contain nicotine.[8]

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5 Ibid.

6 Health Canada, "Health Canada Advises Canadians Not to Use Electronic Cigarettes," 27 March 2009.

7 See, for example, HESA, 2nd Session, 41st Parliament, *Evidence*, 4 December 2014, 1155 (Dr. David McKeown, Medical Officer of Health, Toronto Public Health); 30 October 2014, 1225 (Ms. Margaret Bernhardt-Lowdon, Executive Director, Manitoba Lung Association, Canadian Lung Association). Please note that all subsequent citations refer to 2nd Session, 41st Parliament as well.

8 HESA, *Evidence*, 21 October 2014, 1105 (Hilary Geller, Assistant Deputy Minister, Healthy Environments and Consumer Safety Branch, Department of Health) and 2 December 2014, 1125 (Geneviève Bois, Spokesperson, Coalition québécoise pour le contrôle du tabac).

As devices containing nicotine and those without nicotine may look identical, witnesses noted that it is not possible to know how many users of electronic cigarettes are inhaling vapour containing nicotine[9]. As there is no existing federal regulation restricting the sale of either devices or the liquids that are used to flavour the vapour, both can be purchased legally by individuals of any age.

B. The status quo in other countries

While many countries are working to comply with the guidance from the WHO, the Committee heard about the United States (US) and the United Kingdom (UK) in particular where manufacturing and sale of electronic cigarettes with nicotine are not prohibited.

In the UK, according to a witness representing the Royal College of Physicians, electronic cigarettes are regulated "under general sales regulations… which do not require demonstration that the products work."[10]. In addition, he told the Committee that medical regulators have offered "a simplified version of medicines regulation or licensing… [which] remains extremely cumbersome."[11]

The Committee also heard from a spokesperson for the Coalition québécoise pour le contrôle du tabac that "At the same time that e-cigarettes became very popular in the UK, tobacco control continued to be strengthened."[12]

In the US, current regulations exist only with respect to electronic cigarettes making health claims, although the US Food and Drug Administration proposed regulating electronic cigarettes with nicotine as tobacco products.[13] In the absence of such regulation, the Committee heard that "e-cigarettes are marketed, particularly in the United States, in similar ways that cigarettes were promoted before most tobacco advertising and promotion was prohibited through federal tobacco legislation,"[14] and that "[t]here is lots of U.S. advertising that encourages use of e-cigarettes in places where smoking is banned. This is a problem, because it promotes e-cigarettes not as a substitute for smoking, but as a substitute for not smoking."[15]

Although a witness told the Committee that advertising of e-cigarettes in the US is "certainly becoming an undermining effort to helping kids stop or not to start,"[16] the

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9 See, for example, HESA, *Evidence*, 30 October 2014, 1150 (Rob Cunningham, Senior Policy Analyst, Canadian Cancer Society) and 1230 (Margaret Bernhardt-Lowdon, Canadian Lung Association).

10 HESA, *Evidence*, 28 October 2014, 1205 (Dr. John Britton, Professor of Epidemiology, University of Nottingham, United Kingdom, UK Centre for Tobacco and Alcohol Studies).

11 Ibid.

12 HESA, *Evidence*, 2 December 2014, 1125 (Bois, Coalition québécoise pour le contrôle du tabac).

13 HESA, *Evidence*, 21 October 2014, 1105 (Geller, Department of Health).

14 HESA, *Evidence*, 4 December 2014, 1200 (McKeown, Toronto Public Health).

15 HESA, *Evidence*, 30 October 2014, 1150 (Cunningham, Canadian Cancer Society).

16 HESA, *Evidence*, 28 October 2014, 1115 (Dr. Peter Selby, Chief, Addictions Program, Centre for Addiction and Mental Health).

Committee also heard that the percentage of young smokers has dropped from 14% to 12% in the US "since the advent of the e-cigarette."[17]

HEALTH RISKS AND POSSIBLE BENEFITS ASSOCIATED WITH ELECTRONIC CIGARETTES

While there was widespread agreement among witnesses that insufficient evidence exists to reach a clear conclusion with respect to health risks or benefits associated with the use of electronic cigarettes, there were different interpretations of the limited evidence available.

A. Health risks

Differences of opinion about health risks or benefits included risks imposed on users and upon bystanders. Specific recommendations are provided in the later section of the report, "Regulating electronic cigarettes."

1. Health risks to users of electronic cigarettes

The differences of opinion with respect to health risks focussed primarily, although not exclusively, on the health risks associated with the use of nicotine. Again, there was widespread agreement as to the addictive nature of nicotine,[18] although some witnesses suggested such an addiction was relatively benign, comparing it to a caffeine addiction[19] while others suggested it is a phenomenon to be avoided by restricting access to sources of nicotine, including in electronic cigarettes.[20]

The Committee also heard of the risks associated with liquid nicotine itself, identifying it as a poison that has been increasingly the trigger for calls to poison control centres in the U.S.[21] However, another witness told the Committee that toxic levels of nicotine do not exist outside industrial factories, and that liquids containing currently

17 HESA, *Evidence*, 6 November 2014, 1110 (Dr. Gaston Ostiguy, Chest Physician, McGill University Health Centre, Montreal Chest Institute, as an Individual).

18 See, for example, HESA, *Evidence*, 2 December 2014, 1120 (Melodie Tilson, Director of Policy, Non-Smokers' Rights Association), 1125 (Bois, Coalition québécoise pour le contrôle du tabac) and 21 October 2014, 1140 (Geller, Department of Health).

19 See for example, HESA, *Evidence*, 6 November 2014, 1220 (David Sweanor, Adjunct Professor, Faculty of Law, University of Ottawa, Special Lecturer, Epidemiology and Public Health, University of Nottingham, England, as an Individual) and 28 October 2014, 1235 (Britton, UK Centre for Tobacco and Alcohol Studies).

20 See, for example, HESA, *Evidence*, 4 November 2014, 1155 (Barry Power, Pharmacist, Canadian Pharmacists Association) and 28 October 2014, 1105 (Selby, Centre for Addiction and Mental Health).

21 HESA, *Evidence*, 4 December 2014, 1145 (Dr. Martin Laliberté, President, Canadian Association of Poison Control Centres).

available levels of nicotine would not be toxic.[22] In addition, the Committee heard of the negative impact of nicotine on brain development.[23]

Finally, witnesses identified possible health risks associated with the use of the devices themselves, particularly in an unregulated environment,[24] including for example, flaws in the manufacture of the device.[25]

2. Health risks to bystanders in proximity to individuals using electronic cigarettes

Witnesses also discussed risks to individuals who are in close proximity to users of electronic cigarettes. Opinions varied in terms of what those risks might be and the appropriate response to them. While there have been significant restrictions on the use of tobacco where bystanders might be exposed to "second-hand" smoke, no such restrictions exist with respect to electronic cigarettes. As Dr. Milan Khara pointed out, protecting bystanders from the effects of second-hand vapour was one of the recommendations made by the WHO.[26]

The Committee heard there is not sufficient evidence about what impact, if any, electronic cigarette use might have on bystanders.[27] Some witnesses cited research demonstrating only a minimal impact,[28] while others raised concerns about possible or probable negative impacts.[29] Further discussion about regulatory responses to these health concerns can be found in the later section, "Regulating electronic cigarettes."

B. Potential health benefits

Although health claims cannot be made about electronic cigarettes, witnesses identified experience and research results that demonstrated the harm-reduction benefits of the use of these devices and their potential as smoking cessation devices.

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22 HESA, *Evidence*, 6 November 2014, 1205 (Dr. Gopal Bhatnagar, 180 Smoke, Founder and Chief Medical Officer).

23 HESA, *Evidence*, 4 December 2014, 1155 (Dr. Jennifer Russell, Acting Chief Medical Officer of Health, Department of Health, Government of New Brunswick).

24 See, for example, HESA, *Evidence*, 28 October 2014, 1100 (Selby, Centre for Addiction and Mental Health) and 2 December 2014, 1210 (Gerry Harrington, Director, Policy, Consumer Health Products Canada).

25 HESA, *Evidence*, 4 November 2014, 1155 (Power, Canadian Pharmacists Association).

26 Ibid., 1135 (Dr. Milan Khara, Clinical Director, Smoking Cessation Clinic, Vancouver General Hospital).

27 See, for example, HESA, *Evidence*, 21 October 2014, 1110 (Geller, Department of Health) and 28 October 2014, 1210 (Dr. Armando Peruga, Program Manager, WHO's Tobacco Free Initiative).

