# BREATHING EASIER: ENVIRONMENTAL MANAGEMENT OF ASTHMA

MARCH 7, 2013

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## Acknowledgments

- The U.S. Environmental Protection Agency (EPA) has provided funding to support the development and dissemination of this webinar under grant number 96320501.
- Some of this material was developed by the Mid-Atlantic Center for Children's Health & the Environment and funded under the cooperative agreement award number 1U61TS000118-03 from the Agency for Toxic Substances and Disease Registry (ATSDR).
- The EPA supports the Pediatric Environmental Health Specialty Unit (PEHSU) by providing funds to ATSDR under Inter-Agency Agreement number DW-75-92301301-0.





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The George Washington University School of Medicine and Health Sciences designates this continuing medical education activity for a maximum of 1 AMA Physician Recognition Award Category 1 Credits™.

Participants will be required to certify attendance or participation on an hourfor-hour basis.





### **OBJECTIVES**

After attending this webinar, participants will be able to:

- Explain the importance of environmental exposures in asthma morbidity
- Select or create an efficient environmental screening tool for office practice
- Provide patients/families with brief focused counseling to reduce common exposures
- Identify two community resources for patients with challenging environmental issues





#### **Outline**

- Why environment matters
- Screening for exposures
- Practical counseling
- When counseling is not enough
- Resources

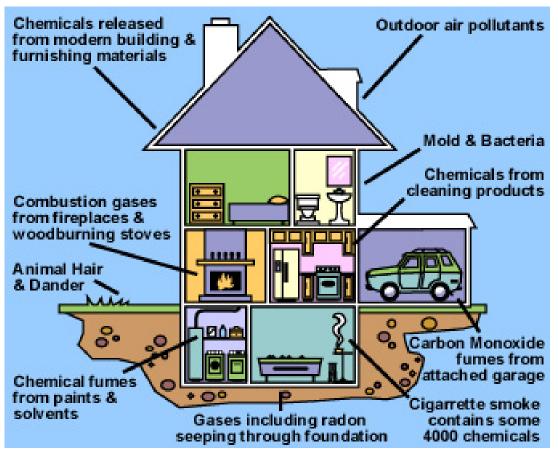








# **Indoor Air Quality**











# **Indoor Air Quality**



- Children spend more time indoors than outdoors
  - Preschool children spend up to 90% of their time indoors, 50% in bedroom
  - School age children may spend 30-50 hours/week in and around school buildings
- Indoor air is unregulated except for smoking laws
- Outdoor air quality affects indoor air quality (diesel exhaust, pollens)





# Asthma morbidity clearly associated with exposure to ...

- Cockroach
- House dust mite
- Mouse
- Pet dander

when sensitized

Tobacco smoke

Rosenstreich, et al. NEJM. 336(19):1356-63, 1997 May 8

Peat et al. Aust NZ J Med 1994;24:270-6







### Sources of Outdoor Air Pollutants

- Mobile sources: cars & trucks
- Power plants
- Other industry
- Incinerators
- Minor sources









#### You can make a difference

- Tailored education and multifaceted interventions can reduce asthma symptoms
  - May reduce dependence on medication

Efforts to target single exposures may show benefits but

are difficult to sustain





Evans, R et al. 1999. National Cooperative Inner-City Asthma Study. J Pediatr. 135(3):332-8.





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# Assessing Environmental Exposures

- Screening questionnaire at least annually (parent vs. clinician-administered)
  - Build into EHR template
- Targeted review of known exposures during follow-up or urgent visits
- Consider further probing during periods of poor control









#### Environmental History Form for Pediatric Asthma Patient

Specify that questions related to the child's home also apply to other indoor environments where the child spends time, including school, daycare, car, school bus, work, and recreational facilities.

