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Chair

Mrs. Joy Smith

Standing Committee on Health

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•(1110)

[English]

The Chair (Mrs. Joy Smith (Kildonan—St. Paul, CPC)): Good morning, everybody. Welcome to the health committee. I am so pleased to see everybody here today.

Pursuant to Standing Order 108(2), we have a study on the impact of microwaves on human health. It is something this committee has wanted to pick up on and continue for some time. I am very pleased that the witnesses have been able to come today.

From the Department of Health, we have Beth Pieteron, director general, environmental and radiation health sciences directorate, healthy environments and consumer safety branch.

Welcome, Beth.

We also have with us Frank Prato, imaging program leader, assistant scientific director, from the Lawson Health Research Institute,

I'm so glad you could make it as well.

We also have, from the Simcoe County Safe School Committee, Rodney Palmer, who is a member.

Thank you for joining us today.

Joining us as an individual we have Anthony Martin Muc, adjunct lecturer at the Dalla Lana School of Public Health, occupational and environmental health unit, University of Toronto.

You were here before. Welcome back. It's nice to see you here again.

Via video conference we have two guests. Curtis Bennett is president of Thermographix Consulting Corporation.

Welcome, Curtis. I'm glad you're here.

Also, from Columbia University, coming to us from Victoria, British Columbia, we have Dr. Martin Blank, associate professor of physiology and cellular biophysics, department of physiology and cellular biophysics.

We're very happy that all of you can be here. We will give you five minutes for a presentation from each organization. Then we'll have questions and answers. At the end of the committee meeting, at 12:45, I will suspend because we have some business we have to do for the final 15 minutes.

We will begin with Ms. Pieteron, please, for five minutes.

Ms. Beth Pieteron (Director General, Environmental and Radiation Health Sciences Directorate, Healthy Environments and Consumer Safety Branch, Department of Health): Thank you, Madam Chairperson and members of the committee.

I'm pleased to be back before the committee today to speak to Health Canada's position on the impact of microwaves on human health.

In April, when this issue was last presented before the committee, I spoke to you of Health Canada's awareness of concerns from some communities of stakeholders about the possible effects of radio frequency electromagnetic emissions on the health of Canadians, including our children. These ongoing concerns received significant press, largely buoyed by the media and by a small yet very vocal group of scientists; however, in many instances, the information communicated is misrepresented.

Health Canada acts within the authority of the Radiation Emitting Devices Act, providing advice and guideline development for electromagnetic energy emissions. Guidelines developed by Health Canada set recommended limits for safe human exposure to electromagnetic energy from various devices, including cellphones, Wi-Fi equipment, and cellphone towers. These guidelines, commonly referred to as Safety Code 6, were reviewed carefully and revised as recently as October 2009.

Health Canada's revision of Safety Code 6 followed a thorough evaluation of worldwide peer-reviewed scientific evidence and literature on the effects of radio frequency energy on biological systems. The department, furthermore, conducted its own in-house studies, also published in peer-reviewed journals, which to date do not support the position that electromagnetic energy emissions from cell towers and wireless technologies pose hazards to the health of Canadians.

Considering the quality of all the individual studies, the reproducibility of observed effects in different laboratories, and acceptance within the international scientific community, Health Canada established limits for human exposure that are well below the level that has been shown to cause any harm. Despite the lack of studies focused solely on children, the limits recommended for general public exposure were designed to provide protection to all age groups, including children, if exposed on a continuous basis.

There's no question about the widespread exposure to cellphones and Wi-Fi in schools, boardrooms, and households across the country. However, the large majority of scientists conducting work related to electromagnetic energy agree that exposure levels encountered by Canadians in these environments are, according to the vast majority of currently available evidence, well below levels that would result in any health effects.

During my last presentation before the committee, I referenced a report cited by electromagnetic field advocates and entitled "The BioInitiative Report". This report suggests that regulatory authorities such as Health Canada should apply precautionary approaches to sources of electromagnetic field exposure and apply much more stringent limits.

It should be noted that in the international dialogue that followed the release of the BioInitiative Report, numerous electromagnetic energy experts, associations, and countries around the world issued statements refuting claims included within the report, expressing criticism for its lack of balance, lack of new scientific evidence, exclusion of numerous studies, internal inconsistencies, and a bias toward negative outcomes.

The science underpinning the report was not peer-reviewed, which is the gold standard for scientific publications, nor was it accepted by governments around the world. Having reviewed the report, Health Canada is of the opinion that there are insufficient grounds to revise our views on the electromagnetic field health risk assessment at this time.

I should emphasize that the scientific evidence supporting Health Canada's exposure limits is verified on an ongoing basis. Our Canadian exposure limits are comparable to those of other jurisdictions, including the United States and the International Commission on Non-Ionizing Radiation Protection. To our knowledge, there is no major jurisdiction in the world that has banned Wi-Fi from schools based on scientific evidence available.

The United Kingdom recently released on their website a general position statement on Wi-Fi, stating: There is no consistent evidence to date that Wi-Fi and WLANs adversely affect the health of the general population. Based on current knowledge and experience, radio frequency exposures...from Wi-Fi are likely to be lower than those from mobile phones.

• (1115)

They say, "On the basis of the studies so far carried out in house" at the Health Protection Agency in the U.K., they see "no reason why Wi-Fi should not continue to be used in schools".

Just to conclude, Health Canada is committing to protecting the health and safety of Canadians and to ensuring that our guidelines are safe. We continually evaluate the science, and the guidelines are based on up-to-date science. As with any new technology, it is a sensible precautionary principle to maintain an ongoing review to provide Canadians with reassurance.

The Chair: Thank you very much.

We'll now go to Dr. Prato.

Dr. Frank Prato (Imaging Program Leader, Assistant Scientific Director, Lawson Health Research Institute): My name is Frank Prato. I'm assistant scientific director of the Lawson Health

Research Institute. I've been doing research in non-thermal effects of electromagnetic radiation since 1982, when I was interested in the possibility that medical imaging using magnetic resonance imaging might have some effects.

Since then I've published a few papers in *RF*, but mostly I participate in reviewing the scientific literature. I have reviewed the scientific literature as a past president of the Bioelectromagnetics Society, the scientific literature as chair of Commission K, and also the biological effects of non-ionizing radiation for the International Union of Radio Science, and I sit on the long-range planning committee. I'm also Canada's representative to URSI, the International Union of Radio Science.

I've participated with the Royal Society with respect to reviews of the scientific literature and the review of Safety Code 6 in the late 1990s. I really believe that this process is an excellent process. Through the former chair of that committee, Dan Krewski, we continue to write reviews of literature every few years.

Safety Code 6, specifically in the area of RF and specifically in the area of Wi-Fi, addresses the issue of heating. Given that that is the major scientific finding, it protects the public from Wi-Fi, from cellphones, etc. The radiation from Wi-Fi is lower in electric and magnetic field intensity than the radiation from cellphones, particularly transmit of cellphones when they are held up to your face and you're going back to a base tower.

So if we allow cellphones in children's homes and allow children to use cellphones, and if we allow children to use Wi-Fi in their own homes, it seems a bit paradoxical that there would be some concern about using this in a more controlled environment in the schools. Nevertheless, I've been reviewing the research program on non-thermal radiation in the area of radio frequency for the Swiss national academy and recently I spent four or five days in Lund, Sweden, reviewing their work on non-ionizing radiation and cellphone effects in blood-brain barrier permeability.

More recently, new technologies have allowed us to particularly evaluate what happens during exposure. In the past, we would do an epidemiology study: someone is exposed for 10 years, and then we try to see whether there's an effect. Right now we can start looking for deterministic effects—non-stochastic effects, let's say—by actually exposing someone and looking to see whether their brain activity is changing during the exposure. These are new findings; they are not necessarily.... And new findings have been produced by the Swiss consortium. Repeated reproducible findings have been produced by the Lund group in Sweden, and these look to be reproducible biological effects, but not necessarily detrimental effects.

I believe the process that Canada has in place—and I'm biased, because I'm part of that review process—for updating Safety Code 6 is a process in which arm's-length committees look at literature and then Safety Code 6 responds to that literature with respect to recommendations for regulations. I think this is a good process. And I see a disconnect with individuals stating that Wi-Fi should be taken out of the schools when in fact those children are exposed to similar conditions everywhere they go these days, and particularly in the home, and particularly if they're allowed to use wireless communication devices.

Really, that's all I need to say.

• (1120)

The Chair: Thank you very much, Dr. Prato. We appreciate your input.

Now we'll hear from Simcoe County Safe School Committee.

Mr. Palmer, please.

Mr. Rodney Palmer (Member, Simcoe County Safe School Committee): Thank you.

We've heard a lot from Health Canada officials that Wi-Fi has absolutely no risk and it's perfectly safe, but I'm here to report that this statement is false.

There is a public health disaster unfolding among children in Simcoe County, north of Toronto, where the school board installed a commercial grade Wi-Fi system in every school about three years ago.

