

# National Radon Program: Behavioural Study 2020

## Final Report

June 2020

**Prepared by:**

Katelyn Penstone, Policy Analyst, National Radon Program, Health Canada

Jane Howe, Behavioural Insights Leader, Deloitte

# TABLE OF CONTENTS

TABLE OF CONTENTS .....	2
1. EXECUTIVE SUMMARY .....	3
2.1. Learnings from NPR's First Behavioural Insights Project (2019) .....	6
2.2. 2020 Behavioural Insights Project .....	6
3. STUDY DESIGN .....	7
3.1. Research Question .....	7
3.2. The Intervention .....	7
3.3. Experimental Design .....	9
3.4. Sample .....	10
Table 1: Municipalities in Sample .....	10
Table 2: Number of Addresses in Sample .....	10
4. RESULTS .....	11
4.1. Radon Awareness .....	11
4.2. Radon Testing .....	14
4.3. Additional Findings .....	16
5. CONCLUSION .....	18
5.1. Radon Awareness .....	18
5.2. Radon Testing .....	18
6. MOVING FORWARD .....	20
7. APPENDIXES .....	22
7.1. Appendix A: Test Kits Sold .....	22
Table 5: Test Kits Sold .....	22
Table 6: Percentage of Test Kits Sold .....	22
7.2. Appendix B: Website Results .....	23
Table 3: Website Visits – Canada.ca .....	23
Table 4: Website Visits – Take Action on Radon .....	24
7.3. Appendix C: Public Inquiries .....	24
Table 7: Public Inquiries by Region .....	24
7.4. Appendix D: Survey Results .....	25

# 1. EXECUTIVE SUMMARY

In 2019, the National Radon Program (NRP) worked with the Privy Council Office Impact & Innovation Unit to perform a Behaviour Intervention and Trial Project. The results of this small pilot project found that behaviourally informed radon outreach postcards did increase the number of test kits purchased, but only slightly.

In 2020 the NRP launched a second Behaviour Intervention Project to evaluate the impact of a new radon outreach postcard. The goal of the new postcard was to increase awareness and knowledge of radon, and to encourage people to purchase a radon test kit.

The primary objective of this project was to test if a behaviourally-informed intervention (i.e. a postcard) is more effective at encouraging people to test their homes for radon in municipalities with strong grassroots radon outreach efforts and awareness. The purpose of this intervention was to test the use of direct, action oriented messaging in areas that have high radon levels in combination with high grassroots awareness/efforts vs those without.

The intervention was tested over an 8-week period from January 6 – March 1, 2020. A postcard was developed and distributed to Canadians through direct mail. It targeted Canadian households in areas (identified by FSA) where 14.49% of homes tested above the Canadian Guideline of 200 Bq/m<sup>3</sup>. Data from Health Canada's 2012 [Cross-Canada Survey of Radon Concentrations in Homes](#) and the [Radon / Thoron Survey in Canadian Metropolitan Areas](#) was used to determine the list of FSAs receiving the postcard.

To collect radon testing data for this project Health Canada reached out to test kit providers, through the Take Action on Radon Network, to provide information for the study and request their participation. The testing plan was provided to test kit providers and a teleconference was set up to provide an overview and answer any questions. Health Canada provided a simple excel document for test kit providers to share data related to test kit sales during the testing time period. Health Canada followed up with test kit providers through Take Action on Radon and then directly once the testing period closed. Health Canada received data from 16 test kit providers.

The results of the 2020 study found that a behaviourally informed postcard does increase awareness of radon among Canadians, and has a more significant impact on awareness / response within high grassroots communities compared to low grassroots communities. This is clearly demonstrated in the increase, year over year, in number of website visits for both [Canada.ca/radon](#) (4,188%) and [TakeActiononRadon.ca](#) (1,248%).

The study also found that a behaviourally informed postcard increases the likelihood that Canadians will purchase a radon test kit, and again a more significant increase was seen in radon test kit purchases in high grassroots communities compared to low grassroots communities. This is clearly demonstrated when comparing the data for control vs. treatment groups.

In the control group, on average, nine test kits were purchased representing approximately 0.04% of the sample. In the treatment group, on average, 58 test kits were purchased representing approximately 0.54% of the sample.

In summary, a behaviourally informed postcard increases the likelihood that Canadians will purchase a radon test kit.

However, this study showed that while a behaviourally informed postcard significantly increased radon awareness, it did not significantly increase the number of radon test kits purchased. While this study did show an increase in test kit purchases, behaviourally informed postcards do not increase the behaviour of radon testing enough given the health risk posed by long-term radon exposure.

## 2. INTRODUCTION

Health Canada's National Radon Program (NRP) was established in 2008 to educate the Canadian public about radon, conduct research to better understand the radon situation in Canada, and establish the Canadian infrastructure and resources needed to take action to reduce indoor radon. Over the past 12 years, the NRP has made significant strides in fulfilling its mandate. A major function of the NRP is to raise awareness among Canadians of the lung cancer risk related to radon and encourage testing and remediation when results are above the Canadian guideline of 200 Bq/m<sup>3</sup>.

While considerable progress has been made, according to the Statistics Canada [2017 Household and Environment Survey](#) Canadian radon testing rates have reached between 5-10% depending on the region of the country, meaning more than 90% have yet to test. For homes where results were above the guideline, the [2015 Residential Radon Mitigation Actions Follow-Up](#) study found that more than 70% had not taken mitigation action to reduce the high radon levels.

The overarching objective of the NRP is to reduce the number of homes and buildings with radon levels above the Canadian radon guideline, thereby reducing the number of Canadians that will develop radon-induced lung cancer. This objective is supported by five linked components within the NRP:

- Characterizing the extent of the radon problem in Canada through measurement, mapping, and health research;
- Development and implementation of a radon education and public awareness strategy to inform Canadians on radon risks and to encourage action (testing and remediation) to reduce those risks;
- Encouraging adoption of radon risk management practices in relevant policies and legislation;
- Development and validation of technical guidance for radon risk reduction, including mitigation, and knowledge transfer to industry; and,
- Ensuring Canadians have access to accredited radon services and resources to help them test and mitigate.

Radon testing and mitigation are not mandatory in Canada. The NRP must encourage these behaviours among Canadians. NRP is looking at ways to accelerate the reduction of radon in Canadian homes and businesses, and to convert increased awareness and knowledge to radon reduction behaviour change.

