



A Public Health Crisis In Vermont and Beyond – Indoor Air Quality (IAQ) and Toxigenic Molds

DAVID FONTAINE

08/14/21



Introduction

Who are we? What is this about?

Who We Are

- Former Ferrisburgh homeowners
- Suffered serious illness as a result of toxigenic molds hidden in our home.
- Lost home and belongings after a failed remediation, leading to a twisted, 2-year long train wreck
- Three years later, still living on the road while working to regain our health – and sharing our learnings
- Passionate advocates for toxic mold awareness
 - Our backstory and resources for others may be found on our personal web site –
 - <https://thegreatmoldescape.com/>



The Great Mold Escape

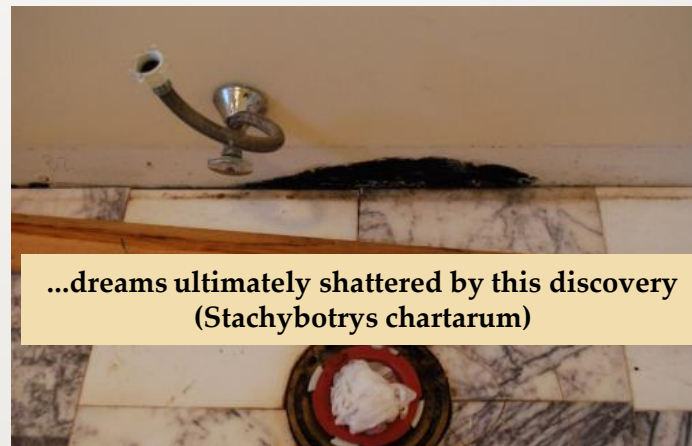


**A JOURNEY BACK TO HEALTH: THROUGH
DISCOVERY, AWARENESS, & ENDURANCE**

Our story in pictures...



...dreams turned into reality (Lissa's art studio)



monument of mad sad suffering

Our story in pictures – cont'd



Our wonderful home,
gutted and empty after
remediation



A life of chaos in a still
contaminated "home"



A house in distress, Winter 2017-18.



A new lifestyle on our property,
Spring 2018



5AM before our estate sale, shoppers already
perched like vultures on the street,



A lifetime's tools...pennies on the dollar



And another new
life begins...!

monument of mad sad suffering

What's Our Concern

- Due to significant political and economic considerations, Federal and State health officials have systematically downplayed the risks associated with water damage in our indoor spaces, particularly regarding toxigenic molds.
- This has left the Vermonters at great public health risk.
- We are looking to turn our experience, our loss – and, likely, the loss of a previous homeowner – into a positive change. Specifically:
 - Raising awareness of the risks of toxic mold
 - Educating practitioners and real estate professionals
 - Addressing systemic issues in the property industry and healthcare system
 - Promoting improved research and public health surveillance, and
 - Providing tools and resources to help others avoid this fate

The Basic Argument...

- There is a clearly demonstrated pattern in the communications and actions of the Federal Gov't, State Gov't, and VT DoH that misrepresent the health risks from the water damaged building (WDB) environment
- In particular, they have systematically downplayed the prevalence and risks of mycotoxins, as shown by their health officer training material, their official web site, etc.
- In addition, the State's public health surveillance efforts completely ignore the critical factor of indoor air quality
- This has left ALL Vermonters - renters, homeowners, employees, medical and mental healthcare practitioners, the building trades, insurance and real estate industries - ignorant of the real prevalence and danger of this preventable hazard...and at great risk.

The Costs...

- This has led to a tremendous disease burden on Vermonters – and all Americans.
 - Medical and drug costs. Lost wages. Quality of life. Reproductive health. Premature, preventable death.
 - WE ARE NOT WELL - and we are getting sicker, not healthier.
- Vermont businesses are also being affected through lost productivity
 - Most small Vermont businesses are totally unaware that the poor air quality of their building could affect their business
 - Most importantly, the healthcare cost burden on self-insured employers represents a significant loss of profits, wages, and tax revenue. Ironically, this includes the State of Vermont!
 - Again, these impacts are really nationwide.

<https://labor.vermont.gov/document/self-insured-list-2018-2019>



Supporting Evidence

How we know what we know...

Our Experience

- Declining health since moving into our home in Ferrisburgh in 2010 – in spite of previously good health, age, activity level, etc.
 - Extensive, multi-system symptoms
 - Well-documented with years of test results
 - Early signs of a compromised immune system
- Health crisis after *Stachybotrys* exposure in 2017
 - Including neuro/cognitive effects
- Subsequent home and medical testing
 - Mycotoxins in our systems correlated to the toxigenic species, plural, in our home
 - **Aspergillus, Penicillium, Stachybotrys**
 - **Ochratoxin A, Aflatoxin, Trichothecene, and Gliotoxin**



Confronting the enemy – a grim night

Our experience shows that it's critical we characterize our exposures to water damaged environments. **It can be of great importance clinically.**

Our Experience

- Our symptoms ran the gamut
 - Neurological / cognitive
 - Abnormal blood tests
 - Liver
 - Skin
 - Eye problems - vision changes, floaters, ...
 - Extreme fatigue
 - Gut problems
 - Unexplained weight gain
 - New food intolerances
- Lissa became one of the 2.5 MILLION people in this country diagnosed with ME/CFS
 - Incidentally, there are interesting relationships being drawn between ME/CFS and “Long COVID”
 - Immune and environmental factors could very well be underpinning all

Virtually all now recognized as associated with chronic mold toxicity.

Our Experience

- Construction defects
 - Lack of VT building codes exacerbates the problem.
 - As does the construction trades' general lack of awareness of the health risks
- Failed remediation
 - Lack of licensing puts homeowners, tenants, and employees at risk
 - Our experience is likely far more common than most would like to admit
- Insufficient training across the traditional medical system
 - Includes multiple highly trained specialists - hepatology, dermatology, ophthalmology, ER
 - These doctors MUST be able to “see” this disease.
- Lack of awareness amongst general public

NOTE: There are thousands of others on the various online health forums and support groups – toxic mold awareness, ME/CFS, fibromyalgia, IBD/Crohn's – with similar experiences.

Our Experience

- Our travels have shown us the desperate condition of our housing – nationwide
 - Vermont cities and towns, Northern Michigan, Arizona, inner-city Chicago, Native American reservations
- We've also seen the condition of our everyday infrastructure - basics that many rely on every day - laundromats, convenience stores, grocery stores.
 - These places, which are workplaces for many, are generally heavily contaminated
 - There is clearly a social justice component to this issue
 - There is no reason to be surprised that COVID hit low income communities the worst

Experiences of Others

- Clinicians
 - We've had the pleasure of meeting mold-literate doctors across the country and in various online health spaces. For example:
 - Drs. Jill Crista, Jill Carnahan, Neil Nathan, Ritchie Shoemaker, Michael Gray, Greg Nigh
 - Treating many thousands of patients.
 - Most overwhelmed w/ patient volume.
- Patients
 - There are thousands of others on the various online health forums and support groups – toxic mold awareness, ME/CFS, fibromyalgia, IBD/Crohn's – with similar experiences.
 - We've become friends with many.
 - We've shared loss, like the loss of a friend's young son.
- Indoor Environmental Professionals (IEPs)
 - The National Organization of Remediators and Mold Inspectors (NORMI)
 - This excellent group understands mold illness and trains the licensed inspectors in FL, TX, TN, LA
 - The IEPs of the International Society of Environmentally Acquired Illness (ISEAI)

Extensive Peer Reviewed Research (Multi-Domain)

- EPA data - 80% of buildings water damaged
- Yale scientist showing decrease in diversity, trending towards toxigenic species
 - Jordan Peccia, Prof. Env. Eng.
- Gray / Thrasher / Shoemaker
 - Numerous case studies by early pioneers
- Extensive clinical evidence
 - Environmental toxicologists
 - Mold-literate ND's and functional med practioners
- New lab tests – RealTime Labs, Great Plains
- Agriculture
 - Decades of research
 - Cows, pigs, chickens – even aquaculture and fur trades
 - FDA/EPA regulations of mycotoxins in food supply
 - Testing/monitoring/reporting
 - Supports extensive industry – ex. Biomin
 - Extensive testing of feed additives to reduce toxic burden



The screenshot shows a PubMed search result. At the top, there is a blue banner with the NIH logo and the text "National Library of Medicine National Center for Biotechnology Information". To the right of the banner is a gold oval containing the text "From 2003!". Below the banner is the PubMed logo and a search bar. Under the search bar, the text "Advanced" is visible. The search result is for a 2003 article in the Journal of Food Protection, with the title "Aflatoxin contamination in shrimp feed and effects of aflatoxin addition to feed on shrimp production".

NIH National Library of Medicine
National Center for Biotechnology Information

From 2003!

PubMed.gov

Advanced

> J Food Prot. 2003 May;66(5):882-5. doi: 10.4315/0362-028x-66.5.882.