28 See, for example, HESA, *Evidence*, 6 November 2014, 1205 (Bhatnagar, 180 Smoke) and Submission to the Committee by the Electronic Cigarette Trade Association of Canada, October 2014, p. 6.

29 See, for example, HESA, *Evidence*, 4 December 2014, 1205 (McKeown, Toronto Public Health) and 28 October 2014, 1215 (Peruga, WHO's Tobacco Free Initiative).

1. Harm reduction

Virtually all witnesses identified the apparent reduced harm to the users of electronic cigarettes containing nicotine compared to the users of combustible tobacco cigarettes. As discussed in the previous section on health risks, however, there were concerns about whether the reduction in harm for smokers justified the risks of introducing a new product with nicotine. For example, the Committee heard from one witness:

> [A]lthough [electronic cigarettes are] less risky than tobacco, this is by no means a harmless product. Although we believe it should be made accessible to all smokers who look to reduce the harm they might suffer from their addiction, it should definitely not be a way to banalize nicotine addiction or nicotine use.[30]

Other testimony suggested the substantial costs to the health care system related to the results of smoking are sufficient reason to consider the substitution of electronic cigarettes for conventional cigarettes, regardless of impacts on reductions in nicotine consumption or ultimate cessation of use of either device:

> Tobacco use remains the leading preventable cause of disease and premature death in Canada, causing an estimated 30% of all cancer deaths in Canada, and approximately 85% of lung cancer deaths. International models have shown that by getting tobacco users to quit, cancer mortality can be significantly reduced.… Emerging evidence suggests that nicotine-containing e-cigarettes may be a less harmful nicotine product, containing fewer carcinogens than combustible cigarettes and other tobacco products. As such, nicotine-containing e-cigarettes may be a product that could help smokers reduce their health risks, and may help them quit.[31]

2. Smoking cessation

Witnesses before the Committee suggested that electronic cigarettes are effective smoking cessation devices.[32] In addition, the Committee received letters from users of these products indicating that their use has resulted in a reduction or elimination of smoking tobacco cigarettes. Still other witnesses and other stakeholders identified the potential of electronic cigarettes to support smoking cessation.[33]

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30 HESA, *Evidence*, 2 December 2014, 1125 (Bois, Coalition québécoise pour le contrôle du tabac).

31 Canadian Partnership Against Cancer, "Written Brief to the House of Commons Standing Committee on Health: E-Cigarettes Hearings."

32 See, for example, HESA, *Evidence*, 28 October 2014, 1200 (Britton, UK Centre for Tobacco and Alcohol Studies).

33 See, for example, HESA, *Evidence*, 21 October 2014, 1120 (Dr. John Patrick Stewart, Executive Medical Director, Therapeutic Products Directorate, Health Products and Food Branch, Department of Health) and 30 October 2014, 1155 (Manuel Arango, Director, Health Policy, Heart and Stroke Foundation of Canada).

GATEWAY EFFECT

The testimony before the Committee on the "gateway effect" focussed largely on the extent to which electronic cigarettes are being used by individuals who have never smoked, including youth, and by youth more generally. The WHO defines the "gateway effect":

> The gateway effect refers to two potential circumstances:
>
> I. the possibility that children (and generally non-smokers) will initiate nicotine use with ENDS at a rate greater than expected if ENDS did not exist; and
>
> II. the possibility that once addicted to nicotine through ENDS children will switch to cigarette smoking.[34]

One witness suggested that the impact of electronic cigarettes as a "gateway," particularly for younger users, could be correlated to the effectiveness of tobacco control measures (discussed in greater detail in the following section entitled "Renormalization"), noting that in Poland, "where tobacco control was not as strong [as in the UK] and was not being strengthened significantly,"[35] research suggests that there is a gateway effect for youth in particular. Other evidence submitted to the Committee identified the potential gateway effect,[36] but several witnesses noted that there is no evidence of this effect occurring in Canada.[37]

Data on youth experimentation with electronic cigarettes were provided by witnesses, For example, Health Canada officials said that an Ontario study showed than in 2013 "nearly 15% of students in grades 9 to 12 were reported to have tried e-cigarettes."[38]

Witnesses identified advertising of electronic cigarettes targeted to youth as a significant concern, often citing candy flavoured electronic cigarettes as being particularly appealing to youth.[39] Other witnesses have told the Committee that such flavours are not intended to target youth, and the availability of a variety of flavours is important in encouraging smokers to switch to electronic cigarettes. For example, one witness

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34 Conference of the Parties to the WHO Framework Convention on Tobacco Control, Electronic nicotine delivery systems, 1 September 2014, p. 6.

35 HESA, *Evidence*, 2 December 2014, 1125 (Bois, Coalition québécoise pour le contrôle du tabac).

36 See, for example, "Heart and Stroke Foundation: E-Cigarettes in Canada," current to September 2014, provided to the Committee, and HESA, *Evidence*, 2 December 2014, 1200 (Tilson, Non-Smokers' Rights Association).

37 See, for example, the appendix to the "Provincial/Territorial Chief Medical Officers of Health Position Statement on Electronic Nicotine Delivery Systems," distributed to Committee members, which attributes this position to Dr. Peter Selby, of the Centre for Addictions and Mental Health, and Dr. David Hammond, University of Waterloo, and Propel Centre for Population Health Impact, both of whom participated in a Virtual E-Cigarette Symposium, 25 July 2014.

38 HESA, *Evidence*, 21 October 2014, 1105 (Geller, Department of Health).

39 See, for example, HESA, *Evidence*, 30 October 2014, 1230 (Bernhardt-Lowdon, Canadian Lung Association) and 4 December 2014, 1150 (Dr. Robert Strang, Chief Public Health Officer, Department of Health Promotion and Wellness, Government of Nova Scotia).

expressed the opinion that flavourings are not being used to target youth, noting that "we have evidence that demonstrates that the flavour descriptors of our products do not appeal to non-smoking teens, but do appeal to smoking adults."[40] Finally, one witness expressed the importance of flavours: "[b]anning e-liquid flavours represents an effective ban on e-cigarettes, as all e-liquid is flavoured, including tobacco flavours."[41]

There was, however, broad agreement that targeted advertising and promotion of electronic cigarettes should be prohibited.[42] More specific recommendations with respect to both flavoured products and advertising are identified in the later section of the report, "Regulating electronic cigarettes."

RENORMALIZATION

The Committee heard much testimony on the role that electronic cigarette use could have in undermining the gains made by tobacco control efforts, both in Canada and internationally. This phenomenon is referred to as the "renormalizing effect," defined by the WHO as

> [T]he possibility that everything that makes ENDS attractive to smokers may enhance the attractiveness of smoking itself and perpetuate the smoking epidemic. ENDS mimic the personal experience and public performance of smoking and their market growth requires marketing that is challenging commercial communication barriers erected to prevent the promotion of tobacco products.[43]

The report points out that in the UK, where tobacco control measures are strong, the use of electronic cigarettes has increased, while "smoking prevalence, cigarette consumption as well as overall nicotine use continues to decrease gradually."[44] However, witnesses expressed concerns that electronic cigarettes "pose a risk to the efforts and successes in tobacco control."[45] As described by another witness, "we don't want [electronic cigarettes] to become the next form of addiction that becomes socially acceptable."[46] Another witness described it as

> the potential of e-cigarette use to impair the process of de-normalizing smoking behaviour which has played such a key role in reducing tobacco use, and that they could undermine smoke-free legislation and controls across the country.[47]

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40 HESA, *Evidence*, 27 November 2014, 1140 (David M. Graham, Senior Vice-President, Global Regulatory Affairs, NJOY).

41 Ibid., 1115 (Daniel David, Chair of the Board, Electronic Cigarette Trade Association of Canada).

42 See, for example, HESA, *Evidence*, 4 December 2014, 1200 (McKeown, Toronto Public Health) and 28 October 2014, 1110 (Selby, Centre for Addiction and Mental Health).

43 Conference of the Parties to the WHO Framework Convention on Tobacco Control, Electronic nicotine delivery systems, 1 September 2014, p. 7.