				Follow up/Notes
Is your child's asthma worse at night?	□ Yes	□No	□ Not sure	
Is your child's asthma worse at specific locations?  If so, where?	□ Yes	□No	□ Not sure	
Is your child's asthma worse during a particular season? If so, which one?	□ Yes	□No	□Notsure	
Is your child's asthma worse with a particular change in climate?  If so, which?	□ Yes	□No	□ Not sure	
Can you identify any specific trigger(s) that makes your child's asthma worse?  If so, what?	□ Yes	□No	□ Not sure	
Have you noticed whether dust exposure makes your child's asthma worse?	☐ Yes	□No	□ Not sure	
Does your child sleep with stuffed animals?	☐ Yes	□No	□ Not sure	
Is there wall-to-wall carpet in your child's bedroom?	□ Yes	□No	□ Not sure	
Have you used any means for dust mite control?  If so, which ones?	□ Yes	□No	□Notsure	
Do you have any furry pets?	□ Yes	□No	□ Not sure	
Do you see evidence of rats or mice in your home weekly?	□ Yes	□No	□ Not sure	
Do you see cockroaches in your home daily?	□ Yes	□No	□ Not sure	
Do any family members, caregivers or friends smoke?	□ Yes	□No	□ Not sure	
Does this person(s) have an interest or desire to quit?	□ Yes	□No	□ Not sure	
Does your child/teenager smoke?	□ Yes	□No	□ Not sure	
Do you see or smell mold/mildew in your home?	□ Yes	□No	□ Not sure	
Is there evidence of water damage in your home?	□ Yes	□No	□ Not sure	
Do you use a humidifier or swamp cooler?	□ Yes	□No	□ Not sure	
Have you had new carpets, paint, floor refinishing, or other changes at your house in the past year?	□ Yes	□No	□Notsure	
Does your child or another family member have a hobby that uses materials that are toxic or give off fumes?	□ Yes	□No	□Notsure	
Has outdoor air pollution ever made your child's asthma worse?	□ Yes	□No	□ Not sure	
Does your child limit outdoor activities during a Code Orange or Code Red air quality alert for ozone or particle pollution?	□ Yes	□No	□ Not sure	
Do you use a wood burning fireplace or stove?	□ Yes	□No	□Notsure	
Do you use unvented appliances such as a gas stove for heating your home?	□ Yes	□No	□Notsure	
Does your child have contact with other irritants (e.g., perfumes, cleaning agents, or sprays)?	□ Yes	□No	□ Not sure	

What other concerns do you have regarding your child's asthma that have not yet been discussed?









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S O IMPAGEMENT							
Children's National Medical Contre	sthma	Actio	n Plai	1			
Name School		DOB / /					
Health Care Provider		Provider's Pho	one	DO NOT WRITE IN THIS SE	DACE		
Parent/Responsible Person		Parent's Phon	e	DO NOT WINIE IN THIS SINCE			
Additional Emergency Contact		Contact Phon	e	Place Patient Label Here			
Asthma Severity (see reverse side, Intermittent or Persistent:  Mild Moderate Severe Strong odors Mold/moisture Pests (rodents, cockroaches)  Asthma Control Stress/emotions Gastroesophageal reflux Exercise  Well-controlled Needs better control Season: Fall, Winter, Spring, Summer Other:							
Green Zone: Go!-Take	Green Zone: Go!-Take these CONTROL (PREVENTION) Medicines EVERY Day						
You have ALL of these:  Breathing is easy  No cough or wheeze  Can work and play  Can sleep all night  Peak flow in this area:  (More than 80% of Personal Best)	Inhaled cortico  Inhaled cortico  Leukotriene an  For asthm  Fast-acting	steroid or inhaled co	e, <u>ADD:</u>	, nebulizer treatment(s) , take by mouth once daily at uff(s) inhaler with spacer 15 minutes before	times a day times a day bedtime		
Personal best peak flow:		cvii oiiiileii(ai	anergy, AD				

Yellow Zone: Caution!-Continue CONTROL Medicines and <u>ADD</u> QUICK-RELIEF Medicines





#### Triggers can cause asthma symptoms.



#### Not everyone has the same triggers.

South Arona Arthur Partnership

SOBRAP

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Developed by the Asthma Literacy Project for the South Bronx Asthma Partnership

# What Are Your **Triggers?**

- ☐ Cigarette Smoke
- □ Colds & Viruses
- □ Weather Changes
- ☐ Hot Air or Cold Air
- □ Cats
- □ Dogs
- □ Odors & Perfumes
- □ Cleaning Products
- □ Exercise
- □ Mold
- □ Pollution
- □ Pollen
- □ Dust Mites
- □ Cockroaches
- □ Rats & Mice

#### **Outline**

- Why environment matters
- Screening for exposures
- Practical counseling
- When counseling is not enough
- Resources









## Cockroaches

- Need warmth
- Need water
- Need source of food same as us
  - Kitchen
  - Where food is consumed
    - At home where we watch TV









### Cockroach Control



- Limit their access to food
  - Keep food in sealed containers
  - Clean up all spilled food
- Eliminate water leaky plumbing, leaky roof







#### **House Dust Mites**

- Need warmth
- Need high humidity
- Need source of food
- Live in mattresses, upholstered furniture and carpet









