HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Health

HESA • NUMBER 041 • 2nd SESSION • 41st PARLIAMENT

EVIDENCE

Thursday, November 6, 2014

Chair

Mr. Ben Lobb

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● (1100)

[*English*]

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

We're continuing our study on e-cigarettes. A lot of great information was provided at our last meeting. Hopefully, we can continue that.

We have two panels here today. The first panel is Dr. Gaston Ostiguy, who will be presenting for the first hour.

Dr. Ostiguy, the floor is yours.

Dr. Gaston Ostiguy (Chest Physician, McGill University Health Centre, Montreal Chest Institute, As an Individual): Thank you, Mr. Chairman, and thank you very much for the invitation.

I didn't realize that there was such an impressive assembly.

[*Translation*]

Good morning.

I will be giving my presentation in English, but I believe simultaneous interpretation is available.

[*English*]

I was told I was the only speaker for the first hour. I have material to go beyond my 10-minute limit. If it's too long, you'll just have to stop me. I have lots of material I'd like to go through, if possible.

You can see the damage that is caused by smoking, both in terms of cancer and other non-malignant diseases. You know as well as I do that this year, 2014, is the 50th anniversary of the first surgeon general's report, so it's a great year for smoking cessation and for knowledge on smoking.

Everybody talks about lung cancer related to cigarettes, but there are at least 11 different cancers that are related to tobacco smoking. People very often forget this, and even physicians forget to tell their patients about this. We realize that when something is put in the surgeon general's report, it's usually extremely well documented.

You see on the right-hand side of the slide, the damage caused by tobacco smoking and on the left-hand side you can see the damage that could be related to e-cigarettes. It's addiction. If you have a teenager and he wants to start smoking, what would you tell him to do: use alcohol, marijuana, different drugs, drink beer, or risk getting addicted to nicotine?

Smoking tobacco kills, but nicotine does not. This is very well accepted in the medical milieu. Nicotine doesn't cause cancer. It doesn't cause cardiovascular disease. It doesn't cause pulmonary disease.

When I was more active in clinical practice, we used to see about 200 to 225 lung cancer cases a year. Since the average lifespan of these people is two years, there was a renewal of the clientele quite often. Nicotine causes addiction. When I was a medical student, I was very impressed. In those days, physicians used to go to play golf on Thursday afternoons and the whole hospital was left in our hands. On a nice August Thursday afternoon, between 3:00 and 3:30, I was called to certify the death of three men dying from lung cancer. I said, “This doesn't make any sense. We have to do something about it.”

It would be rather naive to think that all smokers want to stop smoking, that all smokers will be able to stop smoking. When you have a patient who is on welfare because he's lost his job because of cough syncope, and he doesn't have any money to pay for any medication because he's used the 12 weeks of medication paid by the RAMQ, and he goes on the sidewalk and picks up butts of cigarettes to smoke, this is more than a habit, it's an addiction. These people have difficulty stopping smoking.

For some smokers, let's say in palliative care units, is it really worthwhile to stop? I just saw the wife of a patient who's dying of mesothelioma. He is running into difficulty when he smokes within the hospital, but he's going to die within a few weeks. What about the prisons? What about the CHSLD and psychiatric units? Even the best clinical studies at the moment rarely have a success rate of more than 30% during one year.

● (1105)

People realize it's very easy for physicians and health professionals to prescribe a recipe to help people stop smoking, but smokers are not all the same. Some can stop on their own. Lots of them—70% of smokers—over their lifetime will stop smoking cold turkey by themselves. Some others can stop fairly easily with a little help. Minimal intervention and standard pharmacotherapy are usually prescribed.

But in my clinic, the mandate we've been given is to look after hard-core smokers. These people are very addicted. They're referred to us by physicians. They have medical comorbidities, they've tried many times to stop smoking, they haven't been able to, and it's part of their treatment to stop smoking. Very often, these people have other physical and psychiatric comorbidities and other addictions, whether to alcohol, drugs, or marijuana.

The medication we have nowadays doesn't provide the kick that the smoker gets when lighting a tobacco cigarette. Within eight to ten seconds, the nicotine goes to the nicotine receptors in the brain to make the smoker comfortable. The receptors produce an electrical current going to the front part of the brain to produce neurotransmitters, so that the smoker feels great. He feels comfortable because of the serotonin, the dopamine, the monoamine oxidase inhibitors.

We are really trying to approach the smokers individually. Very often, when I lecture on this subject, I have a slide that says "personalize, personalize, personalize". Even if a smoker tells you that he smokes 20 cigarettes a day, if you measure the creatinine, which is the metabolite of nicotine in the blood, you see how different it can be. It's just like shooting with a 12-calibre gun. You must not approach all the smokers the same way. They have to be approached personally, individually.

At the moment, we have a lot of medications available, in at least three main groups: nicotine replacement therapy; bupropion, which commercially is Zyban; and Champix. But even with these medications....

We are very impressed by the word coming from the Mayo Clinic. They also personalize their approach to the smoking patient, and they and we very often prescribe "off label", as we call it. You have the inhalers, which provide the patient or smoker with a dose of nicotine much faster than the patch or the gums or the lozenges. We try to approach the sensation the smoker gets when he lights up a cigarette. You see the last one that has been on the market in the next slide on the right-hand side at the bottom: the electronic cigarette, which is certainly the thing that comes closest to the tobacco cigarette in terms of nicotine delivery.

If you want a patient to stop smoking, you have to maintain him in his comfort zone. If you go below that comfort zone, he is going to have cravings and develop withdrawal symptoms. The withdrawal symptoms are numerous and extremely frequent. I don't have the time to go through this, but if you really want to be successful, you have to maintain your smoker in a comfortable zone.

You've probably heard about SNUS, which has been extensively used in Sweden for the last 25 years. It's tobacco in a little pouch that you put inside your mouth, and it delivers nicotine. Sweden has the lowest rate of lung cancer in the world and probably the lowest rate of smokers in the world, at 12%.

This is not new stuff. I was in Alaska last spring. You see in the slide the words, "Give me enough SNUS...and I'll build you a road to Hell". So it has been on the market, and it has been there for quite a long time.

The next slide shows a picture—you have probably seen them—of the third model of the e-cigarette. At least in Montreal, this is probably the e-cigarette that is used most frequently. The next slide shows the kit that they buy; along with the e-cigarette, it has the electronic hardware and the e-liquid. The e-liquid essentially contains nicotine at different concentrations, plus propylene glycol, vegetal glycerine, and of course also different flavours to make it pleasant.

● (1110)

The patients who have switched to the electronic cigarette have to choose the proper flavour, because some of the flavours are irritating to their throats. When people light up a tobacco cigarette, it is pleasant for them to smoke, so if they want to use the electronic cigarette it also has to be pleasant.

You have different e-cigarettes available, up to the fourth generation, and their use is something that is growing and developing so rapidly that it's even difficult to keep track of what is on the market. I won't insist on this, because it has probably been already shown to you, but this is the battery, the coil, the little electronic piece that lights up the battery, and so on.

As you probably know, the e-cigarette was invented by a Chinese pharmacist in 2003. His father died of lung cancer. It's really a tsunami. In 2013, it has been calculated that there were 7 million users in Europe—1.5 million users in France. There has been a drop in the sale of tobacco cigarettes in France of 7% between December of 2012 and 2013. No medical intervention, no health professional intervention, no program has ever had such a success. It's the same in England and the United States.

The sale of nicotine replacement therapy is going down in England. The e-cigarette is rarely used by those who have never smoked—less than 1% to 1.5%. It increases smoking cessation attempts. They have excellent data coming from Britain and France, and in England it is considered a consumer product.

Facts and factions—this comes from John Britton's paper. Is the e-cigarette safe? This is certainly one of your concerns.The ambient level of nicotine in the expired vapour is 10 times lower than the second-hand smoke from tobacco cigarettes, 3.3 micrograms compared to 31 micrograms. There's no combustion, no CO, and, of course, in our clinics for the patients using the e-cigarette we measure their alveolar CO. It's always below 8 or 9, like you find in the general non-smoking population.

Yesterday, my nurse was a bit surprised because they measured the alveolar CO in a patient who had just had a pulmonary function test. When you do a pulmonary function test, you measure the DLCO, and we use CO to do that. So when she came to the clinic and we measured the alveolar CO. It was higher, it was 12. She was very surprised and very embarrassed by this and she swore that she was not smoking. So you have little tricks like this.

Toxins are well below concentrations in cigarette smoke, 9 to 450 times lower, and sometimes at concentrations comparable to levels found in nicotine replacement therapy, because the nicotine used in the liquid and in nicotine replacement therapy comes from the tobacco leaf and, of course, you are prone to have some impurities and some contaminants. This is why it has to be regulated, but we'll come to that later on.

Is it a gateway to smoking? Is it an incentive for ex-smokers to relapse? At the moment, we don't have any evidence for that, though I must admit that our follow-up hasn't been long enough to provide you with some information about this. But when you read the literature about it, one thing that is very deceptive is the fact that very often they ask kids whether they've tried the e-cigarette. But trying is not necessarily adopting it.

In England, current users in non-smokers represent 0.2%. With regard to children, 98% will never smoke and never try the e-cigarette. Since the advent of the e-cigarette, the percentage of young tobacco smokers keeps falling, from 14% to 12% in the United States and from 43% to 22% in Paris.

What is our experience at the Montreal Chest Hospital, which is part of the McGill University Health Centre? I was working on the site of the University of Montreal before I was asked to work over there. When I was asked, I was given two mandates. There was nobody trying to help the patients of the McGill University Health Centre stop smoking. We covered the Royal Victoria Hospital, the Montreal General Hospital, the Montreal Chest Hospital, even the Jewish General Hospital, St. Mary's, the Montreal Children's Hospital, and the Montreal Neurological Institute.

● (1115)

We don't take any smokers coming from the street, working at Place Ville Marie or Bell Centre and so on. We see people who are ill. They've been told by their doctor that they have to stop smoking. It's part of their treatment. It's very important. These people have tried many times and have been unsuccessful.