Since then, the health of many children has taken a dramatic shift. Some report chronic headaches so severe that their parents are called to the school to take them home. Some report dizziness and vertigo, but only when they're in the school. Others report a cognitive disassociation where they forget where they are sometimes or they can't hold a pencil.

The more severe cases involve heart problems, specifically, an erratic and sudden speeding heart rate known as tachycardia. The children with this condition have reported that they feel like they're having a heart attack at school. At least one child with this problem passed out on several occasions, one time hitting his head on the gym floor as he went down. At least two children have been evacuated from school because the teacher could see their little hearts pounding through their shirts and had to get them out and call their parents.

Two more children have suffered cardiac arrest in Simcoe County schools in the last year. One of them was revived by a teacher with CPR; another one was revived by an attending police officer with a defibrillator. Now every school in Simcoe County has its own defibrillator, as though teenage cardiac arrest is the new normal. Outside of Simcoe County, it's actually less than one in a million. Inside Simcoe County, it's 46 times higher since they installed the Wi-Fi.

The reality is that we're allowing an experiment to be conducted at our schools every day and nobody's taking notes. This is the state of affairs in a school board that installed Wi-Fi in just about every classroom and hallway, and it's most likely the case in every school board that has installed these powerful Wi-Fi systems, but nobody knows because no one is keeping track and, so far, nobody cares.

We've reported all of this to the school board and they say that it can't be the Wi-Fi because Health Canada says it's safe. We reported it to the public health unit, and they said it can't be the Wi-Fi: Health Canada says it's safe.

We've reported this right up to the Minister of Health for Canada and we're told the same story, often with the same cut-and-pasted, word-for-word explanation that "Health Canada has got our back, don't you worry, Wi-Fi is safe". Beth Pieteron herself was quoted on national television two weeks ago as saying, "There's no scientific evidence that those kinds of effects are caused by the energy limits the kids are exposed to by Wi-Fi".

Well, I have news. The U.S. government's National Institutes of Health published a study this year showing that children's health is profoundly at risk from exposure to wireless devices. The *European Journal of Oncology* published an entire volume this month on the dangers of low-level radiation, and one of those studies showed that this exact heart problem, tachycardia, which is being reported in our schools, is agitated by the exact frequency of Wi-Fi. Just yesterday, the American Society for Reproductive Medicine reported that only four hours of exposure from a laptop with Wi-Fi on can damage DNA in sperm.

So what arrogance declares that all of these scientists and all of their work don't exist?

I've found that by scratching only a thin surface of Health Canada you discover a conflict of interest with the wireless industry, a conflict of interest that might explain why they're ignoring the scientists who have proved time and again that Wi-Fi is in fact harmful, especially to children.

Even though this experiment that is being conducted in Simcoe County has failed miserably, we're about to roll it out in schools throughout Toronto, London, Ottawa, and across Canada until every child in this country is irradiated by microwaves all day long because Health Canada says that's okay. The parents will have no say in this, and when their kids start having heart problems, their doctors will be just like the ones in Simcoe County. They'll say to the kids that it can't be the Wi-Fi because Health Canada says it's safe. Instead, they'll prescribe pharmaceuticals, like they do for kids in our schools, or as in the case of one little boy in Barrie, they'll install a permanent defibrillator in his chest.

Despite the statements of Health Canada, we are without a doubt endangering the future of an entire generation of Canadian children. And for what? So that they can connect to the Internet in a new and cool way. Well, hard wires do the exact same thing. They give them the exact same Internet and they're harmless.

• (1125)

The children of Simcoe County have been failed by every level of government oversight installed to protect them, but they are just the beginning. They're a harbinger of Canada's future of sick children irradiated daily by microwave exposure without consent, and here, in this room, is their last level. This is the last chance for these kids. What do we tell them in a decade or two when we finally figure this out?

The Chair: Mr. Palmer, I'm sorry. You're going to have to wrap up.

Mr. Rodney Palmer: I'll say this in closing. Our great political leaders have on many occasions had to apologize for the institutional abuse of children in decades before, and they always say the same thing. They say, "Never again, not on my watch". Well, it is happening again, and it's on your watch, and I hope that now that you know something you rise to your position and do what you're empowered to do to protect them.

Thank you.

The Chair: Thank you very much, Mr. Palmer.

We'll now go to Dr. Muc.

Dr. Anthony Martin Muc (Adjunct Lecturer, Dalla Lana School of Public Health, Occupational and Environmental Health Unit, University of Toronto, As an Individual): Thank you, Madam Chair.

I don't want to take too much time. I think questions and answers are more relevant and I'm here to try to share my experience with you on these issues.

Just for the record, Ms. Pieteron mentioned the RED Act. I started my career in non-ionizing radiation with drafting regulations related to microwave ovens in the early 1970s under the RED Act. I've done research in the area ever since then. I moved on to the Ontario Ministry of Labour and worked there more broadly, in non-

ionizing radiation in general, which covers the so-called range of "DC to Daylight". I've participated in the standard-setting process and I agree with Dr. Prato about the validity of that process, the serious attempts made, and the absolute attention to every detail related to every aspect of the science of the day.

In the early days.... Just let me make one other point regarding SC 6. While I was with the Health and Welfare Canada of that day, I was personally the author of the seminal drafts of SC 6, and it has evolved significantly since those days, just as understanding of the possible effects of microwaves, radio frequency energy, and non-ionizing radiation in general has evolved over that time. Just as Ms. Pieteron said, all of the standards and guidelines—SC 6, ICNIRP, etc.—are under the same process of evolution as time goes on, developing with advances in scientific knowledge.

Scientific knowledge is not just associations. It's not just indications. A rooster crows in the morning and the sun rises. The rooster does not cause the sun to rise. Many associations are shown in many studies related to the possible effects of RF and microwave non-ionizing radiation in general. They do not become established effects until they meet sufficient criteria related to the whole process of reproducibility, development of mechanisms, and realistic models of how things occur.

The other issue that I think is important in the context of this sort of discussion is the perspective. What risks are we talking about? Are these risks relevant? Are they advantageous to us in terms of expending resources to control things that are hypothetical and to literally not control things that we know are very, very detrimental to us? To me, the glaring example of that is things like automobile fatalities. Children are at higher risk of death and dismemberment going back and forth from school than they are from Wi-Fi, for example. There are many issues like that in the environmental area. I think scientists try to bring perspective and rationality to these kinds of issues.

Thank you.

• (1130)

The Chair: Thank you very much.

We'll now go on to our video conference. We have Dr. Blank and Curtis Bennett.

You will have five minutes for a presentation. I would like to have Curtis Bennett, president of Thermographix Consulting Corporation begin, please.

Mr. Curtis Bennett (President, Thermographix Consulting Corporation): I want to thank you very much for inviting me to testify at this committee.

I first want to tell the people in the room what my professional background is. I'm a government-trained provincial and national electrical professional, so I design magnetic fields for a living and install these applications for industry.

On top of that, I have a building engineering background. Really important in that as well is that I've built that education to complement a background in infrared technology, which allows us to see temperature beyond our visible spectrum. Now, that can't be overstated, because seeing temperature molecular levels has allowed us to do consulting for a multitude of industries in oil and gas. We are part of a team giving their professionals the ability to see beyond their visible spectrum.

It's really important for the committee to understand in regard to me being here that I've consulted on national security issues and on every part of industry. I lecture medical academia in the United States and Canada, where they get education credits they need for licensing. One of the things I educate on in medical academia is magnetic and electromagnetic interference with humans and what it means to interact with anything.

I'll give you an idea of how important this issue is. In the case of electromagnetic radiation, we just recently submitted information to Natural Resources showing that electromagnetic radiation from the sun was causing the excitation of buildings to generate heat close to boiling temperature.

What I also want to say about that is that I've actually imaged, for the medical community, the early detection of breast cancer. I've imaged cellphone radiation in arms, face, and ears without even understanding what I was looking at; nor could the patient see what was in front of me.

As an electrical professional, what I wanted to bring forward to this committee as well is the point that there's been an oversight in Safety Code 6, in that you didn't compare frequencies to frequencies. Children aren't inanimate objects sitting in a room. They are very intricate electrical systems, and in this application they are essentially bare conductors. Being a bare conductor means they're very susceptible to any electromagnetic fields.

Something I've done for industry—and I've done this for their insurers, for these guys, and for manufacturing or lumber industry at the same time—is to actually image this effect in an electrical application. I have imaged 60 hertz, a very low frequency interaction, with electrical components that would have caused failure in their operation, killed people, and shut down the whole process.

Now, that's 60 hertz. Compare that to these children who are functioning at low hertz, at 7.8 hertz, and now you're imposing 2.4 gigahertz, or 5 gigahertz on a 7 hertz signal. You're going to cause electromagnetic induction, which is going to produce heat. You're going to change the frequency and the electrical parameters of that

child. Also, when you get into the higher radiations, all you're talking about is a bigger heating effect because you have more aggressive radiations with that.

