Western Opinion Research

POR 487-06

enrg RESEARCH GROUP

CANADIANS AND INDOOR AIR QUALITY

May 15th, 2007

FINAL REPORT

Health Canada
HC POR 06-107
200 Eglantine Driveway
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Ottawa, Ontario
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Call-Up #: H1011-060086/001/CY

Ce rapport est aussi disponible en français sur demande

WESTERN OPINION RESEARCH

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EXECUTIVE SUMMARY

Health Canada commissioned Western Opinion Research to conduct a qualitative research study (POR 487-06). The purpose of the research project was to test potential indoor air quality messages with the Canadian homeowners. Focus groups were used to refine messages that will be included in the National Radon Strategy campaign.

The contract (#H1011-060086) was awarded March 9, 2007. Eight focus groups were conducted in four cities across Canada. Two sessions were conducted in each of the following locations:

- Halifax, NS on March 26, 2007
- Quebec City, PQ on March 27, 2007
- Toronto, ON on March 28, 2007
- Winnipeg, MB on March 28, 2007

The groups were attended by randomly recruited homeowners residing in the local area. In order to qualify for the study homeowners had to have a first floor living space as part of their residence along with a crawlspace and/or basement. In each city, one group included parents with children under 18 years of age living at home and one group represented the general public.

Focus groups are a qualitative research method, where participants are led through a discussion by a moderator. Participants are encouraged to provide open-ended and detailed responses to questions that allow for probing of inner thoughts and feelings.

The messaging elements tested were sub-divided in four sections:

- Perception of the issue i.e. what is the risk?;
- Revised guidelines: lowering the level from 800 to 200 becquerels (Bq);
- Action plan to address the risk; and
- Remedial measures to reduce elevated radon levels.

A final report entitled “Canadians and Indoor Air Quality” was delivered to Health Canada in May 2007[1]. For further project information contact:

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Overall reactions

Except in Winnipeg, awareness and familiarity with radon gas is extremely low.

Although parents generally tend to be more sensitive to indoor air quality particularly if they have children with respiratory illnesses, they do not react very differently to the radon issue during the discussion.

Overall, the discussion illustrated how delicate the communication needs to be on this topic. The government needs to inform the public, create awareness and generate action, but it also needs to avoid fear or panic. The government needs to demonstrate risk in order to obtain the attention and encourage action among the target audience, but must carefully communicate the issue.

Many participants need more information about the risk, which includes disclosing an answer to the question "*How long has the government known about this?*" This was a very frequent and significant question as the level of fear of many participants grew quickly when they thought the information had been kept secret.

Providing statistics on the increased risk of developing lung cancer (in reference to an overall probability of developing lung cancer) would provide important contextual information.

Participants want to know that lowering the guideline from 800 to 200 becquerels is sustained by scientific evidence. Any communication should address both the fact that there is new evidence supporting this change and that long-term studies were required. Participants wonder why there is a change and why it is taking place now. Some participants feel that lowering the guideline is a clear indication that the government has specific knowledge about the issue. The inclusion of scientific evidence will allow people to judge how honest the government is being on the issue.

The level of interest in radon is also directly related to the identification of radon prone areas. Participants would feel more relaxed if they are not in a higher risk area and are more likely to take the situation seriously if they are in a radon prone area. There is concern that mapping of these areas could create a situation where property values are affected, although there is a need to highlight radon prone areas.

In order to keep a balance between people's awareness/desire to take action and potential panic, the government also needs to provide concrete information on how to test, how to reduce the presence of radon gas, as well as more general information on the issue and health risks related to radon. Messages regarding the health risks, highlighting radon prone areas, testing, and remedial action that is easy to understand and implement will go a long way to providing reassurance.

The cost to homeowners of implementing remedial measures could also be an issue. Some participants feel that there should be some financial compensation and programs established, particularly if the government has been aware of the problem for some time.

As the focus group discussions progressed and more information was revealed about radon, it was obvious that the number of questions increased substantially: every new element of information presented within the four areas of discussion seemed to generate a fair amount of questions.

Overall, the Government Action Plan presented seemed to cover most elements that participants wanted to see addressed. The testing of federal government buildings around the country is a sensitive point and generates questions as to why the government is only taking care of its own buildings. Participants need to be reassured that all public buildings (schools, hospitals, etc) will be tested including populated commercial buildings.

Strategic Considerations & Recommendations

Given the ambivalent reaction of many participants to the level of seriousness of radon gas, it could be judicious to introduce the topic by announcing that there has been new scientific evidence about the long term effects of exposure to radon gas. This will assist in addressing a key question that will arise from the public as more information is made available about radon gas, that is *how long has the government known about this.*

A pragmatic approach to testing and remedial measures through a government program would be considered an effective action trigger. There is great uncertainty and in some cases, misinformation, regarding testing of one's home and accompanying remedial activities. The public would benefit from having clear and concise information relating to these areas. In addition there is some desire and expectation that there will be some government monitoring of the remedial activities provided to the general public regarding this issue. For example, certification of radon gas test suppliers would ensure that the government is watching out for the best interests of Canadians, as the issue is being dealt with. Cost of implementing remedial measures could also be an issue: some financial compensation program could be established to ensure action is taken when necessary.

The four potential messaging elements are equally important and complementary to each other, and the order of presentation should follow a logical sequence :

1- Defining the issue;
2- Addressing the revised guidelines;
3- Introducing the action plan; and
4- Launching a remedial measures program.

It is important to note that the messaging elements tested were preliminary concepts. Actual message wording will be a key communication issue. It would be useful to test the final communications material once they are further developed.

Based on this research, it is possible to identify some language and message related areas that warrant review. These are:

1. The term radon 'hotspots' raises some alarm in terms of meaning and health risks. Similarly, 'radon prone areas' elicits concern among the public. These phrases should be re-examined to determine if more benign terminology can be developed.

2. Reference to testing federal government buildings needs to be expanded upon to inform the public that this is being done *because* the federal government has jurisdiction in these areas. Alternatively, this information could be downplayed altogether as it is not seen as very important.

FAITS SAILLANTS

Santé Canada a confié à Western Opinion Research le mandat de réaliser une étude qualitative (POR 487-06). Ce projet de recherche avait pour but d'évaluer des messages potentiels à propos de la qualité de l'air à l'intérieur des maisons auprès de propriétaires canadiens. Les groupes de discussion ont été utilisés pour raffiner les messages diffusés dans le cadre de la campagne nationale présentant la stratégie sur le radon.

Le contrat (#H1011-060086) a été octroyé le 9 mars 2007. Huit groupes de discussion ont été réalisés dans quatre villes à travers le Canada. Deux sessions ont été animées dans chacune des villes suivantes:

- Halifax, NE le 26 mars, 2007
- Québec, QC le 27 mars, 2007
- Toronto, ON le 28 mars, 2007
- Winnipeg, MA le 28 mars, 2007

Les participants de chaque groupe étaient recrutés aléatoirement parmi les propriétaires de chaque région. Pour être éligibles, les participants devaient être propriétaires d'une habitation avec un sous-sol ou un vide sanitaire et habiter le rez-de-chaussée de leur résidence. Dans chaque ville, le premier groupe était composé de parents qui avaient des enfants de moins de 18 ans habitant avec eux alors que le second groupe représentait le public en général.