We've seen more than 143 people, but these are 143 new patients who have come to our clinic over the last year. They've never been seen before. For these statistics, I have excluded the cases of relapse. Some were seen two or three years ago, and they relapsed to smoking tobacco cigarettes and they're coming back to us.

It's slightly more frequent in females than in males. With 69% of these people it was not recommended necessarily that they use the e-cigarette. We had 31% who wanted to try the e-cigarette. Very often nowadays they come to the clinic and they have already bought the e-cigarette. They come to us to get some information, to know how to use it and so on. In mean age, men are slightly older. The number of cigarettes per day is about the same. We measure the cotinine at the first visit, and it's slightly higher in females than in males. It's better to flag a strong score, to measure the dependency, the addiction to tobacco.

Now if I look specifically at the new patients and relapsing tobacco smokers, there were 69 of these patients who had been referred to us, all hard-core smokers. At the moment, we have 35 who have been totally abstinent from tobacco, and this has been confirmed by the measurement of the alveolar CO and the measurement of the cotinine in the blood. We have 25 dual users of e-cigarettes and tobacco cigarettes, six failures, and three patients who were lost to follow-up, as happens in any type of research.

What kind of comorbidities do we have? There is COPD, and certainly asthma. I work at the Montreal Chest Institute, so it is no surprise that most of our patients suffer from COPD or asthma. We have coronary heart disease, cancer, diabetes, and mental health problems. Very often these people have been admitted for depression. They've been looked after by a psychiatrist. They are still taking psychoactive drugs. It's very frequent in this population.

Among the dual users, 8 out of 25 people were smoking more than 30 cigarettes per day at their first visit, and we had a champion who was smoking 75 cigarettes per day. This guy now has been given his diploma for being one year abstinent. He doesn't smoke any cigarettes anymore. These people have tried to stop smoking six times on average, and 8 out of 25 patients are very often down to two to three tobacco cigarettes per day. We would call that harm reduction.

Despite the controversies, it is clear that the electronic cigarette is far less hazardous than tobacco cigarettes. Smokers smoke primarily for the nicotine, but they die primarily from the tar, combustion of tobacco.

What advice should a clinician—because I deal with my colleagues—give to their patients? E-cigarettes are still not our first approach. We encourage all smokers to quite smoking by using evidence-based medicine and behavioural support in the first instance.

There are two basic principles to help people stop smoking: pharmacotherapy and counselling. It's lifestyle. If they had adequate trials of the standard quit-smoking approach and failed to remain abstinent after many attempts, we suggest that they try the e-cigarette, ideally in conjunction with behavioural support. When we enrol a patient in our clinic, he's followed for at least 12 months.

● (1120)

There is an urgent need to regulate e-cigarettes because consumers need to know what they're buying, and whether they're buying a good product. We have no way at the moment to know this.

It's also urgent because as one of my colleagues, Dr. Juneau, at the Montreal Heart Institute, says, “If I see a patient admitted for myocardial infarction, and I tell him he should try..., he answers, 'Well, after five or six times I haven't been successful. Please, Doctor, don't bother me with this.'” We know that if a patient with myocardial infarction stops smoking, his risk of having another cardiac accident is diminished by 50%.

If we look at COPD patients, we know that if they do stop smoking tobacco cigarettes, it will reduce hospital admissions by 40% and visits to the emergency department by 40%. It's great for them, for their health, but it's also great for the finances of the medical programs. A lot of money could be saved by this.

Also, e-cigarettes need to be properly labelled with proper warnings: childproof bottles, graduated bottles, or graduated e-cigarette reservoirs. Some of them are available now on the market, but most of them are not. When we ask the patient what the concentration of nicotine is in his e-liquid and how many millilitres he is using, very often it's difficult for him to tell us. You could easily transfer or calculate how many cigarettes it would correspond to.

Of course, it should be taxed just like the tobacco products. But it should be sold in specialized, accredited shops—not everywhere, not in the depanneur, not in the gas station. Because it is not that user-friendly. Especially people with less education, who are getting older, have difficulty learning how to use it properly. This is our experience. We have very many patients who come to the clinic, who don't use their e-cigarette properly because they don't know how to use it. They know how to fill the reservoir and so on. They don't know how to calculate the number of millilitres of liquid they're using. They have to be trained how to use it.

We should also provide a large range of nicotine concentration. The European Union suggests not to deliver more than 20 milligrams per millilitre of nicotine. As you saw, if somebody has nicotine in his blood of 700, it's not 20 milligrams per millilitre in his e-liquid that is going to keep him in his comfort zone.

Keep the flavours, but not flavours attractive to children. One of the reasons that the e-cigarettes are successful is because they taste good. When people smoke tobacco cigarettes it's also because they taste good.

It should be allowed in certain public places, such as prisons, palliative care units. Allow exhibits in specialized shops and instructions to users. Also, we should promote it as a harm reduction tool.

This thing is growing up so fast. This is one of the latest e-cigarettes. It looks very much like a package of cigarettes. If you open it, you get a little gadget that will allow you to inhale nicotine. The owner of this new electronic cigarette is British American Tobacco.

Of course, probably many of you have these new machines for coffee. This is the Ploom. It looks very much like the stuff you use to make your tobacco in the morning. This is going to be very popular also.

In conclusion, e-cigarettes can save many thousands of lives. It's been calculated to save 6,000 lives per year in Great Britain, 430,000 per year in the States, and 800,000 per year in China. It has to be regulated, but its availability must not be made more difficult than buying tobacco cigarettes in any depanneur or gas station.

Mr. Chairman, if people want information, I have never seen any books written on e-cigarettes in English, but there are two publications in French that can provide you with lots of information on e-cigarettes. They're written by chest physicians or specialists in smoking cessation.

Thank you very much for your attention.

● (1125)

The Chair: Excellent. That was a great and thorough presentation. Thank you very much, Doctor.

First up we have Mr. Morin. Go ahead, sir.

[*Translation*]

Mr. Dany Morin (Chicoutimi—Le Fjord, NDP): Thank you, Mr. Chair.

Dr. Ostiguy, I have a number of questions for you.

In your presentation, you said that, except for the e-cigarette, stop smoking aids have a success rate below 30% at 1 year, according to the best clinical studies. My understanding is that you are currently conducting a study to determine the success rate among e-cigarette users.

Your study aside, is there any other scientific research showing similar results?

Dr. Gaston Ostiguy: Very few studies have been done because it is such a fast-changing area. A doctor in New Zealand, Dr. Bullen, conducted a study that showed that e-cigarettes were as effective as nicotine replacement therapy. What we're seeing two or three years down the line with nicotine replacement therapies, especially over-the-counter ones, which are available without a prescription or any counselling, is that they are not very good.

It will be necessary to rely on retrospective studies, with all the limitations and biases associated with them. I don't think we have any other choice given how quickly this market is changing.

In fact, I was recently asked to be part of a prospective study. I said no because I didn't think it would be ethical. It would be unethical of me not to let a patient use an e-cigarette immediately following a heart attack or a 10-day stay in hospital for chronic lung disease exacerbation. In those situations, a patient can be allowed to smoke a nicotine-free e-cigarette—they do exist—or even a placebo electronic cigarette.

It will be necessary to rely on retrospective studies. If we manage to conduct a study on a significant number of patients and everyone arrives at the same findings, I think it would be reliable.

Mr. Dany Morin: Very good.

You said there were three types of smokers. Can all three benefit equally from e-cigarettes?

Dr. Gaston Ostiguy: Many people are able to quit cold turkey, in other words, overnight without any medication. Patients are asked whether they smoke, and they say no. They are then asked whether they used to smoke, and if so, how long ago they quit. These types of smokers tell us that they quit overnight, just like that, 25 years ago.

They do not see a doctor for help quitting. They just quit like that. Figures show that, over a lifetime, about 70% of smokers will quit.

Mr. Dany Morin: We learned that 450 types of e-cigarettes are currently on the market, not just in Canada, but also around the world. Types vary and so do manufacturing methods. We were told that cases had been reported of e-cigarettes malfunctioning, where the device had overheated.

If a substance such as propylene glycol becomes overheated, causing its chemical composition to change, does it pose a health risk? I ask the question because Canada currently has no regulatory framework in place. What's more, people do not realize that the quality of the mechanism varies from one e-cigarette to another.

Dr. Gaston Ostiguy: That is precisely why regulations are needed. Licensed stores with staff who are very familiar with the products should be allowed to sell e-cigarettes. Health Canada should conduct a check to confirm that the store is selling high-quality products that work properly.

People are so afraid of propylene glycol, but when they go to a rock concert, the smoke surrounding the guitar player or singer on stage is actually propylene glycol.

Propylene glycol attracts humidity. If you were to smoke an e-cigarette in the Sahara Desert, it would not produce any vapour because of the lack of humidity. E-cigarettes need humidity and attract water molecules. That is why the vapour never travels very far and falls just a few feet from the vaping device.

● (1130)

Mr. Dany Morin: Very good. Thank you.

Dr. Gaston Ostiguy: I quite like the comment that a movie star made when she was being interviewed in a studio in New York. The interviewer asked her whether the substance she was breathing out was harmful.

[*English*]

She answered, “I'm only humidifying your studio, sir”.

[*Translation*]

Mr. Dany Morin: Thank you.

I was a bit surprised by one of your statistics.

People who don't smoke conventional cigarettes are not very likely to smoke e-cigarettes. In our discussions with other witnesses, a fear emerged that if we were to open the floodgates, so to speak, to e-cigarettes, vaping, or smoking, in restaurants and other such places would become normal. Given what you know about e-cigarette use, do you worry that it could lead to the normalization of smoking?

Dr. Gaston Ostiguy: You mean vaping.

Mr. Dany Morin: Yes, vaping. Thank you.

Dr. Gaston Ostiguy: I would be lying if I said I wasn't somewhat concerned about that. That is why e-cigarettes should not be sold to anyone under the age of 18. Young people must not be encouraged to become addicted to nicotine. We would not tell a patient to drink beer or to drive their car at 150 kilometres an hour. We want the product to be made available, but only to those above 18 years of age. Let's not fool ourselves either. We know that a lot of young people today start smoking tobacco cigarettes when they are 12 or 13, in spite of all the restrictions out there.

