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Chair

Mr. Ben Lobb

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• (1105)

[English]

The Chair (Mr. Ben Lobb (Huron—Bruce, CPC)): Good morning, ladies and gentlemen.

We're going to get started in a few minutes. I apologize. We've had a little change in the program. We have about 10 minutes of committee business that we need to take care of first. I'd ask all of those who shouldn't be here to leave for about 10 minutes, and then our clerk will come out to get you and bring you back in.

Thank you.

[*Proceedings continue in camera*]

• (1100)

(Pause)

• (1135)

The Chair: Thank you for waiting. I sincerely apologize for the wait.

We'll ask each of our witnesses and guests to make their presentations, in order, starting with Mr. Khara from the Smoking Cessation Clinic.

Go ahead, sir.

Dr. Milan Khara (Clinical Director, Smoking Cessation Clinic, Vancouver General Hospital): I have around 10 minutes, is that correct?

The Chair: Yes, sir.

Dr. Milan Khara: First of all, just to introduce myself and let you know who I am and what I do, I am a physician, I work at Vancouver General Hospital, and I spend my clinical time in the smoking cessation clinic. Essentially, I eyeball people who want to quit smoking and help them in their quit journey using evidence-based treatment.

I'm here to speak about electronic cigarettes. The first thing I'd like to do is just preface any comments I have by saying that clearly this is a highly contentious area, with great polarization and dispute among people within the public health community and people within the tobacco control community. The areas of contention really span the whole issue, but they probably focus on a couple of main areas. The first is whether these products are safe, or indeed safer than traditional cigarettes. The second is whether these products have utility as a cessation device. Do these products actually help people to quit smoking? Third, there is some dispute over the harm that may or may not be caused to those who are secondarily exposed to

vapour. There is also some concern around youth uptake and so-called renormalization of smoking behaviour.

Those are, in a nutshell, the areas of contention. Many individuals on different sides of the debate would hold differing opinions. I can't really begin to provide you with a succinct summary of that debate. All I will say is that it's contentious, and people with different positions will give you an entirely different answer to each of those questions. Sometimes it may be worth looking at the vested interests for those individuals. Certainly the industry that manufactures these products has a position, and that's worth noting.

I'd like to comment on three areas that I think I can provide some expertise in. The first is that the evidence is probably best summarized by the World Health Organization paper that was released this summer. It was a review of the evidence, and if you're not aware of that publication, I can certainly make it available to you. They made a number of recommendations in that publication, but two recommendations stand out—the need to, one, limit advertising, sponsorship, and promotion to non-smokers and youth, and two, provide protection to bystanders from the effects of second-hand vapour. That World Health Organization review should be, I would suggest, a piece of evidence in any consideration that is given to e-cigarettes. It's also worth saying that the review itself has been criticized by those who are credible within tobacco control, but again, that reflects the debates around these products.

The second thing I'd like to comment on, again very briefly, is that I was part of a Vancouver Coastal Health authority delegation that recommended that the City of Vancouver do two things. One was to ban the sale of electronic cigarettes to minors. Two was to add electronic cigarettes to existing tobacco legislation and thereby limit the places in which electronic cigarettes could be used. We were really proposing bans in indoor public spaces and on patios of restaurants and bars, and a ban on use in parks and beaches, which is already in place for traditional cigarettes in Vancouver. That was unanimously upheld last month. The City of Vancouver has staked out its position quite clearly with regard to electronic cigarettes.

Third and lastly, I have just a brief comment on what I see day to day with smokers who are engaging in that journey to try to rid themselves of the use of tobacco. I see smokers every day, and almost every smoker will ask me, "What about the electronic cigarette? Is it safe? Will it help me to quit?" Many will also report that they've actually used the electronic cigarette and have absolutely no difficulty in purchasing the nicotine-containing product, which of course, according to Health Canada's directive, is banned for import and sale. So the nicotine-containing product is in widespread use.

In summary, there are concerns around manufacturing; around labelling, with thousands of products available; around second-hand exposure; around safety, particularly in long-term use; and around renormalization and uptake among youth.

• (1140)

The Chair: That's very good.

I guess you're coming from Vancouver today, so thank you very much for making the trip and taking a day or two out of your schedule.

Next up, Dr. Laliberté from the Canadian Association of Poison Control Centres. Go ahead, sir. Thank you.

• (1145)

Dr. Martin Laliberté (President, Canadian Association of Poison Control Centres): Thank you very much for the opportunity to speak to the committee today. I would like to introduce myself. I am an emergency physician and a medical toxicologist. I am a consultant at the Quebec Poison Control Centre. I'm also an assistant professor of medicine at McGill University and I'm the current president of the Canadian Association of Poison Control Centres.

I have no financial or scientific conflict of interest to disclose. I will make this presentation in English, but I will be very happy to entertain questions and comments in both official languages.

Our association is a small, non-profit, scientific organization established in 1982, mostly to promote national communications and research in medical toxicology. Our membership includes specialists in poison information, nurses, pharmacists, emergency physicians, and medical toxicologists.