44 Ibid.

45 HESA, *Evidence*, 4 December 2014, 1205 (Russell, Department of Health, Government of New Brunswick).

46 HESA, *Evidence*, 2 December 2014, 1200 (Tilson, Non-Smokers' Rights Association).

47 HESA, *Evidence*, 4 December 2014, 1200 (McKeown, Toronto Public Health).

Although not unanimous, there was widespread support for imposing the same restrictions on the use of electronic cigarettes, with or without nicotine, as those on the use of tobacco cigarettes to counter any renormalization effect.[48] More detailed recommendations are listed in a later section of this report. "Regulating electronic cigarettes."

THE ROLE OF THE TOBACCO INDUSTRY

Some witnesses told Committee members that the electronic cigarette industry in Canada is not linked to the tobacco industry;[49] however, both testimony and submissions often touched on the role of the tobacco industry in the production and distribution of electronic cigarettes, in countries where devices with nicotine are legal, and what might be anticipated in Canada.

Other witnesses suggested that once-independent electronic cigarette businesses are being bought by tobacco companies,[50] and that the electronic cigarette industry is increasingly "dominated by tobacco companies."[51] Another witness described the possible risks of electronic cigarettes as including "use by the tobacco industry to re-engage in tobacco policy, [and] use as a dark marketing tool by tobacco companies,"[52] and yet another described the "aggressive marketing of ENDS by some tobacco companies to be used in smoke-free environments as a way to break the enforcement of smoke-free policies."[53]

While there was no unanimity on whether tobacco companies should be restricted from producing and distributing electronic cigarettes, witnesses did identify the value of prohibiting "cross-branding" or "co-branding" of products with tobacco products[54] and advertising these devices by tobacco companies.[55]

For example, one witness told the Committee of the concern "about the co-branding of e-cigarettes with tobacco industry logos or brands. We don't want

48 See, for example, HESA, *Evidence*, 2 December 2014, 1115 (Tilson, Non-Smokers' Rights Association) and 30 October 2014, 1140 (Cunningham, Canadian Cancer Society).

49 See, for example, HESA, *Evidence*, 2 December 2014, 1300 (Dave Jones, Director, Tobacco Harm Reduction Association of Canada) and 27 November 2014, 1110 (David, Electronic Cigarette Trade Association of Canada).

50 See, for example, HESA, *Evidence*, 30 October 2014, 1300 (Ian Culbert, Executive Director, Canadian Public Health Association) and 28 October 2014, 1115 (Selby, Centre for Addiction and Mental Health).

51 HESA, *Evidence*, 2 December 2014, 1125 (Bois, Coalition québécoise pour le contrôle du tabac).

52 HESA, *Evidence*, 28 October 2014, 1200 (Britton, UK Centre for Tobacco and Alcohol Studies).

53 Ibid., 1215 (Peruga, WHO's Tobacco Free Initiative).

54 See, for example, HESA, *Evidence*, 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association) and 27 November 2014, 1155 (Graham, NJOY).

55 See, for example, HESA, *Evidence*, 30 October 2014, 1150 (Rob Cunningham, Senior Policy Analyst, Canadian Cancer Society) and 1200 (Arango, Heart and Stroke Foundation of Canada).

e-cigarettes being labelled as Rothmans, du Maurier, or Export A. That would only help to renormalize tobacco smoking."[56]

More specific recommendations are included the, "Regulating electronic cigarettes" section of this report.

ACCESS TO ELECTRONIC CIGARETTES

The extent of youth experimentation with electronic cigarettes varied across provinces and countries; however, almost all witnesses agreed that all such experimentation should be discouraged and that sales of electronic cigarettes, with or without nicotine, be prohibited to people under the age of 18.

Daniel David (Chair of the Board, Electronic Cigarette Trade Association) told the Committee that most electronic cigarette shops require proof-of-age identification for people who appear to be under the age of 25, and Boris Giller (Co-founder, 180 Smoke) explained to the Committee that for Internet purchases, Canada Post and other couriers can verify age at delivery.[57]

A dissenting opinion on this age restriction was offered by Dr. John Britton who added the following caveat: "[w]hilst I entirely agree that limiting access to young people is probably a good thing, particularly if we have young people who are otherwise going to smoke, it would make far more sense to have them use an electronic cigarette."[58]

Further detail on the prohibition of sales of electronic cigarettes to minors is provided in the later section of the report, "Regulating electronic cigarettes."

At the same time, witnesses told the Committee that harm reduction for current smokers could be hindered by overly restrictive access to electronic cigarette and that making electronic cigarettes less accessible than tobacco products would deter smokers from choosing this less dangerous alternative.[59] As described by one witness, steps to make these devices less accessible than tobacco products would "provide a competitive advantage for tobacco cigarettes."[60] Another witness said

> I think that if you're really looking at it from a public health standpoint and you want consumers of traditional tobacco products to have access to electronic cigarettes, they need to have as much access as they have to tobacco. My feeling is that if a smoker can walk a block to get their pack of cigarettes, they should be able to have access to electronic cigarettes within that same distance.[61]

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56 Ibid., 1200 (Arango, Heart and Stroke Foundation of Canada).

57 HESA, *Evidence*, 27 November 2014, 1230 (B. Giller, Co-founder, 180 Smoke).

58 HESA, *Evidence*, 28 October 2014, 1240 (Britton, UK Centre for Tobacco and Alcohol Studies).

59 See, for example, HESA, *Evidence*, 27 November 2014, 1200 (Graham, NJOY) and 1215 (Alex Scholten, President, Canadian Convenience Stores Association).

60 HESA, *Evidence*, 27 November 2014, 1145 (David, Electronic Cigarette Trade Association of Canada).

61 Ibid., 1240 (Dr. Inderpreet Rai, Medical Director, Smoke NV Inc.).

Among witnesses and stakeholders who supported access to electronic cigarettes for current smokers, there were varying approaches identified. For example, many witnesses proposed that these devices with nicotine should be available without prescription.[62] Others suggested that to be effective in reducing harm or supporting smoking cessation, the sale of electronic cigarettes should be accompanied by expert advice and training in the use of the devices and other related products, including nicotine-containing liquids.[63]

RESEARCH

The Committee heard from Health Canada officials,[64] public health officials,[65] and other witnesses[66] that there is a paucity of scientific evidence on many aspects of electronic cigarettes, including the following issues identified in this report: health impacts on users and bystanders; the gateway effect (particularly for youth); the renormalization effect; and smoking cessation. The Committee heard that requirements imposed by Health Canada for the authorization of electronic cigarettes with nicotine for sale in Canada,[67] and similar requirements in the UK,[68] are too onerous on producers, and that further research on the health effects of electronic cigarettes,[69] possibly independent of the manufacturers or distributors of electronic cigarettes and related products, is needed.[70] Therefore, the Committee recommends

RECOMMENDATION 1

That the Government of Canada financially support research through existing channels, and that these funds be allocated to independent research on the health effects of electronic cigarettes and related devices, and their impact on the uptake of nicotine products by youth and on other tobacco control efforts.

62 See, for example, Ibid.,1155 (David, Electronic Cigarette Trade Association of Canada) and 6 November 2014, 1130 (Ostiguy, as an Individual).

63 See, for example, HESA, *Evidence*, 6 November 2014, 1235 (Bhatnagar, 180 Smoke) and 1130 (Ostiguy, as an Individual).

64 HESA, *Evidence*, 21 October 2014, 1125 (Patrick Stewart, Department of Health).

65 HESA, *Evidence*, 28 October 2014, 1220 (Peruga, WHO's Tobacco Free Initiative).

66 See, for example, HESA, *Evidence*, 30 October 2014, 1145 (Cunningham, Canadian Cancer Society) and 1200 (Arango, Heart and Stroke Foundation of Canada).

67 HESA, *Evidence*, 28 October 2014, 1110 (Selby, Centre for Addiction and Mental Health).

68 Dr. John Britton, “Evidence to the Standing Committee on Health of the House of Commons of Canada,” Submitted to the Committee in conjunction with his appearance, 28 October 2014.

69 See, for example, HESA, *Evidence*, 30 October 2014, 1200 (Arango, Heart and Stroke Foundation of Canada) and 1300 (Culbert, Canadian Public Health Association).