In France and England, however, people have been using e-cigarettes for 7 or 8 years now. And the statistics show that non-smokers in England account for less than 1%—in other words 0.5% —of total e-cigarette users. And in France, that figure is between 1% and 1.5%. So we are talking about a very small number of people.

Mr. Dany Morin: Just quickly, I have one last question for you. Do you think e-cigarettes should be sold in pharmacies?

Dr. Gaston Ostiguy: There is an important point I would like to make about that. Not medicalizing e-cigarettes is critical. It's hard enough for a patient to get an appointment with their doctor. So I think it would be a mistake to force people to go to their doctors to get a prescription for an e-cigarette. I have no problem with e-cigarettes being sold in a pharmacy, but there again, the availability of time comes into play. We deal with a certain number of shops in Montreal where the staff seem to take what they do seriously because they take the time to explain to smokers how to use e-cigarettes properly. Will pharmacists always have the time to do the same? There are no guarantees. It is not a big mystery. An expert or a doctor doesn't have to be the one explaining how to use e-cigarettes. It can be handled just fine by someone who takes the time necessary to provide the information.

Another very important thing to remember is that hard-core smokers need access to some consultation. Unfortunately, how many of our patients, when buying e-cigarettes today, are told by the salesperson not to use the product while chewing gum, sucking on a mint or lozenge, or wearing a nicotine patch because it's dangerous? The nicotine receptors in a smoker's brain are much smarter than any healthcare professional. When a person gets too much nicotine, they don't feel well, they become sick to their stomach, they sweat and they experience palpitations. They feel the effects very quickly.

[*English*]

The Chair: Thank you.

Ms. Adams.

Ms. Eve Adams (Mississauga—Brampton South, CPC): Thank you very much for joining us here today, Doctor.

[*Translation*]

Dr. Gaston Ostiguy: Thank you.

[*English*]

Ms. Eve Adams: I found your presentation very detailed and very practical.

Just to reiterate, you are currently a practising physician?

Dr. Gaston Ostiguy: Yes.

Ms. Eve Adams: We've been tasked with undertaking research into e-cigarettes, whether or not they ought to be made available in Canada, and submitting some proposed public policy recommendations as to how we might go about regulating it most effectively.

I want to thank you for your time in coming before us today to make some of these recommendations.

You had some very practical recommendations, one of which was to make e-cigarettes as available as cigarettes because you believe e-cigarettes lead to smoking cessation. Correct?

● (1135)

Dr. Gaston Ostiguy: Yes, or harm reduction, both.

Ms. Eve Adams: This is as opposed to becoming a gateway where people try e-cigarettes, get used to the habit, socialize with it, and then develop a full cigarette addiction.

Dr. Gaston Ostiguy: Yes. Again, we need to have some retrospective long-term studies to show that using the electronic cigarette does not lead to a relapse to tobacco.

We don't have any evidence for this, and if we look at the European literature, the European experience, it hasn't been so.

Ms. Eve Adams: We do. We actually have that in Poland. They have an example where having e-cigarettes available has led to new uptake of combustible cigarettes but that seems to be an outlier. We don't seem to have any other evidence. That's why I'm asking if you are aware of any other evidence.

Dr. Gaston Ostiguy: No.

I think Poland is probably the only country that has reported such a thing. But if you look at the French experience, the Scandinavian experience, the British experience, which is extremely well documented, this hasn't been their experience.

Ms. Eve Adams: Doctor, you made some recommendations that if e-cigarettes were to be regulated in Canada you would recommend that there be some gradients on the e-cigarette itself so that people can understand how many cigarettes they're smoking. What level of nicotine and what other recommendations would you have to offer?

Dr. Gaston Ostiguy: Again, when you see a smoker, of course you evaluate him and you ask him how many cigarettes he smokes. To give you a proper idea of the number of cigarettes he smokes, we measure his alveolar CO. If somebody comes out of the clinic with CO of 12 ppm or 18 ppm he will not be given the same concentration as somebody who comes in with 45 ppm CO in his alveolar air. You know that from the rules in the workman's compensation board, if you go over 50 ppm in a shop the CSST would close the shop.

Ms. Eve Adams: Are you suggesting doctors serve a parallel system then, where somebody would come in and meet with their physician regularly and under the advice and monitoring of their physician they would end up eliminating their addiction to nicotine, and then there would be a separate parallel system where e-cigarettes would be available at specialty shops as you mentioned or as readily available as cigarettes currently are in convenience stores?

Dr. Gaston Ostiguy: Well, of course, in our experience we use it to help people to stop smoking and for harm reduction. But again, tobacco cigarettes have been on the market for years and no new government has ever been able to ban the sale of these cigarettes. I think that nobody thinks it's going to be possible. So tobacco cigarettes are always going to be there.

If we have to be realistic and say that you will always have a certain number of smokers in the country, it is certainly going to be less harmful for them to use the e-cigarette than the tobacco cigarette because nicotine, like I said, is not harmful to your health. I mean, is it really worse than coffee? Are you going to close all the Tim Hortons shops? Probably in terms of physical effects on your cardiovascular system it's not much different from coffee and nowadays you see everybody coming to work with a cup of coffee in their hands and we don't care about this, really, at the moment.

Ms. Eve Adams: A gallon of coffee sometimes....

Sorry, again, I'm just putting this out there to understand your opinion and your recommendations. If Canada were to move forward and regulate e-cigarettes with a nicotine content, for instance, make it available at convenience stores only to those 18 years of age or over, only to those with ID as we currently do with tobacco, what would you propose that we do with e-cigarettes that do not have nicotine currently?

Dr. Gaston Ostiguy: There have been some studies, and this is also our experience, that for some people the ritual of smoking, the blowing out of some vapour, is very important for them.

Yesterday I had a patient who had a cerebral haemorrhage. She had neurosurgical surgery. She walks with a cane. She wants to stop smoking to preserve the integrity of her vessels and she doesn't want to use the electronic cigarette with nicotine. But in the past she already bought the e-cigarette without nicotine and it was helpful in her case. So along with nicotine replacement therapy she wants to use the electronic cigarette without nicotine. There have been some publications, and I don't have the reference offhand, showing that the ritual of smoking is also very important for people...to vape or to smoke.

As long as the flavours are innocuous also.... This is one thing. We don't have much information about the flavours. But they need to be there because this is what makes the e-cigarette appealing and usable. We have to have some control over this to make sure that the flavours are not dangerous.

● (1140)

Ms. Eve Adams: Do you have any suggestions in terms of ensuring that those who are under 18 don't get their hands on e-cigarettes even if they do not contain nicotine?

Dr. Gaston Ostiguy: If we look at the experience of tobacco cigarettes, we should at least apply the same rules for e-cigarette in terms of selling e-cigarettes to people under the age of 18. But you know as well as I do that it hasn't always been that successful and that easy to apply.

But again, if you select a certain number of reliable shops and then you make sure that these people don't sell any products to minors.... We are aware of some of these shops where our patients are going and the owners are assuring us that they're not selling any e-cigarettes.... They ask for identity cards before selling e-cigarettes to these people when they look too young.

The Chair: Ms. Fry.

Hon. Hedy Fry (Vancouver Centre, Lib.): Thank you very much, Doctor. I just wanted to ask you a couple of questions.

We heard from other witnesses that there isn't sufficient—and I recognize that at the hospital you are at, you are doing some of this clinical research work yourself—evidence of the efficacy of e-cigarettes as a harm reduction technique. They say they think it is, but there isn't enough clear research. That's the first question. Do you believe there is clear research? Do you believe this constitutes clear research, or should there be more research done?

We've also heard that there is one major danger of e-cigarettes in the home. The liquid can be highly poisonous to children if it gets into their hands. That's the second question. What would you suggest —other than telling parents to take care, and we know how parents leave bleach and all kinds of things that are household hazards for their kids—to diffuse that poison risk or bring down the poison risk? What do you think of the research to ensure that this, in fact, is an efficacious form of either quitting or helping people to quit, or harm reduction?

Dr. Gaston Ostiguy: If you talk to almost any clinician like the ones who have been writing these books, if you think of the experiences of Dr. West and Dr. John Britton in England, they have much more experience with e-cigarettes than we do.

I could tell you some success stories. I have a patient with emphysema and he could hardly walk a block without stopping. He used to be in the construction business. He had to stop two or three times when walking from his car to the clinic. He used to come to the emergency three or four times a year because of exacerbation of his emphysema. He was admitted about once a year. He was taking prednisone and antibiotics every two months. We gave him Zyban, Champix, patches, gum, and lozenges. I did not invent that recipe. If you look at the publications coming from the Mayo Clinic, Dr. Hurt over there is doing those sorts of things. We were unsuccessful. So last October....He was our first patient and he was smoking more than 75 cigarettes a day. He switched to the e-cigarette and now he is still on the e-cigarette at a nicotine concentration of about 5 milligram per millilitre. He has had no exacerbation of his COPD this year, no antibiotics, no cortisone, no admissions to the hospital, no visits to the emergency. Now he has taken one of his rooms to build himself a gymnasium to exercise.

These are the types of success stories that we have, so it's difficult to say that it doesn't help people to stop smoking, and it doesn't help people to improve their health.

I had this young lady who was an asthmatic. She had not jogged for five years and she was on inhaler medications. She started to use the e-cigarette and when she came to the clinic, she didn't want to tell her chest physician that she stopped all her pumps, but she did and she has resumed jogging.

We have patients who have switched to the e-cigarette, even if they haven't stopped completely using tobacco cigarettes—like I said before, many of them are only smoking two or three—but they are planning to stop eventually. All of them, 100%, are feeling better.

However, to carry out prospective studies, especially with hard-core smokers, to tell you the truth, I think it would be unethical at the moment with the experience that we and other clinicians have about this. We have to rely on well-documented, retrospective studies.

● (1145)

Hon. Hedy Fry: I want to ask you about liquid nicotine and kids.