Les groupes de discussion sont une méthode qualitative où les participants discutent entre eux en suivant un schéma de discussion. L'animatrice encourage les participants à fournir des réponses ouvertes et détaillées aux questions posées pour sonder en profondeur leurs pensées et leurs impressions.

Les éléments de message évalués se subdivisent un quatre sections:

- Quel est le problème, le danger?
- Revision des lignes directrices: réduire le niveau de 800 à 200 becquerels (Bq);
- Plan d'action pour faire face au risque; et
- Mesures correctrices pour réduire les niveaux élevés de radon.

Un rapport final intitulé « Les Canadiens et la qualité de l'air à l'intérieur des maisons » a été remis à Santé Canada en mai 2007[1]. Pour de plus amples renseignements sur cette étude, veuillez contacter :

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HC POR 06-107
200 promenade Églantine
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Ottawa, Ontario K1A 0K9 PL 1910A
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[1] This report is also available in English upon request.

Réactions globales

Sauf à Winnipeg, la notoriété et la familiarité du gaz radon est extrêmement faible.

Bien que les parents aient généralement tendance à être plus sensibles à la qualité de l'air ambiant dans les maisons, particulièrement lorsque leurs enfants ont des maladies respiratoires, ils ne réagissent pas différemment aux problématiques reliées au gaz radon tout au long de la discussion.

Globalement, la discussion a fait ressortir jusqu'à quel point les communications sur le sujet doivent être traitées avec doigté. Le gouvernement doit informer le public, créer de la notoriété et susciter de l'action sans pour autant créer de la peur ou susciter de la panique. Le gouvernement doit démontrer le risque pour capter l'attention et encourager l'auditoire cible à passer à l'action, il doit cependant communiquer le problème avec soin.

Plusieurs participants ont besoin de plus d'information sur les risques encourus ce qui comporte une réponse à la question « Depuis combien de temps le gouvernement est-il au courant de la situation? ». Il s'agit ici d'une question récurrente et importante puisque le niveau de crainte de plusieurs participants augmentait rapidement lorsqu'ils pensaient que le gouvernement avait gardé le secret au sujet de cette situation.

Donner des statistiques sur les risques accrus d'avoir un cancer des poumons (par rapport à la probabilité de la population en général d'avoir ce type de cancer) fournirait une référence contextuelle importante.

Les participants veulent savoir que le fait de réduire la ligne directrice de 800 à 200 becquerels repose sur des données scientifiques. Toute communication devrait tenir compte des deux aspects suivants : de nouvelles données scientifiques supportent ce changement et des études à long terme étaient nécessaires. Les participants se demandent pourquoi il y a un changement et pourquoi il a lieu maintenant. Certains participants estiment que la réduction de la ligne directrice indique clairement que le gouvernement sait quelque chose de spécifique au sujet de cette problématique. L'inclusion de preuves scientifiques permettra aux gens de juger par eux-même de l'honnêteté du gouvernement dans ce dossier.

Le niveau d'intérêt par rapport au radon est aussi directement relié à l'identification des zones plus susceptibles de contenir du radon. Les participants auraient plus de tranquillité d'esprit, s'ils n'habitent pas dans une zone à risque élevé et, inversement, seraient plus susceptibles de prendre la situation au sérieux s'ils habitent une zone plus à risque. On craint que le fait de cartographier ces zones puisse avoir un impact sur la valeur des propriétés, bien qu'il soit toutefois jugé nécessaire d'identifier les zones plus à risque.

Afin de conserver un équilibre entre le niveau de connaissance des gens/le désir de passer à l'action et le niveau de panique, le gouvernement doit aussi fournir des renseignements concrets sur les moyens à utiliser pour faire les tests et pour réduire la présence de radon, en plus de donner de l'information de nature plus générale sur la problématique et les risques pour la santé. Des messages relatifs aux risques pour la santé, à l'identification des zones plus à risque, aux tests à effectuer et aux actions correctrices faciles à comprendre et à mettre en application contribueront de façon significative à rassurer la population.

Les coûts de mise en oeuvre des mesures correctives peuvent aussi s'avérer problématiques pour les propriétaires. Certains participants estiment qu'on devrait mettre sur pied des

programmes qui leur permettraient d'obtenir une compensation financière, particulièrement si le gouvernement est au courant de la situation depuis un certain temps.

Il était évident que le nombre de questions augmentait de façon significative au fur et à mesure que la discussion de groupe progressait et qu'on révélait de plus en plus d'information sur le radon : chaque nouvel élément d'information présenté dans le cadre des quatre parties de la discussion semblait générer bon nombre de questions.

Globalement, le plan d'action du gouvernement semblait couvrir la plupart des éléments que les participants souhaitaient voir abordés. Les tests faits dans les édifices du gouvernement fédéral à travers le pays se sont avérés un sujet sensible et ont soulevé des questions sur les raisons pour lesquelles le gouvernement s'occupait seulement de ses propres édifices. Les participants ont besoin qu'on les rassure sur le fait que tous les édifices publics (écoles, hôpitaux, etc) seront testés, incluant les édifices commerciaux à taux d'occupation élevé.

Considérations stratégiques et recommandations

Compte tenu de la réaction ambivalente de plusieurs participants face au niveau de gravité du radon, il pourrait s'avérer judicieux d'aborder le sujet en annonçant qu'il y a de nouvelles données scientifiques sur les effets à long terme de l'exposition au radon. Ceci aidera à aborder la question clef que le public posera lorsqu'on lui donnera de plus en plus de renseignements sur le radon à savoir « depuis combien de temps le gouvernement est-il au courant de la situation? ».

Un programme gouvernemental comportant une approche pragmatique pour effectuer les tests et implanter les mesures correctives pourrait s'avérer un déclencheur d'action efficace. Il y a beaucoup d'incertitude et, dans certains cas, de la désinformation au sujet des tests à effectuer sur les maisons ou sur les correctifs à apporter. Le public aurait avantage à avoir de l'information claire et concise sur le sujet. De plus, les participants désirent ou s'attendent à ce que le gouvernement fasse un suivi sur les correctifs apportés au problème. Par exemple, l'accréditation des fournisseurs qui effectueront les tests de radon garantirait que le gouvernement veille aux intérêts des canadiens pendant qu'il s'occupe du problème. Le coût de mise en œuvre des mesures correctives pourrait aussi constituer un problème : un programme de compensation financière pourrait être mis sur pied pour s'assurer que les gens passent à l'action lorsque c'est nécessaire.

Les quatre éléments de message revêtent une importance identique et s'avèrent complémentaires; l'ordre de présentation devrait suivre une séquence logique :

1- Définir la problématique;
2- Aborder la révision des lignes directrices;
3- Présenter le plan d'action et,
4- Inaugurer le programme de mesures correctives.

Il est important de souligner que les éléments de message évalués étaient présentés sous forme de concepts préliminaires. La formulation réelle des messages sera un enjeu clef de cette campagne de communication. Il serait utile de tester le matériel de communication lorsqu'il sera développé dans une forme plus finale.

En se basant sur cette recherche, il est déjà possible d'identifier certains aspects reliés au vocabulaire ou au message qui ont besoin d'être revus. Il s'agit :

1. Du terme « point chaud » (hot spots) qui éveille des craintes au sujet de sa définition et des risques qu'il comporte pour la santé. De la même manière, le terme « zone propice au radon » suscite des questions de la part du public. On devrait revoir ces expressions pour déterminer si une terminologie moins évocatrice pourrait être utilisée.