Without insulting anybody's intelligence, I would like to remind you exactly what a poison centre is. It's a health organization providing information to the public, 24 hours a day, seven days a week, also to health care providers in the management of suspected poisoning, both accidental and intentional. We deal with a long list of toxins, including medications, also a very long list of non-pharmaceutical products.

There are five Canadian poison centres that are funded by the provincial health care system to provide telephone services 24 hours a day, 7 days a week, free of charge for the caller. We deal with over 160,000 exposures to drugs and toxins every year, mostly calls from the public. We manage to keep up to 70% of the people at home after they call us.

Poison centres have very important value. It's estimated that every \$1 invested in poison centres can save up to \$13 to the health care system, mostly by avoiding unnecessary use of medical resources.

Our data is interesting because the information on the incidence and severity of the exposure reported to a poison centre is valuable in many ways, for providing early warning of major symptomatic exposure and also identifying new trends in product use and regional differences in populations at risk.

Many countries have toxicological surveillance systems, but, unfortunately, at this point Canada is not one of those countries, although we're collaborating with Health Canada to set up such a system.

Most specifically on the topic of e-cigarettes, I would like to start by saying that we're mostly concerned about the liquid nicotine content of e-cigarettes and about the growing popularity of e-cigarettes.

Our two concerns are the following:

Nicotine is a potent toxin, and liquid nicotine solutions used in e-cigarettes have the potential to cause serious poisoning. We are concerned that a liberal approach to regulation may have the predictable consequence of making liquid nicotine solution more available to the public, and mostly to children. We know that children who are less than six years of age are at a high risk for accidental poisoning at home. It's likely that the number of pediatric nicotine exposures will increase in the future.

The second big concern is the fact that nicotine is a highly addictive substance, and we believe efforts should be made to limit the use of nicotine by non-smokers. Increasing the availability and marketing efforts aimed at teenagers may contribute to increasing the magnitude of the problem of nicotine addiction in the future.

I would love to be able to present Canadian statistics to you today, but we don't really have any, although the numbers given to me match the American statistics.

This was published recently this year by the CDC, in the United States. We can see on this graph—the bottom line is the line with the e-cigarette and liquid nicotine exposures—that calls to U.S. poison centres for e-cigarette exposures are going up. Also, compared to more traditional tobacco products, e-cigarette exposures are more likely to be associated with adverse affects.

Nicotine poisoning is very serious. You can be exposed to liquid nicotine and get sick after an oral ingestion, but it's also absorbed through the skin. Clinical manifestation of nicotine poisoning appears quickly within an hour. We don't keep those people at home; we send almost everyone to the hospital.

Mild toxicity can lead to vomiting and tremors, but severe toxicity can be associated with seizures, coma, and cardiovascular collapse. The management is mostly supportive. We don't have an available antidote for liquid nicotine.

The toxic dose is subject to debate right now, but we know that very small amounts of liquid nicotine can be symptomatic and dangerous both for children and adults. Liquid nicotine solutions that are available vary in concentration. Liquid nicotine for e-cigarettes varies anywhere from between 5 milligrams to 20 milligrams per litre, and, unfortunately, they are very often available in flavours that are appealing to children and teenagers.

We think that public education is needed. E-cigarettes should be kept away from children. Liquid nicotine should be locked away in a cabinet. All of the used material should be disposed of properly to prevent exposing children to the liquid left in containers. In the event of an oral skin exposure, we would like the public to call poison centres for immediate advice. And with nicotine being a highly addictive substance in all forms, e-cigarettes should not to be used by teenagers.

Our recommendations are the following:

First of all, liquid nicotine for e-cigarette users should only be available in child-resistant packaging. The sale, distribution, labelling, and marketing of e-cigarettes should be regulated. The sale of e-cigarettes to minors should be prohibited. The labelling of containers should indicate the nicotine concentration, with appropriate safety warnings. Marketing strategies targeting teenagers should also be prohibited. Lastly, our position is that regulation of e-cigarettes and liquid nicotine solutions should probably be regulated in the same way as pharmaceutical products. It would definitely be the safest approach.

Thank you very much.

I would like to remind everybody that we're in the business of protecting all Canadians from all dangers, and liquid nicotine is a part of that.

Thank you very much for your attention.

The Chair: Thank you very much.

Next up we have the Canadian Pharmacists Association, Mr. Power and Mr. Doucet.

Go ahead.

• (1150)

[Translation]

Dr. Barry Power (Pharmacist, Canadian Pharmacists Association): Good morning, ladies and gentlemen.

My name is Barry Power. I represent the Canadian Pharmacists Association. I am accompanied by Glen Doucet, Vice President, Advocacy and Public Affairs.

[English]

The Canadian Pharmacists Association is the national professional association providing leadership to pharmacists and supporting them in providing patient-centred care to optimize medication use and enhance outcomes. Our member organizations are national and provincial pharmacist associations, representing pharmacists practising in community and hospital pharmacies, family practice settings, long-term care facilities, academia, and industry.