Dr. Gaston Ostiguy: If you do provide nicotine in childproof bottles, you cannot even get your nicotine solution with a syringe because it's like a dropper. Children will have extreme difficulty to get intoxicated with nicotine. Christopher Columbus brought nicotine to Europe in 1492, so it is a product that has been on the market a long time. I don't think there's any substance that has been as well studied as nicotine.

Hon. Hedy Fry: Thank you.

The Chair: Thank you very much.

We're going to go to Mr. Lizon now for seven minutes.

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

Thank you, Doctor, for coming here this morning.

I would like to hear clarification from you. You did mention in your presentation that smoke in cigarettes kills people, that's the main cause of lung cancer. Lung cancer is the leading cancer among Canadians, which is a reason for concern. Nicotine does not kill, but can you clarify for me, is there a negative effect of using nicotine in any form on the human body?

At the last committee meeting we had people here who work in the toxicology field. They made a presentation before the committee and spoke a lot about how toxic nicotine is and how strong a poison it is. Is there a negative effect of nicotine in any form on the human body?

Dr. Gaston Ostiguy: It doesn't cause cancer, never caused cancer, I never saw any cancer related to the use of nicotine by itself, and it doesn't cause any pulmonary problems.

The cardiologists tell us that the use of nicotine could slightly increase the heart rate and slightly increase the blood pressure. It's minimal and for them it's not significant compared to the use of tobacco cigarettes.

I cannot tell you that nicotine is completely innocuous in terms of health effects, but the product by itself has so little effect on human health. In the second slide I showed you see the list of diseases related to tobacco smoking and the only thing that is related to nicotine is dependency or addiction.

Mr. Wladyslaw Lizon: On treating nicotine addiction, you mentioned that it should be personalized and everybody is different. I think this applies to any addiction, whether it's an alcohol addiction or a drug addiction. We have centres all around the world that treat people with different addictions. Is there a standard way to treat people addicted to smoking, or is this something that different doctors would try different ways of approaching? If it is, what role will e-cigarettes play in the process of treating the cigarette smoking addiction?

● (1150)

Dr. Gaston Ostiguy: There are two basic, principal issues.

If you look at even the third edition of the American guidelines on how to treat smoking addiction, there are two basic principles: pharmacotherapy and counselling Very often, if people really want to stop smoking and have made many attempts in the past and have had lots of difficulty stopping, you should use these two approaches. But again, I'm a bit disappointed and discouraged to see how.... It's so easy to use a standard recipe for everybody, but this is why it's so unsuccessful at the moment: they don't adapt.

For example, the main cause of failure, in my experience.... I've been doing this for quite a few years now, as you know. I have been involved in the tobacco business since 1975 and am one of the founding members of the Canadian Council on Smoking and Health. In our experience, the main cause of failure of nicotine replacement therapy, for example, is that people don't start at a high enough dose of nicotine replacement.

Even nowadays, smokers remove their patch to light up a cigarette. If they cannot resist lighting up a cigarette while they're wearing the patch, there's only one reason: it's that they're not getting enough nicotine. People are not using combined therapy. The patch will provide the smoker with a constant concentration of nicotine, but it will never provide the kick that the brain is asking for when the smoker lights up a cigarette.

We've been trying to approach some medications that will deliver nicotine much more quickly. We started with the gum, then went to the lozenges. But nicotine is absorbed by the mouth and goes through the venous system, not the arterial system, which goes right the brain when people light up a cigarette.

And then you have the inhaler. There is one inhaler at the moment that is providing the patient a fairly high concentration of nicotine and fairly quickly—less quickly than the tobacco cigarette, but again, much better than the gums and the lozenges or the other forms of inhaler.

As you know, the nasal spray of nicotine is not available in Canada, but it has been used in Europe and in the United States.

What comes closest to the tobacco cigarette, in terms of delivering nicotine to the brain, is the electronic cigarette.

This is very important, because the smoker needs to have that kick to be satisfied and to remain in his comfort zone.

I don't know whether that answered all your questions.

Mr. Wladyslaw Lizon: There was a question asked on whether or not e-cigarettes can be a gateway to smoking for young people, and Poland was mentioned. But I tell you, I just came back from Poland. I grew up there and I tried smoking regular cigarettes at a very young age. I didn't like it and therefore I never smoked, and nobody smoked at home. But I think many young people try this. If you do the statistics, probably you will see that young people try it. But I don't know what percentage get hooked on e-cigarettes.

What struck me—and this is not scientific, but this is what you see in the street—is that I saw a lot of young women smoking cigarettes while walking in the street there. Here, of course, we have made huge progress, with no smoking in public places. But in many countries in Europe, including Poland, they can still smoke in public places.

Another question I have is, should we regulate manufacturing of e-cigarettes, and if it should be regulated, how would you suggest it be regulated?

Dr. Gaston Ostiguy: It should be regulated in terms that the concentration of nicotine is well marked on the bottle. You've heard stories that people were selling e-liquid pretending that it contained 15 milligrams or 18 milligrams of nicotine, while as a matter of fact it was almost down to zero.

If we don't regulate it, we're going to have an accident one of these days, because somebody is going to put some terrible stuff in it and put it on the market. It needs to be regulated; the smokers need to know that they are buying a good-quality product. Again, we'll have to keep pace with the new hardware of the electronic cigarette itself to make sure that it's functioning properly and also that people are using it properly. The manufacturing of the electronic cigarette is important, to ensure that it's good stuff and that the e-liquid sold in the shops is also good stuff.

● (1155)

The Chair: Thank you very much.

Ms. Sellah, you have five minutes.

Go ahead.

[*Translation*]

Mrs. Djaouida Sellah (Saint-Bruno—Saint-Hubert, NDP): Thank you again for having me back in my old committee.

Dr. Ostiguy, thank you for your presentation on electronic vaporizers, commonly referred to as "e-cigarettes".

As you are no doubt aware, they were invented in 2003 by a Chinese entrepreneur named Hon Lik. Most e-cigarettes are made in China. On the surface, they appear safer because they don't contain any carbon monoxide or tar. That being said, at this point, no one can guarantee their safety. Nevertheless, the e-cigarette market is developing quickly.

I looked at some documentation on the situation in my province, Quebec. This new way of smoking is all the rage among students. I read that 8% of students in grade 6 and 34% of high-school students had tried e-cigarettes between 2012 and 2013. The Canadian Cancer Society, specifically its Quebec division, had called on the government to take action and regulate e-cigarettes in the Tobacco Act.

What do you think the federal government should do about this new way of smoking? I am a doctor by training. The objective, as I see it, is to wipe out smoking in all its forms. Doctors are the ones who prescribe nicotine replacement therapy, but the product we are talking about today is available to anyone anywhere and is completely unregulated, from the manufacturing stage right to the point of sale.

What recommendations would you make to the federal government in that regard?

Dr. Gaston Ostiguy: You are reinforcing just how important proper regulations are. I, however, disagree with the figures put forward by the Canadian Cancer Society. From a methodology perspective, respondents were asked whether they had ever tried e-cigarettes. Everyone here today probably has children. Do you know a single teenager who hasn't tried smoking? Trying something does not mean taking it up as a habit. In its study, the Canadian Cancer Society asked people whether they had tried e-cigarettes in the past month or six months. They were not asked, one year later, whether they had continued smoking regularly. Like the Canadian Cancer Society's study, certain American studies do not ask respondents that question either.

In light of that, I think we should be looking to Europe, specifically England and France, which produce statistics on a monthly basis. Those countries could supply us with data on how many people regularly use e-cigarettes. Some argue that the price of e-cigarettes will drop over time. But a hundred dollars is a heck of a lot of money for a teenager to drop on an e-cigarette when they walk into a vape shop for the first time. That does not promote regular e-cigarette use.

What's more, the user has to have a bit of discipline. They have to fill the tank every two or three days and exercise caution when doing so. They also have to charge the battery and change the heating element regularly, as it wears with time.

At the end of the day, it's easier for them to walk into a convenience store and buy a pack of cigarettes than it is to use e-cigarettes. Using e-cigarettes requires some discipline.

● (1200)

Mrs. Djaouida Sellah: What worries me is the popularity among younger kids because it's as though smoking is cool again.

Most tobacco companies advertise, even if only at music festivals or rock concerts, as you mentioned, where everyone is vaping. So it's a real concern. It's become trendy like back when it was cool to smoke on television or in a play. On the surface, vaping is said to be less harmful, but no study has been done yet to prove that.

Dr. Gaston Ostiguy: Right now, the composition of the e-liquid and the levels of toxic substances, or contaminants, in an e-cigarette are significantly lower than what is found in a regular cigarette.

From a public health standpoint, there is something people often forget. The issue of dose-response factors into every type of illness, unless the cause is immunological. You have to have had a certain amount of exposure to a product in order for it to make you sick. Taking an aspirin will not give you a stomach ulcer, but if you take the whole bottle, you'll be in trouble. So the dose-response component is always key.

Even though nicotine, which is extracted from the tobacco leaf, contains toxins and contaminants, there should be some reassurance in the fact that the concentrations in e-cigarettes are 400, 500, even 1,000 times lower than those found in regular cigarette smoke.

[*English*]

The Chair: Okay, thank you very much.

We gave Ms. Sellah a few extra minutes because she has come back to the health committee after being away for a while, so those extra minutes were on the house.

Thank you again, Doctor, for taking the full hour. That was a fantastic presentation you made.

We're going to suspend for a minute to allow our two other guests to get set up and we'll be right back in action.

Thank you.

● (1200)

(Pause)

● (1205)

The Chair: Let's get started again. Welcome back.

We have two guests here for the last hour of our meeting today.

Dr. Bhatnagar, you go first please, then Mr. Sweanor, you can go after.

Go ahead.

Dr. Gopal Bhatnagar (Cardiovascular Surgeon, Trillium Cardiovascular Associates, As an Individual): Thank you very much.

It's certainly a pleasure to be here in front of this committee. Thank you very much for the opportunity.