2. On doit élaborer davantage pour expliquer au public que les tests effectués sur les édifices du gouvernement fédéral sont faits parce que le gouvernement a juridiction sur ces édifices. De façon alternative, on pourrait minimiser l'importance accordée à cette information puisqu'elle n'est pas perçue comme très importante.

STUDY BACKGROUND & RESEARCH DESIGN

Background

Western Opinion Research (WOR)[1] was commissioned by Health Canada to undertake a qualitative research study among Canadian homeowners. In each city, one group consisted of parents with children 18 years of age or less living at home and the second group was representative of the public in general.

This research was conducted to support Health Canada in developing messaging for the future launch of a National Radon Strategy directed to Canadian homeowners.

Radon gas results from the natural breakdown of uranium in soil and rock. In homes and buildings, radon typically moves up through the ground to the air via cracks and other openings in a foundation. Radon in indoor air is the most important source of radionuclide exposure to Canadians, and new scientific evidence demonstrates an elevated risk of radon levels found in many Canadian homes. It is estimated that exposure to radon causes about 1,900 lung cancer deaths per year in Canada. Radon exposure is second only to tobacco smoke as the most important cause of lung cancer and is the leading cause of lung cancer in non-smokers.

Health Canada has been working closely with the Federal/Provincial/Territorial Radiation Protection Committee (FPTRPC) to develop the proposed guideline of 200 Bq/m3. This recommendation is four times more stringent than the current Canadian guideline of 800 becquerels.

A National Radon Strategy will support this new, more stringent radon guideline of 200 becquerels per cubic metre: its purpose is to be a trigger for remedial action.

To date, Health Canada has helped Canada Mortgage and Housing Corporation (CMHC) develop a homeowners' guide on radon gas and has also engaged the Canadian Lung Association which is developing radon awareness products for its membership. Health Canada has also undertaken consultations with other countries to draw from their experience in the development of radon awareness campaigns. Health Canada is currently updating the radon information on its website.

Objectives

The specific objectives of this research include:

- Determining the effectiveness of the various messaging components in communicating information from the National Radon Strategy; and
- Ranking the potential messages in order of preference by the target audience.

Methodology

Eight two-hour focus groups were conducted with Canadian homeowners in four cities across Canada. The recruitment screener was developed by WOR in consultation with Health Canada

[1] Western Opinion Research is a fully functioning, legally maintained company within the larger firm known as NRG Research Group.

to recruit participants for each session (see Appendix A). The screener was developed to ensure that individuals who participated in the sessions met certain criteria.

In order to be eligible for the focus groups, Canadian homeowners had to live in single dwellings with a ground level first floor. If more than one family lived in the dwelling, the homeowner had to reside on the ground level. This excluded anyone living in apartment blocks and condo apartments.

In each city, one group consisted of parents with children eighteen years of age or younger still living at home while the other group consisted of adults from the public in general. A good mix of gender and socio-economic status were included in each group. In addition, individuals were screened to ensure no conflict of employment existed in the groups, as well as for recent participation (within the last 6 months) in a previous qualitative research study.

Participants were recruited at random from the general public residing in each of the studied locations. The recruitment for the English language groups was managed by WOR out of its Winnipeg office. The recruitment of the two focus groups in Quebec was managed by Opinion-Impact, a Montreal based research firm associated with WOR.

The table below outlines the dates and locations where the groups were conducted along with the number of participants who attended each session.

Location	Date	Number of participants per group	
		Parents	Mix of adults
Halifax, NS	Monday, March 26th, 2007	10	10
Québec, PQ	Tuesday, March 27th, 2007	9	9
Toronto, ON	Wednesday, March 28th, 2007	10	10
Winnipeg, MB	Wednesday, March 28th, 2007	9	10

All participants received a $70 cash honorarium for participating in the focus group.

Context of Qualitative Research

The primary benefit of focus group discussions is that they allow for in-depth probing with qualifying participants on behaviour, habits, usage patterns, perceptions and attitudes related to the subject matter. The group discussion allows for flexibility in exploring other areas that may be pertinent to the subject matter.

The focus group technique is used in marketing research as a means of gaining insight and direction, rather than collecting quantitatively precise data or absolute measures. Although numbers are sometimes presented as illustrative of the opinions of the participants in a study, these are offered for insight and should not be considered statistically reliable.

SUMMARY OF FINDINGS – AWARENESS AND CONCERNS ON INDOOR AIR QUALITY RELATED HEALTH ISSUES

The discussions began with a top-of-mind listing of environmental problems or hazards in households that can cause health risks. The most frequently mentioned issues were:

- Mould/mildew;
- Cleaning products/chemicals/insect repellent;
- Dust/Dust mites/Allergens;
- Tobacco smoke;
- Carbon monoxide;
- Pets/Pet dander;
- Gas appliances/gas fumes/gas leaks; and
- Ventilation.

These potential problems were mentioned in at least one group in each city. Other issues related to indoor air quality were not as prevalent. These include asbestos, air purifiers/fresheners/aerosols, viruses/illnesses, lead paint, urea formaldehyde, and PCB's.

Some issues related to heating systems were mentioned in Quebec (wood, oil, propane), in Winnipeg (natural gas/appliance gas leaks) and in Halifax (wood stoves).

Asbestos was not mentioned in Québec but was mentioned in each of the other cities.

In most groups, some participants connected indoor air quality issues with the advent of more energy efficient homes or with "air tight homes". Ventilation was a preoccupation, particularly during the cold winter months.

Awareness and Familiarity of radon gas

While radon was mentioned in all of the Halifax, Toronto and Winnipeg focus groups, it was not mentioned in the Quebec City focus groups.

The awareness of radon gas varied from one location to the other; however, even the few participants who had prior knowledge of radon were not very familiar with the issue.

In Halifax, radon came up unprompted in both groups. In the first group, one person seemed more knowledgeable and informed participants in his group of the key aspects. In the second group, some participants said they were just starting to learn about radon, as they had read an article in the newspaper a few weeks ago. Their knowledge was very partial, and when pressed, a participant summarized it as such: "*It's a poison gas coming from the ground found in basements prevalent in some areas*." Participants were not aware of any specific health consequences.

In Quebec City, radon was not mentioned spontaneously and, even when probed, only one person said she had vaguely heard about it, and thought it was a "*chemical of some sort*".

In Toronto, radon was brought up as the first or second unaided mention of concerns. Notably, those who brought it up were either engineers or architects yet they did not have confident knowledge about radon.

In Winnipeg, the parents' group was not very aware and knowledgeable about radon. Two people had heard of it, only one of which was familiar with the issue. The general population group was much more aware and familiar as half the group had heard of radon, three of whom were quite familiar with the issue. An article about radon gas had run in the Winnipeg Free Press approximately one month prior to the focus group sessions, which several people recalled.

It should be noted that even among participants who professed knowing something about radon gas, there was an almost universal lack of knowledge among participants regarding the specific health consequences associated with this issue.

Perceived seriousness of key issues

After establishing an exhaustive list of indoor air quality related health risks, participants were asked about the perceived seriousness of the key problems on the list.

In all locations, the most serious issues included mould and carbon monoxide. Asbestos was also a serious issue in one group in Winnipeg, Toronto and Halifax, while lead was only mentioned in two groups, one in Toronto and one in Winnipeg.