CPhA is also the largest publisher of Canadian evidence-based drug and therapeutic information, which is widely used by pharmacists, physicians, nurses, and other health professionals. This includes the CPS, sometimes referred to as the "big blue book", and our online resource, e-Therapeutics. Smoking cessation is one of the areas for which we have provided evidence-based content to use in delivering quality smoking cessation services.

Pharmacists are highly accessible health care professionals who can help Canadians quit smoking by providing advice, medications, and support during their quit attempt. Evidence has shown that support from a health care professional increases a person's chance of success and of permanently quitting. In Canada, there are a number of smoking cessation products that are supported through clinical studies and have undergone regulatory scrutiny. These products are being recommended by pharmacists to their patients who wish to quit smoking. The selection of a suitable product is a

systematic process that involves assessing each patient individually and incorporating their specific needs and preferences.

The Canadian Pharmacists Association has been a long-time advocate for control of nicotine products. In 1990, CPhA's board officially opposed the sale of tobacco products in pharmacies. This position remains in effect today. In 2001, CPhA, along with eight other national health professional associations, developed a position paper on the role of health care professionals in smoking cessation. We've partnered with Health Canada to provide educational programs and patient care resources to assist pharmacists in the provision of smoking cessation services.

Pharmacists across the country are involved in helping Canadians to quit smoking. We are frequently asked about e-cigarettes, and we are well aware that nicotine-containing e-cigarettes are readily available in many cities across the country and through a number of online websites. It's important for pharmacists and other health care professionals to be able to provide evidence-based answers to consumers' questions to help ensure the safe use of smoking cessation products. As far as e-cigarettes are concerned, the evidence is lacking. Pharmacists depend on the efforts of regulatory agencies such as Health Canada to provide guidance on health products that are safe and effective. It is for this reason that we show our support to Health Canada for exploring the safety and efficacy of e-cigarettes.

There are a number of concerns over the use of e-cigarettes. The health effects of e-cigarettes are currently unknown. They are often promoted as safer options than cigarettes. The nicotine inhaled from an e-cigarette may be cleaner than nicotine from a traditional cigarette, but it is still nicotine, and e-cigarette vapour contains additional ingredients such as propylene glycol. While some of the detrimental health effects of smoking are attributed to the non-nicotine components of cigarettes, we cannot ignore that nicotine itself has long-term health impacts that contribute to the risk of heart disease and stroke by increasing heart rate and blood pressure. The long-term health impact of regular e-cigarette use is simply unknown at this point. The short-term and long-term effects of inhaling propylene glycol and other additive ingredients from e-cigarettes are also unknown.

One potential harm associated with the use of e-cigarettes is exposure to second-hand smoke. With vaping, as the e-cigarette use is known, the exhaled vapour contains nicotine, so people who are choosing to live without nicotine may be exposed to it, and they may be exposed to it in places that have recently been made smoke free, such as restaurants, the workplace, and schools.

In addition to the unknown effects on health, we have concerns over the normalization of smoking. In a survey of youth, in 2012, researchers found that about one in five respondents between the ages of 16 and 30 had used an e-cigarette, and four out of five of the respondents who smoked felt that e-cigarettes would allow them to smoke in places where it is not allowed, such as the workplace. This has the potential to increase a person's nicotine consumption.

It's well known that most adult smokers began smoking before the age of 18; relatively few people will start smoking and become regular smokers after this age. Increasing the attractiveness of vaping increases the risk of more Canadians becoming regular smokers. This is a serious threat to the tremendous progress that's been made in Canada in reducing the number of smokers.

Part of our 2001 position statement outlines the importance of preventing people from starting to smoke. We see the availability of e-cigarettes as a threat to the prevention of smoking initiation by normalizing smoking and presenting it as a safe way to deliver nicotine.

•(1155)

There is no clear answer as to whether e-cigarettes help people quit smoking. We need further research into what role e-cigarettes play in smoking cessation, if any.

E-cigarette products are currently not regulated and are not required to meet Health Canada standards for pharmaceutical products or natural health products. Until we know more about their safety and effectiveness, and until such time as they are available as regulated health products, we do not think pharmacists and other health care professionals should support their use.

As part of its Framework Convention on Tobacco Control, the World Health Organization published a report on electronic nicotine delivery systems last summer. They provide advice for countries looking to deal with e-cigarettes. There are a number of points made in the report that this committee should seriously consider for implementation in Canada.

They include, first, prohibiting e-cigarette manufacturers from selling and promoting e-cigarettes as a way to quit smoking. 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.

Second, we should treat e-cigarettes the same as cigarettes in terms of bans on their use in public spaces. This will help to send the message that public use of any form of nicotine-containing cigarette is not acceptable.

Third, do not allow sponsorship, advertising, or promotion of e-cigarettes, in the same way that it's not allowed for tobacco cigarettes.

Last, restrict the sale of e-cigarettes in the same way as tobacco, to prevent uptake by minors.

Pharmacists take the health of Canadians very seriously. We see the long-term effects of smoking on a daily basis by dealing with people suffering from heart disease, stroke, emphysema, and cancers. We want Canadians to succeed in their efforts to quit

smoking, but at the same time we want to ensure that there are minimal unintended consequences to themselves or fellow Canadians.