Safety Code 6 says that what's "to be avoided is the unintentional stimulation" of tissue. Safety Code 6 says we're to avoid the heating effect. Because that oversight didn't include frequency to frequency and what this meant for biologic systems in this. Guess what's happening in schools? This is, in effect, causing the "unintentional stimulation" of tissue. This is causing a heating effect. When they talk about non-thermal issues, when you're talking about things in biologic tissue polarizing at high speeds, the fact that it produces a heat effect should be very disturbing to every professional. It's absolutely unnatural to have a mystery heating effect in an electrical application.

When I actually took this forward to Health Canada, to the radio frequency professionals, I got comments like "they're not electrical", and that's the extent of it. The International Brotherhood of Electrical Workers said the same thing. They laughed when they heard there was a mysterious heat effect, but they didn't know cause. Causality and biological plausibility are that you have a frequency and an electrical conflict inducing electrical currents into those children—into everybody.

This is also dangerous out in industry, because this is causing our ecosystems and our atmosphere to polarize up to 10 billion times a second, at twice the frequencies, and if you take anything and ask it to change direction by 4.8 or 10 billion times a second, you're going to have some problems and produce heat.

I'm looking forward to answering any questions related to this. The work that I do has humbled me, but we're here to tell the truth related to all issues.

● (1135)

The Chair: Thank you very much, Mr. Bennett.

Now we'll go to Dr. Blank, associate professor of physiology and cellular biophysics.

Dr. Martin Blank (Associate Professor of physiology and cellular biophysics, Department of physiology and cellular biophysics, Columbia University): Good morning. I am speaking from Victoria. I am a professor at Columbia University and I've spent a good deal of my life doing research.

I want to answer some of the questions that have come up from the speakers, but let me first give you the gist of my statement.

As a result of the research I do, I feel that I'm acting really as a translator for what cells would want to say if they spoke our language, because cells have a way of expressing what happens to them by the things they do.

One of the things we have found out and have published in peer-reviewed journals—and it has been shown by many other people as well—is that when there are electromagnetic signals in the air, the cells start to react as if there were a harmful stimulus around. They do this when there is an increase in temperature. They do this when there's a change in acidity. They do this when there are toxic ions around. Cells start to make stress proteins and the stress proteins are indicative of a potential harm.

Cells make stress proteins in the presence of radio frequency, EMF, in the environment. They do this even with a much weaker power line frequency. You can get this with 60 hertz as well as with 800 megahertz. This is a characteristic that goes up even into ionizing radiation. It's a characteristic which indicates first that the cells are saying they are hurting and they are going to do something to protect themselves. There's no question about this. This happens at a very low level. We've published thresholds for this kind of thing, and they are very low.

The other thing about the stress protein is that this is made across the spectrum. You find it in not only non-ionizing, but up into the ionizing range. You start getting stress proteins being generated on exposure to EMF.

The fact that this occurs over such a wide frequency range is characteristic of what engineers call a fractal antenna. A fractal antenna is unlike the antennas that we are used to. Many of you may remember that when TV first came in they used to have these bars on top of the roofs that would pick up these signals. You had a long bar and a much smaller bar on top. This was so that you could pick up different levels of signals. The length of the bar told you something about the frequency that it would respond to.

If you look at EMF, you see that it looks as if the DNA is picking up all kinds of frequencies; that is, frequencies that relate to all different lengths. If you look into the nucleus to see the structure of DNA, you see that DNA is actually made like a fractal antenna. There is a double helix that everyone is familiar with, but in order for this long six-foot piece of molecule, the DNA, to fit into the nucleus, which is about a micron and very much smaller, this thing is coiled and coiled. The helix is coiled and then that coil is coiled itself. This keeps on going many times over. This is a property that is characteristic of fractals and the fractal response to a variety of frequencies—a much broader range than a single frequency.

I am telling you that the DNA structure is telling you that this would respond to a great variety of frequencies. You not only have the worry that you're responding to radio frequency, but you're responding to power frequency and you're responding to all the other frequencies that are around. Cells would tell you this if they could speak. I am telling you this because I have studied them and I have found this to be so.

We have taken the DNA apart and found the pieces of DNA that actually respond to the EMF. At the very lowest level in the power frequency range, we can get a piece of DNA that responds to EMF

and an adjacent piece of DNA that responds to a thermal stimulus. They are distinct and they can be isolated.

We have actually taken the DNA that responds to the EMF and transferred it to another piece of DNA, which we can turn on. We have shown that we can use this piece of DNA as an electromagnetic trigger. Columbia University owns the patent for this. It is an electromagnetic trigger based on the biology that we've been able to learn from studying the cells.

I thought I would take the last few minutes to make a few comments about the reaction to some of the comments that have been made before now.

• (1140)

In addition to what I said about being at Columbia University, I've been very active in politics. I've been a president of the Bioelectromagnetics Society, the Bioelectrochemical Society, and an officer in the Electrochemical Society, so my experience—

The Chair: Dr. Blank, excuse me. I'm sorry to interrupt you, but we don't have time for that. Your time is up, but here's what you can do. The committee is going to go into two rounds of questioning, so keep in mind the points you wanted to make. When they ask you a question, you do have time to answer that. You have seven minutes. This is just the initial presentation.

Thank you so much. That was very insightful.

We will now go into our first round of questions and answers. It's going to be seven minutes per Liberal, Bloc, NDP, and Conservative members.

We're going to begin with Dr. Duncan.

Ms. Kirsty Duncan (Etobicoke North, Lib.): Thank you, Madam Chair.

Thank you to the witnesses for coming.

It's not disputed that electromagnetic fields above certain levels can trigger biological effects in humans, and therefore exposures to these levels that might be harmful are restricted in Canada and internationally. I think the current debate centres on whether long-term low-level exposure can evoke negative influences on people's well-being.

You see differences between the WHO report and the 2007 "BioInitiative Report". I'm wondering if you can explain the process of Safety Code 6 for me. How often does the group meet? What experts? Are conflicts of interest declared? What is reviewed? Is it peer-reviewed? Is it grey literature? How often is it reviewed?

Are you doing any research of your own? If you are, what are you measuring, please?

The Chair: Would you like to answer that first of all, Ms. Pieterson?

Ms. Beth Pieterson: I can start and then people can add.

Safety Code 6 was first developed in the late seventies. I think Dr. Muc has referred to that. It has been reviewed many times since then. Most importantly, in 1999 the Academy of Sciences was asked to review all of the literature and provide advice.

But Safety Code 6... Most lately, it was reviewed and updated last fall and came out in 2009. But most importantly, we review the literature all the time. We don't decide that five years is up and it's time to review all the literature. Health Canada scientists review on an ongoing basis. We talked about papers being published yesterday. My scientists would be on that and reading it, and as soon as we find out anything that warrants the updating of Safety Code 6, it would be done.

I think that's what has to be remembered here. It's ongoing, keeping up on world literature. We look at the grey literature, but most importantly, we put most of the weight on peer-reviewed science literature and discussions with our international colleagues.

And we do some in-house research—you asked that question.

Ms. Kirsty Duncan: I assume there's an expert panel that's reviewing this. Is that correct?

Ms. Beth Pieterson: The expert panel has not reviewed Safety Code 6.

Ms. Kirsty Duncan: Is there an ongoing process?

Ms. Beth Pieterson: There's an ongoing process to update and review. There's not a standing expert panel.

Ms. Kirsty Duncan: There is not a standing expert panel, so this is in house. Health Canada's doing it. Is that right?

Ms. Beth Pieterson: Maybe Dr. Muc...

Dr. Anthony Martin Muc: If I may, just to try to expand on this issue, I said that when I started out I was involved in the standards and guidelines for microwave ovens. At that time, the standards and guidelines covered the frequency range from 10 megahertz to 100 megahertz, which at the time was like CB radios, and it included AM and FM and the lower frequency TV stations. That was all that there was any standard for at all.

Since that time, that range has expanded to the point where SC 6 now covers 3 kilohertz to 300 gigahertz. That's a hugely different range of frequencies. That's the kind of evolution that has happened over those four or five decades, and it is continuing to happen.

As time has developed, and as information developed about various frequency ranges, different studies and so on were taken into account to look at just how biological systems respond. These guidelines do reflect that and they will continue to reflect that. I have every confidence they will.

• (1145)

Dr. Frank Prato: Can I make a comment, please?

The Chair: Please go ahead, Dr. Prato.

Dr. Frank Prato: I just want to reinforce that. We had an independent panel reviewing Safety Code 6 and we came out with a documented review of the potential health risks in 1999. Now, it was reviewed and sent out for review, but that's not the same as peer review: you're absolutely right. So we separately, then, published in the *Journal of Toxicology and Environmental Health, Part B: Critical Reviews*. We actually published the contents of this complete issue. Then we went on to publish updates in 2001, 2007, and 2009.

So the Canadian community, unofficially, is doing peer review evaluation of the literature. For Safety Code 6, the responsibility of Health Canada has been to incorporate changes on a volunteer basis, clearly, since the original evaluation. For example, in Safety Code 6 version 2009 there are something like 35 references. I was very pleased to see three references to my work—that's fantastic, because I'm not an author of Safety Code 6.