I'll open by saying it's a privilege to be here because of a number of things. Coming up the street in a taxi, as an ex-serviceman and a father of a reservist, I had the opportunity to see in front of me that memorial. It was a very emotional experience. In addition, it's the week coming up to Remembrance Day. In fact, it reminds everybody that today in 1917 our Canadian soldiers took Passchendaele.

With that, I'll try to emphasize the same passion in my knowledge and support for e-cigarettes, and be happy to answer your questions.

I will tell you a little bit about myself. I'm not new to safety or innovation. I established a community cardiac surgery-based practice in Canada. We're now one of the three largest beating-heart surgery centres in North America, meaning we don't stop the heart-lung machine. We did that specifically to improve patient care, and we are lead benchmarks for surgery. I was chief of staff at our hospital, so having to look out for people who could not look out for themselves has been a great passion of mine.

After six months of research, I'll declare that I did find an e-cigarette retailer, but I also advise people to have heart surgery and am renumerated for it. In fact, every physician is remunerated for recommending their treatments, and I would not at all be involved in or stand in front of you to create any kind of bias. I would be happy to address any questions you may have in that regard.

In fact, this is the enemy. The smoking I see every day clogs arteries. That's what I make my living out of. It causes lung cancer.

This slide shows an individual in her last stages of palliative care, and we need to stop this. Of what you see in front of you, 85% to 90% can be prevented.

This slide shows the leading causes of lung cancer: smoking; radon gas we've been able to get rid of; asbestos we regulate and get rid of; air pollution. Air pollution is out there. It's not safe to breathe in our cities.

I want to address clearly some fundamentals of the safety of e-cigarettes for users. No adverse health outcomes were seen when primates were exposed to continuous high concentrations of polyglycol vapour. The primates and mice were put in a box and were given high concentrations to breathe for 12 to 18 months. Histological samples of the lungs were taken and we could find no chronic effects or changes in those lungs in the deep alveolar tissue.

When smokers are able to go off tobacco smoke, they experience immediate beneficial effects.

On pulmonary inflammatory disease, I tell my smoking patients they have to stop smoking two weeks before surgery. The risk of infections is far less because the immune system of the lung improves as soon as we get people off cigarettes, aside from it simply being a long-term cancer-causing agent.

I'm going to use some terms. I want to talk about cytotoxicity, and that's the potential to cause harm or cancer.

Essentially you take the liquids, you take your chemical, you put them on cell cultures and you study them under the microscope to see if there's any change in their DNA. Does it damage the cells in any way? What we see is that when you actually apply the polyglycol vapour, or e-liquid vapour, you see no cytotoxic changes to those cells. These can be fetal cells. They can be stem cells. So you can place it directly on these cell cultures without any effect.

If you do the same thing with extracts from tobacco, even down to a 5% solution of tobacco extract, it causes mutations in the genes of those cells.

In terms of the safety for bystanders, remember that a regular cigarette burns at the end. If you're sitting there and you're a bystander, you're getting the direct effect of that. Any vapour that's inhaled from an electronic vaporizer is first absorbed into the user. What comes out is what's left after absorption, and it's typically just a polyglycol vapour. There are very small amounts of nicotine in it. There have been studies that have shown bystanders will be exposed to nicotine. If you actually take a look at the way those studies were done, it was vaporized into a box. Essentially, to put it into context, you would have to lick the entire inside of the box to get any meaningful amount of nicotine, if you're a bystander.

If you take a look at heavy metals that can be possibly produced in it, they are detectable but are less than 1% of threshold values that you would consider safe if you were to walk into any factory or workplace today. And that's for the user. The bystanders are going to get even less.

I only put up this slide to simply show you there is no mystery around what's in vapour.

● (1210)

Chemical chromatography, liquid chromatography...we can identify all the chemicals that are in there. It's not a mystery. We know that every one of those chemicals, if they exist or are detectable at all, exist at threshold levels that are well below occupational health and safety standards, even if you provide a factor of 10 as a safety margin. This slide shows the same.

This slide compares Nicorette inhaler mist compared to that found in electronic cigarettes. We can see that if you were worried about formaldehyde—a lot was made about formaldehyde—the original FDA trial said there's formaldehyde in it....

There was a question earlier on in the session about the temperature of vaporizers. E-cigarettes vaporize at about 60 degrees. If you vaporize polyglycol at 280°C, in fact you burn it, you will create trace amounts of formaldehyde. An electronic device is incapable of creating that temperature. What we see is a profile of toxicity that's similar to something that's already approved today, that being the nicotine mist vaporiser.

Our youth are very important. I have kids. I don't want them to be exposed to anything toxic. I don't want it in our schools either. But what's the reality? If you take a look, unfortunately, kids somehow get cigarettes. They're banned and they're not supposed to get them, but still they do. We see, shockingly enough, as I was telling my son, that one in 100 of kids in grades 6 to 9 smokes cigarettes. Where do they get them from? We know that by the time they're teenagers, we have rates as high as 14% of kids who are not supposed to have tobacco in their hands or have it available, but somehow they get it. So for me the issue is, why are 14% of our kids smoking?

If we take a look at the United States, the current user prevalence in U.S. adolescents, have a look here, if you take a look at e-cigarettes only, up to about 25% is a very small part. Most are in fact dual users of the ones who use electronic cigarettes.

This study was performed in the United States and it shows a drop in smoking rates. If you take the top and you say, well, the use of electronic cigarettes has doubled. We see young people walking around with electronic cigarettes, it's an epidemic. But, in fact, if you take a look at it, very few of them are using e-cigarettes only. Almost all of them, 99% of them, are previous smokers. When I look at a slide like this, yes, I can worry about the 0.6%, or I can really be dreadfully afraid of that 11.8%, because if you started smoking as an adolescent, your profile of getting emphysema, lung cancer, and heart disease, is huge over your lifetime.

With regard to nicotine safety, nicotine is an alkaloid. It's found in plants. It's made in their roots. You can find it in eggplants, tomatoes, black peppers; it's in the highest concentration in tobacco. Why does tobacco actually have nicotine? It's an insecticide. It protects the tobacco plant from being eaten by insects, so that's why in days gone by high doses of nicotine were used as an insecticide. In fact, a question was raised about the toxicity of nicotine. In industrial-available strength, nicotine is toxic. It will cause seizures and vomiting, and it can be lethal. Outside of an industrial factory, those concentrations of nicotine are not available.

It does not cause cancer. It can be addictive, but there are no serious health care outcomes related to nicotine alone in the concentrations that are available today. Much is made about a child eating or drinking nicotine. Most likely if that happens, they will vomit. It is not fatal. They will vomit even if they like the flavour. They will take it, it will irritate, and they will vomit.

With regard to nicotine safety compared to analgesics, liquids, cosmetics, vitamins, there are very few—618—annualized calls to poison control centres, compared to over 200,000 calls for something like cleaning liquids and cosmetics.

On nicotine as a gateway to other drugs, the Polish study was mentioned. However, in a huge U.K. study as well, and if you take a look in Germany, the number of electronic cigarette users as a percentage is always around 0.1% in youth. There's no molecular mechanism or clinical mechanism, aside from a very small Polish study, that would indicate that people will start with electronic cigarettes and move on to something else.

● (1215)

I want to emphasize that.

Smoking rates have gone down very consistently since marketing has been started to counteract tobacco advertising. But we've plateaued. In fact, now we're in the endgame for a tobacco-free society. That's where I certainly echo the sentiment of physician members and committee members. I would like to see a tobacco-free society. How can we let this occur? We've got the low-hanging fruit. The people we could get off tobacco, we've gotten off tobacco by every means. What's going to get us down to 0%?

Much is made about smoking cessation. The ITC studies say that people who incorporate electronic cigarettes in their regime cut back their exposure to cigarette smoking from about 20 to about 16. It's helpful in reducing emphysema, cancer, heart cessation rates because it's a dose-dependent phenomenon. The more tobacco you take, the worse it is. So you don't have to go from up here to zero; coming down on the scale is beneficial. We can see here, lung cancer in men, cigarette consumption in men. The more you smoke, the worse it is. You move people down that scale, you lower their risk.

Once again, I want to emphasize a lot: tobacco harm reduction. Cessation is an all-or-nothing phenomenon. Tobacco harm is proportional.

This is a great slide. I draw your attention to it. The fact is, if you can reduce people's cigarette consumption, you reduce their relative risk almost exponentially. Take a look at people taking a pack a day in that pink bar. You get them down to 10 cigarettes a day and the trials, both Burstyn and Polosa, have shown that you can reduce cigarette consumption by about 50%. So you're taking people down into that very low column. Are they at a higher risk than zero? Unfortunately they still are. But you've reduced their risk twofold.

In smoking cessation therapy, we can take a look at e-cigarettes and they have gone up. There's a reason they've gone up. Despite all the thinking that experts have, we have failed smokers in being able to get them off cigarettes. We can applaud ourselves about our medical therapy, about our pharmacology, about our drugs, but one in five Canadians still continues to smoke.

I would congratulate you on many respects but one is that you have undertaken more due diligence at this committee than has been done by the FDA, by the World Health Organization, and by the CDC. None of those august organizations that many of the population depends on for clear and accurate information undertook this level of diligence. When you read statements from the World Health Organization, the FDA, and the CDC, those decisions were made behind closed doors. Their review process was not transparent at all. I don't really understand why they say what they did. On the re-normalization of smoking, the gateway phenomenon was attributed to Mark Frieden. He is the director of the FDA. I don't know why he believed that. I have no idea why he made those statements but he did. Because he's director of the FDA, everybody puts credence on that.

I'd like to conclude. I know I'm running short on time. I don't want to take any time from my august member here. So, available cytotoxic and chemical analysis shows e-cigarettes have a risk profile that is orders of magnitude less than traditional combustible. Nicotine does not cause cancer. Tobacco kills people. There's no evidence on a molecular level from the *New England Journal of Medicine* or epidemiological studies aside from only one that e-cigarettes are a gateway to progressive use of worse substances. Tobacco use in our youth remains the concern. In fact, the presence of e-cigarettes could be argued to be reducing the use of combustible products. Flavoured cigarettes, although they have been available in Europe for a decade...still only .1% of all e-cigarette users are youth.