#### House Dust Mite Control

- Keep humidity below 50% ⇒ air conditioner in summer (In school buildings - even if closed)
- Remove carpeting
- Damp mop floor surface

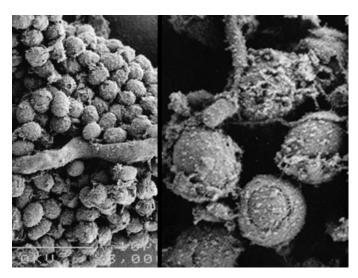






### Molds

- Need water
- Need source of food wallpaper, wood, or cardboard
- Can cause both allergic and irritant effects











### **Mold Control**

- Keep humidity below 50% ⇒ air conditioner in summer (In school buildings - even if closed)
- Fix leaks and clean up spills within 48 hours









### Pets

- Cats
- Dogs
- Rodents
- Birds possibly from dust mites in feathers
- Danders can track from home to car to school

- Personal choice at home
- NO PETS in school







#### **Environmental Tobacco Smoke**

- Every family with a smoker should be referred to
  - 1-800-QUIT NOW (1-800-784-8669) or
  - www.smokefree.gov







#### How to **Reduce Your Exposure to Triggers**

- ☐ Don't bring food into the bedroom
- Keep pets out of the bedroom
- Caulk holes and cracks in walls and corners
- ☐ Remove carpets and rugs from the bedroom
- ☐ Wipe off dust regularly with a damp cloth
- Remove extra dust-collecting items from the bedroom
- ☐ Put away stuffed animals and toys in a bag or box
- Use zipper-encased, allergyfree bedding and pillowcases
- ☐ Replace curtains with **shades** or blinds
- ☐ Don't smoke inside the house
- Keep the windows closed during allergy season
- ☐ Keep indoor humidity under 50%
- ☐ Use only HEPA vacuums and air purifiers
- ☐ Tell your landlord (or call 311) to get rid of mold
- ☐ Use 'green' cleaning supplies or water and vinegar

#### You can reduce your exposure to triggers.



#### Make your bedroom trigger-free.

Developed by the Asthma Literacy Project for the South Bronx Asthma Partnership





#### **FURRY PETS AND BIRDS**

If your child is allergic to a pet...

- If possible, find a new home for the family pet. Separating pets from the family is sometimes the only solution to pet allergies.
- Keeps pets outside the house.
- Never allow pets in your child's bedroom.
- Keep pets off furniture and out of cars.
- Have your child wash hands after playing with animals and keep face away from fur.
- Vacuum, mop, and clean surfaces with a wet cloth frequently.
- Consider getting a portable air cleaner with HEPA\* filter for child's room.
- Other special goals:







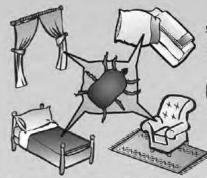




## DUST MITES

Dust mites are tiny microscopic relatives of the spider and live on mattresses, bedding, upholstered furniture, carpets and curtains.

These tiny creatures feed on the flakes of skin that people and pets



shed daily and they thrive in warm and humid environments.

No matter how clean a home is, dust mites cannot be totally eliminated. However, the number of mites can be reduced by following the suggestions below.

#### Preventive Strategies

- Encase your mattress and pillows in dust-proof or allergen impermeable covers (available from specialty supply mail order companies or some bedding and department stores).
- Wash all bedding and blankets once a week in hot water (at least 130-140° F) to kill dust mites. Non-washable bedding can be frozen overnight to kill dust mites.
- Replace wool or feathered bedding with synthetic materials and traditional stuffed animals with washable ones.
- If possible, replace wall-to-wall carpets in bedrooms with bare floors (linoleum, tile or wood) and remove

- fabric curtains and upholstered furniture.
- Use a damp mop or rag to remove dust. Never use a dry cloth since this just stirs up mite allergens.
- Use a dehumidifier or air conditioner to maintain relative humidity at about 50% or below.
- Use a vacuum cleaner with either a double-layered microfilter bag or a HEPA filter to trap allergens that pass through a vacuum's exhaust.
- Wear a mask while vacuuming to avoid inhaling allergens, and stay out of the vacuumed area for 20 minutes to allow any dust and allergens to settle after vacuuming.