While we all want to see the rate of smoking decline in Canada, there is a hazard in allowing the freedom to select products that may prove to be personally harmful or harmful to others. We see unregulated e-cigarettes as a potential threat to health and a path to nicotine addiction for a new generation of Canadians. Allowing them to be sold with no regulation exposes the public to risks associated with inhalation of the ingredients, lack of product labelling, potentially unsafe manufacture and packaging, and accidental exposure of young children to toxic doses, to name just a few.

We're asking Health Canada to take steps to regulate e-cigarettes at the same level as other nicotine products to help reduce their potential for harm, but also to stimulate the type of research and development that could potentially result in a safe and effective new delivery option for nicotine replacement therapy, providing pharmacists and other health professionals an opportunity to support their optimal use.

Thank you for the opportunity to meet with you. We would be pleased to respond to your questions.

The Chair: Thank you very much.

Next up we have David Hammond, associate professor at the School of Public Health and Health Systems, University of Waterloo.

Welcome. Go ahead, sir.

Dr. David Hammond (Associate Professor, School of Public Health and Health Systems, University of Waterloo, As an Individual): Thank you very much.

I know you've heard from a lot of speakers, so I'm going to be brief. I'm a researcher. I've conducted research on tobacco products, and we're preparing a clinical trial on e-cigarettes. I want to focus on two issues today: I have some Canadian evidence that you may not have heard, and I'm going to try to provide some context to what you've heard from others.

I think it's clear that an e-cigarette is a drug-delivery device in the same way that nicotine replacement therapy is a drug-delivery device, and a cigarette is a drug-delivery device. What separates them is the mode of delivery and how they deliver nicotine. Cigarettes deliver nicotine via smoke deep into the lungs in a manner and at a dose that maximize addiction. As you've heard, it's not the nicotine that causes the cancer or most of the health effects but the chemicals released during burning in the smoke. As long as cigarettes produce smoke, there's very little or no possibility of reducing their harm.

The main difference between e-cigarettes and nicotine replacement therapy is that e-cigarettes deliver nicotine into the lung rather than using mouth or throat absorption. The consequence is that e-cigarettes are more rewarding to use—not as much as cigarettes are but far more than the patch and the gum are.

The abuse liability, the extent to which they're addictive, we don't know. They're almost certainly more addictive than the nicotine patch or gum are but also certainly less so than cigarettes are.

You've had a lot of discussion about health risks. Let me be clear: there's no doubt that vaporized nicotine inhaled into the lungs will pose a risk to users. We don't know the full nature of that risk, but we do know that this risk from e-cigarettes is many times less than the risk from smoking cigarettes. It could be 100 times less, or it could be 500 times less, but there's no doubt that e-cigarettes pose less risk than cigarettes do. The risk is likely to be higher than that associated with conventional NRT.

A lot of the debate has focused on the absolute risk of e-cigarettes, but this shouldn't obscure the fundamental issue. The public health benefit or harm from vaporized nicotine will not be determined by the absolute risk alone of these products but by how they affect cigarette use. There are three ways they can affect cigarette smoking. They may help people to quit. They may help sustain smoking among users, and they may promote uptake among youth. You have probably heard people argue both sides of that debate. The fact is there's evidence to support all three outcomes. We know that many smokers use vaporized nicotine e-cigarettes to get off smoking. There is evidence—it's not conclusive—from trials and other experiments that they may be an effective cessation aid.

When we asked Canadian smokers recently, we found that they are just as likely to say that they'll use an e-cigarette to quit smoking as they are to say they will use nicotine gum or a patch, and they are about twice as likely to want to use e-cigarettes as they are to want to use prescription medication. In countries like the U.K., smokers are using e-cigarettes more than other forms of smoking medications to quit, and that's despite the fact that those medications are widely available and subsidized in a way that they're not currently in Canada.

I would suggest that it's easy to overlook or to minimize the potential benefit of vaporized nicotine to smokers. Smokers are a highly marginalized group. They have disproportionately lower income; they're less educated; they have very little political capital. Most Canadian smokers have tried to quit, and half of them are likely to die if they don't stop inhaling smoke. There are 4.5 million of them.

In most of these policy discussions, smokers have received very little consideration. I'd suggest that this is unfortunate. I don't believe that it's melodramatic to state that for many hundreds of thousands or perhaps millions of these Canadian smokers that vaporized nicotine may be one of their better options for avoiding death through their addiction to cigarettes.

At the same time, we know that other smokers are using e-cigarettes in ways that sustain instead of reduce their smoking. About a third of e-cigarette users in Canada say that they use e-cigarettes for times when smoking isn't allowed. That can help

sustain their smoking when they might otherwise quit due to smoking restrictions at work.

In terms of smoking uptake, it's also true that an alarming number of youth are experimenting with cigarettes. Some recent data from Ontario and Quebec suggests that anywhere from 15% to 30% of youth are trying e-cigarettes. That includes virtually all youth smokers, but it also includes non-smokers. In Quebec, close to one-quarter of non-smoking 11- to 17-year-olds have tried e-cigarettes.