I was also pleased to see one publication where we stated that there is a potential for pulsed RF to affect the electrical activity of the brain, and we did that review. That was published in the peer review literature as well. Safety Code 6 acknowledges that work and acknowledges that there are effects; it's just that some of them are not reproducible, and also they're not necessarily detrimental to health.

Ms. Kirsty Duncan: Okay. I'm going to jump in here. Thank you.

Is this something that we should be reviewing on an ongoing basis? For example, the Institute of Medicine might review something every two years. Should there be a formal report? There is a lot of concern out in the public. In your opinion, is there a scientific basis for looking at the precautionary principle in this area?

Dr. Frank Prato: I'm just talking for myself. I'm not representing any group. I would say yes.

I'm very scientifically interested in this field. As I said, there are discoveries going on all the time. The National Research Council in Switzerland put together a group to look at the possibility that RF power from cellphone transmitters could affect sleep. They've recruited the best people in the sleep business to look at this material. It has been published—

Ms. Kirsty Duncan: I'm sorry to interrupt. Would you recommend an expert panel for this for Canada?

Dr. Frank Prato: Well, we have had a process of expert panel through the Royal Society. That worked extremely well. It was not interfered with. It was—

Ms. Kirsty Duncan: Or the academy—

Dr. Frank Prato: The academy and.... Sure, I would suggest that we could do this formally, but I'm saying that Canada has not been let down by its scientists because it's being done informally and the material is being reviewed by peer review.

The Chair: Thank you, Dr. Prato.

We'll now go to Monsieur Dufour.

[*Translation*]

Mr. Nicolas Dufour (Repentigny, BQ): Thank you very much, Madam Chair.

I want to thank the witnesses for being here. I know that Mr. Palmer wanted to speak, and I of course will give him the chance to do so.

First of all, I would like to ask Ms. Pieteron a question. We see that Mr. Palmer has some fears that may be justified. When we talk about child safety, we can definitely be more emotional at times; we can be personally affected. I understand that and I understand Mr. Palmer's fears very well. Earlier you said no study had been conducted specifically on children, that you were ultimately conducting studies at large and that children were included in that.

Don't you think a study could be conducted specifically for the Simcoe schools? Perhaps that might break things down as to whether there is a genuine fear or not.

[*English*]

The Chair: Monsieur Dufour, before they answer, I just want to also invite the people who are on video to just raise their hands. I will acknowledge you.

Monsieur Dufour, who did you want to answer your question?

First Ms. Pieteron will answer, and then, following that, Mr. Bennett.

Ms. Beth Pieteron: I think everyone knows that there are large ethical issues on conducting studies specifically on children, but there were studies done. When the safety code was developed, there were not live children but models of children's brains and of the size of children to look at the effects of radiation exposure on tissue that would be like children's. Let me just say that.

Second, the Interphone study, which came out in the spring of this year, recommended long-term studies on children. It was a multinational study that looked at cellphone exposure. One of their recommendations, which Health Canada thoroughly supports, is having longer-term studies on exposure, particularly with children. We're very supportive of that. We would welcome long-term studies, just as all the other studies are very welcome. As I said, we review them on an ongoing basis.

• (1150)

The Chair: Mr. Bennett, would you like to make a comment on that?

Mr. Curtis Bennett: Yes, I'd like to.

Can you hear me okay?

The Chair: Yes. When you want to make a comment, make sure you raise your hand so I can see you.

Go ahead, Mr. Bennett.

Mr. Curtis Bennett: Thank you.

Listen, something very important on Safety Code 6 is that it is an incomplete document. With all due respect to the professionals working on this, you can't compare frequencies to children as if they're furniture. Mr. Palmer has every right to be concerned about this, because Safety Code 6 says this: that we want to avoid the unintentional stimulation of tissue. In examples, studies have shown nerve and muscle depolarization. That's not electromagnetic hypersensitivity: what happens when the nerves in the body aren't working? Again, because these children, and people in general, are effectively unprotected conductors, you're going to have this frequency conflict; you're going to have this change and something related to this process.

Now I'm a nationally trained government professional, and I contacted the health minister on this. I got back a letter even though I said to the health minister that what's changed in Safety Code 6 is that causality has been found, a biological plausibility has been found, and reproducibility has been found. I got a letter back from the health minister just prior to this meeting thanking me for my interest and totally dismissing my qualifications as well as the science related to the frequencies.

You have to immediately go to your electrical professionals, who are trained and certified in every province, and ask what would happen when you take these high frequencies and have them interact with another lower frequency. But don't equate them to children, because even the electrical professionals didn't understand—

The Chair: Thank you, Mr. Bennett. There are others who want to comment.

[*Translation*]

Mr. Nicolas Dufour: Mr. Palmer has wanted to speak for some time now. I would like to give him the opportunity to do so.

[*English*]

The Chair: Mr. Palmer, go ahead.

Mr. Rodney Palmer: I agree with our friend from Health Canada that it is unethical to experiment on children, yet this experiment is being conducted. If we look at the fact—not a fear, not a concern, but a fact—that there is not a single scientific study on children... exposing them to this level of microwave for six hours a day, five days a week, 14 years long, starting at age four, you are conducting that experiment. We are allowing that experiment to be conducted except that there is no consent.

Now, if Health Canada would like to conduct a long-term exposure study on children, could you please provide your own? Because my children have not consented to be experimented upon and yet they are every day throughout Simcoe County. This is moving toward Toronto and it's moving across Canada.

It's ridiculous to say let's just wait for some more time while I'm sitting here crying out loud and reporting to you that they're falling down, they're getting defibrillators put in their little hearts, and they are getting cardiac arrest. Hello: this is real and it's happening. And it doesn't go away because we pretend that on paper it's all safe.

Thank you.

[Translation]

Mr. Nicolas Dufour: It's definitely not ethical to conduct studies specifically on children; I understand that. We also agree to acknowledge the problem that Mr. Palmer has raised. Whether studies are conducted or not, there currently appears to be a problem from what Mr. Palmer has told us.

Ms. Pieteron, earlier you said that misleading information had been communicated. I would like to know what kind of information that was and what you consider misleading.

[English]

Ms. Beth Pieteron: I think first of all that one of the misleading facts that is always stated about Safety Code 6 is that we don't consider the non-thermal effects. There's a lot of talk about biological effects and that not all biological effects are detrimental.

When all the scientists reviewed the literature considered for the setting of the limits in Safety Code 6—and as you heard, it's not just Health Canada science, it's the scientists across the country—we recognize that there have been reports of biological effects, but those biological effects are not necessarily detrimental, nor—some studies—have they been reproducible, do the limits set are based on thermal effects. But they have been considered. All those other effects have been considered—

• (1155)

The Chair: Thank you.

Ms. Beth Pieteron: —and they will continue to be considered.

Mrs. Joy Smith: Thank you, Ms. Pieteron.

Ms. Hughes.

Mrs. Carol Hughes (Algoma—Manitoulin—Kapuskasing, NDP): Just as a quick comment, I don't know what detrimental is: do we wait until they fall down?

I want to go back because Safety Code 6 is—

The Chair: Ms. Hughes, can I interrupt you for just a minute?

I'm sorry, Dr. Blank. What happens is that I have to keep time here by the clock, and there will be a time.... I'll ask all committee members. If you want to direct a question to anybody on the video conference, they're right in front of you.

I'll begin your time again, Ms. Hughes. Thank you.

Mrs. Carol Hughes: Thank you.

I just want to go back, because Safety Code 6 basically says that the code “cannot cover all possible situations” and that blind adherence to rules cannot substitute for the exercise of sound judgment.

So when we're looking at this, I think it's extremely important to realize there are effects happening. We are seeing children being affected. We are seeing people being affected; if I remember correctly, my colleague sitting beside me is sensitive to microwave radiation. So we're hearing about this, and I think it's very troublesome to say, well, we don't think it's detrimental, and we're willing to take the risk. Are we really willing to take the risk?

Before I continue my comments here and maybe ask some questions, I do want to give Dr. Blank a chance to respond to what he's heard so far today and maybe finish some of the points he wanted to make at the beginning, because I think it's very important to hear those comments before we continue.

The Chair: Dr. Blank, go ahead, please.

Dr. Martin Blank: I wanted to make a comment. Several people have mentioned the fact that results have to be reproducible and be peer-reviewed. I would like to point out the BioInitiative Report, which has been referred to several times. I was one of the people who contributed to it. The BioInitiative Report was written by working scientists, people who've actually been involved in the activities they wrote about, unlike some of the committees that are making the judgments. You have people who are basically experts writing about this and active scientists who are writing about this.

The other thing about the BioInitiative Report is that while it wasn't peer-reviewed in the classic way, it was peer-reviewed among the people who contributed. There was reading of it among those who contributed to it, but the same people who contributed to the BioInitiative Report updated their report and submitted it to a journal called *Pathophysiology*, and thus a peer-reviewed BioInitiative Report came out in August of 2009. So in effect, the BioInitiative Report has been peer-reviewed and it passes with scientific credentials as well—that is, official scientific credentials.

