Almost 500,000 people live in homes above the reference level of 200 Bq/m³

300 people contract radon related lung cancer every year
2010 - 2016
12 risk communication campaigns

1 in 6 Mayo people lives with a killer.

Thrilled to host EPA briefing on radon in Oireachtas yesterday. Next week is Radon Awareness in Clare @EPARadation

Take the RADON test

The Facts:
- One in six homes tested in Mayo have high radon levels.
- Radon causes up to 250 lung cancer cases each year in Ireland.
- Radon gas is invisible, smell, or taste.
- A simple test can tell you whether your home is safe.

Visit www.epa.ie or Freefone 1800 300 600

Home has radon dose equal to nine X-rays

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

November 2016
November 2015
November 2014
November 2012
March 2012
March 2011
May 2011
October 2010
March 2010
<table>
<thead>
<tr>
<th>How effective were our campaigns at communicating risk?</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% aware of radon gas</td>
</tr>
<tr>
<td>56% aware of link with lung cancer</td>
</tr>
<tr>
<td>27% concerned about radon in their home</td>
</tr>
<tr>
<td>21% likely to test for radon</td>
</tr>
<tr>
<td>58% know to go to EPA for information</td>
</tr>
</tbody>
</table>

Unaware

Aware

75%

25%
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.
Be realistic about how much behavioral change can be achieved through risk communication.
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
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 flood 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 “dubious”
  - 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.

- **Irish News**
  Sinn Fein defends €55 cost of signed Gerry Adams’ book

- **www.Radon.ie**
  Radon is an odourless, tasteless gas that causes up to 250 cases of lung cancer every year.
  Visit www.radon.ie to find out more about radon and how to test your home.
1. The Media Making Radon “Normal”

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

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.
2. More Regulation
3. Supporting regulation with high quality information about radon risk

www.radon.ie

Free Phone 1800 300 600
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
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>No.</th>
<th>Metric</th>
<th>Metric Value(s)</th>
<th>Year measured</th>
<th>Repeat frequency</th>
<th>Proposed year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Population weighted national average indoor radon concentration</td>
<td>98 Bq/m³ (Arithmetic mean)</td>
<td>2017</td>
<td>8 years</td>
<td>2025</td>
</tr>
<tr>
<td>2</td>
<td>Geographic weighted national average indoor radon concentration</td>
<td>77 Bq/m³ (Arithmetic mean)</td>
<td>2015</td>
<td>8 years</td>
<td>2023</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 Bq/m³ (Geometric mean)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean for homes built Pre 98 vs post 98:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>86 Bq/m³ vs 64 Bq/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Radon awareness levels</td>
<td>75% with 21% likely to test their home</td>
<td>2017</td>
<td>3-5 years</td>
<td>2020</td>
</tr>
</tbody>
</table>
### Leading indicators

<table>
<thead>
<tr>
<th>No.</th>
<th>Metric</th>
<th>Metric Value</th>
<th>Year measured</th>
<th>Repeat frequency</th>
<th>Proposed year</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Number of domestic radon tests</td>
<td>1327</td>
<td>Annual average for 2014 to date</td>
<td>Annual</td>
<td>2018</td>
<td>Source: EPA data</td>
</tr>
<tr>
<td>5</td>
<td>Number of radon tests associated with conveyancing</td>
<td>To be established in 2018</td>
<td>N/A</td>
<td>Annual</td>
<td>2018</td>
<td>Method for collecting data to be developed</td>
</tr>
<tr>
<td>6</td>
<td>Remediation rate</td>
<td>22%</td>
<td>2015</td>
<td>5 years</td>
<td>2020</td>
<td>Source: EPA data</td>
</tr>
<tr>
<td>7</td>
<td>Rate of successful outcome for those who remediate</td>
<td>70% on first attempt</td>
<td>2015</td>
<td>5 years</td>
<td>2020</td>
<td>Source: EPA data</td>
</tr>
<tr>
<td>8</td>
<td>Radon remediation training course: No. of courses held and annual attendance</td>
<td>5 courses held (including 1 pilot)</td>
<td>2016</td>
<td>Dependent on scheduling of training course</td>
<td>To be decided</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>87 attendees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Radon prevention training course: No. of courses held and annual attendance</td>
<td>5 courses held (including 1 pilot)</td>
<td>2017</td>
<td>Annual</td>
<td>To be decided</td>
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<tr>
<td></td>
<td></td>
<td>78 attendees</td>
<td></td>
<td></td>
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</tbody>
</table>
Future risk communication work

1. Make testing for radon “normal” and visible

2. More government regulation

3. Regulation supported with high quality information about risks

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

5. Use of behavioral economics to nudge changes
THANK YOU FOR LISTENING ANY QUESTIONS?