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Vermont Radon Exposure

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VERMONT RADON EXPOSURE

By Gary Gilmond

Hinesburg, VT

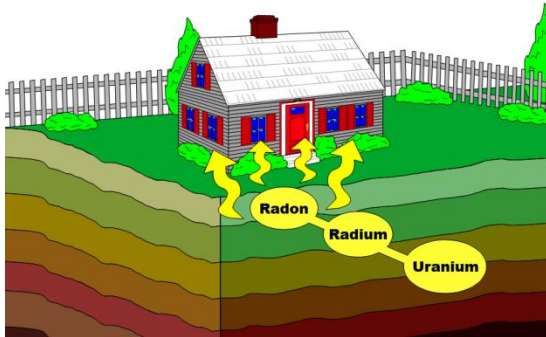
Oct. – Nov., 2014

Mentors: Dr. James Ulager, Judy Wechsler



Radon: A Public Health Concern

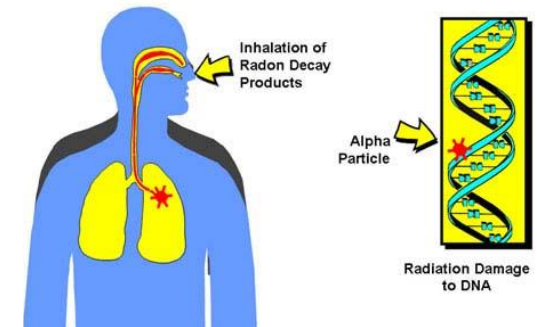
- Radon is a natural, odorless and tasteless radioactive gas that is found in soil, rocks and water all over the US including Vermont
- Long-term radon exposure is linked to over 21,000 lung cancer deaths a year in the US, second only to tobacco
- Roughly 1 in 8 homes in Vermont are believed to have high radon levels



- Vermont law does not require a radon test as part of a real estate transaction
- Thus despite the danger of Radon exposure, the issue remains unrecognized by many Vermonters. Since 2000 only 15,488 state radon test kits have been ordered in Vermont
- It is this need for a greater transparency of the dangers of Radon as well as the resources available for testing and removal of Radon that I chose to address with my project

The Public Health Cost of Radon

- In Vermont each year, 50 people will die of lung cancer directly related to long-term Radon exposure
- Currently it is estimated that lung cancer care accounts for over 20% of Medicare's total cancer expenditures
- Recent research has shown the average costs of the first 6 months of lung cancer treatment in the US range from \$2,687 – \$9,360 per patient
- Conversely, a radon test kit can be obtained for free from the Vermont Department of Health and the one-time cost of installing a radon mitigation system can range from \$800- \$2,500 depending on the home
- Only 28% of Vermont homes with a confirmed elevated radon level have installed a mitigation system to remove it



Community Perspectives on Radon

**Interview #1: *Name Withheld*, Environmental Health Surveillance Chief,
Vermont Department of Health**



- Q: How significant is the issue of Radon exposure to Vermonters?
- A: “This year 50 Vermonters are estimated to die from radon related lung cancer, 7 out of 1000 people are estimated to get lung cancer this year in the US. I think it’s a huge issue.”

- Q: How apparent do you think the issue of radon exposure is to Vermonters?
- A: “I think it is vastly unknown to Vermonters and simply doesn’t come into people’s mind, its one of our major challenges, to educate the public about it.

- Q: What roles if any do you believe health care providers can play in educating Vermonters on Radon?
- A: I think there is a role for health care providers to play. We have talked to OB/GYN doctors and oncologists about it, as of right now, its hard to encourage them to screen for Radon exposure, when little research exists to show it’s a danger to kids or families of a patient with lung cancer. However, I believe there is room in the doctor-patient interaction to educate.”

Community Perspectives on Radon

- **Interview #2: *Name Withheld*, Radon mitigation specialist**
- Q: As a mitigation specialist how well known do you think your work is to the Vermont public?
- A: “Probably not well known. It’s one of the many reasons I am a part of an industry group known as The Association of Vermont Radon Industry Professionals (AVRIP). It’s our mission to raise awareness on the issue of radon and save lives in our communities.”
- Q: Do you believe enough homes/business/schools are getting mitigated in Vermont? If not, what do you believe can be done to improve this?
- A: “No, I don’t believe they are. So far only 53 out of 325 Vermont schools have been tested. Right now the AVRIP’s goal is to drastically increase this number by offering pro bono / reduced cost testing and mitigation installation for these schools. Our hope is that by providing this public service we can increase public awareness and private home testing, which will increase our future business as well.”



Community Intervention and Methodology



- The goal of my project was to create an educational material that could enhance the awareness of Radon exposure as well as the available resources for preventing or removing exposure to the patients of Hinesburg Family Practice
- Ultimately after consulting my community mentors, I settled on creating a easy to read and visually appealing pamphlet that could be used as a quick and informative resource for healthcare providers to give to patients who may be at risk or simply concerned about Radon exposure.
- The pamphlet itself was designed to give patients a simple understanding of what Radon is, the dangers of it's exposure and the resources available to them, namely the possibility of getting a free test kit from the Vermont Department of Health
- In addition to providing pamphlets to providers at Hinesburg Family Practice, I also reached out to the Carpenter-Carse Library in Hinesburg, Vt and provided several copies to them for general public to see and use.