Tracking and influencing behaviour change is a new focus for the NRP, which was sparked by the joint Behavioural Intervention and Trial Project in 2019 with the Impact and Innovation Unit and Deloitte Canada.

## 2.1. Learnings from NPR’s First Behavioural Insights Project (2019)

The primary objective of the 2019 Project was to develop and test behaviourally-informed interventions to encourage people to take action on reducing radon levels in their homes. The specific behaviour that was encouraged was the purchasing of a radon test kit. The Project used findings from primary research, including in-depth interviews with Canadians, and from secondary research, including a large literature review, to inform the development of the behaviourally-informed interventions. Two postcards were tested as part of the project:

	<p>1. <b>Healthy Home Checklist:</b> This postcard was distributed to neighbourhoods throughout Ottawa, Ontario in August 2019. It focused on normalizing the behaviour of radon testing as part of keeping a home healthy.</p>
	<p>2. <b>High Risk Targeting:</b> This postcard was distributed to neighbourhoods throughout Chatham, Ontario in August 2019. It focused on removing uncertainty as to whether a home was at risk, specifically by targeting a high risk community.</p>

Both the healthy home checklist postcard and the high risk targeting postcard increased the likelihood of purchase but only minimally. The best version of the postcard saw 0.14% of the sample purchase the test kit.

## 2.2. 2020 Behavioural Insights Project

Based on the findings from the Behavioural Intervention and Trial Project 2019, Canada Post’s white paper “Connecting for Action”, and experience from senior management, it was recommended that direct mail postcards should not be used in isolation to encourage radon test kit purchases. The NRP hypothesized that a combined solution to increase awareness and encourage testing may be more successful. The NRP Behavioural Study 2020 was developed to test the effectiveness of postcards as a behavioural nudge in combination with foundational (pre-existing) knowledge about radon and the associated health risks.

This report summarizes the findings from the NRP Behavioural Study 2020.

## 3. STUDY DESIGN

### 3.1. Research Question

The goal of this study was to determine if Canadians living in areas with high grassroots efforts (i.e. pre-existing awareness and education about radon) were more likely to purchase a radon test kit than Canadians living in low grassroots communities.

The experiment asked two research questions:

1. **Awareness:** Does a behaviourally-informed postcard increase awareness of radon among Canadians? How does this differ between high grassroots communities and low grassroots communities?
2. **Testing:** Does a behaviourally-informed postcard increase the likelihood that Canadians will purchase a radon test kit? How does this differ between high grassroots communities and low grassroots communities?

For clarity, grassroots efforts are defined as efforts originating at a local, community level, led either by the municipality, local health authority, community member(s) and/or local businesses. Communities with high grassroots efforts typically have high radon awareness, activities and buy-in from members of the community. Low grassroots efforts are defined as little to no efforts or awareness in the community and/or driven by the local government regarding radon.

### 3.2. The Intervention

A postcard was developed as the intervention. It was intended to simplify the actions required to test and determine if their home has a high concentration of radon. Each of the postcards were double-sided, with an English side and a French side.

# RADON GAS IS IN YOUR HOME

Radon is the #1 cause of lung cancer in non-smokers.  
TEST to find out if you have a dangerous level.



## 1 ORDER

Order a long-term radon test from  
[www.takeactiononradon.ca](http://www.takeactiononradon.ca)



## 2 TEST

Follow the instructions provided to properly place the test kit in your home.

**After 3 months** send your radon test kit to the lab to be analysed using the return packaging and instructions provided.

You will receive your result within a few weeks.

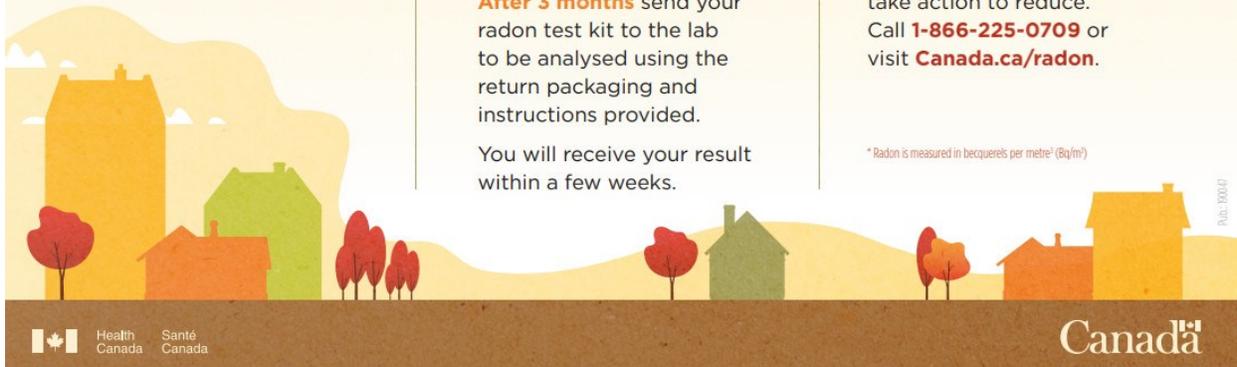


## 3 TAKE ACTION

If your radon levels are below 200\* no action is required.

For radon levels above 200\*, take action to reduce.  
Call **1-866-225-0709** or visit [Canada.ca/radon](http://Canada.ca/radon).

\* Radon is measured in becquerels per metre<sup>3</sup> (Bq/m<sup>3</sup>)



 Health Canada / Santé Canada

Canada

The postcard was distributed to 1,530,000 Canadians through Canada Posts' Neighbourhood Mail Program, targeting Canadian households in areas (identified by FSA) where it was estimated that 14.49% or more of homes tested above the Canadian Guideline of 200 Bq/m<sup>3</sup>. Data from Health Canada's 2012 [Cross-Canada Survey of Radon Concentrations in Homes](#) and the [Radon / Thoron Survey in Canadian Metropolitan Areas](#) was used to determine the list of FSAs receiving the postcard. FSA (Forward Sortation Area) is a way to designate a geographical unit based on the first three characters in a Canadian postal code.

### 3.3. Experimental Design

The intervention was tested over an 8-week period from January 6 – March 1, 2020. This experiment was a natural field experiment. It used a cluster controlled trial experimental design.