Research indicates that second-hand vaping is not a concern.

My suggestions are—I'll run through these; I believe we can all read—that a new category of tobacco harm reduction tools should be created because we cannot predict the future. Let's create a regulatory and structural framework where we can continue to evaluate new products and tools as they come along.

● (1220)

We certainly need to have manufacturing standards for hardware, the battery composition and duration, and you need to establish standards for your liquids. People cannot be making this stuff up in their garage. That's not what we want. We need manufacturing facility requirements. We need labelling. I believe that nicotine can potentially be toxic in high concentrations. We need a lot of tracking mechanisms to know about product recalls and ingredient quality. Certainly, they need to be bottled in a way that it's as difficult as possible for children to get at it. Restricting the sales and products, I think we've been over that.

There is some sort of statutory warning perhaps for women who may be pregnant because there might be some effect on very early fetal cell tissues. In principle, I think there should be some advantage to using electronic cigarettes financially and socially over using a traditional cigarette. I'm not going to suggest exactly how that is. Any type of lifestyle advertising should be banned. I believe that it should be promoted as a tobacco harm reduction strategy. Much has been made on the sale of youth flavours. I'll leave that and answer that during the time for questions, but it should be based on consumer demand.

Increase taxation of tobacco products if we think we're going to lose taxes by the use of tobacco products. Make it more expensive to use whatever tobacco products there are out there, but give some incremental advantage. I believe that the same health care organizations that are saying that there's insufficient evidence should be charged with funding unbiased brand-neutral trials. A standing committee of tobacco harm reduction should be part of the health protection board, that I have occasion to deal with and have helped me to treat a great many patients over the years.

Thank you very much for your attention.

The Chair: Thank you very much.

I'm glad you touched on a couple of topics. One is the combustion of the propylene glycol because that's come up a couple of times and the recommendation on milligrams per millilitres in a capsule.

Professor Sweanor, go ahead.

Mr. David Sweanor (Adjunct Professor, Faculty of Law, University of Ottawa, Special Lecturer, Epidemiology and Public Health, University of Nottingham, England, As an Individual): Thank you very much. It's a pleasure to be here.

I'm a lawyer. I've spent now over 30 years working on public health policies on tobacco in Canada and around the world. I've testified in front of quite a few committees over the years and I think it's fair to say we've literally made history on other issues of tobacco in Canada.

When I first got involved in the beginning of the eighties among 15-year-olds to 19-year-olds, 42% in Canada were daily smokers, and in the space of 10 years we got that down to 16%. That was policy. We led the way on using things like tax policy, advertising restrictions, package health warnings, smoke-free spaces. A few people now remember we were the first country to get smoking out of airplanes. Now many of us have trouble even remembering how awful that used to be, but it was because of things like this.

And I must say, at a personal level, it's fair to blame my wife on some of this because as I was a young lawyer starting out, deciding I was going to change the world, she was a young doctor, and she was talking about how many people were sick, how many people were in hospital beds because of smoking. And at one point I said, “Well, if smoking is as big a problem as doctors say it is, you ought to be doing more about it.” She said, and she's usually right, “You don't get it.” And this was not the only time in our relationship she said that. “Figuring out why people are getting sick is a medical-scientific problem. Dealing with it is a social-legal-political problem. It's up to lawyers and politicians to deal with it.” And I think she's right, and I've been spending over 30 years trying to deal with it. And that's why I think we're here today.

We have had these great successes. We've reduced per capita consumption of cigarettes in Canada very dramatically over that 30 years, probably by about two-thirds. But because of an increase in population and the fact that a lot of people reduced, but didn't quit their smoking, the total number of smokers in this country went from just over seven million to somewhere around five million. It's still our leading cause of preventable death.

I have no written submission for the committee, but what I'd highly recommend is that Clive Bates, who was to testify here, has sent in a very good submission. I think Clive, who is a friend and a colleague for many years out of the U.K., is one of the best thinkers we have in public health on tobacco. And instead of reading anything that I would submit, I suggest you read what Clive submitted twice. It's that valuable.

If the committee is interested, I can certainly submit other things that I've written over my career, including on this topic. I should also say that I have no financial conflicts of interest. I don't get money from anybody on any side of this, whether it be people trying to sell the products or people trying to oppose the products.

Why are these things important? Why is it we're talking about them? Well, frankly, it's because cigarette smoking is still by far our leading cause of preventable death. It's still killing somewhere in excess of 40,000 Canadians per year. Based on the status quo, if we simply continued to do the things that we're doing now, we can expect another million deaths in the next 25 years. Those are all totally preventable. We can do something about it.

And one of the really odd things that I've experienced in my career working on this is that we have done all sorts of things about the periphery of the cigarette, but not dealt with the cigarette itself. We've not dealt with the fundamental problem. We've talked about things like what price because of taxes you have to pay, where you can buy it, who can buy it and who can sell it, where you can use it, what sort of labels you need to have on it, and what sort of advertising there will be for it.

But the product itself is the fundamental problem because cigarettes are just an incredibly deadly delivery system for a drug. If people got their caffeine by smoking tea leaves, it would also be killing a tremendous number of Canadians because essentially, it's the smoke. As you've heard from others, we know that smokers smoke for the nicotine, they die from the smoke, and the public health tragedy is that they don't need to. Even if they were going to use nicotine, they can use nicotine in a way that simply doesn't cause those problems. As I've been saying, we haven't worried a whole lot about people drinking tea and coffee. It can be addictive; there are risks. It's low enough that we don't worry much about it. If they were smoking coffee beans, smoking tea leaves, it would also be a huge problem.

We've known for decades that we could reduce the problem. We could essentially eliminate the problems by simply getting rid of combustion-based delivery. And we now have products that are coming onto the market that provide that sort of opportunity.

● (1225)

Wells Fargo, the giant investment bank, has estimated, and their belief is, that within a decade electronic cigarettes will outsell cigarettes in the United States, depending what sort of regulation facilitates or gets in the way of that happening. That's a huge opportunity.

What we're seeing here is something that I think follows the history of what we've seen in other areas of public health, whereby we're getting an intervention that isn't a medical intervention per se; it isn't because of government or health departments telling people what to do. This is coming from entrepreneurs who come out with a product to meet a demand from consumers who are saying, I don't want to smoke; I want something that will help me get off smoking.

People are incentivized to come out with better products. Among other things, people are spending $700 billion a year buying cigarettes around the world. Most of those people don't want them.

This is similar to what we've seen before. In the early 1940s, the leading cause of cancer death in Canada wasn't lung cancer, which is by far our biggest problem now; it was stomach cancer. Stomach cancer deaths fell precipitously, and they fell not because of a hugely expensive government intervention; they fell because entrepreneurs leveraged innovative technology to meet a consumer demand—for refrigerators. We used refrigeration; diets changed; stomach cancer rates plummeted.

Look at what happened with automobile death rates. When I was young.... I think all of us growing up, certainly in small-town and rural areas, can name lots of friends who died in car accidents. More than 6,000 Canadians were dying each year. It's fewer than 2,000 now, even though there are more than twice as many cars on the road. We changed the delivery system; we changed the product; consumers were able to access something; entrepreneurs were incentivized to come out with better auto safety features. The death rates are down by more than 80%.

When we look at nicotine, we could do something that would lower the death rates far more dramatically and far more quickly, and we simply have to figure out how to seize that opportunity. How do we de-normalize smoking? That's what these products can do; they are a fundamental threat to the cigarette status quo.

It's very hard to imagine somebody now wanting to get into a car that doesn't have air bags, seatbelts, safety glass, etc. It's very hard to imagine somebody wanting to buy the snake oil medicines that existed in the 1930s now, rather than modern medicines.

We have the ability to give a real option to smokers, and in doing that we have the potential to then use the tools we've been using to try to reduce smoking—regulation, litigation, etc—to further change the market. I think we have the potential to make cigarettes history; to make one of the biggest breakthroughs we've ever had in public health.

In terms of how we do this, a key thing is to identify what not to do, because I think we've been seeing a lot of that. I don't think we need to engage in moral panics; I don't think we need fearmongering; I don't think we need people hyping potential, minor, hypothetical, and containable risks; I don't think we want to use regulation that protects the cigarette business because of some fear that something might go wrong with products that are massively less hazardous. We have to be aware that the unintended consequences people worry about have to be seen in relation to the 40,000 deaths a year by cigarettes.

That's the problem. How are we going to avoid being held responsible in future years for having maintained that epidemic when we had the option to do something about it.

What should we do?

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.

We have, even here in Canada, leading medical researchers who are developing what I think are phenomenal products—products that could be far more effective at getting people off cigarettes but that are stymied by regulations—saying, we can't market them in Canada; the barriers to getting these things into the market are simply too great. We need regulation that opens up the opportunity to do things such as that.

We need to have truthful, non-misleading information to consumers. The history of public health tells us that often the biggest breakthroughs are based on two very simple concepts. One is that you give people enough information to make an informed decision; and two, you give them the ability to act on that information. If we do that, amazing things happen when people are able to act.

Look around at what is now happening with electronic cigarettes. As you've heard from other speakers, in the U.K. the anti-smoking groups there estimate that more than 700,000 smokers have totally switched to electronic cigarettes. There are higher numbers in France.

● (1230)

In the U.S., with the best numbers I can see, over two million have already switched entirely to these products. These are huge potential breakthroughs, but it's very much the general patent line, “there's no such thing as an obstacle, only a new opportunity”. Rather than looking at this and asking what might go wrong, let's think of what might go right. What could we do that brings us within the realm of what we've had a history of doing in Canada, of getting public health right and setting precedents here that save the lives of a heck of a lot of Canadians and that are then exportable to the rest of the world as good public policy?

Thank you.

The Chair: Thank you very much.

You referenced a colleague of yours and his material. Just for the committee's records, that information was distributed. Our clerk was able to get this information. It was distributed on November 4 in the morning. If you want further information, check your inbox or your staff's inbox for that.