In all groups, participants were knowledgeable about mould and carbon monoxide issues. Mould could cause a range of illnesses, including severe respiratory problems. People seemed fairly aware of what to look for and how to solve the problem.

Carbon monoxide is perceived as the most serious issue: it is colorless, odorless, tasteless and, most significantly, it can kill. Interestingly, most participants did not have carbon monoxide detectors.

Other issues also caused concern but to a lesser degree, or were familiar to only a few participants. Lead was often linked to water/pipes or paint and associated with neurological problems. Asbestos was felt to be carcinogenic. Urea formaldehyde was mentioned in Quebec City and in Toronto and was associated with severe skin problems, respiratory diseases, allergies or cancer. Most participants felt that this problem had been resolved with laws banning urea formaldehyde and felt affirmed in their belief because it was no longer mentioned in the press.

Amongst the limited number of participants who were aware of radon, almost none could relate radon gas to a specific illness. Comments were very vague:

"It's a gas so it can't be good for you."

"It'll kill you like everything else."

"Well, whatever it is, it must not be very good for you."

"Radon is radioactive so I suppose (it can cause) some form of cancer."

A few participants in Toronto, Winnipeg, as well as the knowledgeable participant in Halifax, linked radon gas with radioactivity and thus cancer.

In general, very few participants check their homes specifically for problems related to indoor air quality, yet many say they do normal maintenance on their air purifiers, furnaces or ventilation systems. Participants feel indoor air quality is important but it is not a concern. One participant summarized the overall feeling: *"Until we're actually faced with a health problem, we're not necessarily too concerned…because of my son, I'm more concerned now (child had allergies)."*

Overall, participants in most parent groups were more sensitive to indoor air quality issues and claimed that young children and seniors are often more at risk. Some individuals also said they were careful or checked their homes more often since they had children. Generally, participants felt they are mainly concerned when faced with a problem.

SUMMARY OF FINDINGS – MESSAGING

Perception of the risk

Perception of the risk was first discussed based on a description of radon gas. Subsequently, participants were exposed to the health consequence of radon gas.

Reactions to the radon definition

The following definition of radon gas was initially read verbatim to participants:

> *"Radon is a radioactive gas that is colorless, odorless and tasteless. It is formed by the natural breakdown of uranium in soil, rock and water. Radon also breaks down to form additional radioactive particles called "progeny". Radon escapes from the ground into the outdoor air. It is diluted to low concentrations and is not a concern. However, radon that enters an enclosed space, such as a home, can sometimes accumulate to high levels."*

Participants' initial reaction was to raise a number of questions:

"What's 'high levels'?"

"How do you test? How do you measure it in the home? "

"Where does it come from? "

"What are the effects/What is the "real" health risk? Can it kill you? Can you be (physically) tested for that?"

"Is there a radon gas detector? "

"How widespread is this? What are the areas? "

"How do I find out if it's in my house?"

"What can you do? "

"How long has the government known about this? "

"Where are the hot spots?"

”What precautions can we take to eliminate or avoid it? “

”What defines a closed space? “

”What about accumulated exposure, are the effects cumulative? “

In Quebec and Toronto the word ‘radioactive’ caused some concern. In the Quebec parents’ group, participants anticipated major respiratory problems, headaches, some brain damage or cancer. They felt it would be more of a concern if their children had asthma or other respiratory problems.

“Well, radioactivity…it’s radioactive, so it’s sort of like an atomic bomb, but only a very teeny, tiny one”.

In Toronto, the term ’radioactive’ caused some panic and concern. There were some participants who did not understand the explanation or “extrapolated” it into concerns that were not there – e.g. radon caused by mining, nuclear reactors, burying radioactive waste. While this did not happen with a lot of participants, some in the groups did give some credence to these extrapolations.

In many of the focus groups, participants also raised the issue of real estate value, wondered how it would be addressed, and whether radon would become an element to test when selling or buying a property.

Overall, the definition as it was presented did not provide enough information and thus raised additional questions.

In all groups, opinions were split with regards to the level of seriousness of the risk.

On one hand, the fact that people were not aware or familiar with the issue of radon gas before the discussion led them to wonder if the government was hiding something from the population. Individuals with this view felt this could be a very serious issue. On the other hand, there were numerous individuals in the sessions who interpreted their low awareness of radon and the fact there had been little information from the government on this issue, as a sign that the problem is not that serious or widespread. Some participant comments illustrating both points of view are provided below:

“I think if it was a major problem, you would have heard of it by now”.

“How long has the government known about this, are they hiding something?”

“I’m not terribly worried about it…there seems to be an awareness of radon and I feel fairly secure if it was going to be a major health risk, then you would hope that there are enough alarm groups that would signify this is a concern as they are aware of this problem”.

Even some of the participants who had previous awareness of radon could not name the health risks. Only a few mentioned lung cancer, and even they were not too sure about this.

Some participants expressed concerns about the fact that they were comparatively less informed about radon gas than they are about other issues such as mould, carbon monoxide,

lead and asbestos, which made it more serious. This also raised the question of long term effects in some groups:

"I think they must be long term effects because we would have heard about this before, but we've never heard of any health effects because of it yet…so either it isn't very serious or it takes a long time before the effects show".

From this perspective, some participants felt that radon could be becoming a serious issue as they were starting to read about it in the paper.

Reaction to the stated health risk

After discussing the initial reaction to the definition, the following statement about radon's health risk was read verbatim by the moderator: "*The only health risk associated with exposure to radon is an increased risk of developing lung cancer*".

Once the health risk was stated, there were a few reactions to the fact that there was "only" one hazard mentioned, as most participants seemed to expect a variety of illnesses. A few individuals conversely noted that 'only' lung cancer was still a very significant illness. Overall, there was no shock or immediate panic or critical concern but some anxiety and the feeling that lung cancer is serious. The information was generally taken in a "matter-of-fact" way in the groups and elicited a number of questions such as:

"What's the proportion of people that are affected by it?"

"How do they know this?"

"Could radon be the reason for the high number of unexplained lung cancer deaths among non-smokers?"

"We never really even heard about it so….it's not like they're talking about it every day."

Many participants said they would do some research based on this information and many mentioned they would search on the Web for more information. From the content of the discussion, it appears that some participants believe that there are more health risks attributed to radon than only lung cancer.

In fact, most participants feel they don't know enough on the subject to pass judgment. When compared to other issues like mould or carbon monoxide, radon gas is not perceived as being as serious. While carbon monoxide can kill immediately and mould creates serious respiratory illnesses, lung cancer risk is taken in stride in terms of the longevity of exposure required for this to show up. The threat did not have the suddenness that carbon monoxide would in getting people's attention.

Some parents were concerned about their children playing in a finished basement. In a few of the groups, particularly in Winnipeg, the discussion included comments regarding ventilation and needing to have proper ventilation in the basement. A few people commented about the 'fresh-air intake' associated with some furnaces as probably being a good thing to have.

Participants also interpreted the fact that the government had not been very active in terms of communicating information on this issue as meaning that this was not a very serious health matter:

"I kind of feel like because we haven't really heard a lot about radon and because it's not something you hear people talking about all the time, it just seems less dramatic".

Yet the perceived silence from the government prompted some participants to be more suspicious about the issue and to wonder whether it could be more serious than they thought.

