

# Preventing respiratory disease associated with severe weather response

Paula Schenck MPH; Paul Bureau MS CIH; Joanne Burcher MD MPH; Marc Croteau MD MPH

UConn HEALTH Division of Occupational and Environmental Medicine

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GOES View of Hurricane Sandy, acquired October 28, 2012  
[earthobservatory.nasa.gov](http://earthobservatory.nasa.gov)

The Northeast recently experienced many catastrophic weather events: excessive snow and ice (2011); Tropical Storm Irene (2011); fall snow event, Storm Alfred that resulted in long-term power outages (2011); and Hurricane Sandy which caused extensive destruction (2012). The number of severe storms is projected to continue. Severe weather events bring attention to threats to respiratory health that are associated with indoor exposures from moisture incursion. The Institute of Medicine Committee on the "Effect of Climate Change on Indoor Air Quality and Public Health" identified chemical exposures, vector-borne disease, and mold and moisture associated illnesses as potential impacts from the damage and degradation of buildings, flooding and water damage associated with hurricanes (IOM 2011).

Anecdotal reports associate exposures from Hurricanes Katrina and Sandy response and recovery activities with individuals' respiratory illnesses. Considering these reports and other experience in our clinic, the UConn Center for Indoor Environments and Health began working on a project - **Recovery from catastrophic weather: mold exposure and health-related training\*** last year. The work is directed to increase knowledge and protective behavior related to mold mitigation and health effects within emergency and recovery responders in states affected by Hurricane Sandy.

To provide guidance to clinicians who see patients presenting with illnesses that may relate to exposures during hurricane response and recovery activities, a new course segment offering Continuing Medical Education will be incorporated with an update to the UConn Center for Indoor Environments and Health on-line Clinicians Mold Course [[www.video.uchc.edu/MoldMoisture/](http://www.video.uchc.edu/MoldMoisture/)]. This poster discusses UConn's work to provide primary care, occupational and environmental specialists, and emergency response physicians with guidance to make informed decisions in patient treatment.

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Mold indicates the presence of hazard for hurricane and disaster responders, rebuilding and clean-up workers, volunteers, and home occupants.



A street on the shoreline of Milford, Connecticut, floods at high tide as Hurricane Sandy approaches on Monday, October 29, 2012

**"Beware the Sandy cough: Storm victims and clean-up workers plagued by cough as local hospital sees rise in lung infections"**

By DAILY MAIL REPORTER  
PUBLISHED: 10:34 EST, 29 November 2012 | UPDATED: 13:04 EST, 29 November 2012  
<http://www.dailymail.co.uk/news/article-2240425/Sandy-victims-cleanup-workers-plagued-cough-hospital-sees-uptick-lung-infection.html#ixzz3K7RtFFqz>



**After Hurricane Sandy: Mold Can Be a Threat to Your Home**  
<http://portchester.patch.com/groups/politics-and-elections/p/after-hurricane-sandy-mold-can-be-a-threat-to-your-home>

## What about mold/moisture and health?



World Health Organization 2009 **Damp and Mould: Health risks, prevention and remedial actions**  
Allergic and irritant respiratory illnesses; more study is needed on toxicity with inhalation exposure, and on inflammatory mechanisms; visible mold and moldy odors are associated with health effects; local recommendations are needed for different climatic regions



Institute of Medicine 2004 **Damp Indoor Spaces and Health**  
Upper respiratory symptoms, cough, wheeze, asthma exacerbation, hypersensitivity pneumonitis in susceptible individuals; immune compromised persons are at increased risk for fungal infections in these environments

**Hurricanes: What you need to know about mold/moisture/bioaerosols and human health** <http://hurricane-weather-health.doem.uconn.edu/medical-providers/>

### Guideline for Health providers:

In the aftermath of a storm, patients may want to remediate their own homes or participate in response and recovery efforts, either as individual volunteers, or as a member of an emergency response team. Health providers may be asked to provide medical clearance for participation in general clean-up efforts or for use of respirators specifically.

Patients may develop symptoms during or after participating in clean-up efforts. Determining the possible relationship of symptoms to exposures related to the disaster, including bioaerosols, can have an important impact on treatment and prevention of disease progression.

### Personal Protective Equipment (PPE)

- Respirator – minimum N95  
Medical clearance and fit testing
- Unvented goggles
- Full clothing/coveralls
- Gloves  
– Rubber gloves if no chemical cleaners used  
– Nitrile or vinyl gloves if chemical cleaners used



## Mold and Moisture: Guidance for Clinicians

June 2015 CME available

Module 1: Mold Basics and Health Effects from Exposure to Mold and Moisture Indoors

Course participants will:

1. learn about the basic ecology and characteristics of fungi that could affect human health;
2. recognize the potential relationship that mold exposure has to respiratory conditions such as sinusitis, asthma, hypersensitivity pneumonitis;
3. develop skills to make informed decisions on the need for environmental intervention based on current information on health effects and exposure to mold and moisture.

Module 2: An Approach to Clinical Care and Utilizing Environmental Information

Course participants will:

1. develop skills to explore and document patients' exposures to mold and moisture indoors;
2. evaluate the role of qualitative observations in environmental assessment for mold and moisture, and appropriate use of measurements; and
3. be able to guide patients/public to resources that they can use to reduce moisture and mold in their homes and other indoor environments.

Module 3: Moisture Related Health Effects in the Setting of Hurricane Disasters

Course participants will:

1. describe appropriate preventive measures for workers and volunteers;
2. have information to make informed decisions in patient treatment as to:  
  
carbon monoxide poisoning,  
  
immunizations against infectious agents,  
  
concerns related to mold/bioaerosol exposure, and
3. be able to guide patients/public to resources on health and safety during hurricane response and recovery.