In terms of their rate of current use, which we define typically as use in the past month, that is quite low. Among non-smokers, it's usually somewhere around 1% in countries like the U.K. or the U.S. There's an exception to this. The Quebec study suggests that 4% of 11- to 17-year-old non-smokers were using e-cigarettes in the past month. That's about 24,000 kids in Quebec. So we have very high rates of experimentation. We still have relatively low rates of conversion to regular use among non-smokers, but that could well change as the technology in nicotine delivery improves.

● (1200)

I would suggest that in Canada we have a very large uncontrolled experiment with vaporized nicotine, and the course of that experiment is being dictated by marketing and unknown product design and specifications. That experiment should be dictated by regulation so it can be shaped in terms of public health. Ultimately, I would suggest that the public health benefit or harm from vaporized nicotine will be determined by how it is regulated.

I would suggest that the current regulatory framework we have in Canada is not viable. There is broad confusion among consumers about the risks of these products and what's in them. When we asked the cigarette users whether they have nicotine in their products, many did not know, and many were incorrect. We have a prohibition on e-cigarettes with nicotine in Canada that is not effective.

We recently went to four cities and about 80 retail outlets, and nicotine-containing e-cigarettes are widely available and accessible. Our best estimate is that millions of Canadians have tried e-cigarettes. The ban is not working. Current regulations have not prevented youth access to or use of either nicotine or non-nicotine e-cigarettes. These products that people are using have no product standards. When we purchased some e-liquid nicotine several weeks ago, we were told that it's okay, because a biochemist in Ottawa made it. I'm not sure about your biochemists here, but that doesn't constitute product standards.

I think it's clear that an illicit black market in vaporized nicotine will continue to thrive until smokers have access to regulated vaporized nicotine in Canada.

Finally, the current framework isn't well suited to the next generation of products. These products are going to blur the distinction between what is an e-cigarette and what is a tobacco product. In the handout, I have provided you with a picture of a Marlboro HeatStick, made by Philip Morris International, which is being test-marketed in Japan as we speak. The principle is the same: it uses vapour, but it's an actual tobacco product. What this means, as far as I understand, is that this product will be legal to sell in Canada under the Tobacco Act, but it will be vaporized nicotine that you're inhaling. This product is likely to be as harmful as or more harmful than most e-cigarettes on the market today, and it is quite simply illogical to allow a product to be sold that vaporizes tobacco relative to one that vaporizes nicotine.

I would suggest that we need a regulatory framework that is proportional to harm. It does not make sense that you can sell cigarettes in every corner store and gas station, but you cannot sell a vaporized nicotine product. As long as cigarettes are available for sale, I would suggest that adult smokers should have access to cleaner forms of nicotine, and that regulation needs to ensure that only adult smokers have access to these products.

I was part of a group to support FDA decision-making. We tried to come up with minimum standards, and I have provided some of those in your handout. As you've heard, some jurisdictions have gone further than regulating e-cigarettes as a tobacco product. I think you've heard about the U.K. system, which has licensed the first vaporized nicotine product as a medicine. I think there are regulatory options.

I would like to thank this committee for considering this issue, because it's a very important one to a lot of Canadians, and it has real potential to impact public health. Thank you very much.

● (1205)

The Chair: Thank you, and again, thank you to all the guests for taking time out of their busy schedule this week to appear before our committee.

Up first, we have Ms. Davies for five minutes. Go ahead, please.

Ms. Libby Davies (Vancouver East, NDP): First, to the witnesses, thank you for coming and also for waiting while we were dealing with committee business.

I think you all made excellent presentations. I think we've heard pretty well all of the witnesses so far—maybe everybody—say that we need to have regulations.

I would certainly agree with you, Mr. Hammond, that the current situation is so confusing. I've talked to people who use e-cigarettes. Their aim is to do something that's less harmful, but they actually have no idea what they're doing. Just as you pointed out, they don't know if they're using a product that actually has nicotine in it or not. It's not clear. So even when people are trying to do something for their own health, they're not sure if they are doing it. It's a pretty bad situation out there.

I think the difficulty is that on the one hand, people are saying, yes, regulate. On the other hand, a lot of witnesses are saying that we need more study; we need to look at this and this. So how do we proceed? Is there a way to proceed with some regulation, noting that further study is required? That's just one thing to think about, if any of you want to respond to that.

The second thing is with regard to nicotine. Dr. Fry asked a very good question a couple of meetings ago about nicotine and how harmful it is. We were told that basically low levels of nicotine, I think up to 18 milligrams, are no more harmful than caffeine.

Mr. Laliberté, you said that even small doses of nicotine are harmful. I don't know what you mean by "small", but it seems to me there is quite a big question around the whole use of nicotine. There are different opinions out there, so if somebody has any better evidence as to what levels of nicotine are....