70 HESA, *Evidence*, 6 November 2014, 1220 (Bhatnagar, 180 Smoke).

REGULATING ELECTRONIC CIGARETTES

> "I think we need to proceed very quickly with changing our entire legislative and regulatory framework. I have great confidence that it can be done quickly."[71]

All of the witnesses who raised the issue of regulating electronic cigarettes agreed that some type of product and industry regulation is needed. Many witnesses spoke to the urgency of establishing a regulatory framework,[72] noting that despite Health Canada's position that the sale of electronic cigarettes that contain nicotine and/or that are marketed with a health claim is not permitted in Canada without authorization from Health Canada,[73] these products are being sold both in stores and over the Internet. Several witnesses stated that the goal of any regulatory framework should be to maximize the benefits to current smokers while minimizing the risks to non-smokers[74] (which includes preventing non-smokers from using electronic cigarettes).[75] Two witnesses spoke of their desire to participate in any discussions relating to a proposed regulatory framework for electronic cigarettes.[76]

Witnesses did not agree, however, on how electronic cigarettes should be regulated. The WHO report, *Electronic nicotine delivery systems* explains that a variety of approaches have been taken by member states with respect to regulating electronic cigarettes including regulating them as tobacco products, regulating them as therapeutic products, and regulating them as consumer products. Some witnesses stated that provisions relating to federal tobacco regulation should apply to electronic cigarettes,[77] while one witness suggested that regulating them as therapeutic products would be appropriate.[78] The majority of witnesses who spoke on the subject of regulation, however, felt that regulating them as tobacco products or as therapeutic products would be problematic for a number of reasons because electronic cigarettes are unique products that fit neither the tobacco nor the therapeutic regulatory model. A regulatory model designed specifically for electronic cigarettes would therefore be appropriate. Proposals with respect to each of these approaches are presented below.

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71 HESA, Evidence, 2 December 2014, 1140 (Neil Collishaw, Research Director, Physicians for a Smoke-Free Canada).

72 HESA, *Evidence*, 6 November 2014, 1120 (Ostiguy, as an Individual); 2 December 2014, 1115 (Tilson, Non-Smokers' Rights Association) and 1140 (Collishaw, Physicians for a Smoke-Free Canada).

73 HESA, *Evidence*, 21 October 2014, 1105 (Geller, Department of Health).

74 HESA, *Evidence*, 2 December 2014, 1110 (Collishaw, Physicians for a Smoke-Free Canada) and 1115 (Tilson, Non-Smokers' Rights Association).

75 HESA, *Evidence*, 28 October 2014, 1215 (Peruga, WHO's Tobacco Free Initiative).

76 HESA, *Evidence*, 27 November 2014, 1110 (David, Electronic Cigarette Trade Association of Canada) and 2 December 2014, 1225 (Jones, Tobacco Harm Reduction Association of Canada).

77 HESA, *Evidence*, 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association); 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia) and 2 December 2014, 1130 (Bois, Coalition québécoise pour le contrôle du tabac).

78 HESA, *Evidence*, 4 November 2014, 1145 (Laliberté, Canadian Association of Poison Control Centres).

A. Possible frameworks for regulating electronic cigarettes

1. Regulate as tobacco products

A few witnesses recommended that electronic cigarettes should be regulated as tobacco products, at least until a framework for regulating electronic cigarettes is developed. It was proposed that this would be an expeditious way of proceeding. As Melodie Tilson explained to the Committee,

> The most straightforward way to regulate e-cigarettes would be to include them in the federal *Tobacco Act*. Doing so would accomplish a number of important regulatory objectives. It would end the current perverse situation whereby e-cigarettes with nicotine are subject to a much stricter regulatory regime than the most hazardous nicotine delivery device: the cigarette. It would ensure that e-cigarettes with nicotine are legally available to smokers. It would reinforce the perception of e-cigarettes as a consumer product, which is important to trial and acceptance by smokers. It would help ensure continued product innovation and affordability, which are adversely affected when products are regulated as drugs. It would also ensure equal treatment of e-cigarettes both with and without nicotine, and it would help safeguard critical tobacco control gains by subjecting e-cigarettes to similar controls as tobacco products.[79]

Geneviève Bois noted that "at the very least [electronic cigarettes] should be subject to federal and provincial legislation on tobacco, and […] a global federal framework should be considered with Health Canada's responsibility to protect the public."[80] And while Dr. Robert Strang stated that "ultimately we need a whole new regulatory approach to these products,"[81] he also noted that "given the time this process would require and the need for urgent regulatory action, we [the Council of Chief Medical Officers of Health] recommend in the short-term that ENDS should be considered as equivalent to cigarettes and regulated as such under existing federal legislation and regulations."[82]

2. Regulate as therapeutic products

Only one witness stated that electronic cigarettes should be regulated as therapeutic products. He indicated that regulating them as pharmaceuticals would be the safest approach.[83]

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79 HESA, *Evidence*, 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association).

80 Ibid., 1130 (Bois, Coalition québécoise pour le contrôle du tabac).

81 HESA, *Evidence*, 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia).

82 Ibid.

83 HESA, *Evidence*, 4 November 2014, 1145 (Laliberté, Canadian Association of Poison Control Centres).

3. Regulate as consumer products

No witnesses suggested that regulating electronic cigarettes as consumer products would be the ideal approach, although one witness suggested that it would be "the most appropriate current regulatory fit,"[84] and another acknowledged that it might fit better under the *Canada Consumer Product Safety Act* rather than being treated as a therapeutic product.[85]

4. Regulate within a new legislative framework

> I think we need fit-for-purpose regulation. There's a tendency for people to look at the regulations we now have on nicotine and say that it has to be a medicine or it has to be a tobacco product. It isn't either of those. Just as, when somebody says "sort these blocks into squares and circles" and then hands you a triangle, it's important to say "I need another pile; this isn't either of those", we need to look at regulation that is aimed at getting the most effective measures in place to move smokers off combustion-based delivery and get people on to not just the e-cigarettes that exist now, but to wherever innovation will take us.[86]

The majority of witnesses who spoke about how electronic cigarettes should be regulated expressed the opinion that none of the existing frameworks (tobacco products, therapeutic products, or consumer products) would be suitable for regulating electronic cigarettes, and two of the witnesses who proposed regulating them as tobacco products suggested that that approach only be an interim solution until a new regulatory framework is established.[87]

There were a number of reasons put forward as to why neither the tobacco regulatory model nor the therapeutic products model would be appropriate to regulate electronic cigarettes, the primary one being that these products are unique and therefore in need of a unique approach. As one witness noted, "[t]obacco regulation was designed to discourage use by any means possible due to the negative health effects. Electronic cigarettes do not fit this category."[88] Many witnesses expressed the opinion that the regulatory approach needed to be proportionate to risk;[89] as one witness pointed out,

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84 HESA, *Evidence*, 27 November 2014, 1115 (David, Electronic Cigarette Trade Association of Canada).

85 HESA, *Evidence*, 2 December 2014, 1240 (Harrington, Consumer Health Products Canada).

86 HESA, *Evidence*, 6 November 2014, 1225 (Sweanor, as an Individual).

87 HESA, *Evidence*, 2 December 2014, 1114 (Tilson, Non-Smokers' Rights Association) and 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia).

88 HESA, *Evidence*, 27 November 2014, 1115 (David, Electronic Cigarette Trade Association of Canada). See also Clive Bates, Brief for House of Commons of Canada Standing Committee on Health: A disruptive public health technology threatened by excessive regulation.

89 See for example HESA, *Evidence*, 4 November 2014, 1200 (David Hammond, Associate Professor, School of Public Health and Health Systems, University of Waterloo, as an Individual); 27 November 2014, 1105 (Graham, NJOY); 2 December 2014, 1225 (Jones, Tobacco Harm Reduction Association of Canada); 27 November 2014, 1110 (David, Electronic Cigarette Trade Association of Canada) and 6 November 2014, 1225 (Sweanor, as an individual).

electronic cigarettes have a "hugely different risk profile" than combustible tobacco.[90] One witness expressed the opinion that forcing electronic cigarettes into the tobacco regulatory framework would make electronic cigarettes less accessible and appealing,[91] and another noted that "we want the less hazardous products to be the more available products."[92]

With respect to regulating electronic cigarettes as therapeutic products, as one witness stated, "not medicalizing e-cigarettes is critical."[93] David M. Graham expressed the opinion that requiring a prescription for electronic cigarettes makes little sense:

> [T]he comparison between electronic cigarettes and combustion cigarettes is unavoidable. If combustion cigarettes are limited to access only by prescription, then perhaps it may be appropriate to think about similar restrictions on e-cigarettes. But it's perverse in the extreme to believe that a product that is so harmful, that kills half of its long-term users, is widely available and that a product that is a magnitude of difference in risk would be more highly restricted. It's an upside-down logic...[94]

The opinion that electronic cigarettes should not require a prescription was supported by other witnesses.[95] Another witness expressed the opinion that electronic cigarettes would be unable to meet the requirements to be approved as a natural health product or as a medicine, and that "[r]egulating electronic cigarettes as medicinal or as alternative health products is the most devastating and harmful option to consider."[96] Finally, one witness noted that regulating it as a therapeutic product and/or requiring a prescription "would be detrimental to the innovation and the variety of products available."[97] A number of witnesses pointed to the need for any regulatory framework to be flexible enough to adapt to new products as they emerge.[98]

Finally, Dr. Robert Strang emphasized the need for federal-provincial discussions on this issue: "[f]or the federal government, our recommendation is, for the longer term, to develop a provincial-territorial engagement strategy to work together along with tobacco control experts to develop a new regulatory framework for ENDS."[99]

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90 HESA, *Evidence*, 27 November 2014, 1105 (Graham, NJOY).