There were very few smokers in the focus groups; some groups had none and others had one or two. Smokers (some claimed to be casual smokers only) did not generally seem more worried about the health risks of radon than the other participants. Some said they might test for radon gas but did not seem overly concerned. The main question they needed answered before taking action was: "*By how much would my risk of lung cancer increase?*" A few participants felt that the causal effect was clearly demonstrated when associating cigarettes to lung cancer, while they felt that radon gas is only likely to cause an increased risk of developing cancer. For these participants, the level of certainty seemed lower in the case of radon gas.

Many participants felt that they might use online search tools such as Google to find more information on the Web about radon gas but would be unlikely to take any further action before they clearly understood what the issue is all about.

Revised guidelines

The information presented here caught people's attention and participants started to get more concerned when they heard the following statement:

"Health Canada in collaboration with the provinces and territories has developed a guideline to indicate when remedial action is necessary. The government is now lowering the current radon guideline from 800 down to 200 becquerels per cubic meter in a home. It recommends that remedial measures be taken where the level of radon in a home is found to exceed 200 becquerels per cubic meter."

The fact that Health Canada was mentioned for the first time seemed to signal that radon gas was probably a more serious issue than they thought: "*I'm sure they are not taking these measures just for the fun of it.*" Lowering the guidelines from 800 to 200 was generally perceived as a big change and also raised numerous questions:

"If the level was 800 before, when was that decided?"

"How long has 800 been an acceptable level? "

"What does the government/Health Canada know that we don't know? "

"How long has the government known about this issue?"

Most participants also believe that something must have happened for the guideline to change so much – and this began to increase the anxiety level in the groups. In a way, it made the abstract concept of a possible risk more concrete: "*They obviously have more data on the long*

term effects of it". In this respect, the majority of participants felt the government was taking a reactive rather than preventive stance. One Quebec City participant summarized the overall feeling in saying:

> *"…it sounds like they're being preventative. But it must be because there have been cases; something happened and now they are reacting to it".*

Most participants felt they needed more scientific evidence. When explained that new scientific evidence or longer term studies were behind this change, most participants accepted this argument but still thought the situation was clearly more serious than they had originally thought. Some participants in Winnipeg, Toronto and Halifax wanted to know how the lowering of the guideline to 200 becquerels compared to the acceptable level in other countries, particularly the US and EU. The Winnipeg group felt the United States is usually ahead of Canada on such issues and is more stringent.

The lowering of the guideline also tends to raise concerns about participants' current property value. Some individuals wondered how this would affect the value of their property, while others did not think the situation would affect them personally as they believed they would have heard about it by now.

Some participants related the issue to more energy efficient homes where there is less fresh air flow. They wondered if the problem was more general or if it was predominant in newer housing developments. In Quebec City, some felt that the new standard of 200 becquerels would probably apply to new home construction rather than to all existing houses.

In Winnipeg, a few participants felt the problem could be more important in their area because they have colder winters and therefore spend a longer time exposed to confined air. In Nova-Scotia, there was some concern about mining communities.

In Toronto, both groups mentioned they perceived radon as an environmental issue. They focused on two points: a general concern about indoor air quality; and government encouragement towards the greening of homes through retrofitting and other methods. They felt radon should be folded in with that kind of initiative or be managed in the same way.

In Toronto, there is a "big concern" about real estate prices, including a potential remedial incentive if people's homes have radon levels that are above the new guideline. Overall, the potential impact of radon gas on property value also raised questions about testing and possible remedial actions.

In many groups, participants raised questions about the inclusion of a radon gas tests in home inspection reports and Real Estate Agreements of Purchase and Sale.

Action plan

When asked (before seeing the plan) what the government should do about the issue of radon gas in homes, participants generally focused on providing information to home owners on what the issue is, what the potential health risk is and what they can do about it (avoiding, testing and remedial measures). The general public group in Winnipeg and the parent group in Halifax almost laid-out the action plan without seeing it. Participants mentioned all the items except testing federal building and mapping new radon prone areas.

In most groups, the participants' needs were focused on obtaining more information on the issue itself and on health risks, as well as incentives for people to test their homes. A few participants wanted construction standards to be updated while others raised the issue of building permits in areas where there are high levels of radon or uranium.

Participants were then presented a list of items the federal government was planning to enforce within its action plan:

a. *Introduce and support a guideline;*
b. *Informing the public of existing radon gas hotspots across the country;*
c. *Aerial mapping across Canada of new hotspot areas;*
d. *Testing of federal government buildings around the country;*
e. *Encouraging Canadians to test their homes for radon gas levels and providing them with information and advice on how to do this;*
f. *Working with Canada Housing and Mortgage Corporation and the Canadian Lung Association to provide information to the public on this issue; and*
g. *Providing information and advice to the public on how to reduce radon gas levels.*

All groups felt that the action plan was generally comprehensive and would be effective. In most groups there were no major missing elements in terms of the government's response to the issue of radon gas in homes. Working in partnership with CHMC and the Canadian Lung Association tended to reinforce the importance of this issue.

The Toronto general public group brought-up some items they would like to see included:

- There is nothing about building codes or regulating new developments in terms of testing land for radon before developers build and sell housing.

- There is nothing compelling landlords to test or make changes. This was seen from two sides, the first being potential concern from the point of view of renters. The second being the concern of landlords who rent-out basement apartments in the Toronto area (which is fairly common in the downtown and mid-town areas). They wondered about the responsibilities that they, as landlords, would have in terms of testing, and repairing, as well as possible legal implications.

- The plan does not mention enforcement of the guideline.

All of the items, except testing federal buildings and mapping new hotspot areas, were viewed positively and described as logical steps to follow.

The testing of federal buildings was not viewed positively: "*Why only federal buildings? What about schools, hospitals and other buildings where lots of people work and where children are?*" Participants generally think this is self-serving. In fact, this item generated questions without contributing to understanding or correcting the issue.

The radon-prone areas drew some special attention. Many individuals raised concerns about decreased property value in radon-prone areas and wondered what they would do if their house was in a radon-prone area. Some individuals voiced the concern that perhaps there would eventually be a disclaimer on home mortgages for radon as there was for formaldehyde some years ago. There were also questions raised on where and how many radon-prone areas there currently are across the country. This discussion inevitably came back to the underlying concern

of how this would affect real estate values, to the point where a few individuals, notably in Toronto and Winnipeg voiced concerns that there could be economic chaos with the property values of whole areas collapsing.

Most participants did not notice the word 'new' hotspots when discussing aerial mapping across Canada. Those who did notice it raised the fact that this meant the government already had current radon-prone area mapping. It also signified to some in Toronto and Halifax that "existing" radon-prone areas are known, and that the government should have previously revealed this information.

The parent group in Winnipeg felt that the term 'hotspot' was a fairly inflammatory word. "*Hotspot, radiation and radon. That is quite a combination*". The other group did not raise this concern unaided, but when drawn to their attention, many in the group did agree this was an "intense" word.

Cost was raised as an issue during the discussion on the Action Plan. It seemed to many participants, particularly those in Toronto and Halifax, that the government is putting the onus on Canadians in terms of taking action on this issue. In all locations, a large number of individuals felt that testing should be paid for by government programs. Remediation programs should also be subsidized according to a fair proportion of participants. Participants were asked to provide reasons why the government should pay. In Toronto, one participant said "If the taxpayer doesn't foot some of the bill, we're punishing people who are lethargic, cheap or don't have any money." Some are concerned that landlords who run businesses would not do radon testing as a cost savings measure.