There were two main outcomes of interest:

1. **Website\_Visits:** This was one of the dependent variables. It captured if the mail recipient visited the **takeactiononradon.ca** or **Canada.ca/radon** websites.
2. **Test\_Initiated:** This was the other dependent variable. It captured if the mail recipient decided to get their home tested for radon, which was captured by whether or not they purchased a test kit.

Additional data was also collected, including:

3. **Call centre calls and public enquiries:** This data captured the volume of calls to Health Canada's call centre over the trial period.
4. **Results from stakeholder survey:** The National Radon Program, Take Action on Radon and Regional Radiation Specialists had first-hand experiences and feedback that was identified as important to developing a fulsome understanding of the impact the postcards had both for the public and stakeholders.

A controlled experimental design was used because the NRP needed to select those communities that were at higher risk (i.e. above more than 14% of homes testing above the 200 Bq/m<sup>3</sup> guideline) and identify those communities as high grassroots and low grassroots. For this reason, a randomized sample was not possible.

### 3.4. Sample

There were five regions and 20 municipalities in this study. Each municipality represents one cluster in our cluster controlled trial. Of the 20 municipalities, there were 10 treatment municipalities and 10 control municipalities for the study.

In the treatment group, which received the postcard, five municipalities had high grassroots efforts and five municipalities had low grassroots efforts.

In the control group, which did not receive the postcard, five municipalities in the control group had high grassroots efforts and five municipalities had low grassroots efforts. A summary of the sample group is outlined in the table below, by number of municipalities and by number of addresses:

**Table 1: Municipalities in Sample**

Municipalities in Sample				
Region	Treatment		Control	
	<i>High Grassroots</i>	<i>Low Grassroots</i>	<i>High Grassroots</i>	<i>Low Grassroots</i>
Atlantic	Halifax, NS	Stephenville, NL	Charlottetown, PEI	St. Stephen, NB
Quebec	Maniwaki, QC	Lennoxville, QC	Chelsea, QC	Saint Bruno, QC
Ontario	Kingston, ON	Seaforth, ON	Hamilton, ON	Timmins, ON
Prairies	Morden, MB	Wayburn, SK	Okotoks, AB	Lethbridge, AB
British Columbia	Castlegar, BC	Greenwood, BC	Abbotsford, BC	Delta, BC

**Table 2: Number of Addresses in Sample**

Number of Addresses in Sample				
Region	Treatment		Control	
	<i>High Grassroots</i>	<i>Low Grassroots</i>	<i>High Grassroots</i>	<i>Low Grassroots</i>
Atlantic	29,877	3,616	16,787	3,468
Quebec	3,644	1,684	2,319	6,928
Ontario	36,286	5,649	109,293	10,911
Prairies	3,421	3593	8,321	29,633
British Columbia	4,643	15,729	30,871	28,804

Treatment and Control FSAs were chosen based on recommendations by Health Canada's Regional Radiation Specialists, with the primary factor being the level of grassroots efforts in each FSA. As a result, population size varies widely within all treatment and control groups. To provide comparable results, the percentage of test kits sold in each FSA was determined using the number of households in each FSA, with data provided by Canada Post. Additional information regarding radon testing data can be found in Appendix A.

Data was collected from 16 test kit providers across the country. Data was collected and identified by FSA. Test kits providers who contributed included: Pinchin Ltd., Algoma, Agat Labs, Lex Scientific, Radon Controls, APQ, New Brunswick Lung Association, Nova Scotia Lung Association, Alpha Tracker, Radontech, Saskatchewan Lung Association, Canada Radon, AccuStar, Alberta Lung Association, Lung Health Foundation, and Radon West.

## 4. RESULTS

Health Canada conducted this study to determine the effectiveness of a behaviourally informed postcard intervention on awareness and testing, in areas with high grassroots efforts compared to low grassroots efforts.

### 4.1. Radon Awareness

To determine the impact on radon awareness, we asked two questions:

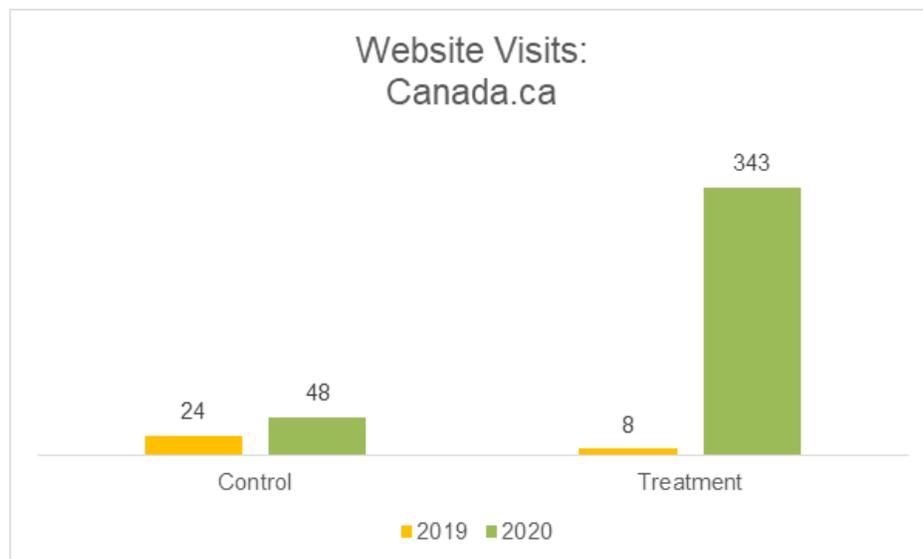
- Does a behaviourally-informed postcard increase awareness of radon among Canadians?
- How does this differ between high grassroots communities and low grassroots communities?