Aflatoxin contamination in shrimp feed and effects of aflatoxin addition to feed on shrimp production

Patterns of Behavior in Legislation, Public Health

- Language
 - Treating the thousands of species of mold as ONE.
 - No discussion of species.
 - No differentiation between allergenic, pathogenic, and toxigenic.
 - Perpetuating the term “black mold”, rather than correcting it.
- Dissuading testing
 - Appears intended to keep Vermonters ignorant of those “scary” species
 - This only serves to mask the real problem
- Ignoring the immune suppressive nature of mycotoxins

These are all discussed in further detail in the context of THO trainings.

Patterns of Behavior in Legislation, Public Health

- Legislative changes of 2001/2002 re: water damage exclusions in homeowners policies
 - Followed costly toxic mold lawsuits in various states in the late 90's.
 - Property/insurance industries immediately collaborated to add mold exclusions to home insurance plans nationwide
 - This has been exceedingly successful in stopping their bleeding – but it doesn't help Vermont homeowners, as they claim
 - Many homeowners think they have coverage, but it disappears in a haze of fine print

Bulletin 141

Information about Coverage for Mold Losses November 26, 2002

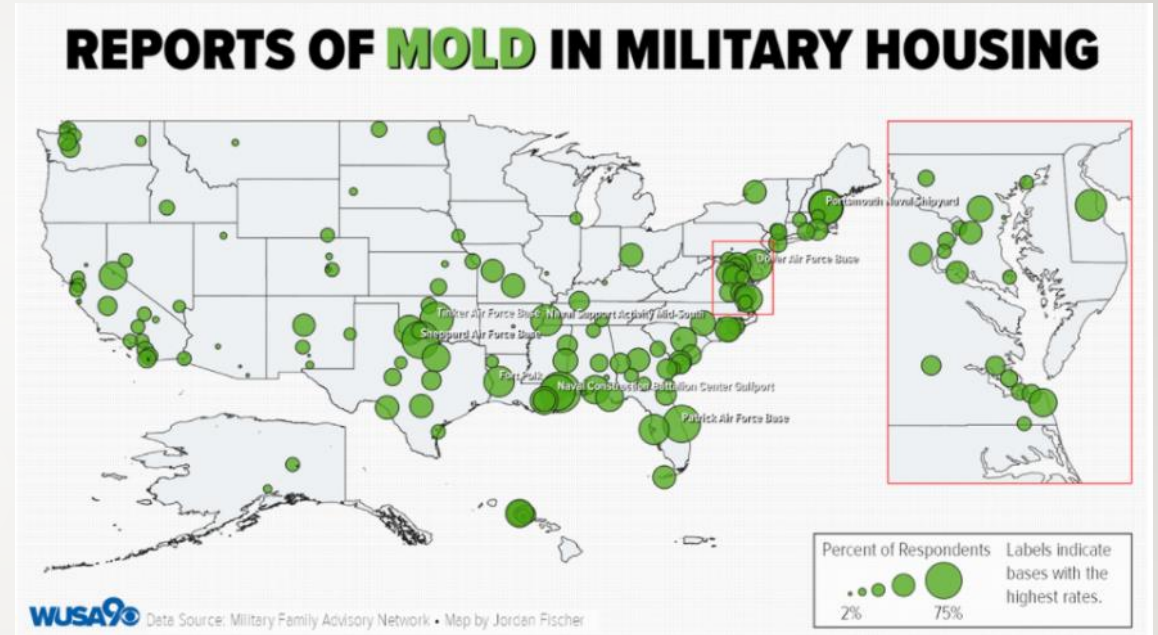
Countrywide, property and liability insurance losses from claims related to mold are increasing. The department has been asked by the insurance industry to approve limitation and exclusion endorsements for mold coverage. Based upon a review of this issue, the department has determined that failure to approve limitations on mold coverage would result in significant premium increases and/or a reduction in the number of insurers doing business in the Vermont market.

After balancing the need of Vermonters to have a competitive marketplace that offers insurance coverage at reasonable prices, with the goal of making the broadest coverage available to Vermonters that is possible, the department has decided to approve certain mold limitations and exclusions. Such limitations will be permitted in the personal line and commercial line marketplaces.

← This was completely the case for us. Neither were we ever made aware of an option to increase mold coverage. This was catastrophic for us – like having your house burn down and realizing it isn't covered.

Patterns of Behavior in Legislation, Public Health

- Military housing issues
 - Ref 2019 hearings of House Armed Services Committee
 - <https://www.congress.gov/event/116th-congress/house-event/LC65432/text?s=1&r=1>
 - On a positive note, it's excellent to see base commanders are making real strides to address this
 - NORMI is currently running a series of IAQ and mold related trainings at numerous bases



INVESTIGATIONS







'Are we not worth safe houses?' | Military spouses create their own advocacy group amid concerns about mold remediation

'I wish I could tell you that we were the exception, but we're kind of the norm.' An advocacy group created at Virginia's Fort Belvoir now has more than 350 members.

VT DoH –Surveillance

VT DoH Surveillance Targets – Relationship to IAQ, Mold, Mycotoxins


IN THIS SECTION

Asthma Data Asthma prevalence in Vermont has been higher than the national rate since 2007. READ MORE 	Cancer Data The Center for Health Statistics conducts surveillance of cancer among Vermonters and creates data products to assist in making data driven decisions for cancer prevention and control. READ MORE 
Cardiovascular Disease Data Cardiovascular Disease (CVD), or heart disease, is the leading health condition that affects over 37,000 Vermonters. READ MORE 	Diabetes Data In Vermont, diabetes is a serious health condition that affects over 40,000 adults, and is one of the leading causes of death resulting from a chronic disease. READ MORE 
Injury Data Injury prevention is part of a comprehensive approach to enhancing health and quality of life for all Vermonters. READ MORE	Maternal and Child Health Data Maternal and Child Health (MCH) experts focus on complex public health problems affecting women, children, and adolescents, from preconception to adulthood. READ MORE 
Dental Health We gather dental health information about Vermonters so we can improve the quality of life of Vermonters. READ MORE 	Physical Activity & Nutrition Data Increasing physical activity and access to healthy diet choices are important in reducing the impact of chronic disease. READ MORE
Tobacco Data Public Health Statistics conducts surveillance of the burden of tobacco use among Vermonters and creates data reports to assist the Vermont Tobacco Control Program in making data-driven decisions for tobacco prevention and control.	

- IAQ is not assessed or tracked at all on our surveillance – yet multiple associated conditions ARE

VT DoH – Town Health Officers (THO's)

- We were left hanging by Ferrisburgh THO after reporting our “situation”. It wasn't a rental – and didn't present a liability concern for anyone.
- This training, more than anything else, represents the Vermont DoH's stance on toxic mold – and demonstrates a lack of objectivity regarding indoor air quality, water damage, mold, and mycotoxins.
- **An extensive, critical review of this training is provided in a separate slide section below.**



(Link)
<https://www.youtube.com/watch?v=22zQvdMd8fw>

Mold for THOs

May 6, 2020

VERMONT
DEPARTMENT OF HEALTH

0:03 / 20:47

From a state public health authority
Learn how experts define health sources in a journal of the National Academy of Medicine

The image shows a YouTube video player interface. The video title is "Mold for THOs" and it was uploaded on May 6, 2020. The video is from the Vermont Department of Health. The video player shows a progress bar at 0:03 / 20:47. Below the video player, there is a red oval highlighting a text box that reads "From a state public health authority" and "Learn how experts define health sources in a journal of the National Academy of Medicine".

VT State House

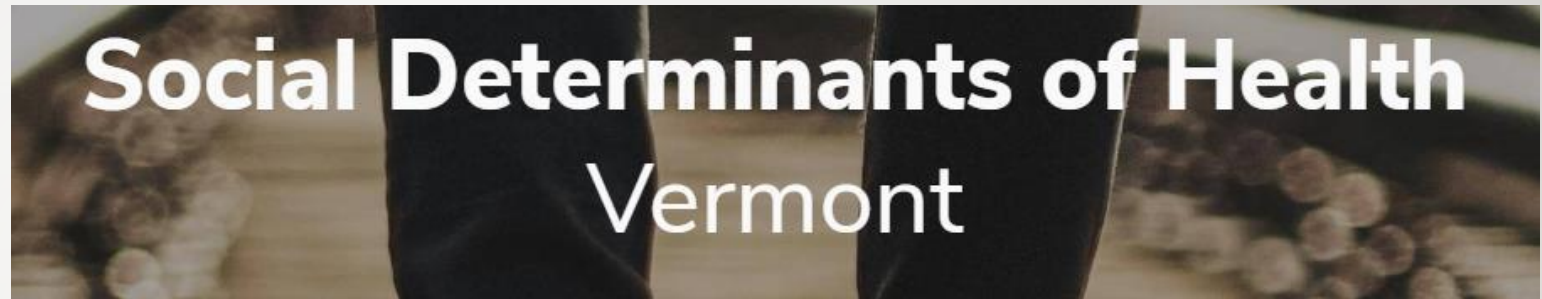
- Beset by extensive mold in 14 chambers in 2018. NOT the first time.
- Clean-up costs > \$500K
- Key contact – Vermont Commissioner of Buildings and General Services, Chris Cole
 - Re: the State House, “You could see where there was a piece of inexpensive framed art where the matting had rippled because of moisture,” he said. **“But there was no visible black mold anywhere.”**
 - Here’s a State official perpetuating the very term the VT DoH says is incorrect and misleading.
- Question – How can we get access to the findings of the State House inspection and post-remediation verification? Also, who did the remediation? Qualifications? Documentation?
Since taxpayer funded, should be freely available.