First, is there a threshold? And second, is it possible to proceed with regulation while at the same time doing more study? In my opinion, those are not mutually exclusive. We need to do something. I don't think we can just agree to the status quo, because it's pretty bad.

I'd like to hear any responses to that.

Dr. Martin Laliberté: I'll use this occasion to answer your question about the danger of nicotine. In toxicology there is a principle that says it's the dose that makes the poison. Everything is poisonous; it's the dose that will actually do it.

You have to make a difference between chronic exposure to nicotine in low doses, as can happen in regular smoking, versus acute exposure to nicotine in adults and in children as well. Nicotine is a very powerful poison. It was used years ago as an insecticide, and a very effective insecticide, too. The concentration of nicotine sulphate that was in insecticide was actually much higher than what is currently available.

● (1210)

Ms. Libby Davies: But are there other doses, low doses, that, depending on how frequently used, are...? I mean, you sound like you're very anti-nicotine. That's fine, but are there other opinions that say low doses are okay and not harmful?

Dr. Martin Laliberté: In children, exposure to liquid nicotine is very, very dangerous. Exposure to only five millilitres of concentrated liquid nicotine preparation can actually bring a child to the hospital very, very sick.

Ms. Libby Davies: What about adults, though, who are smoking e-cigarettes that have some nicotine in them? This is all relative, right? Anything we eat or ingest can be harmful and so on. It's all relative. Where is that threshold?

Dr. Khara, perhaps you'd like to respond.

Dr. Milan Khara: Sure. I think you're looking for an answer to a simple question, when it's actually a much more complex question.

First, just for context, I think around six million people a year die from the use of cigarettes globally, and almost none of them, I would suggest, die from nicotine. They die from smoke. That's the first distinction to make. If we're talking about inhaled nicotine from cigarettes, that's almost certainly not the problem. The problem is the 7,000 chemicals in tobacco smoke.

Then there's the question about oral ingestion, which I think is partly being alluded to by my colleague here, and the levels of oral ingestion from nicotine cartridges that might be lethal. That's debatable. The threshold, I think we would all agree, is still somewhat contentious. The questions that I think you need to ask are what are the levels for oral ingestion, what are the levels from an electronic cigarette that are problematic, and what are the levels from tobacco? There aren't necessarily answers to any of those.

Ms. Libby Davies: I will ask you that, then: do you have any idea?

Dr. Milan Khara: Again, looking for numbers is very difficult.

I'm a little alarmed to hear nicotine being demonized, because we're talking about individuals who have already been using nicotine for three decades, and they're not going to die from it. They're going to die from smoke. If they switch to an electronic cigarette, it's not the nicotine that's the issue unless their children swallow the cartridges, and then that's a different issue.

The Chair: Ms. Adams.

Ms. Eve Adams (Mississauga—Brampton South, CPC): Mr. Chair, I'm going to pass my time over to Mr. Lizon.

The Chair: Mr. Lizon.

Mr. Wladyslaw Lizon (Mississauga East—Cooksville, CPC): Thank you very much, Mr. Chair.

Thanks to all the witnesses for coming to this committee today.

My first question is for you, Mr. Power. I just want to confirm that I heard you right. Did you mention that some of the liquids used in e-cigarettes contain glycol?

Dr. Barry Power: Some of the diluents used in some of the cigarettes are propylene glycol. It's a pharmaceutical diluent. It's used in injections and other pharmaceutical products. We don't know what the effects are of vaporizing it and inhaling it.

Mr. Wladyslaw Lizon: But what would be the purpose of someone using glycol in e-cigarettes?

Dr. Barry Power: It's the substance that the nicotine is dissolved in to help it be in a more dilute form so they're able to vaporize it and use it. It's similar to how you mix a drink and you put rum and Coke together. It's sort of the Coke to the nicotine. It's something that helps get it into your body.

Mr. Wladyslaw Lizon: Is there any indication of a potential danger to people?

Dr. Barry Power: We don't know that yet. That's one of the questions we have, and it's one that's posed in any of the literature you read about it: what are some of the long-term effects of inhaling the vapour itself? It is a cleaner form of nicotine delivery compared to cigarette smoke, but we don't know if it is really safe.

We'd prefer to err on the side of caution at this point, to make sure that people aren't unduly exposed to things that may be found to be problematic down the road after millions of people have been using it for prolonged periods of time.

Mr. Wladyslaw Lizon: Thank you very much.

The next question, through you, Mr. Chair, is for Mr. Khara.

You did say that people use e-cigarettes if they want to quit smoking. Now, from your practice, or maybe from some studies, how effective is it for smokers? Do they do it individually? Do they go to therapy that someone designs? How effective is that process?

• (1215)

Dr. Milan Khara: If the question is “how effective are electronic cigarettes as a cessation device?”, that's again a slightly complex answer, because there's a lot of anecdotal evidence. A lot of people will tell you that they have used electronic cigarettes to quit smoking. A lot of online surveys will also report that people are using electronic cigarettes to quit smoking, but if you look at trials that have compared electronic cigarettes to other evidence-based treatments to help people quit smoking, there's very little available.

