Communicating Radon Case Study - Ireland

IAEA Workshop
Radon Communication
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Stephanie Long
EPA, Ireland

Radon Risk Map of Ireland
Almost 500,000 people live in homes above the reference level of 200 Bq/m$^3$.
2010 - 2016
12 risk communication campaigns

Wicklow
Clare
Mayo
Kilkenny
Louth
Wexford
Kerry
Galway
South Tipperary
Waterford
Carlow
Sligo

November 2016
November 2015
November 2014
March 2014
April 2013
November 2012
March 2012
October 2011
May 2011
October 2010
April 2010
March 2010
75% aware of radon gas

56% aware of link with lung cancer

27% concerned about radon in their home

21% likely to test for radon

58% know to go to EPA for information
How effective were our campaigns at motivating behaviour change?

- **5,000** homes tested
- **800** homes identified with high radon levels
- **80** with very high radon levels
High levels of awareness do not lead to action

- Typical response rate of 1% (where a kit costs €50)
- Typical response rate of 22% (where a kit is free)
- Cost is a barrier but there are much more significant barriers
- Where high radon is measured, typically only 1 in 5 homeowners remediate
- Why??
Health psychology review
We don’t act rationally to health threats

Radon risk communication is based on an assumption that individuals will act rationally in relation to the information.

We process information about a health threat using both our minds and our emotions.

And once our emotions get involved, we tend to respond defensively to information about health threats.
Recommendations

Be realistic about how much change can be achieved through risk communication

1. Make testing for radon “normal” and visible

2. Shift responsibility solely from the householder by bringing in more government regulation

3. Regulation needs to be supported by high quality information about risks

4. Information needs to be “stage matched” – messages should match their target audience

5. Financial support is needed
1. Making Radon “Normal”

https://www.youtube.com/playlist?list=PLFesobjWT1FhjQuTBjZFZv6zq4yPwE3B8
1. Radon Ambassadors
Making Radon “Normal”

10 THINGS TO KNOW ABOUT...
Showcasing the best in Irish scientific research – Series 4 coming soon!
1. Online Articles making Radon “Normal”

- **Lowering CO2 emissions, claims lobby group**
  Increasing wind energy is not the answer to decreasing the country’s carbon emissions, according to...
  - Ireland to miss 2020 emissions targets and would need carbon tax of €70 per tonne.
  - Ireland is worst country in Europe for taking action to tackle climate change.

- **Relentless rain takes its toll**
  Farmers fear they are the first Irish victims of climate change as a fodder crisis looms on the horizon because of incessant rain since July and a shortage of consecutive dry days.

- **State delays funding for new homes over social housing fears**
  The Government is refusing to approve State funding for one-in-six housing schemes because it’s not clear how many of the homes built will be ‘affordable’.
  - PTSB claims that trackers restored to all are ‘baloney’
  - More homeless than ever relying on shelter

- **We know the dangers but we’re still not testing our homes for radon**
  Ireland has one of the highest average indoor concentrations of radon gas in the world, with some of the highest levels of radon concentrations anywhere in Europe found in homes and workplaces here.

**www.Radon.ie**

- Radon is an odourless, tasteless gas that causes up to 250 cases of lung cancer every year.

- Radon gas can seriously damage your family’s health
  Test your home

- Radon gas is a cancer-causing gas that can be detrimental to the health of your family.

**Country people have much more bedrooms and are more likely to be involved with radon gas issues**
1. The Media Making Radon “Normal”

Some 460,000 people at risk from cancer-causing radon gas

Scientists produce new map showing areas at risk from radon gas

© Tue, May 23, 2017, 13:05 | Updated: Tue, May 23, 2017, 18:12

Elaine Edwards

According to Trinity College scientists, one in 10 of the population is at risk from radon.

Up to 460,000 people in the State – one in 10 of the population – are at risk from unsafe exposure to indoor radon gas, which may cause lung cancer.

Radon levels in Wicklow home were equal to 56 X-rays a day

Environmental Protection Agency calls for people to test their homes for the gas

© Mon, Nov 20, 2017, 16:09

Dan Griffin

A radon mitigating system in the basement of a house. The EPA is calling on people in high radon areas to test their homes for the gas. File photograph: iStock

Residents of a house in Co. Wicklow were exposed to a radiation dose which was equivalent to 56 chest X-rays a day because of the amount of radon in the area, the Environmental Protection Agency (EPA) has said.
Low uptake rates are normal

Need to be realistic about what can be achieved through persuasion

Stronger regulation by Government to address radon is essential

2. More Regulation

Actions:
1. Implementation of workplace regulations in partnership with Health & Safety Authority

2. Strengthen Building Regulations

3. Work with relevant stakeholders towards rental legislation requiring testing & remediation by landlords

4. Work with stakeholders towards conveyancing requiring radon testing
2. More Regulation: Workplaces

• Council Directive 2013/59/Euratom (EU BSSD)