Previous Homeowner's Experience

- Died 2008...after approx. 7 years in home
- Pneumonia
- Bacterial sepsis
- Kidney failure/transplant
- Myelodysplastic syndrome with thrombocytopenia
- Chronic immunosuppression
- Diabetes Mellitus
- These symptoms, singularly and collectively, speak of environmental toxicity
- **How many practitioners were involved in his diagnosis and treatment?**
- **Why did no one raise the question of toxic mold in the home – especially in the face of his broad, multi-system symptoms?**
- **The System appears to be failing.**
- **Practitioner CME is ESSENTIAL!**

Social Determinates of Health (SDH)

According to the VT DoH, SDH include the conditions in the places where Vermont residents live, learn, work, and play...



Conditions in the places where Vermont residents live, learn, work, and play affect a wide range of health risks and outcomes. These conditions are known as **Social Determinants of Health (SDOH)**.

This report presents an overview of the data related to social determinants in Vermont. It explores data on cost-burdened housing, poverty, and food insecurity. Communities in Vermont with inadequate housing, low household incomes, or lack of access to healthy food may be at risk of poor health outcomes. Applying [research on social determinants](#) can improve well-being for Vermont's residents.

Social Determinates of Health

- Interesting, then, that **NONE** of the identified social determinates of health include housing quality!
- This includes indoor air quality, which includes mold, mycotoxins, microbial VOCs, etc.
- Our indoor environments are likely one of the **BIGGEST** factors!

<https://www.healthvermont.gov/about/performance/social-determinants-healthhealth-equity-scorecard>

- O SDOH All Vermonters have fair and just opportunities to be healthy 📄	
+ I Access	% of adults age 18-64 with health insurance
+ I Access	% of adults who cannot obtain care or delay care
+ I SHIP	% of adults with disabilities always or usually getting social and emotional support
+ I Environmental	% of children age 1-5 who have elevated blood lead levels (≥ 10 $\mu\text{g}/\text{dL}$ - venous confirmed)
+ I newHV2020	% of children age 1-5 who have elevated blood lead levels (5-9 $\mu\text{g}/\text{dL}$ - venous confirmed)
+ I Access	% of children age 17 and younger with health insurance
+ I SDOH	% of eligible registered voters who participated in the last election
+ I newHV2020	% of households that spend 30% or more of their income on housing
+ I Retired	% of households with food insecurity
+ I SDOH	% of students awarded a high school diploma 4 years after starting 9th grade
+ I SDOH	% of Vermonters age 17 or younger living below the poverty level
+ I SDOH	% of Vermonters living below the poverty level

Relevance to Indoor Air Quality

No

No

No

No

No

No

NO!

Partial

No

No

No

No

Comparison to Other Toxic Health Risks

- Like BPA, PFOA/PFOS, cyanotoxins and other toxic environmental hazards, radon is being taken FAR more seriously than indoor air quality, mold, and mycotoxins - even with significantly lower prevalence and impact

From the Front Porch Forum - 1/28/19

Test Your Home for Radon. It Can Save Your Life

KATIE WARCHUT, KATIE.WARCHUT@VERMONT.GOV, PUBLIC HEALTH COMMUNICATION OFFICER, VT DEPT. OF HEALTH, VERMONT

ANNOUNCEMENT

It wasn't until Kathy's mom was diagnosed with lung cancer that her Vermont home was tested for radon. Watch this video to learn what her family found:

<https://youtu.be/xepXlm2L4I4>

More than 48,000 Vermonters have already tested their homes for radon. It's easy to test, and it's FREE. Request your kit today by emailing your name, mailing address, physical address and phone number to radon@vermont.gov or by calling 1-800-439-8550.

One out of every seven homes in Vermont has elevated levels of radon and an estimated 50 Vermonters die of lung cancer related to radon every year.

Radon gas enters your home from the surrounding soil and bedrock. It doesn't matter where your home is or how old it is – it can still have high levels of radon. But you can reduce radon levels in your home. For more information, visit

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

Want to see the results of radon tests in your town? Or how the bedrock geology of Vermont relates to radon risk? Go to <https://arcg.is/1TGSba>

EMAIL AUTHOR REPLY TO FORUM

Comparison to Other Toxic Health Risks

✓ Radon

- Affects roughly 14% of VT homes
- Primarily results in lung cancer
 - Estimated 50 radon-related lung cancer deaths in VT each year
- VT DoH community outreach
- Free test kits available
- DoH web page featuring emotional video of Vermonter's experience losing mother to radon-induced lung cancer

✓ Cyanobacteria

- Primarily in and around water bodies with blue-green algae blooms. Generally small, clustered outbreaks.
- Affects include dermatologic, gastrointestinal, respiratory, and neurologic signs and symptoms*
- Risks from cyanotoxin exposure clearly communicated
- Cyanobacteria tracker to help protect public from exposure
 - <https://www.healthvermont.gov/tracking/cyanobacteria-tracker>
- Detailed info for clinicians – ex. UVM Medical Center
 - <https://medcenterblog.uvmhealth.org/family-health/blue-green-algae/>

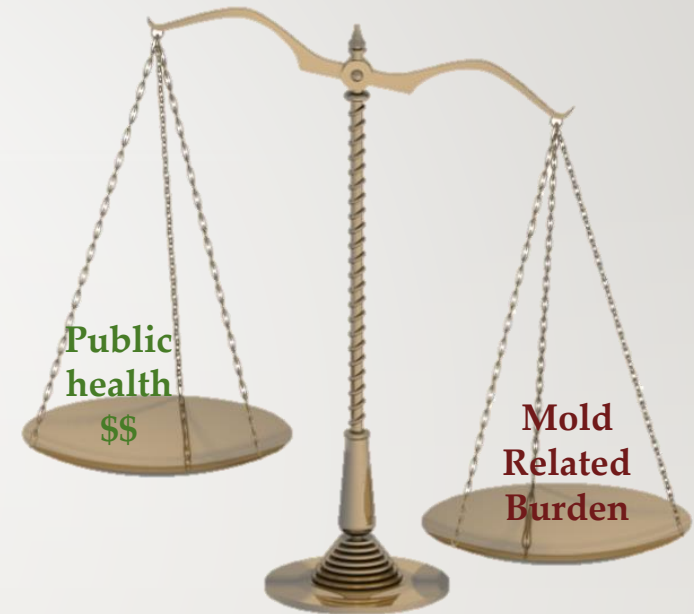
Comparison to Other Toxic Health Risks

X Mold

- Affects the vast majority of our buildings
 - 50-80% per EPA estimates. Supporting evidence is all around us!
 - Flooding, structural deterioration, condensation, plumbing leaks.
 - Think of the armies of contractors that face this problem every day – roofers, plumbers, basement waterproofing professionals
- Associated with “chronic dysfunction or injury to all organ systems”, per AAEM*
 - Respiratory, neurological, cardiovascular, genitourinary, gastrointestinal, musculoskeletal, immune, and hematological
- **THIS** problem is getting rapidly worse, unlike the others
 - Buildings deteriorating; not being addressed appropriately.
 - Climate change increasing frequency and severity of flooding
 - New building standards resulting in less air circulation
 - Reports of HRVs being full of mold, blowing into home
- Yet, there’s a pattern of dismissive public health messaging
 - Treated as one nebulous hazard...“Mold”
 - No differentiation of high risk species
 - Talk of some “black mold”, as though it’s one rare thing. **It’s NOT.**
 - No mention of mycotoxins
- **MULTIPLE** toxigenic species are common
 - Toxic molds win “survival of the fittest”
 - Extensive data supports this. We had 3 – Asp, Pen, Stachy.
 - Some, like Aspergillus, can be dangerously pathogenic
 - Infections like this are grossly understudied – and likely underdiagnosed
- According to the World Health Organization:
 - Mycotoxins can cause a variety of adverse health effects and pose a serious health threat to both humans and livestock.
 - The adverse health effects of mycotoxins range from acute poisoning to long-term effects such as **immune deficiency** and **cancer**.

Comparison to Other Toxic Health Risks

- So, one of these...
 - Is orders of magnitude larger in scope than the others;
 - Is getting steadily worse;
 - Has far broader and more severe health effects;
 - Is downplayed by our public health system;
 - Is underfunded and under-researched;
 - Is excluded from our health surveillance;
 - Is costing us an unknown fortune in medical costs, lost productivity, etc.
 - With no efforts to study the problem, we can only speculate how much.