[*Translation*]

Mrs. Djaouida Sellah: Do you have a copy for me?

[*English*]

The Chair: Your friend to your left will give it to you.

Okay, Mr. Morin, you're up for five minutes.

● (1235)

Mr. Dany Morin: Isn't it seven minutes?

The Chair: It would be, but in order to get around we'll keep it to five minutes, but we'll be lenient.

Mr. Dany Morin: That's not a problem, thank you.

Dr. Bhatnagar, thank you so much for your presentation. It is very thorough work you are giving us today.

Regarding your suggestions, I have three of your suggestions on which I'm not fully convinced. I'm going to give you more opportunity to convince me, as a member of Parliament, to go along with some of your suggestions. A lot of them make total sense.

You asked for wider latitude for public use indoors. I do understand that the grand goal is to move people away from cigarettes and toward e-cigarettes or other ways to decrease the usage of cigarettes, but my fear is about the normalization of smoking indoors, in restaurants and maybe in schools. If a teacher in class wanted to smoke e-cigarettes, according to your suggestions, that could be allowed.

Could you explain or expand on this?

Dr. Gopal Bhatnagar: By “latitude”, I don't mean freedom. I would be appalled if a teacher stood up in front of a class and used any type of vaping device. I certainly think that is not on.... I also believe that in a confined space, a workplace, there is the science and then there is the social custom. It is impolite, whether it be safe or not, for me to vape if somebody is there beside me, science aside. Where I would suggest there are possibilities in promoting the public good is in night clubs. Perhaps there is some opportunity there.

Is there some opportunity in the public spaces at the base of a condominium or in an office building, not in the office itself, or some area that's set aside such as a large lobby area where a vaper can use it indoors and the only small incremental advantage you're giving them is if they're using a vaping device they don't have to go outside and stand in the cold? Essentially, if you gave them even that little sliver that would be a huge bonus, especially in Canada in the wintertime so that they could stay inside and stay out of the sleet and snow, whereas those using tobacco products would be outside.

Otherwise I do believe there should be significant restrictions on its use.

Mr. Dany Morin: Thank you. That helps to better understand that recommendation.

You also recommended not restricting sales of e-cigarettes to tobacco retailers. Where would you want those e-cigarettes to be sold? Would it be in the specialty shops that were mentioned earlier or drugstores to receive the input of pharmacists regarding their use? What do you think?

Dr. Gopal Bhatnagar: To be clear I just wanted the sale of an electronic cigarette not be tied to the sale of tobacco. I don't believe it would be in the public's interest to say, “where tobacco is sold is the only place you can sell electronic cigarettes“.

The electronic cigarette, or vaporizer, comes in two forms. One is disposable. It's a self-sealed thing. You use it until it runs out and you throw it away. Those are the ones you see sold at gas stations. They require absolutely no information. You just open it, you pull off the peel, and you can start using it. For the more sophisticated vaporizers —selling them in pharmacies, Walmart, Target, places like that—it's going to be an economic failure because they do require instructions to use, so you need motivated staff. You need time.

Leaving that type of product in a pharmacy is probably not going to financially do well for the pharmacist. The disposable e-cigarette, which is just a plastic tube, the simplest thing, may be perfectly fine.

Mr. Dany Morin: For my other question, you talked about increasing taxation on tobacco products to compensate for the loss of taxation income from e-cigarette use. I'm not a fan of tobacco, but I wonder if by increasing the already high tax on tobacco products it would push more people into illegal regular cigarettes. That's why I want to have your input on why you think it is still a good option and will not fuel the illegal regular cigarette market.

Dr. Gopal Bhatnagar: Fair enough. These are the pros and cons that certainly have to be weighed. We see the economic curve of price and use. Pragmatically, though, if as predicted by Wells Fargo electronic cigarettes are taking over tobacco, the taxation income from tobacco will decline. At some point in time it will decline. However, there will be a time lag in which you will see the health benefits. when those health benefits start accruing, if we see cancer rates drop, emphysema hospitalization rates lower, we'll see a savings on the health care front, but something will need to be done to make a leeway. I think there are people far better qualified than me to discuss the economics of what tolerance there is for increasing taxation as opposed to not driving that illegal market. I have no clear answer for you about how to control the illegal market of tobacco. I would only say, though, that the corollary is true, that if you increase the taxation on electronic cigarettes there's a clear problem with a black market e-cigarette. You can make these devices in your garage at home. There are YouTube sites where people will make these devices and make the solutions at home that have no standard. If we make it inordinately expensive or even equally as expensive to acquire, then you'll see people start making these things at home and then you will see more batteries explode and people being poisoned by them. That's why we need regulations.

● (1240)

The Chair: Thank you very much.

Mr. Young, go ahead sir.

Mr. Terence Young (Oakville, CPC): Dr. Bhatnagar, we've recently done a study on opioid use and on marijuana use and the health risks related to that. We have huge addiction problems in Canada. So it's not only tobacco that's the problem, it's addictions that are the problem. Addicts are diminished. They lose control of their lives. Their thoughts are interrupted regularly during waking hours by urges they can't control. They spends hundreds and thousands of dollars annually, depending on their drug of choice, to satisfy unnatural cravings. Teens as young as 12 regularly get drunk, practice binge drinking, and some of them develop lifelong addictions. Teens as young as 12 are addicted already, or beginning an addition to tobacco and marijuana, which also leads to a range of serious health issues later in life including brain damage and lung cancers. Teens as young as 12 are becoming addicted to opioids, other painkillers and prescription drugs, tens of thousands of them. We know that our young people are getting their hands on all these substances. In my view we have failed all these young people. Now there's a new way to get addicted, which is e-cigarettes, and they're already using them.

My question for you is how can we protect our children and youth from the drug and alcohol and nicotine dealers, and don't we owe that protection to our youth, and don't we owe our youth the best that we can do to protect them from those addictions?

Dr. Gopal Bhatnagar: Mr. Young, the answer only to that is yes, of course, we do have a duty from a medical perspective, from a policy perspective, from a political perspective, to protect our youth from harm. There's no doubt about that. I don't hazard to provide you any opinion on how to improve alcohol addictions and opioid addictions. I know in Canada chronic pain management is poorly treated. It's a systemic problem for chronic pain.

Mr. Terence Young: Doctor, you appear here under two roles actually.

Dr. Gopal Bhatnagar: I suppose that's true, yes sir.

Mr. Terence Young: So as well as being a heart surgeon, you sell many brands of e-cigarettes and you even have your own brand. Isn't that correct?

Dr. Gopal Bhatnagar: That's correct, sir, yes.

Mr. Terence Young: Do you sell e-cigarettes that contain nicotine liquid?

Dr. Gopal Bhatnagar: In the retail store, where we can verify age, we do.

Mr. Terence Young: I was under the impression that this was illegal in Canada. Is it not illegal?

Dr. Gopal Bhatnagar: I can only go with our legal advice, sir. We've been in contact with Health Canada, and our legal advice in Toronto has told us that this is up for debate. We do not sell it on our Internet site, because we cannot verify the age.

Mr. Terence Young: That's a for-profit business, right?

Dr. Gopal Bhatnagar: That's correct; yes, sir, it is.

Mr. Terence Young: I just want to ask you whether you recognize any potential conflict of interest in being a heart surgeon and medical doctor and also selling and profiting from selling an addictive product.

● (1245)

Dr. Gopal Bhatnagar: That's fair enough, sir; it's a very good question.

If it causes no cardiovascular harm.... As I said, when I was approached, from a purely business perspective, I spent six.... When somebody mentioned electronic cigarettes to me, I was completely ignorant of it, two years ago. My initial reaction was that I'm not going to involve myself in anything like this. I spent six months taking a look at the data myself—reading the original studies, not relying on interpretation.

Mr. Terence Young: I've heard your evidence that they're much safer than tobacco—

Dr. Gopal Bhatnagar: Yes.

Mr. Terence Young: —and that for people addicted to tobacco it's a good alternative. But what about young people who aren't addicted to anything but might have their first addiction to these products? That's my concern.

Dr. Gopal Bhatnagar: That's fair enough.

Mr. Terence Young: In your conclusion, you say that “flavoured e-cigarettes products are not being produced to target a youth market”.

Please read our report when it comes out, and please take a look at the evidence that's online, because that's not what we've heard. We've heard that youth are being targeted with various flavours of products, targeted directly. Marlboro now has a product out, a hybrid between a vaping product and a tobacco product, that they're marketing. They're marketing it to youth through movies and television with product placement, which is a very insidious form of marketing.

So your conclusion there is actually incorrect.

Dr. Gopal Bhatnagar: Well, sir, the way flavouring is used in marketing can be regulated. I certainly would agree 100% that any representation of the use of tobacco to youth as a cool thing, as a lifestyle thing, be completely off limits.

Mr. Terence Young: A previous witness said that you could make it with flavours that children don't like or something, but I don't know how you could market a product with flavours that children don't like but adults do. People like flavours, whatever they are. I don't understand that position.

Dr. Gopal Bhatnagar: I can extrapolate from data in jurisdictions in which flavours are freely available, and the actual use of electronic cigarettes by youth is exceptionally low. It's less than 0.1% in a huge population study in Germany.

We can emphasize the small use of electronic cigarettes by youth or we can choose to see that the real problem is that 14% of youth are getting hooked on tobacco cigarettes and that this what is going to kill them when they're 25 and 30 years old.

Mr. Terence Young: But as a doctor, don't you think the third option is—?

The Chair: Mr. Young, your time is up, sir. I'm sorry.

Ms. Fry, it's your time now.

Dr. Gopal Bhatnagar: No addictions is always better, but it's not practical.

Hon. Hedy Fry: Thank you very much, Mr. Chair.

I think I'm going to have to stop drinking coffee because it's addictive. I don't know what we can do. We can ban it, or something like that, and Coke and Pepsi and all of the other addictive drinks that our children drink that will cause them to get diseases like type 2 diabetes, etc.

I think that discussing addiction is about whether addiction is harmful, whether it causes you disease and illness, or whether that addiction, at the end of the day, has no effect on the rest of society or on your own particular health.