It should be noted that the concerns expressed about remedial costs associated with radon gas occurred, according to participants, without the benefit of much information as to what specific remedial efforts were required. Individuals were not very aware about what steps they, as homeowners, could take to mitigate the presence of radon gas in their home. There was a general assumption that it was likely expensive.

Many participants suggested that testing radon gas should become a mandatory part of home inspections and that certifications should be put into Agreements of Purchase and Sale. When addressing testing by experts, participants feared that anybody could sell their services or claim to be experts in testing homes for radon. Many suggested it would be more credible if the government would do the testing itself or if it would certify the testers. In fact, many thought the government should be paying for the indoor testing at least in areas that are prone to radon. When encouraging Canadians to test their homes, most participants wanted the government to have easy to use radon testing kits available. In Toronto, some participants wanted an incentive plan and justified this request by saying that testing and/or reduction of radon gas levels would put less strain on the health care system.

When asked whether this action plan would create panic, participants feel that the problem is significant and that the issue would depend on how the government presents its awareness campaign.

Overall, participants felt the plan was relatively complete and addressed topics logically in a step by step fashion.

Remedial measures

Participants were generally able to think of a number of the possible remedial measures for dealing with radon gas in an un-aided fashion. When the measures were read to the groups (sealing cracks, renovating basements, ventilating sub-floors), they seemed reasonable. In addition, a few individuals in most groups mentioned that possible basement ventilation improvements, such fresh-air intakes and basement fans were probably good remedial steps.

Before adopting any remedial measures, participants need to be informed as to whether they are in a hotspot area and, if so, how to test for radon gas and what to do to reduce the radon gas levels.

Cost was a source of much discussion. For many individuals it was a major concern, as some of the remediation measures, were perceived to be potentially fairly expensive, particularly when they have a finished basement. Many felt that the cost would have a direct impact on whether they would take any remedial actions. Other individuals felt that remedial measures, such as sealing cracks, could be quite inexpensive and were not concerned. This may be an errant impression depending on the nature and extent of 'crack sealing' required to reduce radon gas seepage into the home.

Cost concerns were also expressed as they related to the actual test itself. There was little knowledge of what it would cost to test one's home for radon gas, but it was assumed it was not as simple as installing a CO monitor. In Winnipeg, the anticipated cost for a test generally ranged between $50 and $100. This was seen not an unreasonable amount; however, it was also not an insignificant household expense. There were some comments from participants that perhaps this cost should be subsidized in some way by the government to encourage people to get the test done. Some participants also addressed cost in relation to the risk of developing lung cancer:

"We need the percentage to justify the cost of taking all these remedial measures; is it really worth to go ahead and launch an action plan if we don't know that. For instance, if it quadruples your risk for lung cancer, then yes it's worth it".

The discussion over remedial actions led to comments about the certification and regulation of those testing for radon as well as those who are authorized to make radon gas reduction repairs on homes. Individuals said they could easily see how unscrupulous people will take advantage of the radon issue to gouge consumers if the industry is not monitored. Most people felt that the government had an important role to play in this respect.

When asked if they would still worry about radon gas after implementing remedial measures to reduce the level of radon gas in their homes, participants generally did not think they would be too concerned after the situation was corrected but that they would probably keep it in the back of their minds. Overall, a few participants raised questions about sustained exposure to radon gas in the years before they would have remedied the situation: "*It would depend on how long I'd been living there.*" They were concerned about the personal risk of contracting lung cancer.

Generally, participants seemed more preoccupied about the physical aspect of the issue (cost, time and effort required) and spent less time addressing the health consequence. When asked if they would consult their family doctor, only a few said they would discuss the matter with their doctor during a future visit. Very few of the participants felt that they would make a doctor's appointment strictly to check potential health problems related to radon gas.

CONCLUSIONS ON MESSAGING

When asked to select which of the four areas (risk, guidelines, action plan and homeowners solutions) contained the most important information for Canadians to hear, it became obvious that these four areas were interdependent and that the order of presentation followed a logical pattern.

Focusing on one area over the others could raise additional questions and could lead to a more fear-based reaction.

From the comments made in all groups, it seems relatively clear that many participants would not pursue their search for information if they were not in a radon prone area and that the level of pressure would be significantly reduced.

Participants feel that the communications around this issue will need to be well balanced in order to create awareness and motivate people to take action without alarming the population or creating panic.

Generally, participants are wondering how long the government has been aware of this situation. A statement about the time required to obtain scientific evidence would reassure people that the government has acted responsibly in conducting research before launching its awareness campaign.

The overall action plan and the partnerships with CHMC and the Lung Association were reassuring for individuals as it meant that people were not left to themselves to figure out a course of action.

COMMUNICATIONS AND SOURCES OF INFORMATION

The Web was mentioned most often as a source of information, as it is easily accessible and lends itself to providing documentary/scientific knowledge. Many participants would search on Health Canada's site but would also look for other credible sources.

Generally, as the level of awareness and familiarity with the issue is perceived to be very low, a fair proportion of participants also suggest the need for mass media advertising in order to create awareness and a certain sense of urgency. Public affairs programs or more scientific documentary programming should also be considered.

Brochures, inserts, and leaflets with utility or other home related mail is perceived as an adequate source of communication. A homeowners' guide was mentioned in a few groups as a good source of information and a reference to keep on hand.

There was some sense that the message itself would need solid information to avoid panic while making sure that the public is aware and will take action.

Health Canada, the Canadian Lung Association, CHMC, municipalities, and local public health organizations are perceived as the most credible sponsors and sources of information. The family doctor is not considered to be a good or reliable source of information in most groups, as participants feel that they probably would not know much more than the general public about radon gas. Yet, a few participants in each group felt that they might address this subject with their doctor at their next medical appointment.

Final Thoughts

Given the ambivalent reaction of many participants to the level of seriousness of radon gas, it could be judicious to introduce the topic by announcing that there has been new scientific evidence about the long term effects of exposure to radon gas. This will assist in addressing a key question that will arise from the public as more information is made available about radon gas, that is *how long has the government known about this.*

A pragmatic approach to testing and remedial measures through a government program would be considered an effective action trigger. There is great uncertainty and in some cases, misinformation, regarding testing of one's home and accompanying remedial activities. The public would benefit from having clear and concise information relating to these areas. In addition there is some desire and expectation that there will be some government monitoring of the remedial activities provided to the general public regarding this issue. For example, certification of radon gas test suppliers would ensure that the government is watching out for the best interests of Canadians, as the issue is being dealt with. Cost of implementing remedial measures could also be an issue: some financial compensation program could be established to ensure action is taken when necessary.

The four potential messaging elements are equally important and complementary to each other, and the order of presentation should follow a logical sequence :

1- Defining the issue;
2- Addressing the revised guidelines;
3- Introducing the action plan; and
4- Launching a remedial measures program.

It is important to note that the messaging elements tested were preliminary concepts. Actual message wording will be a key communication issue. It would be useful to test the final communications material once they are further developed.

Based on this research, it is possible to identify some language and message related areas that warrant review. These are:

1. The term radon 'hotspots' raises some alarm in terms of meaning and health risks. Similarly, 'radon prone areas' elicits concern among the public. These phrases should be re-examined to determine if more benign terminology can be developed.

2. Reference to testing federal government buildings needs to be expanded upon to inform the public that this is being done *because* the federal government has jurisdiction in these areas. Alternatively, this information could be downplayed altogether as it is not seen as very important.