As a coda to this, I'd like to point out that the Parliament of the European Union actually voted—I think in September 2009—to review their own standards based on the BioInitiative Report. So if you get the occasional report going around from a few committees of mainly politician-scientists, as opposed to active scientists.... The European Union, in its collective wisdom, decided there was enough evidence in there...and by the way, the BioInitiative Report had over 2,000 references in it, so you can't say that it was just a cursory review. It was a very thorough review, and it's open to discussion.

The point is that it was put out so that people could see it and in general the public did see it. The reviews have been that people are now much more aware of the issues than they had been previously.

• (1200)

Mrs. Carol Hughes: Thank you.

I do want to ask a question of Mrs. Pieteron. Have you ever received letters from the Toronto Board of Health asking for stricter regulations with regard to Safety Code 6?

Ms. Beth Pieteron: Not that I'm aware of.

Mrs. Carol Hughes: Do you know if the government has ever received letters?

Ms. Beth Pieteron: Not that I'm aware of.

I do know that the Toronto school board is in discussions with Industry Canada and other government departments about providing them some measurement of Wi-Fi in schools.

Mrs. Carol Hughes: Have you ever received letters from anybody else asking that Safety Code 6 be reviewed with respect to this very subject?

Ms. Beth Pieteron: We have received letters. The minister has received letters and the department has received letters from individuals.

Mrs. Carol Hughes: So based on that, would it not make sense that if long-term studies are recommended with regard to children...? Why isn't the precautionary principle being used to offer protection for children and to stop people pointing to the code as a means of deferring the concerns of people like Mr. Palmer here today, and Monsieur Therrien, whom we heard from in April?

I just want to throw that in here, because we know there are pesticides out there that Health Canada still recommends as safe to use, yet we have provinces and communities that won't allow them. We have to look at the mercury poisoning and the level that Canada safety says it is, and yet we are still seeing low levels of mercury affecting and actually poisoning people, so why wouldn't we use the precautionary principle on this?

Ms. Beth Pieteron: Health Canada does use the precautionary principle, as do other regulatory agencies worldwide. It's used to manage risk when there are possible but unproven adverse health effects.

Mrs. Carol Hughes: Just on that note, though, in a school, if someone is allergic to nuts, the precautionary principle is to not allow the nuts in the school. So why would we allow Wi-Fi in the school if children are affected by the technology?

Ms. Beth Pieteron: Health Canada's position is that there's sufficient evidence to show that if you adhere to Safety Code 6

there's not....and we have to go back to that cause and effect. I'm very sympathetic to the children and the parents in the situation there, but from the science we know—and Health Canada has to base our—

Mrs. Carol Hughes: But whose science? We're hearing science right here. I believe that maybe I should give an opportunity, based on what was just heard—

The Chair: I think Dr. Muc wants to make a comment.

Is that okay, Ms. Hughes?

Mrs. Carol Hughes: Well, I'd like to hear from Mr. Bennett on this.

The Chair: Okay.

Mr. Bennett, would you like to comment?

Mr. Curtis Bennett: With all due respect to Ms. Pieteron and doing those things.... Again, I really want to tell the committee this. Consulting at the level that I do, and consulting for industry and insurers at the same time, there's not a school board that wants to accept responsibility for this. Health Canada does not want to accept responsibility for this.

Because of the oversight in missing the frequency-to-frequency conflict in here, Safety Code 6 actually validates why Wi-Fi should not be in schools: it's causing the unintentional stimulation of tissue and the heat effect, which they call nerve and muscle depolarization

The Chair: Thank you.

Mr. Curtis Bennett: How many of you want your kids in that environment?

The Chair: Thank you, Mr. Bennett.

We'll now go on to Mr. Uppal.

Mr. Tim Uppal (Edmonton—Sherwood Park, CPC): Thank you to the witnesses for coming today and contributing to this very important study.

After hearing from Mr. Palmer about the situation in Simcoe County, I actually have a concern about my riding in which a cellphone tower has been put up very close to a day care centre. We have received a number of concerns from parents in that area.

The fact is that I'm concerned as a member of Parliament but also as the parent of a small child. Parents are not scientists, and we get a lot of different information, whether it's from the Internet or different scientists like the ones we have heard from today. There's conflicting information.

I would like to ask Health Canada, as the highest authority here in Canada, how parents can be reassured about sending their children to those schools and to day care. How can they have confidence in Health Canada? What do you say to parents in this situation?

Ms. Beth Pieterston: I think parents have to make decisions all the time about the safety of their kids and the well-being of their families. I think they have to seek good information, talk to their health care providers, and get information from all sources. Science isn't black and white. There are always going to be different sides. They need to make their own decisions.

This is Health Canada's position on this issue. Certainly, the information on our website, we believe, is very accurate and true and worth being read by parents. It talks about Wi-Fi and exposure to cellphones.

•(1205)

The Chair: Dr. Muc, did you want to comment?

Dr. Anthony Martin Muc: Yes, if I may. Actually, I'm trying to address what you've raised, and I will also use the example that was raised previously about peanut allergies. Peanut allergies are established as an effect in certain people, so it's reasonable to take action to deal with established effects.

But despite Mr. Palmer's observations of distressful occurrences in the schools, those effects have not been established as a consequence of Wi-Fi per se. Now, there has not been a study specifically of children to determine that kind of thing, but nonetheless the standards and guidelines have indeed, as Ms. Pieterston raised, the issue of modelling and so on.... It's established that at levels far below—which is what Wi-Fi produces—the levels that are accepted by SC 6, it is not expected that effects like that will occur.

I will also say that in my experience with these situations over the last four decades, there have been similar spectra of consequences and of observations in schools, related to things like flicker in fluorescent tubes and colour quality of lighting, whether it's full spectrum so-called solar or natural fluorescent tubes or standard fluorescent tubes. It's just as each new technology comes along.... We've had compact fluorescents raised as a possible issue now as well. There are new technologies. High frequency is being used to stimulate them. Lord knows where it will go.

The Chair: Mr. Palmer, I believe I saw you raise your hand.

Mr. Rodney Palmer: Yes. I have two quick comments.

The reason it isn't established like the peanut allergy is because it's currently unethical to conduct scientific experiments on children. As long as that remains, it will never—read “never”—be established, okay? So that's a ridiculous standard to hold us to.

I'll give you another ridiculous standard that just came out of the mouth of Beth Pieterston: “no consistent evidence to date”. Let's edit that. I'm not a scientist, but I was a journalist for 20 years in this country. I would edit that. I would take out the words “consistent

evidence” and then the word “no” doesn't apply. You have to take out “no consistent”, so there is evidence that this causes harm.

They're throwing in what journalists so affectionately call weasel words when we hear from our bureaucrats and politicians. It's plausible deniability, so that when children start getting sick in bigger cities like Toronto, Ottawa, or London, Health Canada can say, “Well, there was no consistent evidence to date”. There is no consistent evidence by this standard that smoking for 40 years causes lung cancer, because only 30% of the people get lung cancer. So for that other 70% of the people, there's no consistent evidence.

So they're raising the bar, raising the bar, raising the bar.... If they get sick, well, it's only these kids. If it's more schools, it's only those schools, well, we want doctor's notes now....

Mr. Tim Uppal: Thank you.

Ms. Pieterston, how many reports of adverse health effects relating to Wi-Fi does Health Canada receive and have you received? Also, what do you do with these reports, concerns, or complaints that you get?

Ms. Beth Pieterston: We haven't received any formal notifications other than the ones that Mr. Palmer is talking about from that school board. We—

Mr. Tim Uppal: Sorry. So that's that the first one you've received?

Ms. Beth Pieterston: That's the first notice of a school board, yes. Other school boards...like the Ottawa school board, which has Wi-Fi, has reported no health effects. The U.K. system, which has Wi-Fi in many of its schools, is studying it in long-term studies, but it doesn't have any health effects reported to date.

Mr. Tim Uppal: Mr. Muc, there's something that you had touched on, and frankly, it's a fact of life that we use technology today. We use Wi-Fi. We use cellphones. How do we balance the benefits derived from these technologies over the concerns of exposure?

Dr. Anthony Martin Muc: I can't say that's a question I can presume to answer except as a citizen. I don't think it's a scientific question. I would say personally that we benefit greatly from these technologies. I have two grandsons now, one not six months old yet, the other about three years old, and our family uses cellphones, Wi-Fi, and all the technology. I have not the least qualm with their continuing to do so throughout their whole lives.

• (1210)

The Chair: Mr. Bennett, did you want to comment quickly?

Mr. Curtis Bennett: When you talk about caution in using this, you have to bring the right professionals into this. Health Canada needs to go back to the electrical engineers and these other professionals and say there was a frequency conflict, because blasting this stuff through our atmosphere is affecting pollinators and everything else.