Given the fact that we've heard over and over that nicotine itself has an effect in terms of disease and harm done, in the same way as coffee.... I'm hearing that coffee has benefits to a lot of people. I think the important thing therefore is that you're talking about e-cigarettes as harm reduction in the same way that we use a patch and the gum, which are all legal things to use and are prescribed by physicians to use them. We hear that those harm reduction methods are not particularly effective.

Again I want to congratulate you, Dr. Bhatnagar. You and the earlier physician who presented to us gave us some facts we did not have before that I cannot refute—they come from reliable sources—about the benefits and the second-hand smoke issues, and all of those kinds of things. Given that I believe what you're saying about e-cigarettes, it may be worth using it as a harm reduction technique, an effective way to stop smoking, and an effective way to save lives, as we're hearing.

You're suggesting regulations, and I agree with you. Right now it's in a limbo world where anybody can sell it, anybody can buy it, and nobody knows what quality they're getting, either the industrial quality or the quality and potency of the nicotine, etc.

You've given us a list of the things that you believe should be put into regulations, i.e., sales to minors, advertising. I was told earlier on that we could use childproof bottles or vials for containing the nicotine.

What I wanted to ask you is this. Are you suggesting that this be treated as a consumer product or are you suggesting that it be a prescribed product? That's the first question I'd like to ask. Because I think that again is where it falls. Should it be prescribed by physicians in the same way that the gum and the other harm reduction techniques used for smoking cessation are? If so, how would you do that? Would it have to be a specialist in tobacco cessation? Would you do that? Or would your family doctor do it? Or could a nurse do it, if you're in a smoking cessation program?

I am convinced from all of the studies except the Polish study—and you can't just pick one study—that actually this does not cause “re-normalization of smoking”. My big question is, should it be sold behind the counter in a pharmacy? Or should it be given as a prescription?

Mr. Sweanor, I wanted to applaud when you finished. You gave some extremely graphic descriptions that I could just imagine—people grinding up coffee beans, and rolling it and smoking it, you know? I think you effectively made the point that it's the mode of transition that is the problem, not nicotine itself. When you take away all the tar, nicotine, formaldehyde, and all that kind of thing, you take away the harm that is being done by the drug.

Again, I just wanted to suggest to you, as a lawyer, whether you see pieces of legislation other than the ones we heard about, minors, etc., that you think would help.... Should there be warnings? Should there be any kind of thing sold with the cigarettes that you feel might help to make better public health legislation and public health policy?

Thank you.

● (1250)

The Chair: I'd just like to ask you both for a brief response. It's going to be tough to do because we were pretty much five minutes getting there.

Mr. David Sweanor: The quick answer on regulation is Clive Bates' submission, that you have, because he gives a very good overview of what would be necessary. In short, we want to make sure these products are not placed at a disadvantage to cigarettes. We want the less hazardous products to be the more available products.

We also want to ensure that our fear about unintended consequences, such as children getting access to these.... Keep in mind that 80% of smokers say, "I wish I didn't smoke". Where are kids getting their cigarettes? They're getting their cigarettes from family, people who don't want to smoke. If we could get them off smoking, we would get rid of a lot of the access that gets kids started. There's huge potential upside on this. We just need to be sensible on the regulation and avoid things like "medicinalizing" it so that cigarettes are given an advantage in the marketplace.

The Chair: A brief response, Doctor.

Dr. Gopal Bhatnagar: Yes, of course.

Trying to put it within a medical framework, I think, in an already overburdened health care system, would be a disadvantage to the people who are going to seek out electronic cigarettes. I do not see it as a prescription drug.

The Chair: Okay. Thank you very much.

Mr. Lunney, please

Mr. James Lunney (Nanaimo—Alberni, CPC): Thank you, Mr. Chair.

Thanks, both of you, for your participation and very well thought-out presentations.

Dr. Bhatnagar, can I ask you, your product that you're marketing, is it a rechargeable product?

Dr. Gopal Bhatnagar: We carry the vaporizers, which are rechargeable, as well as the disposable products.

Mr. James Lunney: So you have both.

Dr. Gopal Bhatnagar: Yes, sir.

Mr. James Lunney: Could your product be used to do your own compound and put it in there?

Dr. Gopal Bhatnagar: There are two—

Mr. James Lunney: In the combustion chamber....

Dr. Gopal Bhatnagar: Yes.

There are two fundamentally different types of vaporizer technologies. There are ones that are dry herb vaporizers. Let's be honest, there's one dry herb that people are looking to use in that type of vaporizer. We do not deal with that at all. The type of vaporizer we use is suitable only for liquid.

Mr. James Lunney: Because the liquid widely available would be propylene glycol or vegetable glycol and so on.

Dr. Gopal Bhatnagar: Yes, usually the propellent or the admissible liquid is propylene glycol.

Mr. James Lunney: Mr. Sweanor, you're suggesting that we don't want to get caught up in minor or theoretical or hypothetical risks. I can appreciate that Dr. Ostiguy, who was here before you, with a career of trying to help us with smoking cessation, yourself, as a thoracic surgeon, yourself as a campaigner, because of a highly motivated wife—we all know how motivating that can be for any of us—would be very keen to make sure we eliminate cigarette smoking, which is far worse than the e-cigarettes. I think most of us are probably convinced that there is a reduced risk. What I'm very concerned about is looking beyond the smokers of today—10 years from now, 15 years from now, 20 years from now, what else is going to be inhaled? Doctor, as a thoracic surgeon, you're well aware, and I'm sure Mr. Sweanor is, that when you change the delivery mechanism.... Ingestion is vastly different than inhalation because the product is going directly to your body, and particularly to the brain, and bypassing the liver.

That's what my concern is: what else? In my world—I'm from the west coast, marijuana central—

Voices: Oh, oh!

Mr. James Lunney: I don't want to get carried away by the discussion there, but anyway the point is we've had lots of illegal marijuana production for ages, and now we have medical marijuana production coming online. But already online are your own make-your-own vape products—it was mentioned here earlier—and how to do it. The concern is that all kinds of other products—and Terence mentioned a few—and medications, almost anything could be powderized, ground up, mixed with propylene glycol, whatever's solvent or soluble there, and put into these chambers. What are we going to be dealing with?

Now, Mr. Sweanor, you're saying these are all theoretical risks, but who thought of crystal meth 20 years ago? Frankly, we didn't. The kids' experimentation with homemade drugs is a very serious problem, causing immense problems today. What are we creating if we don't very strictly limit this to the people who are mostly going to benefit from it, and that's the people who are trying to quit smoking?

● (1255)

Mr. David Sweanor: The technology is already there, so if somebody's wanting to use these products for crystal meth or anything else, they can. The question is what are we going to do for the five million smokers? Anything we do with policy, we know that there can be unintended consequences. How do we control for that? We know that licensed pharmaceuticals in the United States, licensed by the FDA, kill 100,000 Americans a year, but in the absence of that, it would be much worse. What we do is we try to reduce that as much as we can. That's the importance of revisiting what we do—to say, is there something happening that we can further control? Certainly the first step, like preventing those 40,000 deaths a year from smoking, is so huge...to say if there is some unintended consequence, how do we then control for that? But let's not have the fear of that prevent us from doing something that could prevent those 40,000 deaths a year.

Mr. James Lunney: We're just trying to strike the appropriate balance.

Mr. David Sweanor: Yes.

Mr. James Lunney: A remark was made earlier about kids getting their first cigarettes from their parents, and while I suspect that may be true, I also suspect that a vast percentage, at least 50%, are getting them from their peers. I had my first cigarette in grade 10 in the car of a buddy. I could name him. I went into my classroom and I had to head down the hall and throw up. I don't know why you'd ever have a second one after that.

The point is that kids are peer-influenced. Re-normalizing smoking is a very serious concern for many of us. We've made such great grounds, and I appreciate the remarks you've made. By the way, when you talked about Wells Fargo and eclipsing the cigarette market, we're talking about investment opportunity there, and they are an investment firm.

While there are commercial opportunities in e-cigarettes, we're concerned about the health implications of a new generation.

Dr. Gopal Bhatnagar: I've tried to discern that down into two questions. One I might address has to do with concerns about the glycol. It's an organic molecule.

Mr. James Lunney: It's not the propylene glycol I'm worried about. It's what might be used along with it.

Dr. Gopal Bhatnagar: All right. Fair enough.

Mr. James Lunney: It's the unknown breakdown of a number of chemicals. All the pharmacology studied has been about the product, but when you combust it—

The Chair: Mr. Lunney, we'll allow the doctor to provide his answers, and then we'll wrap up.

Mr. James Lunney: Okay.

Dr. Gopal Bhatnagar: I just want to make sure I answer your question. I can't give you a comprehensive answer on the pharmacology of everything that could possibly be mixed in it.

Propylene glycol is routinely available. You probably used it in your shampoo today. We actually use it as a suspension for the delivery of drugs such as diazepam—Valium—and things like that. It's an organic molecule that is very quickly broken down in the cells to lactic acid and pyruvic acid, which are used by your liver and made back into glucose. It has been studied for over 70 years in inhalation, injectable, and oral forms, and there have been no fatalities or adverse outcomes, aside from irritation, associated with it.

The lung realistically responds in two ways to chemicals. They can cause cancer or they can basically cause the equivalent of emphysema. Bronchitis is reversible.

No evidence has ever been presented, either molecular or clinical, that the combustion, the vaporized products of propylene glycol, can cause either, no matter how long....

I agree with Dr. Sweanor that we need to create a framework to understand how, if the misuse or the lateral consequences of this technology are occurring, we address those, but I think that essentially trying to throw out the immense benefit of this potential and manageable harm that might be caused would be a disservice to people today.

● (1300)

The Chair: Okay. Thanks very much.

I think we've had a great discussion this week and especially today.

Thank you, doctors and professor, for taking time out of your busy schedules. This has been an important presentation.

This is the end of our meeting. Hopefully we'll see some of your comments in our report.

Thank you and have a nice day.

The meeting is adjourned.