Key questions we should be asking...

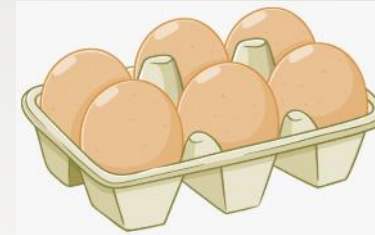
How much do we currently spend on each toxic hazard?

How much do those efforts actually improve the health of Vermonters?

How much do those efforts save Vermonters – and the State?

Pre-Natal / Neo-Natal Risks

- Mycotoxins are commonly known to carry through to agricultural products – meat, eggs, milk
- The same holds true for humans, supported by numerous peer reviewed papers and case studies
- Mycotoxins have been repeatedly shown to be present in cord blood and breast milk
 - Next slide presents just ONE relevant case study:
 - <https://pubmed.ncbi.nlm.nih.gov/22220187/>
- There is no reasonable scientific dispute of this.



Pre-Natal / Neo-Natal Risks

- A 2012 paper from Jack Dwayne Thrasher, Michael R Gray, Kaye H Kilburn, Donald P Dennis, Archie Yu – early pioneers in this field
- [A water-damaged home and health of occupants: a case study](#)

Abstract

A family of five and pet dog who rented a water-damaged home and developed multiple health problems. The home was analyzed for species of mold and bacteria. The diagnostics included MRI for chronic sinusitis with ENT and sinus surgery, and neurological testing for neurocognitive deficits. **Bulk samples from the home, tissue from the sinuses, urine, nasal secretions, placenta, umbilical cord, and breast milk were tested for the presence of trichothecenes, aflatoxins, and Ochratoxin A.** The family had the following diagnosed conditions: chronic sinusitis, neurological deficits, coughing with wheeze, nose bleeds, and fatigue among other symptoms. An infant was born with a total body flare, developed multiple Cafe-au-Lait pigmented skin spots and diagnoses with NF1 at age 2. **The mycotoxins were detected in bulk samples, urine and nasal secretions, breast milk, placenta, and umbilical cord.** Pseudomonas aeruginosa, Acinetobacter, Penicillium, and Aspergillus fumigatus were cultured from nasal secretions (father and daughter). RT-PCR revealed A. fumigatus DNA in sinus tissues of the daughter. The dog had 72 skin lesions (sebaceous glands and lipomas) from which trichothecenes and ochratoxin A. were detected. The health of the family is discussed in relation to the most recent published literature regarding microbial contamination and toxic by-products present in water-damaged buildings.

This is NOT a rare or extreme example – just one that has been well-studied.

Pre-Natal / Neo-Natal Risks

- The risk of WDB contaminants, including mycotoxins, to the unborn and newborns has been clearly established
- **WHY, then, do we provide no warning and, instead, accept a 15% miscarriage rate???**
- Where is public health surveillance? Where is the research?
- Our public health strategy needs to include appropriate messaging for those planning families
 - Not just an issue for renters with liable landlords. Homeowners need our protection, too.

How it Appears

- Prioritizing interests of real estate, insurance, and healthcare industries
- Allowed to walk in front of bus – in spite of significant evidence of public health risk
- Allopathic medical community lagging behind alternative medicine practitioners in this area
 - Numerous Vermont ND's and functional medicine specialists are well-trained – and providing excellent clinical care
 - Broad “whole body” approach is critical, given the complex, multi-system effects of mold illness



The Roadblock

- So, why this lack of focus on the biggest factor?
- It is, unfortunately, a liability laden mine field, which is WHY it has been such an intractable problem.
 - Real estate
 - Construction
 - Hospital acquired infections – a BIG deal!
- Luckily, if done right, there are ways to balance the health needs of Vermonters with other interests
- I'd like to work towards mutually beneficial solutions – while preventing our catastrophe, or worse, for others





Urgency

Why this needs immediate attention...

Why the urgency?

- Problems getting worse
 - Building standards
 - “Tighter” means “worse”!
 - Climate change
 - Greater wx fluctuations. More flooding.
- Self-insured companies in Vermont are bleeding profits due to IAQ related illness
- Suffering and public health costs, including mental health
- Lives being lost every day – including the unborn
- We NEED to change course now
- We HAVE the knowledge and tools to do it
- We just NEED leadership – and the political will to make bold change



GOALS

What we'd like to see done to address this issue...

Acknowledgement of Health Hazard

- Mycotoxins present a significant health risk
 - We protect against them in our food supply and in other industries
 - YET, we totally ignore them in this context.
 - Over time, toxigenic species dominate – survival of the fittest
 - Should be added to the “Significant Chemicals of Concern” list
- Multiple toxigenic species – not just “black mold”
 - Stachybotrys chartarum, Chaetomium, Aspergillus, Penicillium,...
 - **Species identification IS important!**
- Environment and genetics are significant risk factors
 - Up to 25% of the VT population is particularly at risk
- Mycotoxins can be significant immune disruptors
 - Risk not limited to the immune compromised.
 - ALL ARE AT RISK! Fixing this messaging is **CRITICAL**.

**NOTE: This simple act – the acknowledgement of the risk – will go a LONG way towards defusing the current, systemic and pervasive gov’t/industry “gaslighting”.
And, it will help keep Vermonters safe.**

Stop the Disinformation!

- The current State guidance on mold is dangerously flawed.
 - YES, it does match federal guidance (CDC, EPA, OSHA, NIOSH...)
 - However, that is exactly the type of disinformation we need to fix
 - We, Vermont, are a strongly independent state – the Brave Little State.
 - We can and should do better.
 - Training – Mold for Town Health Officers
 - Freshly updated in May 2020, this is just a video version of the same flawed 2009/2012 guidance slides.
 - <https://www.youtube.com/watch?v=22zQvdMd8fw>
 - This training is riddled with holes.
 - See “A Critical Review of the VT DoH Mold Training for Town Health Officers (THOs)” section below.
- Should be updated to reflect new information on risk factors (incl. immune health), exposure, recommendations for testing, etc.
 - Suggest review by clinicians with appropriate experience – AAEM, NAEM, and/or ISEAI.

A primary goal should be an updated training, appropriately vetted, within 2 years.

Public Health Awareness

- Require VT Director of Health to establish a public health awareness campaign
 - Update all guidance pertaining to the water damaged building environment, mold, mycotoxins, bacterial contamination, microbial VOCs, etc.
 - MANY avenues – require notices in rental agreements, public health posters at laundromats, notices in hardware stores, etc.
 - Note: NORMI IAQ Basics 101 course has a great slide that could serve as a useful handout

Public Health Surveillance

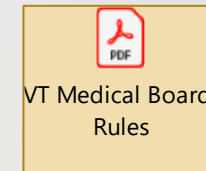
- Add this issue to the public health surveillance program
 - <https://www.healthvermont.gov/stats/topics>
 - As previously noted, NOTHING substantive re: indoor air quality, mycotoxin exposure, microbial VOCs
 - NOTE: These are significant drivers of many of the other conditions being monitored. See **BOLD FACED** items.

Public Health Surveillance Focus Areas

- **Asthma**
- **Cancer**
- **Cardiovascular Disease**
- **Diabetes**
- Injury
- **Maternal and Child Health**
- **Dental**
- **Physical Activity and Nutrition**

Continuing Medical Education (CME)

- THIS is critical
 - Previous homeowner likely died due to lack of doctors' training
 - He suffered extensive multi-system, multi-organ health problems consistent with mold toxicity – and would have seen a long list of specialists
 - NONE of them knew enough to ask the right questions
- CME requirements already exist
 - See Section 22 of the PDF embedded here...
 - Special topics already exist for:
 - Hospice, Palliative Care, Pain Management (22.1.5)
 - Prescribing Controlled Substances (22.1.6)
- Ideally, this would include both generalized and discipline-specific trainings:
 - Dermatology, neurology, ophthalmology, hepatology, oncology, mental health
 - I can speak first-hand to the knowledge gaps in ALL of these areas
- Numerous organizations are available to assist with curriculum development
 - ISEAI, GPL workshops, etc.



Continuing Education - Realtors

- Vermont already has continuing education requirements for realtors
- To dispel decades of systemic bias, reinforced by poor public health messaging, realtors have no idea of the true, grave health effects of mold and mycotoxins
- How can we ensure they get an appropriate understanding of the real health risks?
- Note: There are numerous groups available to help develop an appropriate curriculum.
 - In fact, I know one doing similar work in CT.

Real Estate Industry Changes

- Mold notifications, like CA
- Disclosure requirements for commercial real estate rental/sale
 - Our commercial real estate stock is in extremely poor condition.
 - At this moment, there are dilapidated commercial buildings currently being renovated across the state – at least 4 prominent ones between Addison and Burlington
 - There are currently NO protections to ensure those buildings are appropriately remediated

Licensing of Remediators and Mold Inspectors

- Some states currently requiring licensed mold inspectors/remediators (click links for further details)
 - [Texas](#)
 - [Louisiana](#)
 - [Florida](#)
 - [Maryland](#)
 - [New York](#)
 - [Washington, DC](#)
- National Organization of Remediators and Mold Inspectors (NORMI) is an extremely well qualified training supplier, licensed by the states listed above
 - I can provide additional contact details.
 - They would be an excellent resource in developing licensing requirements.