91 Ibid., 1115 (David, Electronic Cigarette Trade Association of Canada).

92 HESA, *Evidence*, 6 November 2014, 1250 (Sweanor, as an individual).

93 Ibid., 1130 (Ostiguy, as an individual).

94 HESA, *Evidence*, 27 November 2014, 1200 (Graham, NJOY).

95 HESA, *Evidence*, 6 November 2014, 1250 (Sweanor, as an individual) and 27 November 2014, 1230 (Giller, 180 Smoke).

96 HESA, *Evidence*, 27 November 2014, 1115 (David, Electronic Cigarette Trade Association of Canada).

97 Ibid., 1230 (Giller, 180 Smoke).

98 HESA, *Evidence*, 6 November 2014, 1215 (Bhatnagar, 180 Smoke), 1225 (Sweanor, as an Individual) and 27 November 2014, 1115 (David, Electronic Cigarette Trade Association of Canada).

99 HESA, *Evidence*, 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia).

It is clear that a regulatory framework that addresses electronic cigarettes is needed. For that reason, the Committee recommends

RECOMMENDATION 2

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices.

RECOMMENDATION 3

That the Government of Canada consult with the public, provinces/territories and stakeholders with respect to the regulation of electronic cigarettes with a view to protecting the health of Canadians.

B. Additional factors recommended for regulation

In addition to receiving evidence relating to what regulatory approach should be taken, the Committee heard details of what legislation or regulation relating to electronic cigarettes should address. For example, all witnesses agreed that there should be a prohibition against selling these products to minors, and almost all witnesses noted that advertising should be regulated in some way. Many witnesses also spoke of the need to establish product quality and safety standards. The use of electronic cigarette flavourings was also a frequently-raised subject, but there was no consensus as to whether these flavourings should be restricted as they are in tobacco products. These issues and other proposed legislative components are discussed in greater detail below.

1. Regulating devices

Many witnesses identified the need to regulate electronic cigarettes and their liquids, giving consideration to the safety of users, distinguishing them from tobacco cigarettes, and determining and possibly restricting the amount of nicotine they might contain. Witnesses also discussed reporting requirements of producers and distributors of such devices and packaging and labelling requirements. Each of these topics is discussed in greater detail below.

a. Electronic cigarettes that do not contain nicotine

All witnesses who mentioned electronic cigarettes that do not contain nicotine agreed that they should be regulated under the same framework as those that do contain nicotine.[100]

For that reason, the Committee recommends

100 HESA, *Evidence*, 30 October 2014, 1150 (Cunningham, Canadian Cancer Society); 2 December 2014, 1155 (Bois, Coalition québécoise pour le contrôle du tabac) and 1155 (Tilson, Non-Smokers' Rights Association).

RECOMMENDATION 4

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework address both electronic cigarettes that contain nicotine and other substances and electronic cigarettes that do not contain nicotine.

b. Restricting what electronic cigarettes can look like

Two witnesses indicated that to help prevent renormalization of smoking, electronic cigarettes should be visually distinct from other tobacco products.[101] For example, they should not have a filter or a glowing tip.[102]

Given that renormalization of smoking is a significant concern of the Committee, the Committee recommends

RECOMMENDATION 5

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework require that electronic cigarettes be visually distinct from other tobacco products.

c. Level of nicotine

A number of witnesses spoke of the need to regulate the amount of nicotine contained in electronic cigarette liquid.[103] One witness noted that it may be necessary to specify those levels in future "based on careful research and evaluation."[104]

RECOMMENDATION 6

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework establish maximum levels of nicotine contained in electronic cigarette liquid or vapour.

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101 Ibid., 1150 (Cunningham, Canadian Cancer Society) and 1200 (Arango, Heart and Stroke Foundation of Canada).

102 Ibid., 1200 (Arango, Heart and Stroke Foundation of Canada).

103 HESA, *Evidence*, 6 November 2014, 1120 (Ostiguy, as an Individual); 2 December 2014, 1140 (Bois, Coalition québécoise pour le contrôle du tabac); 2 December 2014, 1140 (Collishaw, Physicians for a Smoke-Free Canada); 4 December 2014, 1200 (McKeown, Toronto Public Health).

104 HESA, *Evidence*, 2 December 2014, 1140 (Collishaw, Physicians for a Smoke-Free Canada).

d. Information, reporting, disclosure and safety standards

Many witnesses spoke of the need to establish reporting mechanisms to gather data about the safety of electronic cigarettes, the need to require manufacturers to disclose ingredients in electronic cigarettes, and the need to establish certain manufacturing and safety standards for electronic cigarettes.

With respect to the importance of gathering data, Dr. Peter Selby suggested that "we need to have a detailed surveillance and monitoring system that can tell us what people are using and what harms they're coming to."[105] Another witness noted that smoking uptake should be monitored, and then regulations should be modified if there is an increase in uptake.[106]

Other witnesses mentioned that manufacturers should be required to publicly disclose ingredients in electronic cigarettes,[107] or to disclose the contents and emissions of products to the government.[108]

With respect to safety, one witness noted that "at the very least, all e-cigarettes should be reviewed for safety under the *Canada Consumer Product Safety Act*."[109] Many witnesses expressed concern over the lack of safety and quality assurance relating to electronic cigarettes, including both their liquids and their components, such as batteries.[110] Daniel David indicated to the Committee that the Electronic Cigarette Trade Association already monitors e-liquid "for accuracy, the existence of preventable risk elements, and other contaminants […] [T]his type of precautionary and consistency testing should be required in any future electronic cigarette regulation."[111]

Given that the safety of Canadians who may use or otherwise come into contact with electronic cigarettes is a significant concern of the Committee, the Committee recommends

105 HESA, *Evidence*, 28 October 2014, 1115 (Selby, Centre for Addiction and Mental Health).

106 HESA, *Evidence*, 2 December 2014, 1220 (Jones, Tobacco Harm Reduction Association of Canada).

107 HESA, *Evidence*, 30 October 2014, 1150 (Cunningham, Canadian Cancer Society), 1225 (Bernhardt-Lowdon, Canadian Lung Association) and 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association).

108 Ibid., 1235 (Culbert, Canadian Public Health Association).

109 Ibid.

110 HESA, *Evidence*, 6 November 2014, 1220 (Bhatnagar, 180 Smoke); 27 November 2014, 1210 (Shanu Mohamedali, President, Smoke NV Inc.), 1230 (Giller, 180 Smoke); 2 December 2014, 1210 (Harrington, Consumer Health Products Canada), 1220 (Jones, Tobacco Harm Reduction Association of Canada) and 4 December 2014, 1200 (McKeown, Public Health).

111 HESA, *Evidence*, 27 November 2014, 1110 (David, Electronic Cigarette Trade Association of Canada).

RECOMMENDATION 7

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework establish standards relating to the safety of all components of electronic cigarettes, and also require manufacturers and importers of electronic cigarettes to disclose information relating to ingredients.

e. Packaging and labelling of electronic cigarettes and their components

A number of witnesses made recommendations with respect to how electronic cigarettes and their components should be packaged and labelled. Several witnesses indicated that liquids for electronic cigarettes should be sold in child-resistant packaging,[112] have labels that indicate their nicotine concentration,[113] ensure that labels are accurate (for example, not indicating that they do not contain nicotine if they do in fact contain nicotine),[114] and have labels with appropriate safety warnings.[115] Three witnesses noted that labelling requirements for tobacco products should apply to electronic cigarettes.[116]

Given that the safety of children must be a paramount consideration in establishing a legislative framework for electronic cigarettes, and that consumers should have accurate information about the products they are consuming, the Committee recommends

RECOMMENDATION 8

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework require that electronic cigarette components be sold in child-resistant packaging, and that all packaging clearly and accurately indicate the concentration of nicotine and contain appropriate safety warnings about the product.