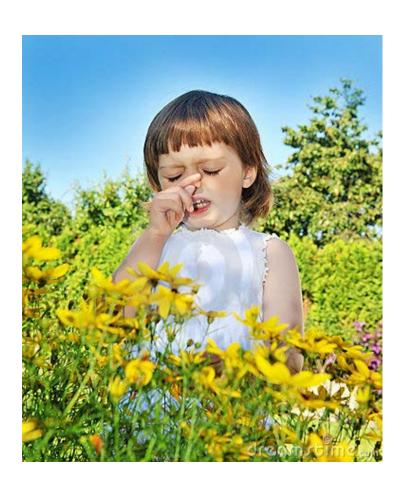








#### Pollen



- Avoid outdoor activity and keep windows closed during early afternoon in spring
- Wash hands and face after coming inside
- Shower at bedtime
- Consider intranasal steroids







# Air Quality Index

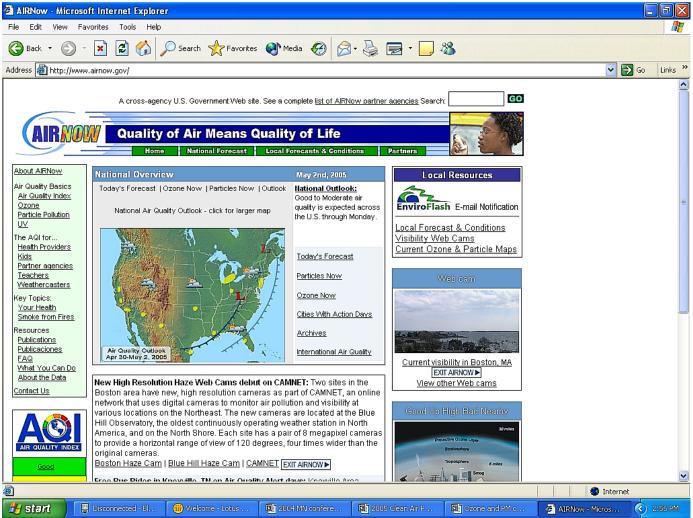
Descriptors	Cautionary Statement
Good 0 – 50	No message
Moderate 51 – 100	Unusually sensitive individuals
Unhealthy for Sensitive Groups 101 – 150	Identifiable groups at risk - different groups for different pollutants
Unhealthy 151 – 200	General public at risk; sensitive groups at greater risk
Very Unhealthy 201 - 300	General public at greater risk; sensitive groups at greatest risk

Health Network*™* 

Improving Pediatric Asthma Care in the District of Columbia



# AIRNow - www.airnow.gov







#### **Outline**

- Why environment matters
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# Engaging Families To Reduce Home Environmental Asthma Triggers



Kate Scott, MPH, RN Margret Schnitzer, MSW







## The Baltimore City Asthma Program

- Focus
  - Reduction of home environmental triggers
  - Asthma medical case management
- Target Population
  - Children with moderate to severe asthma
  - Attending Baltimore City Public Schools







### Community Asthma Program

#### Goals

- Decrease
  - asthma morbidity
  - asthma symptom days
  - use of urgent health services
- Increase
  - Provider knowledge of home environment and communication with families
  - Family understanding of medical and environmental asthma mgmt

### Intervention

3 home visits over 4 months with 6 month follow-up

- Medication and technique review
- Identification of asthma triggers
- Trigger reduction education
- Coordination with providers







### Social Determinants of Heath

### How do they affect efforts to reduce asthma triggers?

- Individual behaviors
  - RAID spray
  - 'Everyone I know has pests'
  - Competing high-level priorities
- Social environment
  - Lack of knowledge of IPM
  - Multiple life stressors
- Physical environment
  - Row homes
- Health services
  - Don't address environmental asthma triggers









### **Environmental Intervention**

- One-on-one teaching / motivational interviewing
- IPM teaching and pest supplies
  - Baits, gel, filling holes
- Green cleaning supplies
- Mattress and pillow covers
  - Put them on with the family
- Tenant/landlord rights and responsibilities
- Encounter form
  - Report sent to medical provider about environmental triggers and asthma management after each visit







### Lessons Learned

### **BCHD**

Partnering with the medical community is essential in managing asthma triggers

### **Providers**

- Ask about pests and smoking habits
- Have hand-outs available to address environmental issues and tobacco harm reduction techniques







## DC's Healthy Asthma Homes Program

- Run by District Department of the Environment (DDOE)
- Home visit and health hazards evaluation
- Detailed report to landlord
- Materials and education for family
- Referrals and coordination with DC agencies
- Case management up to 1 year