Construction Trades

- Challenging as it may be, we MUST start educating contractors re the risks
 - The health effects are FAR beyond whatever they might imagine
 - There are also significant workplace safety issues
 - Mycotoxins are dangerous chemicals. Look at the Material Safety Data Sheets for Aflatoxin, Ochratoxin, etc.
 - From personal experience, I can say there is little to no awareness of the hazards of mold toxins, and PPE use is often lax.
 - Simply removing/treating affected material is inadequate.
 - Contamination spreads/lingers. If no clean-up done to rest of home, toxic problem remains.
 - The DoH, through their mold training, is relying on contractors to be part of the front lines.
 - Unless and until we can get them appropriate training, THEY ARE ADDING TO THE PROBLEM.



Connections / Allies

Who are some resources we might draw on...

Some Allied Organizations

- International Society of Environmentally Acquired Illness (ISEAI)
- American Academy of Environmental Medicine (AAEM)
- National Academy of Environmental Medicine (NAEM)
- Global Indoor Health Network (GIHN)
- National Organization of Remediators and Mold Inspectors (NORMI)

A Possible Legal Resource... Vermont Legal Aid

The screenshot shows the Vermont Legal Aid website. On the left is a navigation menu with buttons for Home, About Us, Our Projects, and Contact Us. The 'Our Projects' button is highlighted. Below it, a list of projects is shown: Disability Law Project, Elder Law Project, Health Care Advocate Project, Housing Discrimination Law Project, Mental Health Law Project, Poverty Law Project, and Vermont Long-Term Care Ombudsman Project. The 'Contact Us' section is highlighted in green and contains the text: 'The Office of the Health Care Advocate is a free resource for Vermonters. Call us for help at 1-800-917-7787 or fill out our [Help Request Form](#).' The main content area is titled 'Our Projects' and includes a 'Home' link. The text states: 'Vermont Legal Aid provides free civil legal services to Vermont residents who meet at least one of the following criteria:' followed by a bulleted list: 'are low income', 'have a disability', 'are over 60', 'have experienced illegal discrimination in housing', and 'have a problem related to health care insurance or services'. Below this, it says 'Our lawyers and paralegal advocates, with support from our staff:' followed by another bulleted list: 'represent clients', 'provide advice, forms and other helpful tools, and information', 'testify before the legislature or administrative committees and boards about how laws or rules impact Vermonters everyday', 'advocate for new protections or the enforcement of those that already exist and', and 'identify and work to correct systemic problems that adversely affect vulnerable people'. A red bracket on the right side of the page groups the two bulleted lists. Below the lists, the text reads: 'VLA provides information, advice and representation in a wide range of civil legal areas including health care, housing, education, family law, public benefits, and consumer law. We don't take criminal cases or traffic violations. Due to the high level of need, compared with funding, we aren't able to provide direct help to everyone who is eligible for our services. However, we provide some level of service to as many people as possible; offer practical tools and helpful information on our [VTLawHelp.org](#) website; and direct people to other agencies, organizations and legal help.'

ALL relevant

Vermont Legal Aid – cont'd

- In 2018, they produced a report titled – “Renters at Risk - The Cost of Substandard Housing”
 - Here’s a link to the report:
 - <https://www.vtlegalaid.org/sites/default/files/Renters%20at%20Risk%20-%20The%20Cost%20of%20Substandard%20Housing.pdf>
 - Here’s the team that worked on it:

Acknowledgments

This project was made possible by lead author Tessa Horan, whose extensive writing, research, and interviews bring to this report the voices of Vermonters in the struggle for healthy housing. The Vermont Legal Aid Housing Habitability Committee (Maryellen Griffin, David Koeninger, Wendy Morgan, Sandy Paritz, Jessica Radbord, and Rachel Seelig) was also integral in bringing this report to fruition. We are indebted to the Shepherd Higher Education Consortium on Poverty (SHECP) for their generous support and funding; Richard Sheward for sharing the extensive research of Children’s Health Watch with Vermont Legal Aid; and UVM Medical Center for working with us in our Medical-Legal Partnership, Legal Access Works. Thank you to the tenants and community stakeholders whose stories and perspectives provide the backbone for this report, and all those whose support helped this report become a reality.



Other Players

Who are some other affected parties, esp. those who would push back...

Potential Sources of Push-back

- Real estate industry
 - Push-back on disclosures or anything that might depress sales/profits
- Mold inspection/remediation industry
 - Push-back on licensing
- Construction trades
- Public health officials
- Healthcare industry
 - How does Green Mountain Care Board fit in?

Test Your Home for Radon. It Can Save Your Life

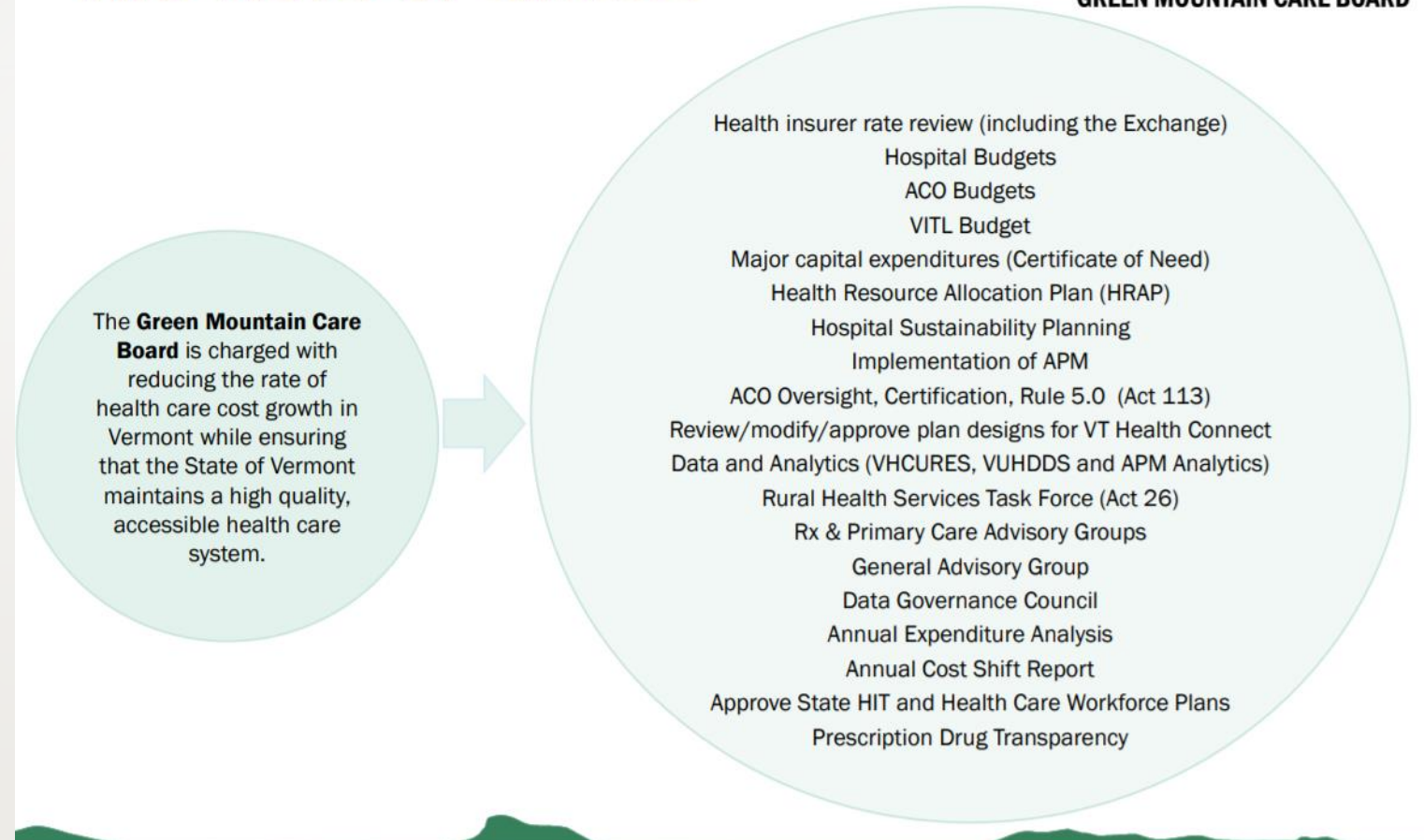
KATIE WARCHUT, KATIE.WARCHUT@VERMONT.GOV, PUBLIC HEALTH COMMUNICATION OFFICER, VT DEPT. OF HEALTH, VERMONT

Green Mountain Care Board?