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112 HESA, *Evidence*, 6 November 2014, 1120 (Ostiguy, as an Individual), 1220 (Bhatnagar, 180 Smoke); 27 November 2014, 1125 (Shawn Wells, Owner, TVC Liquids), 1230 (Giller; 180 Smoke) and 4 December 2014, 1210 (Russell, Department of Health, Government of New Brunswick).

113 HESA, *Evidence*, 4 November 2014, 1145 (Laliberté, Canadian Association of Poison Control Centres) and 2 December 214, 1120 (Tilson, Non-Smokers' Rights Association).

114 HESA, *Evidence*, 2 December 2014, 1125 (Bois, Coalition québécoise pour le contrôle du tabac).

115 HESA, *Evidence*, 4 November 2014, 1145 (Laliberté, Canadian Association of Poison Control Centres); 6 November 2014, 1120 (Ostiguy, as an Individual); 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association) and 1220 (Jones, Tobacco Harm Reduction Association of Canada).

116 HESA, *Evidence*, 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia), 1200 (McKeown, Toronto Public Health) and 1210 (Russell, Department of Health, Government of New Brunswick).

f. Health claims

With respect to claims that electronic cigarettes could assist smokers in quitting, a few witnesses stated that manufacturers should be prohibited from making unproven health claims about their products.[117] As one witness mentioned, "[e]-cigarette manufacturers should be required to comply with the same stringent criteria as other manufacturers of smoking cessation aids before being allowed to make such claims."[118]

The Committee therefore recommends

RECOMMENDATION 9

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework prohibit electronic cigarette manufacturers from making unproven health claims.

2. Regulating how and where devices are promoted and used

Some of these additional factors related to regulation, addressing the context in which electronic cigarettes can be sold and used, have been addressed in preceding sections of this report without specific regulatory proposals. These issues are summarized below, along with regulatory recommendations to the Government of Canada.

a. Sale to minors

As noted under the section "Access to Electronic Cigarettes", there was broad agreement that the sale of electronic cigarettes to minors should be prohibited. Rob Cunningham stressed the importance of enforcing any prohibition against selling electronic cigarettes to minors that might be established in legislation:

> [B]anning e-cigarette sales to minors by itself is insufficient to protect youth. We know from long-standing experience with tobacco legislation that sales to minors laws are notoriously difficult to enforce. The most recent Health Canada evaluation found that fully one in six stores sold tobacco illegally to youth. Kids find and know the stores that are willing to sell illegally.[119]

The Committee recommends

117 HESA, *Evidence*, 28 October 2014, 1215 (Peruga, WHO's Tobacco Free Initiative); 4 November 2014, 1155 (Power, Canadian Pharmacists' Association) and 2 December 2014, 1130 (Bois, Coalition québécoise pour le contrôle du tabac).

118 HESA, *Evidence*, 4 November 2014, 1155 (Power, Canadian Pharmacists' Association).

119 HESA, *Evidence*, 30 October 2014, 1145 (Cunningham, Canadian Cancer Society).

RECOMMENDATION 10

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework prohibit the sale of electronic cigarettes or other electronic nicotine delivery systems to persons under the age of 18.

b. Use in public spaces

As discussed earlier in the report, concerns about "renormalization" of smoking were expressed by several witnesses, as were concerns about potential health risks to bystanders. Of the witnesses who raised the issue of where the use of electronic cigarettes should be permitted, the majority told the Committee that their use should be prohibited in indoor public spaces,[120] where smoking is prohibited,[121] and in workplaces and public spaces that are under federal jurisdiction where smoking is already banned.[122] A few witnesses suggested there should be greater latitude with respect to where electronic cigarette use should be permitted. For example, Dr. Ostiguy suggested that exceptions should be made to allow the use of electronic cigarettes in certain public spaces such as in prisons and in palliative care facilities.[123] Dr. Britton also mentioned that allowing electronic cigarettes to be used in mental health facilities "would make sense."[124]

Boris Giller stated that a number of smokers switch to electronic cigarettes because they can use the products indoors: "[i]t's one of the top reasons why people do it. We ask that you don't ban indoor vaping as long as there's no proof of second-hand vaping harm."[125] With respect to proof of harm, Mr. Giller stated that "[air quality research] shows that e-cigarette second-hand vape is well below the occupational hazard threshold in air quality, so we would ask you to allow indoor vaping at the establishment's discretion and not send ex-smokers outside to breathe second-hand smoke."[126]

The Committee acknowledges the concerns that were raised with respect to the possible impacts on individuals who use electronic cigarettes, and recommends taking a precautionary approach to protect the health of non-electronic cigarette users and avoid any renormalizing effect. For these reasons, the Committee recommends

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120 HESA, *Evidence*, 28 October 2014, 1215 (Peruga, WHO's Tobacco Free Initiative).

121 Ibid., 1110 (Selby, Centre for Addiction and Mental Health); 30 October 2014, 1200 (Arango, Heart and Stroke Foundation of Canada); 4 November 2014, 1155 (Power, Canadian Pharmacists' Association) and 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association).

122 HESA, *Evidence*, 30 October 2014, 1145 (Cunningham, Canadian Cancer Society); 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia) and 1210 (Russell, Department of Health, Government of New Brunswick).

123 HESA, *Evidence*, 6 November 2014, 1120 (Ostiguy, as an individual).

124 HESA, *Evidence*, 28 October 2014, 1245 (Britton, UK Centre for Tobacco and Alcohol Studies).

125 HESA, *Evidence*, 27 November 2014, 1225 (Giller, 180 Smoke).

126 Ibid.

RECOMMENDATION 11

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework prohibit the use of electronic cigarettes and other electronic nicotine delivery systems in federally regulated public spaces.[127]

c. Advertising

Advertising of electronic cigarettes was the issue raised most frequently by witnesses. Every witness who spoke to this issue noted that some type of advertising restriction would be required for the marketing of electronic cigarettes.

Many witnesses who discussed advertising indicated that electronic cigarettes should be subject to the same advertising and promotion restrictions that are in place for tobacco products,[128] or that advertising should be strictly regulated.[129] As Dr. David McKeown stated:

> Federal regulation is also urgently needed to address […] e-cigarette promotion and advertising. We've been disturbed to see that e-cigarettes are marketed, particularly in the United States, in similar ways that cigarettes were promoted before most tobacco advertising and promotion was prohibited through federal tobacco legislation. This includes strategies such as free product offers, celebrity endorsements, overt lifestyle advertising, and attractive product packaging and flavours. This type of promotion influences the perceived acceptability of e-cigarette use and smoking, and I'm particularly concerned about its impact on youth.[130]

Other witnesses recommended a less comprehensive approach to advertising restrictions.[131] Daniel David indicated that he "would support some very specific marketing restrictions," particularly with respect to marketing to individuals who have never smoked

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127 The *Non-smokers' Health Act*, R.S.C. 1985, c. 15, currently regulates smoking in the federal work place and on common carriers such as aircraft and trains.

128 HESA, *Evidence*, 30 October 2014, 1235 (Culbert, Canadian Public Health Association); 4 November 2014, 1115 (Power, Canadian Pharmacists' Association); 2 December 2014, 1130 (Bois, Coalition québécoise pour le contrôle du tabac); 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia), 1200 (McKeown, Toronto Public Health) and 1210 (Russell, Department of Health, Government of New Brunswick).

129 HESA, *Evidence*, 28 October 2014, 1110 (Selby, Centre for Addiction and Mental Health); 30 October 2014, 1200 (Arango, Heart and Stroke Foundation of Canada); 4 November 2014, 1135 (Khara, Vancouver General Hospital), 1145 (Laliberté, Canadian Association of Poison Control Centres) and 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association).