We have to be careful about convenience versus the right professionals to install this safely. Blasting this out across our atmosphere and in schools without that complete data is irresponsible.

The Chair: I'm sorry, but we're out of time for this round of questioning.

We're now going to our next round, which is five minutes for questions and answers.

We will begin with Dr. Duncan.

Ms. Kirsty Duncan: Thank you, Madam Chair.

Ms. Pieterston, can you define the precautionary principle, please?

Ms. Beth Pieterston: I'm going to read it out, okay? I have it written down here. It's quite a complicated thing. I'm not convinced that it's interpreted well by all.

Health Canada uses it. There have been cases where it has been used; I think the latest one is the removal of bisphenol A in toys and things. It's used by regulatory agencies worldwide. It's "a public policy approach for risk management of possible, but unproven, adverse health effects" to underpin risk-related decisions. Risk assessments consider all data available in the scientific literature and focus on effects where scientists consider most relevant for human health, and based on such an evaluation, the department, or any other agency, takes action as required.

But the precautionary principle is used when there is only some evidence and it's not conclusive. In the case of electromagnetic fields, Health Canada's position is that there is sufficient evidence to show that adherence to Safety Code 6 will not cause harm to human health. That's why we do not advocate the precautionary principle in this situation.

Ms. Kirsty Duncan: There is concern out there. Is there a possibility with a scientific basis to use the precautionary principle in this area?

Ms. Beth Pieterston: At this point, again, I reiterate the department's position. There's no evidence that links the cause and effect, and based on the best science available and reviewed, we do not believe the precautionary principle is warranted now.

Ms. Kirsty Duncan: What would be the positive and negative impacts of using the precautionary principle here?

Ms. Beth Pieterston: I think the negative input is that it would impede some people's desire to use it, and it's impossible to block out electromagnetic fields from everywhere. You know, you walk down the street in Toronto, you're exposed to it everywhere, so yes, you could apply it in some areas, and you could weigh the benefit and the risk of that.

Ms. Kirsty Duncan: Okay, I'm going to ask one last question. If you could write the recommendations—we will be producing a report—what is it that you would recommend this committee do? One we've heard from you is that it would be good to establish an expert panel that should review this at regular intervals. What else would you like to see?

Ms. Beth Pieterston: I think it's very important that we encourage both the scientists at Health Canada and the scientists across the country to continue to do long-term studies as well as the type of biologic studies that Dr. Prato recommended, which he and some colleagues in Sweden are doing. I would encourage that.

Ms. Kirsty Duncan: Okay.

Can we hear from Dr. Blank?

The Chair: Dr. Blank, would you like to come in and make some comments on this? Go ahead.

Dr. Martin Blank: I wanted to make a comment when we were talking about whether anybody has taken any action in connection with Wi-Fi. There was a much publicized case recently when the library in Paris actually eliminated this. It actually had instituted Wi-Fi within its structure and then, as a result of complaints and I guess their own study, they decided to just disband it. They got rid of it. I understand that the same thing happened in England in one of the school systems. I don't have that kind of information at hand.

But I just found out about a review that was written by Vini Khurana and a number of other colleagues in the *International Journal of Environmental and Occupational Health*—it just came out—in which they reviewed the effects of towers. Now, these are much lower-emitting kinds of structures, and they're probably more comparable to Wi-Fi than they are to cellphones. They point out that there are some studies...they are not very many and they're not very well-funded studies so they're not all that well done, but nevertheless there are indications that there are problems, including such problems as the development of cancer.

Now, there are two studies that looked really good, one done in Germany and one done in—

• (1215)

The Chair: Dr. Duncan would like you to talk also about recommendations and our time is running out, so—

Ms. Kirsty Duncan: Thank you, Madam Chair.

The Chair:—could you please talk about the recommendations you would suggest?

Dr. Martin Blank: I think the recommendation is that the barn door is already unlocked and the horses are out of the stable, and the fact is that it's a little late to go back, but one should really not have been there. It's like the old Irishman's story, when he was asked, "How do I get to there from here?" He said, "Well, I wouldn't start from here". I think we're in a position now where we've gone too far without having adequate preparation for what we've done.

I think perhaps it would be cautious to have a cease and desist; in other words, just stop instituting these things right away and take stock and see where we are, because there have been reports. This latest paper by Khurana and colleagues indicates that there is reason to believe not only the incidence of cancer that occurs from these tower studies but also these other neurologic symptoms like people with dizziness and all kinds of things like that.

The Chair: Thank you, Dr. Blank.

We'll now go to Mr. Brown.

Mr. Patrick Brown (Barrie, CPC): Thank you, Madam Chair.

We have heard interesting comments today. Certainly, coming from the City of Barrie, where I've seen some newspaper coverage of the concerns in Collingwood, it brings this very close to home. I haven't heard any of these concerns in my own schools, but seeing some of the coverage of what Mr. Palmer has talked about obviously has left me curious.

I wanted to know, first of all from Mr. Palmer, did the Simcoe Muskoka District Health Unit ever get involved? Did they ever substantiate any of the effort that was raised?

Mr. Rodney Palmer: We've reported to them. They deferred to Health Canada, as did everybody else: that Safety Code 6 says it's safe. I've pointed out to them that, in fact, after reading Safety Code 6, on page 3, there's a disclaimer that says in a world of rapidly changing technology, "this code cannot cover all possible situations".

Mr. Patrick Brown: Were you disappointed that the health unit didn't take it more seriously?

Mr. Rodney Palmer: They entirely failed. There are two cases of cardiac arrest, multiple cases of tachycardia, and defibrillators in every school, and they're ignoring it because Health Canada says it's safe.

Mr. Patrick Brown: There's been reference to the BioInitiative Report. That seems to be brought up in reference to those who are concerned about this and the potential adverse reactions.

What is Health Canada's opinion on that BioInitiative Report? Is there any scientific basis that would substantiate it?

Ms. Beth Pieterston: In my opening remarks, I commented on the BioInitiative Report. It's Health Canada's position, as well as that of most international and other jurisdictional health agencies like Health Canada, that the BioInitiative Report was not peer-reviewed, although I heard Dr. Blank said a later version was peer-reviewed, and there were a lot of...that it has a lack of balance within it. They didn't present all of the new scientific evidence. They only considered more of the negative outcome reports rather than looking at all of them. It's most usual when you review science that you consider the whole scope of science showing one thing and the other thing, not just one thing—and that there were inconsistencies within the report.

It's Health Canada's position as well—as I said—as that of other international regulators that we do not support the findings.

Mr. Patrick Brown: How does Health Canada respond to complaints and concerns that are raised? For example, when they see those front page headlines in a local newspaper in the spring or summer—whenever it was—with several dozen or several hundred concerned parents, how does Health Canada respond to verify or investigate those concerns that are brought to them?

Are there mechanisms or protocols that exist within Health Canada to look into those issues as they emerge?

• (1220)

Ms. Beth Pieterston: Not specifically. We certainly take them seriously and look to what's happening, but local health issues are the responsibility of the local health authorities.

As for the school boards, if they wanted some interaction with us, we would respond. For instance, the Toronto school board is asking Industry Canada to go into the schools and measure radio frequency there. It's another government department, but that's the government department responsible for it.

Mr. Patrick Brown: Are there any schools in the country that have been looked at either by a provincial ministry of health or the federal ministry of health? Are any school boards investigating—

Ms. Beth Pieteron: Not that I'm aware of. As I said, the U.K. has set up quite a systematic study of the effects of Wi-Fi there, and we're following that study.

Mr. Patrick Brown: Normally if there were alarming health concerns, would you expect the local health unit to deal with it?

Ms. Beth Pieteron: I would, yes. Health effects, health care... yes. We would obviously be concerned. We review the literature. I think that when something like that has happened, the scientists go back and review, verify, and examine.

Mr. Patrick Brown: In the case of what Mr. Palmer brought up, I'd certainly be interested in the reasons why or what action was taken by the health unit: why they didn't take action, why they believe they shouldn't have taken action.

I know that for a lot of local issues, the Simcoe Muskoka District Health Unit is pretty quick on their feet. So that's why your comments are obviously concerning—that you felt your concerns weren't met with that same level of enthusiasm.

For Mr. Muc—

The Chair: I'm sorry, Mr. Brown, your time is up. My apologies.

We now have to go to Mr. Pomerleau. I understand that Monsieur Dufour might share time. Keep in mind that you do have five minutes.

[*Translation*]

Mr. Roger Pomerleau (Drummond, BQ): Thank you, Madam Chair.

Thank you for your presentation. Thanks as well to the witnesses who have joined us by video conference

Mr. Palmer, my question is further to what Mr. Brown just said. I wonder whether I correctly understood the French translation. Did you say that you had taken steps to report all the incidents that had occurred involving children in your schools and that no action was taken on that on the ground that theoretically that cannot happen?

[*English*]

Mr. Rodney Palmer: That is exactly right.

Mr. Roger Pomerleau: Not very scientific, no?