Per statute (18 V.S.A. § 9372), the Board's purpose is "to promote the general good of the State by:

- improving the health of the population;
- reducing the per-capita rate of growth in expenditures for health services in Vermont across all payers while ensuring that access to care and quality of care are not compromised;
- enhancing the patient and health care professional experience of care;
- recruiting and retaining high-quality health care professionals; and
- achieving administrative simplification in health care financing and delivery. (Added 2011, No. 48, § 3, eff. May 26, 2011.)

The Role of GMCB



However, they seem primarily concerned about healthcare costs and access – as opposed to actual public health



Closing

Some positive thoughts, a recap, and questions/actions

Some positives...

- Good timing for real estate industry!
 - Recent hot market, in spite of pandemic, provides increased profits – a great time to put some money back into IAQ improvements
- COVID related school IAQ improvements
 - Also, note immune suppression and effect of COVID on low-income population
- Other states' legislation provides framework – not starting from scratch
- Technology improvements
 - Mycotoxin testing – home and medical
 - Air treatment
- With appropriate action, Vermont can be a true leader in this critical area
 - Needs to start somewhere

Summary

- Yes. This is a big problem – and a tough one to tackle.
- Unfortunately, it was allowed to grow unchecked for the past 2 decades due to a lack of appropriate Federal guidance, maneuvering by special interests, a lack of research, and – fundamentally – a lack of political will...on both sides of the aisle.
- HOWEVER, putting the interests of the real estate, insurance, and healthcare industries – and others - above the health and safety of the citizens of Vermont, systematically downplaying the risks, leaving us ignorant and unable to take steps to protect ourselves, is like letting us walk out in front of a bus. It's unconscionable.
- Instead, we should be addressing the problem head on and clear eyed, doing research where required, clearly and accurately communicating the hazards, and providing guidance on mitigations – remediation, lifestyle changes, air filtration, and health strategies that support proper detoxification.
- We must start shining a light on this issue and educating Vermonters of the hazards.

Questions

- How does funding of legislated efforts work?
- Are there concerns with State vs Federal guidance?
- Can CDC prevent contrary messaging?
- Who reviewed/approved YouTube THO mold training? FOIA request? (Check w/ VT Digger.)
- What is the review process for DoH guidance docs?
- Looking for original ERMI data via Federal FOIA request. Do they know anyone that can assist?
- How does this fit in with other healthcare reforms and organizations?
 - Ex. How would the Green Mountain Care Board be involved? How do we break down entrenched allegiances and build new ones to take us back in the right direction?

A Critical Review of the VT DoH Mold Training for Town Health Officers (THOs)


A fresh look at our latest public health guidance on mold –
as illustrated by the YouTube training for THOs

In-Work

VT DoH – Town Health Officers (THO's)

- This training, more than anything else, represents the Vermont DoH's **current** stance on toxic mold – and demonstrates a lack of objectivity regarding indoor air quality, water damage, mold, and mycotoxins. See YouTube link.
- Based on our experience, and from the experiences of clinicians and IEPs we have met in our travels, this training is shown to be, in many ways, inadequate, inappropriate – and in some ways dangerous.
- *Quotes are from the VT Public Health Industrial Hygienist, based on the transcript auto-generated by YouTube*

(Link)
<https://www.youtube.com/watch?v=22zQvdMd8fw>



Mold for THOs

May 6, 2020

VERMONT
DEPARTMENT OF HEALTH

0:03 / 20:47

From a state public health authority
Learn how experts define health sources in a journal of the National Academy of Medicine

Slide 2 – Slide Content

Mold is everywhere.

Mold and mildew are general terms used to describe kinds of fungus. All it needs to grow is:

Organic matter

- Food
- Furnishings, linens, clothing
- Building materials: carpet, wallboard, wood

Water/moisture

- Flood water
- Plumbing or roof leaks
- Relative humidity



Vermont Department of Health

2

- This mantra of “mold is common...mold is everywhere” runs throughout the training
 - Over a dozen times
- They say this as if there’s no way to avoid it...or control it. We should just accept the risk and deal with it when it inevitably happens.
- Mold is common, yes, but it should NOT be in our indoor spaces.
- And, just because it’s common, doesn’t mean it’s not dangerous.

This type of messaging perpetuates the dismissive attitudes and general ignorance around the health risks of mold, particularly toxigenic molds.

Slide 2 – Quotes from the Trainer

“u.s environmental protection agency studies of human exposure to air pollutants indicate that indoor levels of pollutants may be two to five times – and occasionally even more than 100 times higher - than outdoor levels.”

Given this, it's inconceivable that indoor air quality is not tracked as a social determinate of health, nor on our surveillance radar, in any meaningful way.

THIS NEEDS TO BE FIXED.

“indoor air quality is a particular concern because most people spend about 90 percent of their time indoors - which includes their time at work, at home, when they're sleeping, and so on.”

Slide 3 – Slide Content

No species of mold is named “black mold.”

Many kinds of mold may be black, and the color of mold does not describe what type it is or how hazardous it is.

Stachybotrys chartarum (S. chartarum) is a mold species that often is incorrectly called “black mold.”

- It has also been featured in news reports as more toxic than other molds.
- Currently it is not known whether low exposure to S. chartarum causes more illness than exposure to other mold species.
- Whether an indoor environment is contaminated with S. chartarum or any other species of mold, the recommendations remain the same.

Vermont Department of Health

3

The claim that it’s “featured in news reports as more toxic than other molds”, like it’s some over sensationalized fear mongering, is not appropriate for PH guidance

Yes, it has been reported that way – because it IS more toxic than many other common species.

Not true. There is significant evidence available on this – and it’s considered of particular concern by most IEPs. And, who said anything about “low exposure”?

Purely from the perspective of professional remediation, the recommendations would be the same. However, not knowing species puts DIY homeowners at great risk, as lack of training and lapses of protocols can have serious consequences.

And, this info can be crucial for treating physicians.

**Better guidance would be that species identification IS important..
And, there are multiple toxigenic species that are common in WDB,
based on the EPA’s own ERMI source data – from 15 years ago!**

Slide 4 – Slide Content

Mold is commonly found in Vermont homes.

Mold can grow in your home on foods, damp surfaces, cloth and other porous materials.

Finding areas with water or moisture intrusion—such as around leaks in roofs, windows, or pipes, or where there has been flooding—is the best way to identify where mold may be.

Other clues to mold growth are “musty” or “moldy” smells.

Fixing the water or moisture problem is the key to controlling mold.

- This is all generally good guidance
- However, is the THO role really to do some form of assessment, based on visual and odor cues?
 - Seems problematic.
 - If any suspicions, it deserves professional inspection and testing.

Slide 4 – Quotes from the Trainer

“because we often deal with humidity and many times floods here in Vermont, mold is commonly found in our homes”

Yes, but as noted, this does not mean we should accept it – or that it’s not a health hazard. It only means this is a large and serious issue.

“often mold is visible, but because of the way buildings are built, it’s possible that it might be hidden too “

Right! Which is exactly the reason it requires proper assessment by a trained – and, ideally, licensed – professional. They have tools required to do a proper assessment - thermal imaging, moisture meters, air sampling ... and experience.

“the key to preventing mold is to address water and moisture problems quickly, ideally in less than 24 hours”

YES. This is a mantra we should ALL have in our minds at all times when it comes to our homes and workplaces. There are also plenty of good preventative measures we could be incorporating into our homes – leak sensors, automatic shutoff valves, vents with humidistats, one-piece shower enclosures, top loading washing machines. There’s a lot of “low hanging fruit” homeowners could be harvesting – and be staying healthier in the process.

Slide 5 – Slide Content

Mold is commonly found in Vermont homes.

Common places in homes where mold grows:

- basements
- windows and windowsills
- rooms that are not properly ventilated— especially kitchen or bathrooms without fans and rooms with clothes dryers

Mold grows well on drywall, paper products, cardboard, ceiling tiles, and wood products.

Mold can also grow in dust, paints, wallpaper, insulation, carpet, fabric and upholstery.

- This is all excellent information for homeowners, residents, and employees to know.
- Why is this not part of some broader public health messaging? Why does this only seem to come up after there is a problem?
- We should have strong public health messaging based on prevention.

Slide 6 – Slide Content

Mold is commonly found in Vermont homes.



Vermont Department of Health

6

- Some examples.
- Narrative again stresses mold is common.

Slide 7 – Slide Content

Mold is commonly found in Vermont homes.



Vermont Department of Health

7

- More mold examples

“what the mold is growing on will determine the proper cleanup method for you ”

It will also determine what species are likely to dominate. Stachybotrys – the infamous “black mold” - for example, favors cellulose. This makes drywall a prime target.

Understanding these factors is why we should be addressing this problem with properly trained, and licensed, indoor environmental professionals.

Slide 8 – Slide Content

Exposure to mold can impact health.

For people who are affected, mold may cause:

- Eye, nose, throat or skin irritation
- Runny nose
- Cough
- Chest tightness
- Headache or fatigue

People with asthma, mold allergies, chronic lung illnesses or people who have compromised immune systems may have more severe reactions.