130 HESA, *Evidence*, 4 December 2014, 1200 (McKeown, Toronto Public Health).

131 HESA, *Evidence*, 27 November 2014, 1145 (David, Electronic Cigarette Trade Association of Canada), 1145 (Wells, TVC Liquids), 1145 (Graham, NJOY), 1220 (Scholten, Canadian Convenience Stores Association), 1230 (Giller, 180 Smoke) and 2 December 2014, 1220 (Jones, Tobacco Harm Reduction Association of Canada).

or to youth, but also stated that "it is important to have some aspect of marketing to let current smokers know that the product is available."[132]

David M. Graham echoed that opinion:

> We believe that advertising is critically important to raise awareness of this new class of products, but unfettered advertising with no restrictions, no rules, and no limitations is entirely irresponsible. Therefore, we support restrictions on advertising that allow it to take place with appropriate rules that are enforced by an appropriate body.[133]

Boris Giller was concerned about the potential impact advertising could have on the electronic cigarette industry: "[it] would kill competition. It would reduce the appeal, compared to cigarettes. It would harm innovation and limit the recruitment of smokers...."[134]

Given that protecting youth from becoming addicted to nicotine is of great concern to the Committee, and given the concerns that have been expressed by witnesses that non-smokers who start using electronic cigarettes may start using tobacco products (the "gateway effect"), the Committee recommends

RECOMMENDATION 12

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework restrict advertising and promotional activities for these products.

d. Cross-branding

As discussed earlier in this report in a discussion of the role of the tobacco industry with respect to electronic cigarettes, the issue of cross-branding or co-branding, which involves tobacco industry logos being used on electronic cigarettes, arose during Committee hearings. To address the concern that cross-branding could contribute to the renormalization of smoking and increased take-up of tobacco products, the Committee recommends

132 HESA, *Evidence*, 27 November 2014, 1145 (David, Electronic Cigarette Trade Association of Canada).

133 Ibid., 1150 (Graham, NJOY).

134 Ibid., 1230 (Giller, 180 Smoke). See also Clive Bates, Brief for House of Commons of Canada Standing Committee on Health: A disruptive public health technology threatened by excessive regulation.

RECOMMENDATION 13

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework prohibit cross-branding practices, which can involve tobacco industry logos being used on electronic cigarettes.

e. Flavours

As discussed in an earlier section of this report related to the use of electronic cigarettes as a possible "gateway" to tobacco use, the issue of whether flavours should be permitted in electronic cigarette liquids arose frequently. To address this concern, witnesses identified three different possible regulatory approaches: a) all flavours should be prohibited; b) flavours that are prohibited for tobacco products under the *Tobacco Act* should be prohibited; or c) flavours that might be attractive to children should be prohibited.[135] As David Hammond explained,

> […] real harm reduction advocates suggest that you keep the flavours in because that makes smokers want to use it. I think it would be more conservative and probably prudent to eliminate the cotton candy flavours, the cherry flavours. My opinion is that if an adult smoker is genuinely using this to help him quit, they don't necessarily need cotton candy flavouring to promote this product.[136]

One witness mentioned that Health Canada could identify specific flavours that would be permitted, such as the ones available for nicotine replacement products.[137] Other witnesses emphasized the need for flavours in electronic cigarette liquids, stating that banning flavours would reduce appeal and potentially drive the market underground, making the products unsafe for users,[138] and that the flavours available should be based on consumer demand.[139]

Given that protecting youth from the potential harms of nicotine addiction is of great concern to the Committee, the Committee recommends

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135 See, for example, HESA, *Evidence*, 30 October 2014, 1150 (Cunningham, Canadian Cancer Society), 1200 (Arango, Heart and Stroke Foundation of Canada), 1235 (Culbert, Canadian Public Health Association); 4 November 2014, 1220 (Hammond, as an Individual), 1220 (Laliberté, Canadian Association of Poison Control Centres); 6 November 2014, 1120 (Ostiguy, as an Individual); 2 December 2014, 1120 (Tilson, Non-Smokers' Rights Association); 4 December 2014, 1150 (Strang, Department of Health Promotion and Wellness, Government of Nova Scotia) and 1210 (Russell, Department of Health, Government of New Brunswick).

136 HESA, *Evidence*, 4 November 2014, 1220 (Hammond, as an individual).

137 HESA, *Evidence*, 30 October 2014, 1150 (Cunningham, Canadian Cancer Society).

138 HESA, *Evidence*, 27 November 2014, 1230 (Giller, 180 Smoke). See also Clive Bates, Brief for House of Commons of Canada Standing Committee on Health: A disruptive public health technology threatened by excessive regulation.

139 HESA, *Evidence*, 6 November 2014, 1220 Bhatnagar, 180 Smoke).

RECOMMENDATION 14

That the Government of Canada work with all affected stakeholders to establish a new legislative framework (under the *Tobacco Act*, new legislation, or other relevant statutes) for regulating electronic cigarettes and related devices and that this new framework prohibit the use of flavourings in electronic cigarette liquids that are specifically designed to appeal to youth, such as candy flavourings.

LIST OF RECOMMENDATIONS

APPENDIX A
RESEARCH IDENTIFIED IN TESTIMONY AND BRIEFS

Research referenced or provided	Source from testimony or submissions
Canadian Tobacco Use Monitoring Survey (CTUMS) 2012	HESA, *Evidence*, Suzy McDonald (Associate Director General, Controlled Substances and Tobacco Directorate, Healthy Environments and Consumer Safety Branch, Department of Health), 21 October 2014, 1200.
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• René A. Arrazola, "Tobacco Product Use Among Middle and High School Students — United States, 2011 and 2012," *Morbidity and Mortality Weekly Report*, Centers for Disease Control and Prevention, 15 November 2013. • M. L. Goniewicz, et. al., "A Rise in Electronic Cigarette Use Among Adolescents in Poland," *Journal of Adolescent Health*, 2014; 55(5): 713–5.	References provided by Clive Bates, circulated 4 November 2014.
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Witness likely referring to Christine Czoli, et. al., "Electronic cigarettes in Canada: Prevelance of use and perceptions among youth and young adults," *Canadian Journal of Public Health*, March/April 2014.	• HESA, *Evidence*, Dr. David Hammond (Associate Professor, School of Public Health and Health Systems, University of Waterloo, As an Individual), 4 November 2014, 1155 • Also in references .provided in *Heart and Stroke Foundation: E-Cigarettes in Canada*, circulated 21 October 2014, by Canadian Partnership Against Cancer, circulated 25 November 2014, and by Dr. David McKeown, circulated 9 December 2014
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Witness likely referring to Chris Bullen, et. al., "Electronic cigarettes for smoking cessation: a randomised controlled trial," *The Lancet*, 16 November 2013.	• HESA, *Evidence*, Dr. Gaston Ostiguy (Chest Physician, McGill University Health Centre, Montreal Chest Institute, As an Individual), 6 November 2014, 1145 • Also in references provided by Peter Selby circulated 29 October 2014 and by Canadian Partnership Against Cancer, circulated 25 November 2014.
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Research referenced or provided	Source from testimony or submissions
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Witness likely referring to: • Daniel Kotz, et. al., "'Real-world' effectiveness of smoking cessation treatments: a population study," *Addiction*, March 2014. • Saul Shiffman, et. al., "The Impact of Flavor Descriptors on Nonsmoking Teens' and Adult Smokers' Interest in Electronic Cigarettes," *Nicotine & Tobacco Research*, 2015.	HESA, *Evidence*, Mr. David M. Graham (Senior Vice-President, Global Regulatory Affairs, NJOY), 27 November 2014, 1150.
Witness could be referring to UK report by Action on smoking and health, "Use of electronic cigarettes in Great Britain," *Fact sheet*, October 2014, with respect to UK. Witness likely referring to the following studies: • M.L Goniewicz and W. Zielinksa-Danch, "Electronic cigarette use among teenagers and young adults in Poland," *Pediatrics*, October 2012, with respect to Poland. • Jaana Maarit Kinnunen, et. al., "Awareness and determinants of electronic cigarette use among Finnish adolescents in 2013: a population-based study," *Tobacco Control*, 14 May 2014, with respect to Finland.	• HESA, *Evidence*, Ms. Melodie Tilson (Director of Policy, Non-Smokers' Rights Association), 2 December 2014, 1120. • "Use of electronic cigarettes in Britain" also in references provided by Clive Bates, circulated 4 November 2014
• Centers for Disease Control and Prevention, "Notes from the Field: Electronic Cigarette Use Among Middle and High School Students — United States, 2011-2012," *Morbidity and Mortality Weekly Report (MMWR).*, 6 September 2013. • Bridget K. Ambrose, et. al., "Perceptions of the Relative Harm of Cigarettes and E-cigarettes Among U.S. Youth," *American Journal of Preventive Medicine*, 2014.	References provided by Dr. Jennifer Russell, circulated 10 December 2014.

