



Climate Change & Vermont's Weatherization Programs

In September 2018, the Global Climate and Health Forum issued an urgent call-to-action stating that “climate change is a global health emergency.” Across the United States today, we are seeing climate change effects that severely impact human and animal health. Sea level rise in Florida, repeated heavy flooding in the mid-west, and more prevalent extreme storms across the country are just a few examples of how climate change is radically destabilizing the ways in which our society ensures the health of all citizens.

Here in Vermont, the heat wave of 2018 caused fatalities across the region, and a record spike in heat related illness and related emergency room visits, while heavy rains caused an unprecedented release of untreated waste from municipal water treatment plants. We have the highest per capita rate of Lyme disease in the nation. These and other health issues are not random. They are precursors of devastating health effects the Center for Disease Control has been predicting for years.

Currently, the most vulnerable among us – the elderly, Vermonters with low incomes and those with chronic illness – are hit first and hardest, and are the slowest to recover. Over the longer term, the health and well-being of all Vermonters will be severely compromised.

Vermont's Weatherization Programs: Saving Lives & Money

- 24% of greenhouse gas emissions in Vermont come from energy consumption in buildings.¹ Reducing energy use in buildings must be addressed if we are to protect our communities from the impacts of climate change.
- A recent Vermont Department of Health weatherization report indicates that weatherizing 50,000 homes will avoid more than 5,600 emergency room visits, 330 hospitalizations, and 13 deaths over a 10-year period.²
- Over the 10 years after a weatherization project is finished, the family in a newly weatherized home will save an average of \$1,450 per year (\$1,174 reduction in energy costs and \$276 in avoided health expenses).³ The net savings will allow Vermonters to redirect money toward taking care of other essential needs of their households.
- In addition, weatherizing 50,000 homes over 10 years would yield \$300-\$700 million in public health benefits (e.g., respiratory and cardiovascular disease) due to reductions in fine particulate emissions from home heating systems.
- Expanding the weatherization funding will grow jobs in the new energy economy. Employment is a fundamental requirement for household health and well-being.

Increasing investment in weatherization offers a powerful path for protecting the health of all Vermonters, and will yield proven, strong economic benefits.

For more information, contact Dan Quinlan, 802.760.7400, contact@vtcha.org

¹ Vermont Greenhouse Gas Inventory Update 1990-2015, Agency of Natural Resources, June 2018

² Health and Climate Change Co-Benefits of Home Weatherization in Vermont, VT Dept of Health, December 2018

³ As noted in the report, the health expense estimate is likely to be very conservative due to limitations of the financial modeling.



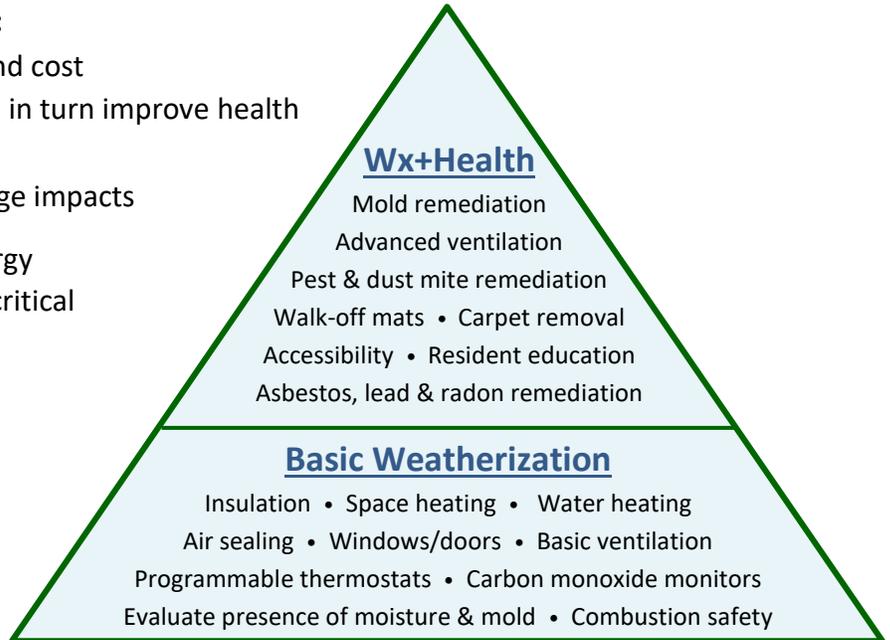
Home weatherization addresses energy, health and environmental problems

Benefits of home weatherization include:

- Reduced household energy usage and cost
- Improved housing conditions, which in turn improve health
- Reduced greenhouse gas emissions
- Increased resilience to climate change impacts

Basic weatherization (Wx) prioritizes energy efficiency improvements but can include critical health and safety improvements.

Weatherization + Health (Wx+Health) prioritizes delivery of health benefits by including specific health and safety improvements in addition to basic Wx strategies, which may be especially helpful for those with chronic health conditions or accessibility challenges.



Wx+Health builds on basic weatherization strategies

Weatherization improves home conditions that affect health

Wx improves the home

-  Reduced energy bills
-  Improved temperature control
-  Improved indoor air quality
-  Enhanced safety
-  Reduced humidity
-  Reduced mold
-  Reduced pest intrusion

**Published evidence about the indoor environmental quality and health impacts of Wx was reviewed to identify the expected effects. The strength of evidence for each finding was based on the quality and amount of evidence available.*

Wx benefits health in many ways

| Health benefits... | ...are associated with these improvements to home conditions. | Strength of evidence* |
|---------------------------------|---------------------------------------------------------------------------------------|-----------------------|
| General Health |  | High |
| Productivity |  | High |
| Social Health |  | High |
| Upper Respiratory |  | High |
| Asthma |  | Medium |
| Cardiovascular |  | Medium |
| Financial Stress |  | Medium |
| Mental Health |  | Medium |
| Health Care Utilization & Costs |  | Medium |
| Accidental Injury |  | Low |
| Infectious Disease |  | Low |
| Neurological |  | Low |

Impact of Climate Change on Human Health

Injuries, fatalities,
mental health impacts

Asthma,
cardiovascular disease

Severe
Weather

Air
Pollution

Malaria, dengue,
encephalitis, hantavirus,
Rift Valley fever,
Lyme disease,
chikungunya,
West Nile virus

Changes
in Vector
Ecology

MORE EXTREME
WEATHER

RISING
TEMPERATURES

Extreme
Heat

Heat-related illness
and death,
cardiovascular failure

INCREASING
CO₂ LEVELS

Environ-
mental
Degradation

Forced migration,
civil conflict,
mental health impacts

RISING
SEA LEVELS

Water and Food
Supply Impacts

Water
Quality Impacts

Respiratory
allergies, asthma

Cholera,
cryptosporidiosis,
campylobacter, leptospirosis,
harmful algal blooms

Malnutrition,
diarrheal disease