# Legal Advocacy to Support Families in the Environmental Management of Asthma



Joy M. Purcell, Esq. Senior Attorney







### CLC's Medical-Legal Partnership -- Healthy Together

- Attorneys on-site at our medical partners:
  - Children's National Medical Center 4 locations in D.C.
  - Mary's Center located in the Adams Morgan neighborhood
- Three primary practice areas:
  - 1. Education/Special Education
    - school discipline for children with special needs
    - access to education for a child with a health condition or physical disability
    - special education

#### 2. Housing Conditions

- Tead, mold, rats, infestations
- accessibility issues that impact children's health
- 3. Access to Health Care
  - termination of medically necessary health care services including mental health services
  - MCO denial of a medically necessary service





## What types of housing conditions do our families frequently face?

- Tenants are entitled to safe, habitable housing
- A landlord who fails to remedy housing code violations within a reasonable period of time is violating the law



- Common housing conditions:
  - Pest and vermin infestations
  - Mold
  - Cracked and/or peeling paint
  - Leaks
  - Sewage overflow











## What self-advocacy steps can a family take?

- Document existing housing code violations
  - Photographs
  - Written notice to landlord, keep dated copies
  - Request formal inspection by agency responsible for building and housing inspections
    - Department of Consumer and Regulatory Affairs or D.C. Housing Authority
- Provide landlords with information about the impact of the housing code violations on family's life







## How can health care providers help families advocate for themselves?

- Help families identify housing conditions
  - Ask parents if they have any concerns about the condition of their home
- Educate families about their right to safe, habitable housing
  - Make sure families know that they don't have to live with housing code violations
  - Remind them to document housing conditions and contact their landlords to request repairs
- Provide families with tools to use in their advocacy
  - Written advocacy letters to submit to their landlords
  - Information about how common conditions (infestations, mold) can exacerbate existing health conditions



# What legal options do families have if a landlord fails to make repairs?

Formal legal options vary by state

### District of Columbia:

- Housing Conditions Calendar allows tenants to file affirmatively against their landlord to enforce the housing code
- Tenants may also follow formal procedures to notify their landlord of the violations and withhold rent due to housing code violations
- Maryland and Virginia do not have a housing conditions court that allows tenants to file affirmatively against their landlords







## What can families expect from legal assistance provider?

- Intake interview to determine legal options
- Families should be prepared to provide all documents related to their housing concerns
- The tenant and attorney can determine the best option to assist the family in securing habitable housing conditions
- Options to secure transfers to other housing are limited tenants may only be entitled to obtain repairs to their current housing







# How can health care providers support families taking legal action?

- Provide families with tools to use in their legal case
  - Affidavits
  - Medical records
  - Information about how common conditions
    (infestations, mold) can exacerbate existing health
    conditions
- Provide testimony in court
  - Testimony regarding a child's medical conditions may be compelling
  - Testimony about the impact of housing code violations on the family's health may help educate a judge





## Summary – Tips for Real Life Practice!

- Use a screening tool while patients wait
- Ask about <u>all</u> places the child spends time
- Ask about smoke exposure
- Have non-judgmental approach
- Keep educational handouts and resource list on hand
- Document what you do!
  - "Counseled patient/family about identified exposures/triggers."
  - "Provided patient/family information on reducing environmental triggers."
  - "Referred patient/family to XXX for assistance with home conditions."







### Resources

- National Environmental Education Foundation (NEEF) www.neefusa.org
- Environmental Protection Agency (EPA) www.epa.gov/asthma/publications.html
- Clinical Effort Against Secondhand Tobacco Exposure (CEASE) <u>www.massgeneral.org/ceasetobacco</u>
- Improving Asthma Care in the District of Columbia (IMPACT DC) <u>www.impact-dc.org</u>





## Regional Legal Support

#### **District of Columbia:**

Children's Law Center 616 H Street, NW, Suite 300 Washington, DC 20001 (202) 467-4900, Option 3 (Helpline)



#### Virginia:

Legal Services of Northern Virginia 6066 Leesburg Pike, Suite 500 Falls Church, VA 22041 (703) 778-6800



#### Maryland:

Legal Aid Bureau 500 East Lexington Street Baltimore, MD 21202 (800) 999-8904





## Healthy Homes Programs

Baltimore City Asthma Program 1800 N. Charles St. 5th Floor Baltimore, Maryland 21201 410-396-3848 www.baltimorehealth.org/asthma

District Department of the Environment Healthy Homes Division 1200 First Street NE. 5th floor Washington, DC 20002 202-535-2600

www.ddoe.dc.gov

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- 202-471-4829
- www.childrensnational.org/macche



A PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNIT (PEHSU)





## Questions?