Respiratory fungal infection – where fungus grows on or in body tissue – are rare, but possible.

Vermont Department of Health

8

- OK, this is a big problem – immune compromise
- There is extensive evidence across multiple domains – agriculture, food safety, indoor air quality – and from multiple agencies – FDA, EPA, WHO – that clearly show many mycotoxins commonly found in WDB, such as Aflatoxin, are immune suppressive or immunotoxic.
- Immune compromise, therefore, comes with the territory. It is inappropriate to use it as a risk classifier in this way.
- You're putting people in harm's way.
ALL ARE AT RISK!

Slide 8 – Quotes from the Trainer

“some people are affected by everyday exposure to mold but most people are not”

How is “everyday exposure” defined???

For MANY, their daily mold exposure at home or in a contaminated workplace can be extremely high.

We should not be dismissively accepting of mold.

“how a person might react to mold depends on several factors, including the **type of mold**, the amount of mold present, the length and number of times a person is exposed, their family history, and their overall health status“

Clear acknowledgement that the TYPE of mold DOES matter, when it comes to health effects. This is why testing is important.

Family history is very relevant, especially w.r.t. to certain genes, like HLAs, that are associated with higher than normal susceptibility.

Overall health status can be misleading, as the environment itself can lead to a number of high-risk conditions, including immune suppression.

“similar symptoms to those that one might experience with seasonal allergies or a cold”

“respiratory fungal infections are rare - but someone that has a compromised immune system, or an underlying lung disease, may be at higher risk for this type of infection “

Published research, case studies and clinical evidence suggest this is a gross mischaracterization of mold-related illness, particularly in those cases involving toxigenic species – and immune suppression.

Unreferenced Content

- This information was presented without any slide reference.

“I’m often asked how to test if someone has been exposed to mold...there are no blood tests for mold but allergy testing might be an option “

The key here is that there ARE useful tests, widely ordered by clinicians with appropriate experience. These include mycotoxin urinalysis, which can directly test for the presence of mold toxins in an occupant. (We tested positive for Ochratoxin A, Aflatoxin, Trichothecene, and Gliotoxin.)

“always refer residents to their health care provider for any type of health concern question“

This is absolutely the right guidance. However, we’re currently referring them to practitioners largely untrained and inexperienced in the broader, current view of mold illness. We need to grow the knowledge base with appropriate continuing medical education (CME) requirements.

Slide 9 – Slide Content

To clean up mold, first fix the water problem.

There are no federal or Vermont certifications or licenses for mold remediation.

Fix water/moisture intrusion:

- Plumbing
- Roof
- Windows
- Drainage



Manage indoor relative humidity between 30 and 60%, ideally below 50%.

Vermont Department of Health

9

- Yes, and this lack of licensing needs to change...

Slide 9 – Quotes from the Trainer

- This information was presented “off label” - without any associated slide content.

“usually a contractor is not needed for a small mold problem of less than 10 square feet...for more than 100 square feet, hiring a contractor is probably best, and for areas between 10 and 100 square feet, the residents should **use their judgment** to decide how comfortable they are addressing the mold or not“

“there are no federal or vermont certifications or licenses for mold remediation “

Their judgement? Based on what? The current guidance? They have no idea what they're potentially getting into – the precautions required, the health risks. When toxigenic species are involved – which is often - and proper PPE isn't used or precautions taken, can make themselves VERY sick and actually spread the contamination, making things worse.

Wherever possible, we're better off using properly trained and licensed IEPs.

True. And, as we've illustrated, this is coming at great risk to the health of Vermonters due to improper/inadequate remediation. We are just one case in point. Vermont needs to follow the lead of “mold woke” states, like FL, TN, LA, TX.

Slide 9 – Quotes from the Trainer

- This information was presented “off label” - without any associated slide content.

“general contractors and home inspectors often can identify mold and moisture problems - and they can suggest solutions. general contractors may also be able to fix the conditions that are causing the mold growth“

Yes, this is true...but, if not properly trained, they’re likely leaving behind extensive contamination – not just in the immediately affected area, but more broadly in the building environment, as air currents readily disperse contamination.

An assessment should be performed by a qualified indoor environmental professional with knowledge of high-risk species.

“some contractors specialize in mold cleanup and may be well suited for challenging cases of mold growth “

Again, in our experience, the lack of proper training and potential conflicts of interest would seem to contradict this guidance.

“if a resident decides to clean the mold themselves, they should always remember to wear appropriate personal protective equipment - and this includes using an n95 respirator, gloves, and goggles“

It’s important to note that the eyes are known to be a significant route of exposure to mycotoxins – and eye complaints are commonly associated with exposure in WDB environments. Given this, residents may wish to consider a tight fitting form of eye protection.

Slide 10 – Slide Content

To clean up mold, remove damaged building materials and launder soft items.

If materials/items were not dried within 48 hours of becoming wetted, consider them damaged:

- Ceiling tiles
- Mattresses
- Furniture
- Carpeting
- Drywall



Items that can be laundered do not need to be discarded

- Linens
- Clothes



Vermont Department of Health

10

- There is no guidance in this section regarding the extent of remediation – i.e. the affected area.
 - If the problem is a long-standing one, contamination has likely spread broadly
- This information should be added – and the recommendation should be conservative to ensure the space is adequately decontaminated, particularly for mold sensitized persons

Slide 11 – Slide Content

To clean up mold, clean hard building materials and surfaces.

Hard or nonporous materials and items can be washed to remove mold unless structurally damaged.

Clean using soap and water.

Biocides and bleach are not recommended.



Vermont Department of Health

11

- Excellent guidance for those with known health issues can be found in the Consensus Statement of the IEPs Panel of Surviving Mold, *“Medically sound investigation and remediation of water-damaged buildings in cases of CIRS-WDB”*, located here:
 - https://www.survivingmold.com/docs/MEDICAL_CONSENSUS_1_19_2016_INDOOR_AIR_KB_FINAL.pdf
- NORMI is also working on new training for remediation for mold sensitized occupants
- Information from these qualified sources should be incorporated into revised training for THOs.

Slide 11 – A Missed Opportunity

- There is no guidance provided on steps homeowners can take after their home has been restored to a safe condition – to maintain their indoor air quality, These include:
 - Air purifiers, a regular cleaning routine to control dust buildup, vigilance regarding leaks and condensation, tips on moisture management – leak sensors, humidstats, etc.
 - In fact, this type of information can and, I believe, should be part of normal public health messaging, greatly reducing the risks for many homeowners.

Slide 12 – Slide Content

Testing for mold is not necessary or recommended.

Typically, testing does not provide any information that would change the action steps to fix the problem.

There are no standards that test results can be compared to, and therefore test results cannot be used to say a building is “safe” or “unsafe.”



Vermont Department of Health

12

- THIS repeated recommendation is shameful. It’s exactly the type of messaging that has kept this issue hidden for 2 decades now.
- SPECIES IS CRITICAL – AS PREVIOUSLY NOTED.
- It directly affects clinical course, after exposure to a water damaged environment. If toxigenic species are involved, the illness may be much more severe, involve more body systems, and treatment will require detoxification.
- It also determines the potential level of contamination associated with personal belongings, greatly affecting those “keep-pitch” type decisions.
- Also, if deciding on DIY vs professional remediation, the presence of toxigenic species could be a decisive factor.

Slide 12 – Quotes from the Trainer

“the type and amount of mold in a home does not change the action steps that need to be taken to address visible mold or musty moldy odors“

This is not entirely true. As noted previously, there are many reasons why knowing species could change the course of action. Also, if toxigenic species are involved, the issue is far more serious than “addressing visible mold or musty moldy odors”.

“testing can be expensive“

As can be chronic mold toxicity

“there's no threshold for deeming a home safe or unsafe rarely does mold testing reveal a clear answer results will typically show the presence of mold”

It's not about quantitative assessment, but qualitative.

“...because remember mold is everywhere“

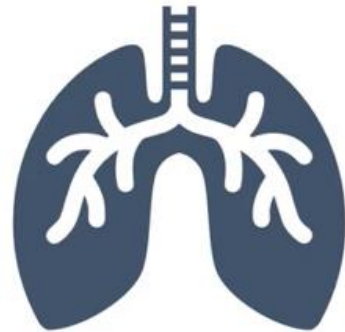
Again, dismissive and defeatist, as though we should just be accepting the status quo – not trying to address the problem.

Slide 13 – Slide Content

How does this all fit into the role of a THO?

The air inside homes, schools and other buildings may contain pollutants that can affect human health such as carbon monoxide, radon, tobacco smoke, chemicals from household cleaning, mold and pet dander.

Breathing air pollutants can lead to allergies, infections, asthma and other health problems that involve the lungs, nose and throat.



Slide 14 – Slide Content

How does this all fit into the role of a THO?

Role of the Town Health Officer:

- In rental housing, [inspect](#) unit upon request/complaint from either tenant or property owner.
- In a private home, provide information and resources available at healthvermont.gov/mold or refer to the Environmental Health Division at 800-439-8550. Refer residents concerned about cost to their local [NeighborWorks](#) organization.
- At a worksite, provide information and resources available at healthvermont.gov/mold or refer to the Vermont Occupational Safety & Health Administration ([VOSHA](#)) at 800-287-2765.