Probably really only one randomized control trial of any rigour has been done, a New Zealand trial that suggested that electronic cigarettes were about as effective as a nicotine patch, but in that trial, both nicotine patches and electronic cigarettes were actually not very effective. But that's one trial and, for perspective, we can look at the thousands of trials that have shown that nicotine replacement therapies—patches, gum, and those kinds of treatments—are quite effective in doubling and maybe even almost trebling the likelihood of success.

I would suggest that there's an evidence gap even though there are some lower levels of evidence that electronic cigarettes can be helpful. The big thing that I think overlies all of this is that people like electronic cigarettes and people want to use electronic cigarettes. There is rapid growth in the use of these products, not in the way that nicotine replacement therapy is viewed, which is viewed with some lack of enthusiasm by people who are looking for an answer.

To answer your question, we don't really know how effective these devices are. That evidence is emerging.

Mr. Wladyslaw Lizon: On the other hand, with the advertising campaign that's going on, people who never smoke, especially young people, will try e-cigarettes. Apparently a lot of them do try. Do you know what percentage would get addicted to nicotine?

Dr. Milan Khara: I'm sure Dr. Hammond will have a comment on that, but I would suggest that it's the missing piece. We don't know what the conversion rate is. I think some of the early evidence would suggest it's not very high. There is a lot of experimentation, but it doesn't seem like many people go on to become regular users. Maybe it's a little early to fully answer that question.

Dr. David Hammond: I think it's difficult to say, because we have many different types of products, and generations of products; but the answer is, to date, that conversion rate is very low. We see a very small fraction of young people who try e-cigarettes go on to use them with any frequency. That is not to say that these products can't be addictive. The design of these things is rapidly changing, and the elements that may make them an effective replacement, substitute, or cessation product for smokers, may well make them more appealing for youth to try in the long term. It's not to minimize the risk at all. It's just that we haven't seen much conversion to date.

The Chair: Ms. Fry, for five minutes, please.

Hon. Hedy Fry (Vancouver Centre, Lib.): Again, thank you for waiting this morning.

I guess many of us are running out of questions, at least I am. Everyone we've listened to has been saying the same things. As Dr. Khara just said, there is a lack of evidence with regard to the ability of e-cigarettes to be effective as a smoking cessation tool. Another point is that we really need to look at the nicotine liquid in the hands of small children. At the end of the day, we've heard that everyone is saying, "Look, in the vacuum in which we now exist in Canada, let us at least regulate for safety's sake". I'm hearing that over and over and over.

What I would like to focus on however, is what one of the pieces of regulation would look like. Obviously, there would be measures for minors, keeping it out of the hands of children, etc. The point I wanted to talk about is what Ms. Davies touched on, which is potency. Should there be a limit to potency of the nicotine in the liquid?

I would also like to know if you think flavouring in nicotine liquid should be banned, because it really is an incentive for young people to like it and to want to use it, even if regulations are put in place to prevent them from getting it.

The potency is the piece I am a little concerned about. Why? We know that cancer and other harms, such as all of the tar and benzo[a]pyrene etc., are associated with cigarettes. Nicotine is still a very addictive substance. I am told that nicotine is as addictive as heroin, or that heroin is as addictive as nicotine. The two of them are on a par. The question of potency then becomes really important.

I just wanted to hear you expand a little bit on potency.

● (1220)

Dr. Martin Laliberté: My point of view is very particular on this subject. Being a medical toxicologist—and Canadian poison centres are handling acute exposures—what I am concerned about is the potential for liquid nicotine to cause harm, especially in children, because children under six years of age have a smaller body weight, and they are also very curious by nature.

What is it that they actually overdose on? They overdose on whatever they find in their environment, especially at home.

Tobacco products have been around for a long time, but everyone will realize that it is much more difficult for children to be exposed to a big amount of nicotine by chewing on conventional cigarettes. It's very likely they are not going to be able to chew more than just a little piece. It's completely different with liquid nicotine, which will

be absorbed very quickly. On top of that, if flavourings such as cherry or grape are added, we create a situation with a toxin that's very potent, a liquid preparation that could be absorbed through the skin or the gastrointestinal tract very rapidly, and a flavouring that makes the substance attractive to children. We might be seeing the stars align for a big catastrophe and the perfect storm to happen in the future.

That is my position.

Dr. David Hammond: You are absolutely right when you say that nicotine is highly addictive, but that's a function of the mode of delivery. When you deliver nicotine through the patch or the gum, so transdermally or orally, it's not very addictive at all. In fact, it has a very low abuse liability, and, as Dr. Khara said, most people don't want to use it. We have to encourage smokers to keep using it for the minimum amount of time.

E-cigarettes and vapour will likely fall somewhere in between. It's unlikely to be as addictive as smoke because it's all about the rate of delivery, the rate at which it gets into your bloodstream. Vaporized nicotine will fall somewhere between smoke and mouth or skin.

On the issue of concentration, you may know that the European Union has set a maximum concentration for nicotine in e-cigarettes. I would urge this committee to look at what's happened in the European Union and the U.K. because it's not as if a country has not tried to elaborate this regulatory framework.