#### 4.1.1. Website Visits

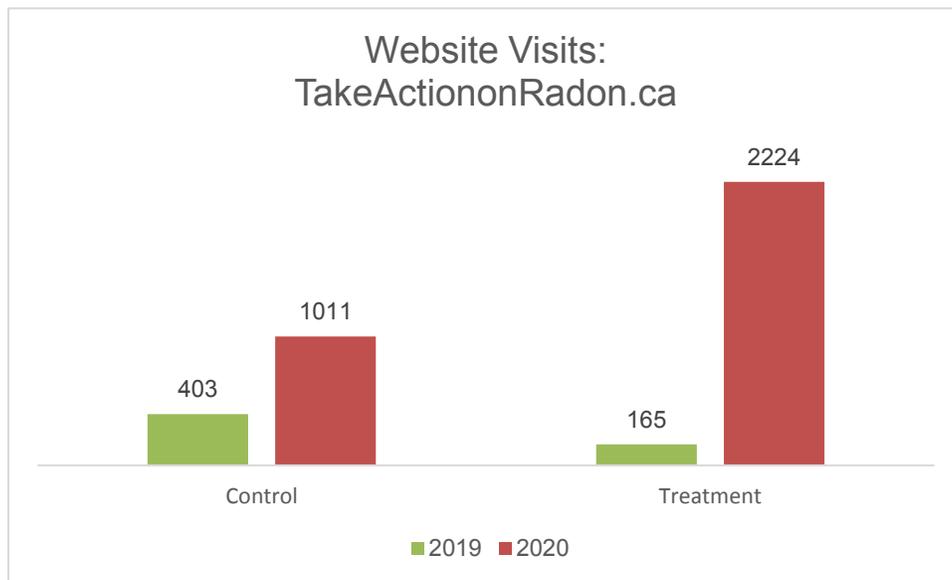
To answer our first research question, we looked at website visits to [Canada.ca](http://Canada.ca) and to [TakeActionOnRadon.ca](http://TakeActionOnRadon.ca):

- Unique visits by users were gathered from Health Canada's Web Communications team to [www.canada.ca/radon](http://www.canada.ca/radon) and [www.canada.ca/le-radon](http://www.canada.ca/le-radon) during the testing period and were compared to the same time frame in 2019 for reference.
- Additionally, unique visits by users were gathered using Take Action on Radon's Google Analytics account to [www.takeactiononradon.ca](http://www.takeactiononradon.ca) and [www.occupetoiduradon.ca](http://www.occupetoiduradon.ca) during the testing period and were compared to the same time frame in 2019 for reference.

The following graphs compare the number of website visits between the control and treatment groups compared to the same time period in 2019.



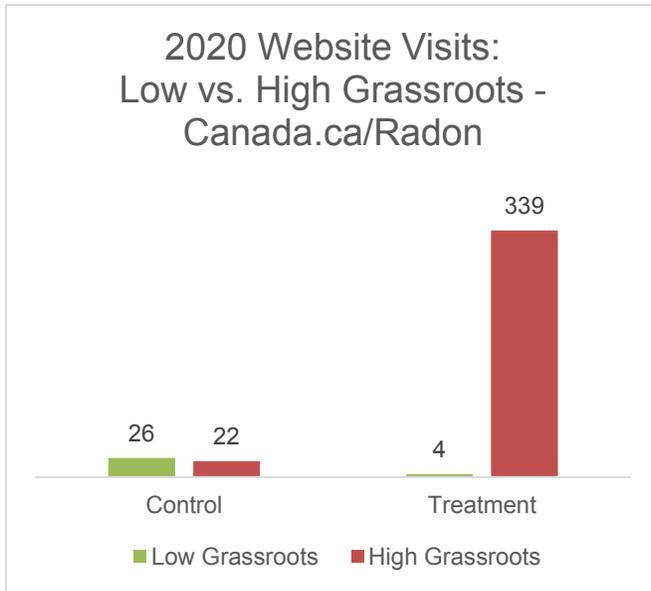
For Canada.ca, website visits increased year over year. In the control group, website visits doubled from 24 to 48 representing a 100% increase in website traffic. In the treatment group, website visits increased by 4,188% from 8 in 2019 to 343 in 2020.



For TakeActionOnRadon.ca, website visits also increased year over year. In the control group, website visits increased from 403 to 1,011 representing a 151% increase in website traffic. In the treatment group, website visits increased by 1,248% from 165 in 2019 to 2,224 in 2020.

**In summary, a behaviourally informed postcard does increase awareness of radon among Canadians.**

To answer the second question, we looked at website visits to Canada.ca and to TakeActionOnRadon.ca, specifically within the high grassroots and low grassroots communities. The following graphs compare the number of website visits between the high grassroots and low grassroots communities for the current year only.



For Canada.ca, website visits were highest among high grassroots communities that received the postcard. In the control group, website visits remained almost the same, with 26 visits from low grassroots communities and 22 visits from high grassroots communities. In the treatment group, website visits significantly increased among the high grassroots communities. With 4 in the low grassroots communities and 339 in the high grassroots communities.

For TakeActionOnRadon.ca, website visits were higher among high grassroots effort communities in both the control and treatment groups. In the control group, TakeActionOnRadon.ca received 184 visits from low grassroots communities compared to 827 visits from high grassroots communities. In the treatment group, TakeActionOnRadon.ca received 131 visits from low grassroots communities and 2,093 from high grassroots communities.

**In summary, a behaviourally informed postcard further increases awareness within high grassroots communities compared to low grassroots communities.**

More detailed data for website visits can be found in Appendix B.

## 4.2. Radon Testing

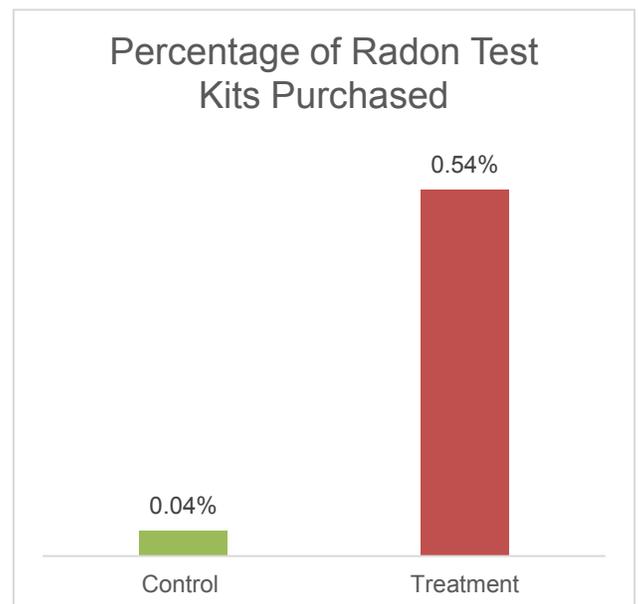
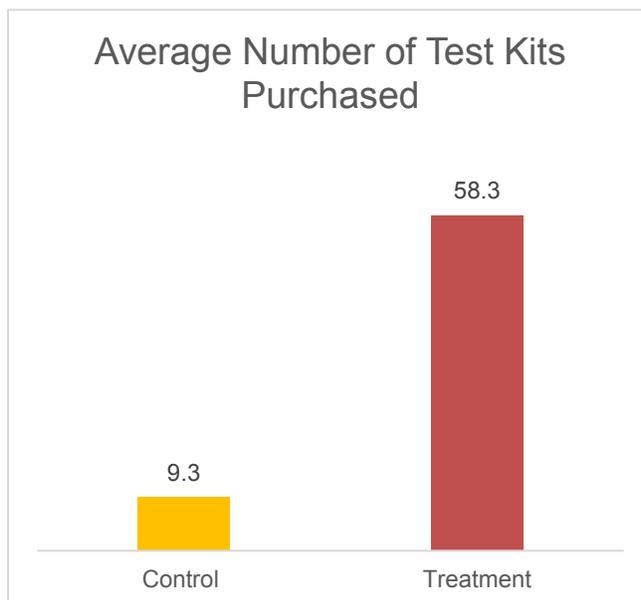
To determine the impact on radon testing, we asked two questions:

- Does a behaviourally-informed postcard increase the likelihood that Canadians will purchase a radon test kit?
- How does this differ between high grassroots communities and low grassroots communities?

### 4.2.1. Test Kits Purchased: Control vs. Treatment

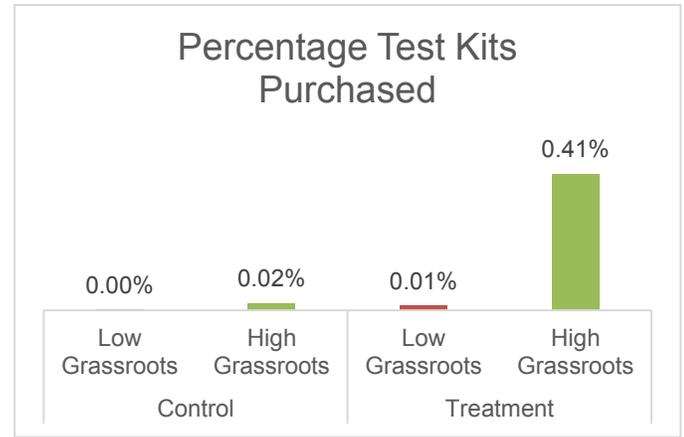
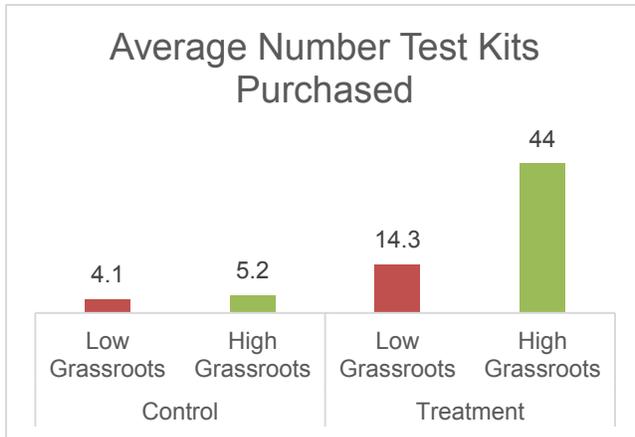
To answer the first question, we looked at test kits purchased between the control and treatment groups.

The data demonstrates that more test kits were purchased by Canadians who were in the treatment group, compared to the control group. This shows that the post cards were effective in influencing Canadians to purchase a radon test kit, regardless of level of grassroots efforts, in all regions. In the control group, on average, 9 test kits were purchased representing approximately 0.04% of the sample. In the treatment group, on average, 58 test kits were purchased representing approximately 0.54% of the sample.



**In summary, a behaviourally informed postcard increases the likelihood that Canadians will purchase a radon test kit.**

To answer the second question, we looked at test kits purchased between the control and treatment groups, specifically comparing low grassroots and high grassroots communities. The following graphs compare both the average number of test kits purchased and the percentage of test kits purchased within the high and low grassroots communities.



Overall, people who received the postcard and lived in a high grassroots community were more likely to purchase a radon test kit. In the control group, the average test kits purchased and the percentage of test kits purchased within communities was relatively similar between the low grassroots and high grassroots communities. However, when we look at the treatment group, those people in high grassroots communities were more likely to purchase a radon test kit. The average number of test kits purchased in the low grassroots community was 14 test kits, representing approximately 0.01% of the sample, while there were 44 test kits purchased in the high grassroots communities, representing approximately 0.41% of the sample.

**In summary, people who live in a high grassroots community are more likely to purchase a radon test kit when they receive a behaviourally informed postcard as compared to people in a low grassroots community.**

### 4.3. Additional Findings

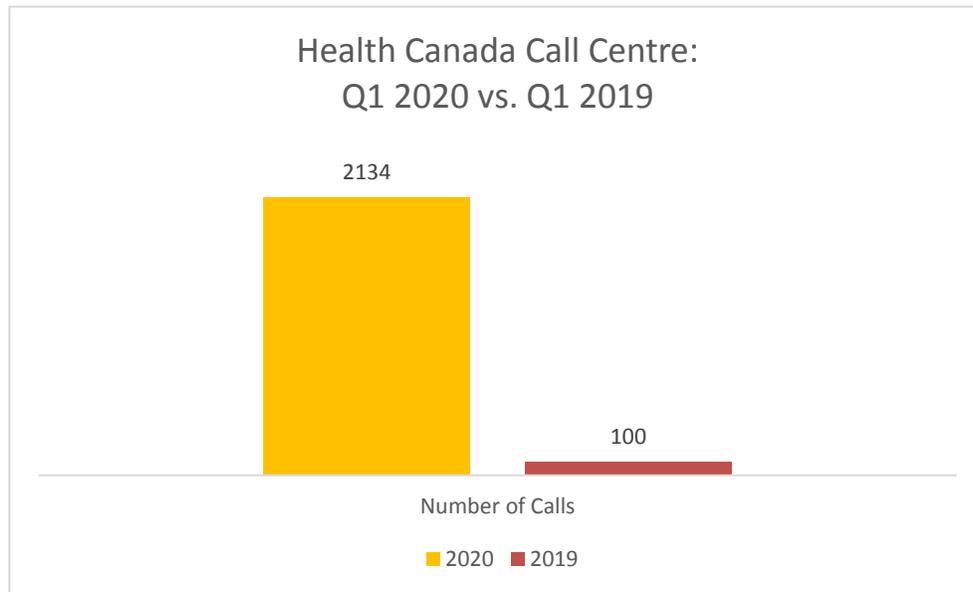
#### 4.3.1. Survey Results

Health Canada developed and circulated a survey to industry stakeholders and regional radiation specialists to gather anecdotal information pertaining to the study. Full survey results are provided in Appendix C. The survey received a total of 26 responses and found that:

- 69% of industry stakeholders noticed a significant increase in engagement with Canadians via phone, email and website traffic.
- Almost 50% of industry stakeholders noticed an increase in testing and mitigation through certified mitigation professionals.
- 62% of industry stakeholders described the feedback they received as positive.
- 96% of industry stakeholders would support this type of activity in the future.

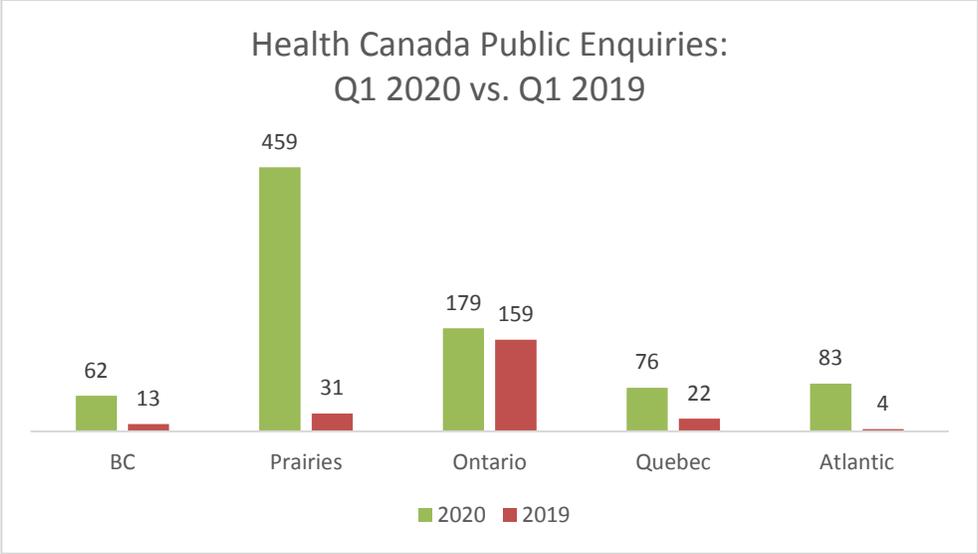
#### 4.3.2. Call Centre

Health Canada's Call Centre experienced a significant spike in calls from January to March 2020 in comparison to 2019.



#### 4.3.3. Public Inquiries

Health Canada's National Radon Program and Regional offices field calls from Canadians every day regarding radon. The chart below shows the increase in public inquiries during the testing period, compared to 2019.



During the testing period for the project, Health Canada received more calls on average than the same time period in 2019. Every region received more calls than the previous year, with significantly more calls coming in from the Prairie Region during the trial.

For detailed results by month, see Appendix C.

## 5. CONCLUSION

The goal of this study was to determine if Canadians living in areas with high grassroots efforts (i.e. pre-existing awareness and education about radon) were more likely to purchase a radon test kit than Canadians living in low grassroots communities.

The experiment asked two research questions:

1. **Awareness:** Does a behaviourally-informed postcard increase awareness of radon among Canadians? How does this differ between high grassroots communities and low grassroots communities?
2. **Testing:** Does a behaviourally-informed postcard increase the likelihood that Canadians will purchase a radon test kit? How does this differ between high grassroots communities and low grassroots communities?

### 5.1. Radon Awareness

In conclusion, the data found that a behaviourally informed postcard does increase awareness of radon among Canadians. This is clearly demonstrated in the increase, year over year, in the number of website visits for both Canada.ca and TakeActiononRadon.ca.

#### 5.1.1. Website Visits

Canada.ca saw a 4,188% increase of website visits from Canadians living in treatment group municipalities, compared to a 100% increase of visits from Canadians living in control group municipalities.

TakeActiononRadon.ca saw a 1,248% increase of website visits from Canadians living in treatment group municipalities, compared to 151% increase of visits from Canadians living in control group municipalities.

### 5.2. Radon Testing

A behaviourally informed postcard increases the likelihood that Canadians will purchase a radon test kit. This is clearly demonstrated when comparing the data for control vs. treatment groups.

However, this study showed that while behaviourally informed postcards significantly increase radon awareness, they do not significantly increase the behaviour of purchasing a radon test kit and home testing. While this study did show an increase in test kit purchases, behaviourally informed postcards do not increase the behaviour of radon testing enough given the health risk posed by long-term radon exposure.

#### 5.2.1. Test Kits Purchased by FSA

In treatment FSAs there was an average of 58.3 test kits purchased, compared to 9.3 test kits in control FSAs.

#### 5.2.2. Test Kits Purchased by Percentage

In treatment FSAs 0.54% of homes purchased a test kit, compared to 0.04% of homes in control FSAs.

### **5.2.3. Average Number of Test Kits Purchased (High vs. Low Grassroots)**

In treatment FSAs an average of 44 test kits were purchased in high grassroots areas, compared to 14.3 in low grassroots areas. In control FSA 5.2 test kits were purchased in high grassroots areas, compared for 4.1 test kits in low grassroots areas.

## 6. MOVING FORWARD

Health Canada's National Radon Program has conducted two behavioural research studies that tested the impact of behaviourally informed postcards on radon awareness and radon test kit purchases. Both studies have demonstrated that behaviourally informed postcards are highly effective at increasing radon awareness but only marginally effective at increasing radon test kit purchases by Canadians.

The National Radon Program can continue to encourage Canadians to test their homes and provide education and awareness with the goal of increasing testing. It is clear that behaviourally informed postcards are making a difference, but not to the degree that is necessary to protect the health and safety of Canadians. These behavioural studies demonstrate that other solutions need to be considered to make radon testing a top-of-mind consideration for Canadians. Informational campaigns will only take radon education, awareness, testing, and mitigation so far. Given that testing in Canada is so low, Health Canada needs to take additional action to help more Canadians test their homes for radon.

