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Breathing Easy: Lung Health and Associated Conditions in the Day Care Setting

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Breathing Easy:

Lung Health and Associated Conditions in the Day Care Setting

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Introduction

Air pollutants are associated with many health risks. Children in the day care environment are uniquely susceptible to lung damage, infection, systemic illness & pollutant triggered hypersensitivity reactions. The latest public report by the CDC reports Vermont's (VT) asthma rate is the highest in the country at 11.1%.^a This project compared VT's

day care regulations regarding specific environmental factors linked with health risks to regulations in six surrounding New England states. We sought to assess whether VT's regulations adequately protect children in day care.



Methods

Reviewed regulations on EPA-identified pollutants: CO, pesticides, radon, biological contaminants, asbestos, smoking, ventilation & volatile organic compounds (VOCs).^b

- Compared VT day care policies to surrounding New England states: CT, NH, ME, MA, RI, & NY.
- Made recommendations to improve VT day care regulations

Pesticides

- Used to eliminate rodents, insects, etc.
- Associated risks: damage to the central nervous system, liver, and respiratory tract
- Associated with certain types of cancers
- Triggers asthma



^c Current VT regulations restrict application methods and timing to limit children's exposure.

Recommendations For Vermont

Carbon Monoxide (CT, MA, NY)

- A detector on each floor
- Inspection of fossil fuel burning devices
- Prohibit use of portable heaters

Radon (CT, RI)

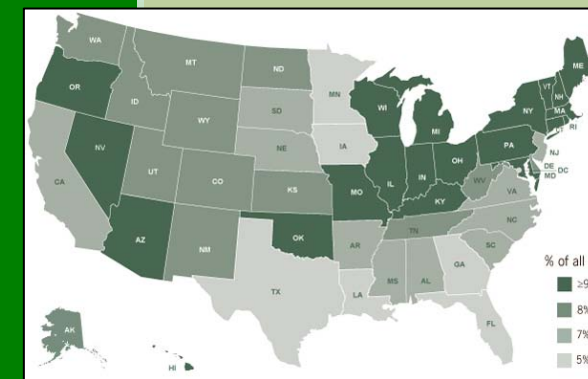
- Annual testing
- Maintain levels below 4 pCi/L

Pesticides (CT, NH, NY)

- Provide written notice of intended use to parents

Biological contaminants (CT, MA NH)

- Notify parents of pets on the premises ^c



2009 CDC Adult asthma levels ^f

VT meets or exceeds regional standards for:

- Asbestos,
- Smoking,
- Ventilation,
- Lead & VOCs.

Conclusions

Vermont either meets the standard or leads the way among other New England states in protecting the health of children in child care settings with regards to ventilation, smoking, asbestos, and volatile organic compounds. Vermont should consider the addition of mandatory radon testing, more comprehensive CO monitoring, and parental notification of pesticide use and the presence of animals to child care regulations. The addition of more extensive lead testing requirements, such as those in Massachusetts, would also be beneficial for protecting overall children's health.

Carbon Monoxide

- Odorless colorless gas produced by burning fossil fuels
- CO poisoning decreases oxygen delivery
- Long-term damage to central nervous system & heart



- VT fire codes require all buildings used for sleeping be equipped with one or more carbon monoxide detectors. Placement is not specified. No specific child care center regulation exists.^c

Dust, Mold, Pet Dander



- Can cause shortness of breath, rashes, eczema, and induce asthma attacks even in otherwise healthy people.
- Common trigger of hypersensitivity reactions and asthma causing allergic rhinitis, urticaria and difficulty breathing.^d

^e Current VT regulations state that conditions must be sanitary but do not address mold or pet allergen exposure.

Radon

- Colorless odorless gas formed in soil uranium breakdown
- VT levels rank in the highest EPA Category (2-4 pCi/L) ^e
- Number one cause of lung cancer in non-smokers ^e



^e VT does not currently have any regulations regarding radon testing, prevention, exposure or remediation.

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