• S.I. No. 30 of 2019, (Ionising Radiation) Regulations 2019

• Reference Level reduced from 400 Bq/m³ to 300 Bq/m³

• Responsibility to measure now rests with the employer (in High Radon Areas)

• Health & Safety Authority include in inspections & communications
Since 1998 Building Regulations require:

- All new buildings to have a standby sump
- All new buildings in High Radon Areas to have a radon barrier
3. Supporting regulation with high quality information about radon risk

www.radon.ie
(100,000 hits 2017 & 2018)

Free Phone 1800 300 600

radon@epa.ie
3. Supporting regulation with high quality information about radon risk

Radon Day 2017:
- Press release resulting in 7 interviews on local radio
- Advertisements on national radio
- Features on two TV shows
- Twitter @EPARadiation

Radon Day 2018:
- Research students presenting their work in a high radon area with a local man telling the story of the death of his family members from radon (supported by EPA)
- Interviews with radon ambassadors
- Press release
- Advertisements on national radio
- Twitter @EPARadiation
4. Information needs to be “stage matched”

Develop targeted communications and other “nudges” to increase the testing & remediation rate

**Actions:**

1. Targeting specific groups when raising awareness:
   - Those that have already tested >200 Bq/m$^3$ but not remediated
   - Those buying and selling their homes

2. Exploring the potential of digital monitors to nudge action
5. Financial support

- Feedback consistently says that cost is a reason for not taking action

- Research survey looking at providing financial incentives for radon testing and remediation

- 1400 invitations issued to randomly selected homes in parts of Co. Galway and Co. Roscommon

- Participants offered a free radon test and grant of 50% of the cost of remediation (max €500)
5. Financial support

- 20% response rate observed – same as other surveys we have carried out

- 9 homes had radon levels above 200 Bq/m³ with 3 availing of the remediation grant

- Next step is to work with behavioral economists to review this study and test different ways of communicating radon testing and remediation and measure the outcomes
How do we measure effectiveness?

**Lagging indicators:**
• Provides information that may not be sufficiently timely to helpfully direct ongoing actions eg health outcomes for long latency diseases

**Leading indicators:**
• Give a real-time measure of progress towards reducing exposure
• They can then be used as reliable evidence that the long term objective will be achieved
## Lagging indicators

<table>
<thead>
<tr>
<th>Metric</th>
<th>Metric Value(s)</th>
<th>Year measured</th>
<th>Repeat frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population weighted national average indoor radon concentration</td>
<td>98 Bq/m³ (Arithmetic mean)</td>
<td>2017</td>
<td>8 years</td>
</tr>
<tr>
<td>Geographic weighted national average indoor radon concentration</td>
<td>77 Bq/m³ (Arithmetic mean)</td>
<td>2015</td>
<td>8 years</td>
</tr>
<tr>
<td>Radon awareness levels</td>
<td>75% with 21% likely to test their home</td>
<td>2017</td>
<td>3-5 years</td>
</tr>
</tbody>
</table>
### Leading indicators (1)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Metric Value</th>
<th>Year Measured</th>
<th>Repeat Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of domestic radon tests</td>
<td>1327</td>
<td>Average for 2014 -2018</td>
<td>Annually</td>
</tr>
<tr>
<td>No. of radon tests linked to conveyancing</td>
<td>To be established</td>
<td>N/A</td>
<td>Annually</td>
</tr>
<tr>
<td>Remediation rate</td>
<td>22%</td>
<td>2015</td>
<td>5 years</td>
</tr>
<tr>
<td>Rate of successful outcome for those who remediate</td>
<td>70% on first attempt</td>
<td>2015</td>
<td>5 years</td>
</tr>
<tr>
<td>Website hits</td>
<td>Almost 100,000</td>
<td>Average for 2017 and 2018</td>
<td>Annually</td>
</tr>
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</table>
### Leading indicators (2)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Metric Value</th>
<th>Year Measured</th>
<th>Repeat Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of courses held &amp; attendance at Remediation Training</td>
<td>5 courses held</td>
<td>2016</td>
<td>Dependent on scheduling of training course</td>
</tr>
<tr>
<td></td>
<td>87 attendees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of courses held &amp; attendance at Radon Prevention Training</td>
<td>5 courses held</td>
<td>2017</td>
<td>Dependent on scheduling of training course</td>
</tr>
<tr>
<td></td>
<td>78 attendees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of businesses that include radon in H&amp;S assessment using BeSmart</td>
<td>1506</td>
<td>Annual average for 2012-2018</td>
<td>Annually</td>
</tr>
</tbody>
</table>
Future risk communication work

1. Implementation of workplace regulations

2. Communication of revised Building Regulation requirements

3. Continue providing high quality information about risks

4. “Stage matched” information targeting home buyers and those that have already tested high

5. Use of behavioral economics to change the language & methods used when persuading homeowners to take action
THANK
YOU
FOR
LISTENING
ANY QUESTIONS?