With the onset of COVID-19, more Canadians are working from home and spending more time indoors. As this trend continues and more Canadians continue to work remotely, there is even more of an imperative to increase testing rates in Canada.

Health Canada is currently encouraging Canadians to stay home to “flatten the curve”, combating the immediate COVID-19 public health crisis. However, in doing so, Canadians risk of exposure to radon has increased. In her 2019 study, [“Risk Assessment for Radon Exposure in Various Indoor Environments.”](#) Dr. Jing Chen found that, “due to relatively higher radon concentrations in homes and longer time spent indoor at home, the exposure at home contributes to 90% of the radon-induced lung-cancer risk”. While we must address the immediate health risks of COVID-19, we must also stay aware of the longer-term health risks related to spending more time indoors, like radon induced lung cancer.

Based on the findings of our two most recent behavioural research studies, combined with existing research and data developed both in Canada and internationally, it is recommended that Health Canada take stronger action to assist Canadians in testing and, if necessary, mitigating their homes. We would like to propose the following recommendations:

- Pending funding approval, the NRP should develop a behaviourally informed postcard coupon, “Healthy Home Checklist” providing Canadians a coupon code, redeemable for a free long-term test kit, paying only for the cost of shipping. The NRP should also modify the 2019 “Radon Gas is in your Home” postcard, adjusting messaging based on lessons learned in this research project and adding coupon purchase code.
- In combination with these coupon postcards, the NRP should develop a campaign on [Canada.ca/radon](#) to run for the duration of the radon testing period, October – March, with specific information regarding Radon and COVID-19 and a direct link to redeem radon test kit coupon. The NRP will work collaboratively with Take Action on Radon (TAOR) to distribute the free radon test kits.

- The NRP should deliver the radon test kit coupons to Canadians via Canada's Post's Neighbourhood Mail Program in November 2020. Redeemed coupons will be recorded and a behaviour analysis report will be developed to determine if the coupon initiative was successful in increasing radon testing.
- Working collaboratively with TAOR, the NRP should also utilize part of the Grant and Contributions funds to develop a radon mitigation rebate program. A digital, social media, and traditional media awareness campaign should be developed to promote awareness of the program. Data should be collected to support a 2021/22 bid to the Canada Revenue Agency to develop a permanent radon mitigation tax rebate, potentially rolled into a green rebate program.

Underlying these recommendations is the assumption that the NRP will have access to additional funding through the Radon Outreach Contribution Program. If the NRP is unsuccessful in its bid for additional contribution funding, it is suggested that additional budget request is made for the 2021/22 fiscal year to fund a pilot program to purchase at minimum 100,000 long-term test kits, fund up to \$250,000 for radon mitigation (\$500 - \$1,000 per application), develop necessary awareness materials, and paid advertisement to raise awareness about both programs. Data from this pilot program should be used to support a future 2022/23 bid to the Canada Revenue Agency to develop a permanent radon mitigation tax rebate, potentially rolled into a green rebate program.

The cost for this program is justified through Dr. Janet Gaskin's 2019 thesis, "[Radon and Lung Cancer](#)," which looked to, "...quantify the lung cancer burden associated with residential radon and to identify the most cost effective mitigation options to reduce radon in Canada". Dr. Gaskin's research found that radon is an important modifiable cause of lung cancer in Canada, the cost-utility analysis of interventions to reduce residential radon suggests it is comparable to other healthcare interventions.

## 7. APPENDIXES

### 7.1. Appendix A: Test Kits Sold

Table 5: Test Kits Sold

Region	Treatment High Grassroots	Treatment Low Grassroots	Control High Grassroots	Control Low Grassroots
BC	11	52	0	0
Prairies	11	31	26	38
Ontario	108	16	23	0
Quebec	8	32	2	3
Atlantic	302	12	1	0

Table 6: Percentage of Test Kits Sold

Region	Treatment High Grassroots	Treatment Low Grassroots	Control High Grassroots	Control Low Grassroots
BC	0.0024%	0.0033%	0%	0%
Prairies	0.0032%	0.0086%	0.0031%	0.0013%
Ontario	0.003%	0.0028%	0.0002%	0%
Quebec	0.0022%	0.019%	0.0009%	0.0004%

## 7.2. Appendix B: Website Results

Table 3: Website Visits – Canada.ca

City	Canada.ca/radon		Canada.ca/le-radon	
	2020	2019	2020	2019
Castlegar, BC	27	3	0	0
Greenwood, BC	0	0	0	0
Abbotsford, BC	0	0	0	0
Delta, BC	0	0	0	0
Morden, MB	0	0	0	0
Weyburn, SK	0	0	0	0
Okotoks, AB	0	0	0	0
Lethbridge, AB	24	0	0	5
Kingston, ON	93	5	5	0
Seaforth, ON	0	0	0	0
Hamilton, ON	21	19	0	0
Timmins, ON	0	0	0	0
Maniwaki, QC	0	0	15	0
Lennoxville, QC	0	0	0	0
Chelsea, QC	0	0	0	0
Saint-Bruno, QC	0	0	0	0
Halifax, NS	197	0	2	0
Stephenville, NL	4	0	0	0
Charlottetown, PEI	1	0	0	0
St. Stephen, NB	2	0	0	0

Legend
Treatment High GR
Treatment No GR
Control High GR
Control No GR

**Table 4: Website Visits – Take Action on Radon**

City	takeactiononradon.ca		occupetoiduradon.ca	
	2020	2019	2020	2019
Castlegar, BC	294	10	2	0
Greenwood, BC	0	0	0	0
Abbotsford, BC	12	12	0	0
Delta, BC	4	4	0	0
Morden, MB	174	7	0	0
Weyburn, SK	61	6	2	0
Okotoks, AB	33	20	0	0
Lethbridge, AB	172	34	1	0
Kingston, ON	1,310	82	26	0
Seaforth, ON	0	0	0	0
Hamilton, ON	703	291	10	1
Timmins, ON	7	17	0	0
Maniwaki, QC	129	1	158	1
Lennoxville, QC	0	0	0	0
Chelsea, QC	10	4	1	2
Saint-Bruno, QC	0	0	0	0
Halifax, NS	0	58	0	0
Stephenville, NL	68	0	0	0
Charlottetown, PEI	50	18	8	0
St. Stephen, NB	0	0	0	0

Legend
Treatment High GR
Treatment No GR
Control High GR
Control No GR

### 7.3. Appendix C: Public Inquiries

**Table 7: Public Inquiries by Region**

Region	January		February		March	
	2020	2019	2020	2019	2020	2019
BC	48	6	12	4	2	3
Prairies	357	8	70	17	32	6
Ontario	103	59	48	67	28	33
Quebec	41	7	12	13	23	2
Atlantic	65	4	10	0	8	0

## 7.4. Appendix D: Survey Results

Below are the five questions asked in the survey with responses provided by participants.