Having said that, it's the user who controls the dose. You can have half the concentration and take twice the puffs or the inhalation. You want to make sure that it's not overly toxic per dose, but ultimately it might be a bit of a fool's errand.

On your last point about flavouring, 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.

The Chair: Thank you very much.

We're up to five minutes now.

Next up I have Mr. Young on my list.

Mr. Terence Young (Oakville, CPC): Thank you, Chair. I'd like to share my time with Dr. Lunney, if that's okay.

With what we've heard so far, the best endorsement that we've heard for e-cigarettes was today. We heard that they're basically better than death. That's the best endorsement we've heard so far. I wanted to tell you that because you weren't at our other meetings. It's not a great endorsement.

Dr. Laliberté, I would like to follow up your comment on the poisonous effects of nicotine. You said it was originally marketed as an insecticide.

My question is on whether a curious five-year-old or six-year-old could open up one of these things and drink the liquid nicotine and cause death.

Dr. Martin Laliberté: Yes. Clearly it's just a matter of time.

Most medical toxicologists were not in practice in the years when nicotine sulphate was actually used as an insecticide, but the older medical toxicology literature has many case reports of children dying after exposures to liquid nicotine. Of course, the concentration was very different. It used to be anywhere from between 24% up to 40%. We're down by a factor of about 10 with the preparations that are available now.

It's just a matter of volume. If a child ingests enough liquid nicotine, that child is at risk of dying and will likely die very quickly. Anything I can do to help that child.... But short of supportive treatment, there's really nothing I can do.

• (1225)

Mr. Terence Young: So a child who had drunk that liquid nicotine—

Dr. Martin Laliberté: —might die before reaching the hospital. There would be no possibility for me to clean his gastrointestinal tract. Supportive treatment is the same. We have no known good antidotes for nicotine.

That's a cause for concern.

Mr. James Lunney (Nanaimo—Alberni, CPC): Thanks, Terence.

The time is so short, but I will try to get a couple of questions in here.

We talked briefly about propylene glycol. The boiling point I understand is 188 degrees centigrade, but it has a flashpoint; at over 109 degrees, the vapour can be ignited. Propylene glycol is in all kinds of products, low-risk antifreeze, for example.

You can already see online how to convert your dry marijuana to be able to vape it this way. Kids can be using this odour-free form and toking up in front of their parents without the parents even knowing they're getting the hit of marijuana inhaled in this way—vaped.

But it's the whole list.... I want to ask your opinion on this because it's poison control.

Any medication out of a parents' cupboard could be ground up, powdered, similarly mixed with propylene glycol, and inhaled this way.

For poison control, are we not naive to think it will only be nicotine that we need to be concerned about with these products? Are any of you at the table concerned about that, and our pharmacy friend as well?

Dr. Martin Laliberté: I'm going to make a very short comment on that.

The potential toxicity, acute toxicity, of nicotine versus the toxicity of propylene glycol is completely different. What we're concerned about right now is the nicotine sulphate.

I'm not saying that it's impossible for young people, teenagers or young adults, to find creative ways of misusing the propylene glycol. Believe me, this is something that I deal with on a daily basis. They always seem to find a new way to get into trouble. However, if you compare the two, I mean, clearly the danger here is nicotine sulphate.

Mr. James Lunney: No, I'm talking about vaporizing anything here, Dr. Khara, and then combusting it. Who knows what breakdown products of any chemical you're likely to end up with?

Dr. Milan Khara: I don't believe there's any published evidence, at this point, about other substances being vaporized through the traditional electronic cigarette, but there's certainly lots of anecdotes about marijuana oil. So, you may well be right. This may well become a vehicle for other things, and we may have other considerations at that point.

But just to answer the propylene glycol issue, it's certainly used in lots of things, and the proponents of these cigarettes would say that we use it in lots of things and it's harmless. But nobody actually, I would suggest, knows the answer to what chronic inhalation of propylene glycol will mean. We'll get that answer in about 10 years, or whatever. Right?

Mr. James Lunney: Right.

So, that's a concern. Also, online, here, there's how to smoke weed in your e-cigarette, how to prepare it with the propylene glycol, and how to make your own mix very quickly. So, I think we're naive if we think it's only nicotine we need to be concerned about with this inhalation delivery mechanism. We know with medication, delivery mechanism makes a difference.

The Chair: Barry Power.

Dr. Barry Power: I think I would agree with Dr. Khara. It's something we need to be aware of and watch, but the nicotine is the bigger issue here in a lot of ways. We don't know what the effects are. So let's design whatever system we're going to design so that we can find out what the problems are that may be created by the inhalation of these products.

Mr. James Lunney: Okay, thank you.

The Chair: Thank you very much.

Well, we've had a condensed meeting today, but I think it was a good meeting nonetheless.

Again, I'd like to sincerely thank you for taking time out of your very busy schedules to help add input and content to our study. I wish you all the best.

I'm going to suspend for a few minutes. We will go back into camera and discuss more committee business.

[Proceedings continue in camera]

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