Mr. Rodney Palmer: No one has come to our school to interview any one of these children. No one has done a case history to find out if they had these symptoms prior to Wi-Fi being installed. This is a simple diagnostic procedure that any physician would conduct and not a single one of them has.

The ones where the parents have taken studies that show the condition their child has are supported in the annals of science as occurring as a result of Wi-Fi or microwaves. These doctors have told those people Health Canada says they're wrong so they're not considering it, and instead they choose to medicate, do surgery, or ignore. But they have not yet asked any of them to move out of the Wi-Fi areas where their children are having these reactions.

[*Translation*]

Mr. Roger Pomerleau: What did you do? Who did you contact to try to obtain a scientific analysis of the facts? You made the affair public, but whom did you contact in your region to have a serious analysis conducted? Did you contact Health Canada, for example? Science is based on facts, first and foremost, far more than theories. If you report facts, someone with a scientific mind should at least go and see whether what you say is true, tell you whether you are right or wrong, but based on facts and on an analysis of those facts.

[*English*]

Mr. Rodney Palmer: I agree with you completely, sir. We have been entirely discounted. The children have been discounted.

For example, we did contact a biologist who is the president of Lakehead University, who is a school administrator in our area. Lakehead has a campus in Simcoe County, in Orillia. He has banned Wi-Fi on his campus, and we asked the school board, the Simcoe County District School Board, to invite him to lecture about why as a biologist he knows that Wi-Fi is potentially harmful, and why he chose to not have it in his school and instead use fibre optic cables to hard-wire the computers. They refused to invite him in.

We asked them to invite Dr. Magda Havas, a professor at Trent University, published in peer review journals and doing research on electromagnetic radiation—which I know Beth Pieteron is well aware of—and specifically on microwave radiation. The Simcoe County District School Board ignored that and did not have her in. They instead invited Professor Muc to come in, who admitted that he has no knowledge of biological effects because he's not a biologist. He's a scientist; he speaks within his realm of training.

They didn't ask a biologist to come in. They didn't ask a doctor to come in. They didn't ask anybody who has training in the biological effects of microwave radiation to come in. Instead, they just keep deferring to Health Canada.

• (1225)

The Chair: Mr. Palmer, I think Monsieur Dufour wants to—

[*Translation*]

Mr. Nicolas Dufour: I'm sorry, but I think you'll appreciate the question, Mr. Palmer.

Ms. Pieteron, do you intend to do anything to verify what Mr. Palmer has said?

[*English*]

Ms. Beth Pieteron: If we were asked to help the school board measure, yes, we'd be there. If we were asked to provide some assistance to the provincial government, we would do so.

Mr. Rodney Palmer: So that's a no.

Ms. Beth Pieteron: No, we would respond if we were asked by the—

The Chair: Excuse me. We'll stop right here. Anything has to be addressed through the chair.

Mr. Rodney Palmer: I apologize.

The Chair: Thank you.

Please continue, Ms. Pieteron.

Ms. Beth Pieteron: My response was that yes, we would respond if we're asked by the provincial government or by the school board to provide some information and assistance.

The Chair: Thank you very much.

You have about 50 seconds, Mr. Dufour.

[*Translation*]

Mr. Nicolas Dufour: I have no further questions, Madam Chair, but Mr. Pomerleau has one.

Mr. Roger Pomerleau: I have a very brief question for Mr. Bennett. Did I correctly understand the translation? You expressed your comments, your hesitations and your doubts about the procedure surrounding this affair. You also said that, despite the letter or letters you sent, all you received was an acknowledgment of receipt telling you you were very kind. Is that the situation?

[*English*]

Mr. Curtis Bennett: You know, unfortunately that is the fact, and again I want to stress this to Ms. Pieteron and Health Canada. Safety Code 6 is a complete document in that it says the problem with all the things we're talking about today is that we're missing causality, biological plausibility.

I'm here, Ms. Pieteron, as a science professional who is trained and certified by the government, to tell you that the science has changed, and that's for this panel as well: a prolonged study effectively means that we're going to radiate your children and they're going to be in a lot of trouble because Safety Code 6 says "nerve and muscle depolarization". If Ms. Pieteron and Health Canada—

The Chair: Thank you, Mr. Bennett.

Now we'll go to Ms. McLeod.

Mr. Curtis Bennett: Thank you.

Mrs. Cathy McLeod (Kamloops—Thompson—Cariboo, CPC): Thank you, Madam Chair.

I'd like to go back to part of the opening remarks from Ms. Pieteron. You talked about the Interphone study. I'm wondering if you could talk a lot more about the Interphone study, what it was, and what the results were. Then I'd like to hear the other researchers' perspectives on that particular study.

Ms. Beth Pieteron: The Interphone study was a multinational study. I forget how many countries were involved; Canada was involved, as were many other countries. It was released this past May.

It took place over 10 years and looked specifically at whether cellphones increased the risk of brain tumours. The results showed that there was not evidence that conclusively said, yes, the risk of brain tumours was increased, but it did recommend that longer-term studies be conducted, specifically on children.

As most of us know, cellphone use didn't really become widespread until the nineties, so children have not been exposed for that long.

So longer-term studies were warranted and Canada will hopefully participate.

Mrs. Cathy McLeod: Could I ask the researchers, anyone with knowledge, what their perspectives are on that particular study?

Dr. Anthony Martin Muc: I have no particular comment on it other than to say it is part of the environment within which the standard-setting committees evaluate the studies that are coming along and take them into account.

It remains a study that... What could I say? It was not conclusive in establishing any effects. That's really the bottom line, as I read it.

Mrs. Cathy McLeod: It looks like Mr. Blank has some comments.

The Chair: Dr. Blank.

Dr. Martin Blank: I'm not prepared to give you a detailed kind of analysis, but there are people who have made analyses of the data. They have pointed out that there a number of things in the report indicate that it really is a document that does not give you the full story. It's the fact that they separated out some of the data in the appendices. It's in the appendices that they find the data there for longer periods.

I think for the 10-year periods the data shows that there is some indication that the greater the length of exposure, the greater your risk of getting cancer, that is, it approaches or may have actually reached significance. The end points there are cancer, and cancer is not something that shows up in a matter of a few years. You usually take induction periods of greater than 10 years, sometimes 15 or 20 years, before you start seeing cancer. The fact that you see it in those data indicates that there is something there that you ought to follow up and view with caution.

If you want to get more detail on what there is, there was an analysis that was published by Lloyd Morgan, and there may have been someone else on that. They went into the various flaws in the way they chose.... One thing I remember is that they defined "users". In the Danish study, for example, a user was someone who used a cellphone once a week for six months. That's hardly "use". You're loading your category of users with a lot of almost non-users. They also eliminated corporate users because the phones weren't registered in their own names, which means they were eliminating those who were most likely to use the phones. So you can see the ways in which the data could be skewed, and there are reasons to believe they probably were skewed.

The actual investigators on Interphone disagreed very, very strongly on the results of the Interphone study, and for years they could not agree on a common point of view. I think that's the reason they actually published it with these appendices: so that the appendices would show that there are data in there that shows there's reason to worry about some of the things they found.

• (1230)

The Chair: Thank you.

Dr. Prato, I think Ms. McLeod wants you to comment. Is that okay?

Dr. Frank Prato: Thanks. May I?

The Chair: Yes, go ahead.

Dr. Frank Prato: With due respect, Martin, we do not have any epidemiologists amongst us researchers here. That is a very sophisticated question that you've asked and it should be asked to a scientist who is knowledgeable in that particular field.

But Dr. Blank is correct in the sense that in presentations of this particular work by Dan Krewski, who is a Canadian in Ottawa here, a well-respected man, he feels the results show that there is no evidence of effects. Maria Feychting of the Karolinska Institute in Sweden, another epidemiologist, has stated that she believes the data show there is no effect. Dr. Martin Blank is correct. Elisabeth Cardis has suggested that there may be some bias in the data and that additional studies would have to be done to determine the outcome.

The problem, again, I state, from my particular specialty and my observation of epidemiology, is that epidemiology tells you if there are effects of the order of at least 50% or 25%. In smoking studies, for example, it's easy to show by epidemiology that smoking causes lung cancer because the effect is 20 times higher. But with respect to these studies on epidemiology and cellphones, we always have error bars that seem to straddle the no-effect point.

The Chair: Thank you, Dr. Prato.

Now we'll go to Dr. Duncan.

Ms. Kirsty Duncan: Thank you. These questions will be for Mr. Palmer.

I'm assuming the committee has taken their concerns to the school. What specifically has the school done to respond?

Mr. Rodney Palmer: You'd have to be talking about the school board, which is the elected body. They have done absolutely nothing, and our requests from the beginning have been very reasonable. There are eight—

Ms. Kirsty Duncan: What are those requests?

Mr. Rodney Palmer: I'll tell you the only request we've ever made of them. There are eight microwave transmitters designed to power 30 computers. This isn't your home Wi-Fi, by the way; this is a much stronger system. They are throughout the school. Only one of them actually connects to eight laptops in one classroom, so the other seven are beaming microwave pulse radiation all day long into the children and aren't being used.