1. Did you notice an increase in phone calls, emails, website traffic?
  - Significantly less activity than normal (0)
  - Slightly less activity than normal (0)
  - The same level of activity as normal (2)
  - Slightly more activity than normal (4)
  - Significantly more activity than normal (18)
  - Unsure (2)
2. Did you notice an increase in testing and mitigations through certified professionals?
  - Significantly less activity than normal (0)
  - Slightly less activity than normal (0)
  - The same level of activity as normal (6)
  - Slightly more activity than normal (6)
  - Significantly more activity than normal (6)
  - Unsure (7)
3. How would you describe the feedback you received?
  - Positive, people were glad to receive the post card and wanted to know more and/or purchase a test kit or hire a professional (16)
  - Negative, people were angry or afraid (0)
  - Other (10)
4. Would you support this activity in the future – did you find that it was effective in increasing awareness/getting people to take actions?
  - Yes (25)
  - No (0)
  - Other (1)
5. Comments

*“Really liked it. It would be great if you can give advance warning to CARST members it is coming; we can tie it into other activities.”*

++

*“Generally, well received but some dismay at government apathy. Mitigation systems continue to be installed in upper middle class and above. Landlords can tax deduct this improvement cost and should be encouraged. Homeowners should be allowed to tax deduct cost. Lower income and young families are not installing systems.”*

++

*“There was a large number of comments back from the people who saw the postcard and also there were added conversations from social circles in people who got one to those who did not. More needs to be done to continue to build awareness. Thanks for what has been done so far.”*

++

*"We received both positive and negative feedback. While many people were interested in learning more/buying a kit, we received a number of calls from people who were suspicious about the kits/radon gas or who were irritated that the government is pushing for radon testing without offering any financial compensation. About 1/3 of our customers/callers mentioned that they looked at additional resources on radon before deciding to buy a test kit. Overall, our customers/callers responded positively to the postcards and seemed thankful that the government is creating awareness about radon gas."*

++

*"We felt it was a very positive step, however the timing was wrong. We had zero awareness during November. Sending them out in November would have reinforced radon awareness month, and also given them time to make up their minds - we are still getting calls from people who received a postcard, but it took them until now to get around to calling. They are disappointed to discover that it isn't the best time to start a test. If they got the card in November and took a couple of months to call, they would have still been able to take advantage of the winter months for testing. For the feedback we received - I chose other because we received both positive and negative feedback."*

++

*"We had 2 customers contact us from rural areas saying they received the postcard and were looking for more information. It is obviously not enough data but I find it interesting neither were from large urban areas. Maybe snail mail works well for more laid back areas where people can take time to smell the roses and read their "junk mail". :-)"*

++

*"We need to be more clear on HC involvement and the fact that test kits are not included."*

++

*"I had a few calls from rural areas asking about radon reduction and the feedback for the post cards were very positive. It is hard to know if it effected our company directly as the calls were from out of our service area but I think it is a very good initiative. Homeowners trust information from Health Canada and they were open to receiving this information as this was not from a private company. Since it is from Health Canada I think the home owners took it more seriously as it was not related to sales. Also it is a pretty low cost way to get the word out about testing and radon reduction. I think this was a very good project for the radon industry in general."*

++

*"1. Replace 'order' with 'purchase.'*

*2. Add link to CRRS data so people can look into why they are being told to test.*

3. Prepare TAOR with resources for a telephone line where they can handle the consumers not connected to the internet.

4. Be prepared with the options for consumers not willing to shop online.

5. Hold a training session with Health Canada call centre to reduce calls forwarded to the specialists for standard information.

6. Consider re-sending to some areas already included in first wave, such as areas of interest to the behavioural study or simply the most radon prone FSAs.

--> These changes should reduce the number of angry and afraid, which accounted for approximately 10% of inquiries.”

++

“Make sure to let radon test kit distributors know well in advance. Also it would not be a good idea to do the campaign while COVID-19 is still circulating.”

++

“Feedback received was a combination of positive and negative depending on the person. I believe this was a result of the wording ‘To Order’, it could be alternatively ‘To Purchase.’”

++

“A wonderful initiative! The only feedback would be to provide additional notice of the next initiative so we can support the efforts by ensuring we have adequate supply of test kits, and also to provide supporting communications (media outreach, social media, web, etc) Thanks!”

++

“Great initiative that significantly raise radon awareness and commend the government for doing it.”

++

“Had more phone calls asking for information about radon and what to do if they had high levels.”

++

“Hard to differentiate between whether it was our initiatives or the post card that lead to the increase in traffic.”

++

“Notification about the campaign in advance would be helpful so we can prepare and be ready for increased activity.”

++

*“Give the businesses and community groups who supply Radon kits and information a heads up prior to sending out the information. We can be a little more prepared for the fall blast.”*

++

*“People appalled at government apathy. I continue to install systems in relatively wealthy people’s homes only as there is no government subsidy or even a tax deduction for these systems. The irony is that the people who have the least to gain (lifespan) are getting the systems while young families who should be installing these can’t afford them. I live in an area where measurements over 1000 Bq are not uncommon. Given that about 17% of homes in my area test over 200 and many over 600 it is sad to realize that there are tens of thousands of children who are receiving the radiation equivalent of three chest x-rays a week while they are sleeping. Modern building codes and the inadequate make up air requirements do not deal with the fact that people are installing appliances that collectively can exhaust thousands of cubic feet of air per minute. The result is measurable depressurization and the drawing in of soil gasses. Hope this helps.”*

++

*“As a collaborator with Health Canada for radon awareness, we would have appreciated being informed before this postcard was sent and also a copy. So we would have been able to adjust our telephone support service.” (Originally submitted in French)*