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• L.M. Dutra and S.A. Glantz, (2014). "Electronic cigarettes and conventional cigarette use among US adolescents: a cross-sectional study," *JAMA pediatrics*, 2014;168(7):610-617. • Sungkyu Lee, et. al., "Electronic Cigarette Use Among Korean Adolescents: A Cross-Sectional Study of Market Penetration, Dual Use, and Relationship to Quit Attempts and Former Smoking," *Journal of Adolescent Health*, November 2013.	
• Staff of Senator Richard J. Durbin et. al. *Gateway to Addiction?: A Survey of Popular Electronic Cigarette Manufacturers and Targeted Marketing to Youth*, 2014. • S. E. Adkison, et. al., "Electronic nicotine delivery systems: international tobacco control four-country survey." *American journal of preventive medicine*, 2013. • M.B. Drummond, and D. Upson, "Electronic cigarettes. Potential harms and benefits," *Annals of the American Thoracic Society*, 2014. • R. Grana, et al., "E-Cigarettes A Scientific Review." *Circulation*, 2014. • L. Kosmider, et. al., "Carbonyl Compounds in Electronic Cigarette Vapors—Effects of Nicotine Solvent and Battery Output Voltage." *Nicotine & Tobacco Research*, 2014. • J. Czogala, et. al., (2014). "Secondhand exposure to vapors from electronic cigarettes," *Nicotine & Tobacco Research,* 2014. • W. Schober, et. al., "Use of electronic cigarettes (e-cigarettes) impairs indoor air quality and increases FeNO levels of e-cigarette consumers," *International journal of hygiene and environmental health,* 2013. • T. Schripp,.et. al., "Does e-cigarette consumption cause passive vaping?" *Indoor Air*, 2013. • A.D. Flouris, et. al., "Acute impact of active and passive electronic cigarette smoking on serum cotinine and lung function," *Inhalation toxicology*, 2013, 25(2), 91-101.	• References provided by Dr. David McKeown, (Medical Officer of Health, Toronto Public Health), circulated 12 December 2014. • Adkison, Grana, et. al.,Schripp, et. al., Schober, et. al., Flouris, et. al., and Czogala, et. al., also from references by Canadian Partnership Against Cancer, circulated 25 November 2014. • Adkison also from references provided by Gopal Bhatnagar, circulated 12 November 2014; by US Centers for Disease Control and Prevention, circulated 7 November, 2014, also in references provided in *Heart and Stroke Foundation: E-Cigarettes in Canada*, circulated 21 October 2014. • Grana, et. al. also in references provided in *Heart and Stroke Foundation: E-Cigarettes in Canada*, circulated 21 October 2014. • Bullen, et. al.,Grana, et. al., Drummond and Upson, Kosmider, et. al., Flouris, et. al., Dwyer et. al. also in references provided by Dr. Peter Selby, circulated 29 October 2014. • Vardavas, et. al., likely reference in references provided by Jean-Pierre Maltais, Les Magasins Vaporus, Inc., circulated 6 November 2014. • Bullen et. al., Grana, et.al., Schripp, et. al., Vickerman, et. al., also in references provided by US Centers for Disease Control and Prevention, circulated 7 November 2014.

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APPENDIX B
LIST OF WITNESSES

Organizations and Individuals	Date	Meeting
Department of Health	2014/10/21	37
Peter Brander, Acting Senior Director General, Regions and Programs Bureau		
Hilary Geller, Assistant Deputy Minister, Healthy Environments and Consumer Safety Branch		
Suzy McDonald, Associate Director General, Controlled Substances and Tobacco Directorate, Healthy Environments and Consumer Safety Branch		
John Patrick Stewart, Executive Medical Director, Therapeutic Products Directorate, Health Products and Food Branch		
Centre for Addiction and Mental Health	2014/10/28	38
Dr. Peter Selby, Chief, Addictions Program		
UK Centre for Tobacco and Alcohol Studies		
John Britton, Professor of Epidemiology, University of Nottingham, United Kingdom		
World Health Organization's Tobacco Free Initiative		
Dr. Armando Peruga, Program Manager		
Canadian Cancer Society	2014/10/30	39
Rob Cunningham, Senior Policy Analyst		
Canadian Lung Association		
Margaret Bernhardt-Lowdon, Executive Director, Manitoba Lung Association		
Canadian Public Health Association		
Ian Culbert, Excutive Director		
Heart and Stroke Foundation of Canada		
Manuel Arango, Director, Health Policy		
As an individual	2014/11/04	40
David Hammond, Associate Professor, School of Public Health and Health Systems, University of Waterloo		
Canadian Association of Poison Control Centres		
Dr. Martin Laliberté, President		

Organizations and Individuals	Date	Meeting
Canadian Pharmacists Association	2014/11/04	40
Glen Doucet, Vice-President, Advocacy and Public Affairs		
Barry Power, Pharmacist		
Vancouver General Hospital		
Dr. Milan Khara, Clinical Director, Smoking Cessation Clinic		
As an individual	2014/11/06	41
Dr. Gopal Bhatnagar, Cardiovascular Surgeon , Trillium Cardiovascular Associates		
Dr. Gaston Ostiguy, Chest Physician, McGill University Health Centre, Montreal Chest Institute		
David Sweanor, Adjunct Professor, Faculty of Law, University of Ottawa, Special Lecturer, Epidemiology and Public Health, University of Nottingham, England		
180 Smoke	2014/11/27	43
Boris Giller, Co-Founder		
Canadian Convenience Stores Association		
Alex Scholten, President		
Electronic Cigarette Trade Association of Canada		
Daniel David, Chair of the Board		
NJOY		
David M. Graham, Senior Vice-President, Global Regulatory Affairs		
Smoke NV Inc.		
Shanu Mohamedali, President		
Dr. Inderpreet Rai, Medical Director		
TVC Liquids		
Shawn Wells, Owner		
Consumer Health Products Canada	2014/12/02	44
Gerry Harrington, Director, Policy		
Non-Smokers' Rights Association		
Melodie Tilson, Director of Policy		
Physicians for a Smoke-Free Canada		
Neil E. Collishaw, Research Director		
Quebec Coalition for Tobacco Control		
Dr. Geneviève Bois, Spokesperson		

Organizations and Individuals	Date	Meeting
Tobacco Harm Reduction Association of Canada	2014/12/02	44
Dave Jones, Director		
Government of New Brunswick	2014/12/04	45
Dr. Jennifer Russell, Acting Chief Medical Officer of Health, Department of Health		
Government of Nova Scotia		
Dr. Robert Strang, Chief Public Health Officer, Department of Health Promotion and Wellness		
Toronto Public Health		
Dr. David McKeown, Medical Officer of Health		

APPENDIX C
LIST OF BRIEFS

Organizations and Individuals

180 Smoke

Ball, **Dave**

Bates, **Clive**

Bhatnagar, **Gopal**

Bouchard, **Denis**

Caldwell, **Devine**

Canadian Association of Poison Control Centres

Canadian Cancer Society

Canadian Convenience Stores Association

Canadian Medical Association

Canadian Partnership Against Cancer

Canadian Pharmacists Association

Centre for Addiction and Mental Health

Chard, **Melody**

Chronic Disease Prevention Alliance of Canada

Couchman, **Ron**

Dean, **Blair**

Denison, **D.**

Electronic Cigarette Trade Association of Canada

Erickson, **Chris**

Farrow, **Wendy**

Geoghegan, **Kathleen**

Government of Nova Scotia

Organizations and Individuals

Gratton, **André**

Hammond, **David**

Lapalme, **Christine**

Lemens, **Sébastien**

Les magasins Vaporus Inc

Megarry, **Brett**

NJOY

O'Quinn, **Patrick Ryan**

Ostiguy, **Gaston**

Patenaude, **John**

Penner, **Ronna**

Phillips, **Darlene**

Physicians for a Smoke-Free Canada

Pijl, **Stanley**

Quebec coalition for Tobacco Control

Sheehan, **Denise**

Sorrell, **Eden**

Tobacco Harm Reduction Association of Canada

Toronto Public Health

TVC Liquids

US Centers for Disease Control and Prevention

Warr-Hunter, **Rowan**

Wei, **Julie**

Zandera Ltd

REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the Committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* (Meetings Nos. 37, 38, 39, 40, 41, 43, 44, 45, 46, 50 and 51) is tabled.

Respectfully submitted,

Ben Lobb

Chair