APPENDIX A

Recruitment Instrument

Hello. My name is _____ from Western Opinion Research. I am calling to invite people to participate in a small research discussion group. These groups are often called focus groups. We are conducting these groups on behalf of Health Canada to get your views on some communication materials related to indoor air quality. We want to speak with specific groups of individuals during these sessions. If you qualify for the group and attend the meeting you will receive an honorarium of **$70**. Can I ask you some questions to see if you are the type of participant we are looking for?

[IF NEED MORE INFO] These sessions are often called "Focus Groups" and are an important way of conducting PUBLIC OPINION RESEARCH. The reason for the group is to hear your feelings and impressions on a particular topic. They are NOT SALES MEETINGS. At no time during or after the group will anyone try to sell you anything.

Please note that your participation is voluntary. The information you provide will be administered in accordance with the Privacy Act and other applicable privacy laws and will be reported in aggregate form only. No comments will be attributed to any individual in any reports resulting from this study.

The discussions will take place on **[INSERT DATE]**, and will last no more then 2 hours. Would you be available to attend a discussion like this? We are conducting a number of these sessions, and want to ask you some questions to see which particular session you would attend.

1) **[By observation]** Gender…
[**AIM TO RECRUIT A GOOD MIX PER GROUP]**

- ☐ Male
- ☐ Female

2) Please tell me if you or any other member of your immediate family currently work in, or are retired from any of the following:

- ❑ A marketing research firm
- ❑ A media or news company
- ❑ An advertising agency
- ❑ A Public Affairs company
- ❑ The Federal, Provincial or Municipal Government
- ❑ A contractor or house renovation company

If "Yes" to any of the above, TERMINATE

2b) What is your occupation?_____**[Validate against Q2a to ensure not a sensitive occupation]**

3) Do you own or rent your main place of residence?

Home owner/co-owner ☐

Tenant ☐ **[THANK AND TERMINATE]**

4a) In what type of dwelling do you live?

_____

(IF APPARTMENT BLOCK OR CONDO APPARTMENTS: THANK AND TERMINATE)

4b) How many families live in your dwelling?

_____

IF MORE THEN ONE ASK: Q4C OTHERWISE GO TO Q4D.

4c) And on what floor do you personally live? Is it on….

The ground floor ☐

The second floor ☐

Any other ☐

} **THANK AND TERMINATE**

4d) Does your residence have…..

A finished basement 1

A unfinished basement 2

A crawl space 3

IF BASEMENT ASK: Is this basement part of your residence?
IF NO: THANK AND TERMINATE

5a) Do you have children that live at home with you?

Yes 1 **Continue at Q5b**

No 2 **Potentially eligible for Group2, GO TO Q6**

5b) And how old are the children that live with you? **(INSERT AGE OF EVERY CHILD)**

_____

_____

TO BE ELIGIBLE FOR GROUP 1, MUST HAVE CHILDREN 18 YEARS OR YOUNGER LIVING AT HOME

5c) Does [your child/any of your children] that live at home with you have any respiratory illness?

Yes ☐ → What kind of illness is it?

(Specify) _____

No ☐

6) In which of the following age categories do you belong?

- ☐ Under 18 **TERMINATE**
- ☐ 18 – 24
- ☐ 25 – 34
- ☐ 35 – 44 **RECRUIT A GOOD MIX OF AGES**
- ☐ 45 – 54
- ☐ 55 – 64
- ☐ 65 and over

7) What is the highest level of education you have obtained? Is it…

Less than high school	1
High school graduate	2
Some College but did not finish	3
Completed College	4
Some university but did not finish	5
Completed University	6
Post-graduate studies	7

8) In what range does your total household income fall before taxes?

Less than $20,000	1
$20,000 to $39,999	2
$40,000 to $59,999	3
$60,000 to $74,999	4
$75,000 to $99,999	5
$100,000 or more	6

GENERAL QUESTIONS

9) As I mentioned earlier you are being invited to a group discussion with approximately 10 other people.

How comfortable are you in participating and speaking out in group discussions of this size?

Very Comfortable	
Somewhat Comfortable	
Not very comfortable	**[THANK AND TERMINATE]**
Not at all Comfortable	**[THANK AND TERMINATE]**
Don't know	**[THANK AND TERMINATE]**

10) Participants will be asked to read information and write answers to questions in English. Will you be able to do this, and will you be able to bring with you glasses or other items that will allow you to read the material?

Yes	
No	**[THANK AND TERMINATE]**

11) Have you ever attended a focus group?

Yes
No [**Skip to Q 12**]

If yes, how long ago? _____
[TERMINATE IF LESS THAN SIX MONTHS]

If yes, how many have you attended in the past five years?

_____**[TERMINATE IF MORE THAN FIVE]**

APPENDIX B

Moderator's Guide

Health Canada
Focus groups on Indoor Air Quality – Radon gas
Final moderator's guide

Schedule

Group guidelines & Introductions
Awareness & Concerns on indoor air quality related health issues
Section 1: What is the issue?
Section 2: Revised guidelines
Section 3: Radon action plan
Section 4: Reassure Canadians and point them towards info
Section 5: Information sources
Wrap-up discussion

Interview Guidelines

- Use this document as a guide, it is meant to be a semi-structured discussion with focus group participants
- Ask additional questions for clarification
- It is not necessary to answer the questions in order
- Keep discussion informal and conversational
- Summarize notes, comments and conclusions at the end of the discussion
- Avoid discussion of a general nature. Participants should be talking about themselves, their behaviours and attitudes. They should not be expressing opinions about the general population or others.

Introduction, Guidelines & Warm-Up

- Introduce the moderator and WOR
- Introduce assignment and role of the focus group
    - *Health Canada is the sponsor of these focus groups.*
    - *It is interested in understanding the impressions and attitudes of Canadian homeowners regarding some health issues related to indoor air quality.*
    - *Only talking with a few groups of people, thus your observations and opinions are important.*
- Conduct of the discussion
    - *Not all at once, but do not need to wait for me to call on you*
    - *Want to get individual thoughts and opinions—we're not looking for a consensus. Encourage individual group members to participate.*
    - *Respect*
    - *No wrong answers.*
- Audio recording and presence of observers.
    - *Assure participants we are not selling anything; this meeting is strictly for research purposes.*
    - *Colleagues behind the mirror who are observing.*
    - *Confirm that individual responses will be kept confidential. The purpose is not to report on individuals, but instead to get a better understanding of the information needs of Canadians.*
- Roundtable Intros

What I'd like you to do is go around the room and introduce yourself, first name is fine, and tell me what keeps you busy these days—work, family, hobbies.

Awareness & Concerns on indoor air quality related health issues

1. I would like to start with a broad discussion on what is on your mind when you think of environmental problems or hazards in households that can cause health risks? As a home owner, what are the environmental hazards that can have an impact on health that come to mind?

   [LIST] – What else comes to mind?

   [IF NOT MENTIONED ASK:] What about indoor air quality? Is this something that can cause health problems?

2. More specifically, when we talk about health risks related to indoor air quality what are the air quality issues you have in mind?
   [ADD TO LIST]

   Ask for each health risk added to list:
   -How serious is this problem?
   -What health consequences can it have?
   - Do you feel well informed on this health hazard?
   IF NOT WELL INFORMED ASK:
   -What would you need to know about this?