We, as an elected school council, which is a legislative body in Ontario, requested that the seven unused transmitters be shut down and the eighth be used freely as they like. We're not against Wi-Fi. We're against the frivolous use of this microwave radiation.

Ms. Kirsty Duncan: How often have you gone to these people to make the request? Were they re-elected this past week? When will you go again?

Mr. Rodney Palmer: We went on multiple occasions. We went to our principal. We had private meetings with the superintendents. We had public meetings like this one with the entire school board on two occasions.

As I mentioned, I was a journalist for 20 years. I did a film of children describing their symptoms when they walked into the school and we played it on a 20-foot screen. Many of the elected trustees ignored it and looked down and didn't even look at it. They have absolutely no interest in the harm that's being caused by the Wi-Fi systems. And they always say, "Look here, we have a letter from Health Canada saying it's safe".

• (1235)

Ms. Kirsty Duncan: Did anyone come in to look at what's going on in the school? Do we know what the level of illness was before this was put in and what the level of illness is after? Has there been tracking?

Mr. Rodney Palmer: That's a brilliant question. We proposed this question to the Simcoe County district health unit and told them we thought we had an illness cluster there. We believed we had a suspected agent causing it. The other two possible agents would be toxic mould or a sick building syndrome type of situation.

I have great experience in both of these. These are cement buildings with no mould problems, there hasn't been a recent renovation, and it's occurring in at least 14 different schools with identical symptoms.

So we now have a primary suspect, which is the Wi-Fi. This is what we presented to them and they failed to come. They said, "Because Health Canada says that's impossible, we refuse to investigate".

Ms. Kirsty Duncan: That was my next question. Have you looked at other possible reasons for the illness, for the health effects in the children? How have you looked at that? How have you explored the other variables? Who have you brought in to help you with that? Is it the trustees? Is it the health unit?

Mr. Rodney Palmer: Our trustees sat around a table and the majority of them admitted they didn't even have basic high school science so they can't understand this. Our argument is that if you don't understand it, you have no right to turn this thing on, but they have not offered to have anyone to come in.

As I mentioned, I have some personal and professional experience with toxic mould and sick building syndrome.

Ms. Kirsty Duncan: Have you brought in someone to look for mould?

Mr. Rodney Palmer: No. And is it my responsibility? I've become an epidemiologist here, tracking down the names. People phone me and say, "My little daughter was brought home from school because her heart was pounding so much the teacher could see it through her shirt".

How is it that it's my responsibility to bring all these people in? I have gone to every level of government and every level of oversight has said it can't happen.

Ms. Kirsty Duncan: I'm going to ask the last question to all of you.

There will be a report after this. What recommendations from the scientists, from Mr. Palmer, and from Health Canada, do you want in the report this committee's going to write?

The Chair: We only have one minute and I don't think that's possible, Dr. Duncan, with all due respect.

But what we can do if we run out of time—and we've just stopped the clock for a minute—is that you can get written submissions to the clerk and she will distribute them to anyone.

Who do you want to answer that question, Dr. Duncan?

Ms. Kirsty Duncan: I think I'll ask Dr. Muc. Thank you for that.

The Chair: Thank you.

Dr. Muc, please.

Dr. Anthony Martin Muc: I'm sorry. Would you repeat what you're asking?

Ms. Kirsty Duncan: The committee will write a report making recommendations about looking at this problem. We've talked about an expert panel and how long it'll be reviewed every so often. What other recommendations would you like to see this committee make?

Dr. Anthony Martin Muc: That's a very tough question. I can hardly presume. I would say to allow due process to continue, which is what's been going on, and allow Health Canada to continue its review process. SC 6 should not be considered a closed book. Science is never a closed book.

Dr. Blank, in speaking about the Interphone study, said there were indications approaching statistical significance and maybe reaching statistical significance. Dr. Prato raised the issue that you must have maybe a 50% increase in something before you can say that it's an established effect.

The Chair: I'm sorry, Doctor—

Dr. Anthony Martin Muc: Smoking and lung cancer is a factor of 20—and 300 if asbestos is involved.

The Chair: Thank you very much.

We'll now go to Ms. Davidson.

Mrs. Patricia Davidson (Sarnia—Lambton, CPC): Thank you very much, Madam Chair.

Thank you all very much for being here with us today.

Certainly we've been hearing some wide discrepancies across the spectrum of this issue. I would like to ask Ms. Pieteron how our regulations regarding the exposure limits compare internationally.

● (1240)

Ms. Beth Pieteron: Safety Code 6, which we've heard a lot about and is a Health Canada document, is referenced in Industry Canada's regulations, and it's Industry Canada that regulates the telecommunications industry.

The levels set in the safety code, and therefore Industry Canada's regulations, are exactly the same as those in the United States and slightly more stringent than those of the International Commission on Non-Ionizing Radiation Protection.

Mrs. Patricia Davidson: Is there anyone who has more stringent regulations than we do?

Ms. Beth Pieteron: You will hear of countries that do, such as Russia, but I do not believe they ever do any compliance checks. I think their cell towers, because the standard is much lower, probably meet the standard, but I doubt that their cellphones do. Certainly among the developed countries, no, there is no one that I am aware of.

Mrs. Patricia Davidson: Are our guidelines within the limits of the World Health Organization?

Ms. Beth Pieteron: Yes, the processes to develop the guidelines and the limits are according to the World Health Organization.

Mrs. Patricia Davidson: I'd like to ask Mr. Bennett to comment. Also, while you are commenting, would you please give us your recommendation as to what you'd like to see come out of today's hearings?

Mr. Curtis Bennett: Absolutely. There's something I'd like to say about the World Health Organization—I say this with all the required professional humility—which is that the World Health Organization missed the fact that there's an electrical conflict between frequencies.

As far as recommendations go, here is something that could be done immediately following the meeting. If Health Canada went to their industry-trained electrical professionals, the ones it has certified as professionals, and to the electrical engineers and any reference in Safety Code 6, and said that this is an electrical frequency problem between an unprotected conductor and these high frequencies, within one hour you would have those electrical professionals talking about this induced heat effect and this unintentional stimulation of tissue. That can be qualified before the end of the day.

The idea that we're going to subject children or anybody to this radiation when Safety Code 6 specifically says that example studies have shown nerve and muscle depolarization.... Any medical professional I've ever talked to, when you talk about your nerves not working... This is going to produce symptoms from the top of your head to the tips of your toes.

Mrs. Patricia Davidson: Thank you.

Do I still have time?

The Chair: Yes, go ahead.

Mrs. Patricia Davidson: Ms. Pieteron, has Industry Canada ever been contacted to do any testing, that you're aware of, in the Simcoe County area?

Ms. Beth Pieteron: No, not that I'm aware of. As I mentioned to Ms. Hughes, the only one I'm aware of that has contacted Industry Canada is the Toronto school board.

Mrs. Patricia Davidson: Mr. Palmer, is this widespread across Simcoe County? You must have a lot of schools in Simcoe County.

Mr. Rodney Palmer: Again, I don't have the tools to determine exactly how widespread it is. We've asked the school board to do this. They can send a note and a health survey home with every child, and in about five days, they would find out how widespread this problem is. They've refused to do that. So we've set up a website for Simcoe County called safeschool.ca and have asked people to write to it.

We have similar symptoms being reported: these chronic headaches, and nausea, dizziness, and vertigo. Often they're reported by parents whose children have entered kindergarten, because they have the baseline: their children never had this problem at home and now they're getting it at school. Others say they noticed it when their child graduated to another grade that was out in a portable. Now, these portables are associated normally with toxic mould. The portables didn't have Wi-Fi and the children's symptoms disappeared. Profoundly strong and chronic headaches disappeared.

So the parents are kind of having these "aha" moments; they are in at least 14 schools across Simcoe County that have reported to us, and probably more by now. It's becoming something close to a full-time job for me to figure this out. I could organize the study—I already have—for the school board to actually figure it out properly with the Simcoe health unit, with the epidemiologists, and with all the proper professionals who are in place to do this, but so far they refuse to.

Mrs. Patricia Davidson: The question was asked of you earlier whether all those board members were re-elected last Monday.

Mr. Rodney Palmer: Some of them were re-elected. Some of them were not re-elected. In many cases, nobody runs against them—or at least in some cases.

Mrs. Patricia Davidson: Was it an issue for the general public?

Mr. Rodney Palmer: It was an issue, but it's a very difficult one to turn over an election on, and believe me, I would have loved to. Simcoe County is one of the largest geographical districts; you have from Barrie to Penetang to Orillia to Collingwood. As you might know, to organize a grassroots political movement to kick out our school board trustees is difficult.

The Chair: Thank you very much. I think we're a little short of time now.

I want to thank our guests for coming today and for all your insightful comments. This is a very important committee and we take a lot of things under consideration.

I'm going to suspend the committee for just two minutes, and then we'll go back into our report. We will do that in camera.

[Proceedings continue in camera]

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