- For rentals, a THO performs the inspection
- For homeowners, no THO involvement, other than getting steered towards more dismissive guidance
 - We didn't even get this.
- For worksites, this becomes a workplace safety issue, so VOSHA becomes involved.

Slide 14 – Quotes from the Trainer

“if a complaint is received from a tenant or landlord, a full inspection should be completed. remember, you're required to do a full inspection - not just the area of concern ask the occupants or landlord about possible sources of water or moisture.
perform building investigation using your eyes and your nose “

So, essentially, Vermonters all over the state are relying on their local health officers, with no training other than this, to assess the condition of the environment of concern. No real training in IAQ assessment. No special equipment. Limited experience. This is a recipe for trouble – and, it would seem, a potential source of liability for the State.

“remember testing is not recommended“

Again, the DoH is dissuading people from testing...from getting a better understanding of a potential health hazard. It doesn't make sense.

“document any visible mold, noticeable odors, and water or moisture damage, if found
direct the tenant or the landlord to resources about health effects “

...resources which, as we've seen, will greatly downplay and underrepresent those health effects.

“sometimes invasive building investigation methods like drilling a hole a test hole to see mold in a suspect wall cavity might be needed”

More often, this would be for a cavity air sample – something a trained IEP would do

“it's best to leave this type of work to the landlord or the property manager “

This seems inappropriate, as they would lack independence.

Slide 14 – Quotes from the Trainer

“many homeowners do not have the money to address mold problems – and, unfortunately, there's very limited funding available to address mold “

Unfortunately, this is probably one of the more accurate statements in the training – and we should be looking for ways to change this. In the meantime, there are many homeowners who DO; who are spending money on other property improvements, while living in a toxically moldy home; and are not being given the tools and knowledge to protect themselves. How is this right?

“right now neighborworks is the only organization that i'm aware of that may have grants or loans available for health and safety improvements in homes “

This is a great area of opportunity, then. If we really are striving to improve the health of Vermonters, we need to drastically increase the programs and resources being devoted to indoor air quality, living conditions, professional trainings, etc.

Slide 15 – Slide Content

The Health Department does not govern mold in buildings, but it is a part of the Rental Housing Health Code.

4.23 “Ventilation” means the adequate supply and removal of air to and from a space through windows, skylights, doors, grilles, ducts or mechanical devices.

4.25 “Watertight” means so constructed that the structure is substantially impermeable to water.

4.26 “Weathertight” means so constructed that the structure resists weather and excludes rain and snow and prevents the infiltration of air.

Slide 16 – Slide Content

The Health Department does not govern mold in buildings, but it is a part of the Rental Housing Health Code.

5.0 Sanitation Facilities

- 5.3 Non-absorbent Surfaces: The floor and counter surfaces of every bathroom and kitchen in dwelling units and rooming houses shall be constructed and maintained to be a smooth, non-corrosive, non-absorbent and waterproof covering. This shall not prohibit the use of carpeting for floors in kitchens and bathrooms, or the use of wood for floors in kitchens, provided the following qualifications are met:
 - 5.3.1 Carpeting must contain a solid, nonabsorbent, water repellent backing which will prevent the passage of moisture through it to the floor below; and
 - 5.3.2 Wood flooring must have a water-resistant finish and have no cracks to allow the accumulation of dirt and food, or the harborage of insects.

Slide 17 – Slide Content

The Health Department does not govern mold in buildings, but it is a part of the Rental Housing Health Code.

8.0 Natural and Mechanical Ventilation

- 8.1 The owner of dwellings and rooming houses shall provide ventilation to the outdoors as follows so as to not endanger the health and safety of the occupants:
 - 8.1.4 Every bath, toilet or shower room shall be ventilated by direct access with the external air either by window, airshaft or ventilation fan. If a ventilation fan is used, it shall be vented directly to the exterior of the building and be of sufficient size to prevent the buildup of moisture.
 - 8.1.5 All clothing dryers shall be vented directly to the exterior of the building
- 8.2 Use of vaporizers/humidifiers: Vaporizers/humidifiers shall not be used by dwelling or rooming house occupants or owners in such ways that cause an elevated relative humidity (above 60%), promoting the growth of microorganisms and visible mold.

Slide 18 – Slide Content

The Health Department does not govern mold in buildings, but it is a part of the Rental Housing Health Code.

10.0 Structural Elements

- 10.1 Every owner of a dwelling or rooming house shall provide and maintain the foundation, floors, walls, doors, windows, ceilings, roof, staircases, chimneys and other **structural elements** of his or her dwelling, dwelling unit, rooming house or rooming unit so that it is **weathertight, watertight**, rodent proof and in good repair.
- 10.2 Every occupant of a dwelling or rooming house shall exercise reasonable care in the use of the structural elements of the building to maintain it in good working condition.
- 10.3 Every dwelling, dwelling unit, rooming house or rooming unit shall be maintained to be **free from the regular or periodic appearance of standing water or excessive moisture**, which may result in visible mold growth.

Slide 19 – Slide Content

There are many resources available.

Vermont Department of Health:

- Mold in Your Home (healthvermont.gov/mold)
- Stay Safe in a Flood (healthvermont.gov/flood)
- [Mold fact sheet](#)

Environmental Protection Agency:

- Mold (epa.gov/mold)
- [A Brief Guide to Mold, Moisture and Your Home](#)

Centers for Disease Control and Prevention:

- Mold (cdc.gov/mold)
- [Homeowner's and Renter's Guide to Mold Cleanup After Disasters](#)

Slide 20 – Slide Content

Questions?

Michelle Thompson, Public Health Industrial Hygienist

- michelle.e.thompson@vermont.gov
- 802-951-5732

THO Program:

- AHS.VDHTHO@vermont.gov
- 802-863-7220 or 800-439-8550 (toll-free in Vermont)



Backup / Reference

Historical Perspective

- As shown here, VT officials have been aware of mycotoxins and other by-products of water damaged buildings since at least 2002

Definitions: While all limitation and exclusion endorsements will need to contain a mold definition, this department is not proposing or endorsing a specific definition. As a guide, while not intended as an exhaustive or exclusive listing, inclusion of the following terms would be acceptable:

Mold, Fungi, Mildew, Wet or Dry Rot, Bacteria, Mycotoxins, Spores, Scents, by-Products released by a Fungus, Protists.

Additionally, this department does not consider mold to be a “pollutant” and therefore it is not included in the coverage requirements outlined in our departmental Bulletin 111.

Social Determinates of Health

Neighborhood and Built Environment

Neighborhood and Built Environment Objectives

Environmental Health

[Increase the proportion of people whose water supply meets Safe Drinking Water Act regulations — EH-03](#)

[Reduce the number of days people are exposed to unhealthy air — EH-01](#)

[Reduce health and environmental risks from hazardous sites — EH-05](#)

[Reduce the amount of toxic pollutants released into the environment — EH-06](#)

No

Maybe???

Maybe???

No

Summary

Exposure to air pollution is linked to many health problems, including cancer, respiratory diseases, and heart disease. **Outdoor air pollution** is also linked to early death. Taking action to prevent air pollution through laws like the Clean Air Act can lead to major reductions in pollution and help prevent many serious health problems.

NOPE

Summary

Sites with toxic or dangerous materials can harm both human health and the environment. Chemicals from these materials can get into drinking water or the air, which can have negative health effects on entire communities. Cleaning up sites with toxic or dangerous materials can help prevent or reduce these health risks.

YES! But ONLY if include indoor environ.

Another Good Article re: the Criticality – and Politics

- How Government Decisions Left Tennessee Exposed to Deadly Flooding - The New York Times
- <https://www.nytimes.com/2021/08/26/climate/tennessee-flood-damage-impact.html>

Vermont Self-Insured Employers

- Link - https://labor.vermont.gov/sites/labor/files/doc_library/Self-InsuredList8-2019.pdf
- NOTE: This appears to be an incomplete list, as it does not include RTX/Collins.

Given that their lost profits, due to mold related employee illness, equates to reduced VT tax revenue, is there any way we could do a notice to each self-insured employer?

- Beldon Wire and Cable
- Bombardier Corporation
- **Central Vermont Medical Center**
- Green Mountain Power
- Columbia Forest Products, Inc.
- Costco Wholesale
- Federal Express Corporation
- **Fletcher Allen Health Care**
- Frito-Lay of Pepsi Co.
- Georgia Pacific Corporation
- Hannaford Brothers Company
- Mack Molding, Inc.
- Middlebury College
- PPG Industries, Inc.
- Price Chopper Operating Company of Vermont, Inc.
- Shaw's Supermarkets, Inc.
- **University of Vermont & State Agriculture Co**
- **State of Vermont - State Employee Workers' Compensation and Prevention**
- **Vermont League of Cities and Towns**
- **Vermont School Boards**