Pamphlet Front & Back

GET THE FACTS ON RADON

- 1 out of 15 homes in the US is estimated have elevated radon levels
- Over 21,000 lung cancer deaths are associated with radon exposure each year in the US.
- Elevated levels of radon can be found in any type of home and in any area in Vermont
- Only 28% of Vermont homes with elevated radon levels have a radon mitigation system in place to remove it
- Vermont law does not require a radon test for a real estate transaction
- Radon test kits are most accurate at the lowest level of living space
- Radon removal systems usually involve a venting pipe and fan and do not require a major structural change

FOR MORE INFORMATION VISIT:

healthvermont.org;

<http://www.epa.gov/radon>

Hinesburg Family Practice
37 Haystack Road
Hinesburg, VT 05481

Phone | 802.847.7400
Fax | 802.847.8698



**COULD YOUR HOME BE
EXPOSED TO HIGH
LEVELS OF RADON?**



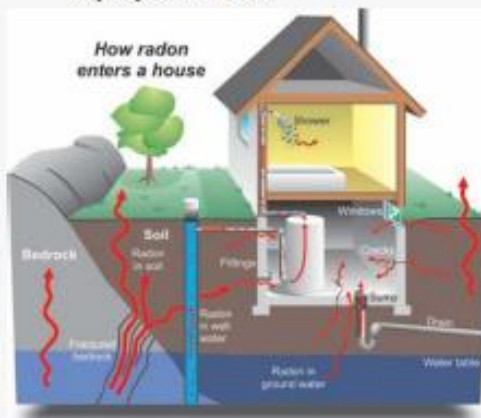
**LEARN HOW TO PROTECT
YOURSELF AND YOUR
FAMILY FROM THIS
DANGEROUS GAS**

Pamphlet Internal Contents

COMMON QUESTIONS ON RADON

WHAT IS RADON?

- Radon is a colorless, odorless and tasteless gas that is found naturally in soil, water and rocks all over the U.S.
- Radon is radioactive and comes from the breakdown of uranium, the same substance used to fuel nuclear power plants
- Radon can enter any type of building through the soil as gas, and sometimes through water. Homes can act like chimneys funneling the rising radon gas to upper floors and pulling more out of the soil. This is why most radon exposure tends to occur in people's homes where they often spend the majority of their time.



WHAT ARE THE HEALTH RISKS OF RADON EXPOSURE?

- Prolonged radon exposure is the second leading cause of lung cancer in the US after smoking
- There are no symptoms for brief or prolonged radon exposure, meaning that the only way for a person to know that they are exposed is to test their home for radon



HOW CAN I PROTECT MYSELF AND MY FAMILY FROM RADON?

- The best way to protect yourself from radon exposure is to get your home tested and installing radon removal system
- FREE radon test kits are available from the Vermont Department of Health
 - An Online form can be found at: <http://healthvermont.gov/enviro/rad/Radon.aspx>
 - You can also call to request a kit at 1-800-439-8550

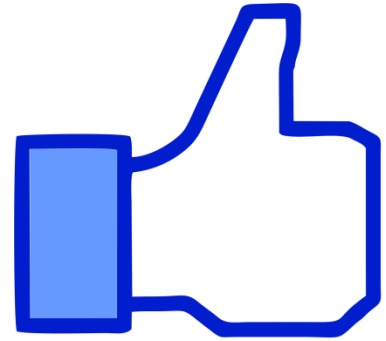
WHAT SHOULD I DO IF MY HOME HAS A HIGH RADON LEVEL?



- The Environmental Protection Agency marks 4.0 pCi/L as the action level for radon.
- If you test your home for radon and find radon levels higher than 4.0 pCi/L you should get help from a certified radon mitigation specialist.
- A radon mitigation specialist is a licensed expert in installing home radon removal systems
- A list of local vendors can found at: <http://www.nrso.org/>
 - Or call toll free at 1-888-329-3474

Response

- Ultimately the feedback for my project was universally positive.
- From a Hinesburg Family Practitioner:
 - “The pamphlet looks great, I especially like that tells people how they can get free test kits for Radon”
- From a member of the environmental health office of the Vermont Department of Health:
 - “I think it’s great that another resource will be available to educate Vermonters about Radon”



Evaluation of Effectiveness and Limitations

- Unfortunately due to the time constraints of the rotation, I was unable to implement a quantitative method of evaluating my project
- However qualitatively, my project goal of providing an informative educational material for the providers of Hinesburg Family Practice to offer their patients seemed very effective
- The providers I spoke to were very pleased with the design and content of the pamphlet and believed they would go to good use
- In addition staff at the Carpenter-Carse Library seemed happy to have copies of the pamphlet and were quick to offer space for them in their public bulletin board area
- Limitations for my project included:
 - **Time** - Specifically for implementing a quantitative evaluation of effectiveness of the pamphlets and to be able to coordinate with other public venues to distribute them
 - **Funds** – Unfortunately I was left to my own devices to pay for color copies of my pamphlet and thus, was unable to make a large number pamphlets for a larger distribution

Recommendations for future interventions

- I believe there are several options for further public health interventions on the issue of Radon exposure
- **1. Expand distribution** of educational pamphlets **and/or hold a community seminar** on the importance of Radon testing. Either option could be followed with a online survey to evaluate the impact on public awareness of Radon
- **2. Contact public schools/municipal offices and/or other public buildings** and inquire about their Radon testing, offer to educate officials on testing and the health concerns of Radon if testing has not been done.
- **3. Reach out to local primary care physicians** on the possibility of including Radon exposure screening into health maintenance/well child check questionnaires.

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