   IF RADON GAS NOT MENTIONNED SPONTANEOUSLY ASK:

3. What about radon gas? Have you ever heard about it? What is it exactly?

   -How serious is this problem?
   -What health consequences can it have?
   -Do you feel well informed about radon gas?

   IF NOT WELL INFORMED:
   -What would you need to know about this?

4. As a home owner, when it comes to environmental safety in the home, what do you check? What else?

   PROBE: Radon gas, mould, formaldehyde, carbon monoxide, lead.

5. Overall, would you say you are concerned about indoor air quality in your home?
   IF CONCERNED : More specifically, what concerns you? Why?

MESSAGING

Section 1: What is the issue/risk?

We are now going to spend some time on health issues related to radon gas. Let's start with a definition of radon.

Radon is a radioactive gas that is colorless, odorless and tasteless. It is formed by the natural breakdown of uranium in soil, rock and water. Radon also breaks down to form additional radioactive particles called "progeny". Radon escapes from the ground into the outdoor air. It is diluted to low concentrations and is not a concern. However, radon that enters an enclosed space, such as a home, can sometimes accumulate to high levels.

And what is the risk? What questions or concerns do you have?

The only know health risk associated with exposure to radon is an increased risk of developing lung cancer.

1. Based on the definition of what radon gas is and what the risk is, what are your concerns? Is this something that you would worry about? How serious is this for you? Why?

2. How does it rate in terms of risk compared to other health risks related to indoor air quality like:
   -carbon monoxide
   -formaldehyde
   -mould
   -lead

   Is it more or less serious? What makes you say that?

3. What other health and safety issues can you think of? How does it compare to the other health and safety issues in your home that we talked about already?

4. As a homeowner, how do you perceive the risk for yourself and for your family? Is this serious enough that you would do something about it? What would you do?
   PROBE: Look for more information (where/how?) test to check presence of radon in your home (how would you go about doing this); contact an expert (who would that be?)

5. Does anyone around the table smoke?

   ASK SMOKERS: -Do you think that radon gas is more likely to increase your level of risk for contracting lung cancer than for non-smokers? Why is that?

   ASK NON SMOKERS: -And what do you think? Do you feel radon gas is more likely to increase the risk of developing lung cancer for those who smoke? Why?

In fact, the only known health risk associated with exposure to radon is an increased risk of developing lung cancer.

ASK SMOKERS FIRST – What do you think about this? Would this information motivate you to do something about this? What would you do?

PROBE: -Look for more information?
-What type of information?
-Where would you look for info?
-From whom?
-Have your house checked? Who would you rely on to do this verification?

Section 2 : Revised guidelines for existing homes and new home construction

Health Canada in collaboration with the provinces and territories has developed a guideline to indicate when remedial action is necessary. The government is now lowering the current radon guideline from 800 down to 200 becquerels per cubic meter in a home. It recommends that remedial measures be taken where the level of radon in a home is found to exceed 200 becquerels per cubic meter.

1. What do you think about this? Why do you think they are reducing the level?
   PROBE: Are they being reactive or preventative?

2. Does it raise any concerns about your current home? Why?

Section 3 radon action plan - what govt is doing to address the risk

What do you think the government should do about the issue of radon gas in homes? [PROBE FOR SPECIFIC ACTIONS]

I want to read you some of what the federal government plans to do about this issue. I will list a few items and then we can discuss. [MODERATOR HAVE POINTS PREVIOUSLY WRITTEN OUT ON FLIP CHART PAGE FOR DISPLAY]

h. Introduce and support a guideline
i. Informing public of existing radon gas hotspots across the country
j. Aerial mapping of across Canada of new hotspot areas
k. Testing of federal government buildings around the country
l. Encouraging Canadians to test their homes for radon gas levels and providing them with information and advice on how to do this
m. Working with Canada Housing and Mortgage Corporation and the Canadian Lung Association to provide information to the public on this issue
n. Providing information and advice to the public on how to reduce radon gas levels

1. What do you think of these points as part of the federal government's response to this issue? [DISCUSS]

2. What are the strongest or most important elements of the plan?

3. Are there any elements or points that you do not agree with? Are there any that are confusing or unclear?

4. Is there anything missing in terms of the government's response to the issue of radon gas in homes? [IF YES] What do you feel is missing?

5. When they provide information and advice to the public, what do you want them to address more specifically?

Section 4 reassure Canadians that the problem is resolvable and to point them towards other sources of info and remediation

1. Based on what we have discussed and what you know about radon gas in homes, would you take some action to test and, if necessary, reduce radon gas levels in your homes?

2. What information do you need as homeowners to take action regarding radon gas levels? [IF NECESS PROBE WITH]
    - Risk of radon gas in your area?
    - How to have your home tested? Who tests?
    - What to do if levels too high?
    - Anything else?

3. Some remedial actions that homeowners can do to lower radon gas levels in their homes include: Sealing cracks and openings in basement floors, renovating basement areas and ventilating sub-floors in basements.

    Does this seem reasonable? Why or why not? [MODERATOR LISTEN FOR COST CONCERNS AND PROBE INTO THESE IF RAISED]

4. I would like to run a hypothetical situation by you to get your thoughts. “You have your home tested for radon gas and discover the levels are higher than the 200 becqurel guideline. You do the necessary things, as noted above, to reduce the level. How do you feel about any personal health risks to you or your family?” Would you have any questions in this regard? Is this something you would worry about?

5. Where would you look for answers? Would you consult your family doctor?

6. [IF SMOKERS IN GROUP] Does it make any difference for those of you who smoke? We spoke earlier about the increased risk of lung cancer for smokers who are also exposed to high levels of radon gas. Is there any more urgency due to an elevated risk of lung cancer for smokers?

7. Do you expect the federal government to do anything more regarding the remedial actions open to homeowners or the possible health consequences to exposure? What would that be?

Message Section Wrap

We have discussed 4 different sections relating to the federal government's response to this issue:

- Risk
- Guidelines
- The Government Action Plan
- Homeowner Solutions

1. Of these 4 areas which one contains information that you feel is <u>most important</u> for Canadians to hear? Why do you say that?

   Which area provides the next most important information?

2. What information contained in the four areas outlined above, and that we spent the last part of the group discussing, is least important in your opinion? Why do you feel that way?

3. Based on what you know, what is most reassuring in the government's action plan to address this risk?

4. And what is most concerning in this action plan? Why?

5. Is there anything else you feel should be addressed or covered in the action plan?

Section 5 : Information sources

1. When it comes to communicating health related information destined to homeowners – what is the best way to get the information out to homeowners?

[PROBE] Public affairs/news programs, government press releases, Q & A (FAQ type) , homeowners guide, Web site, advertising (TV, newspapers), retail (grocery store, home improvement store), 1-800 number [if not mentioned spontaneously] What other means of communication would be most effective?

Where do you anticipate finding this type of information? From what source of information – who would be a credible source of information? Why? Any other credible source of information you can think of?

[PROBE: CHMC, HEALTH CANADA, PUBLIC HEALTH AGENCY OF CANADA, LOCAL HEALTH UNITS, PROVINCIAL GOVERNMENT, CANADIAN LUNG ASSOCIATION, FAMILY DOCTOR]

Wrap-Up Questions

1. Overall, what are your views about radon gas now that we have talked about it? Is this a serious issue? Why do you say that?

2. Do you feel there are adequate controls and action plans in place?

Thank you. That is all I have. Any last thoughts for me?
Good night