



Healthy Homes Evaluator

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Institute

ARKANSAS



**ANNUAL TRAINING
CONFERENCE**

www.nascsp.org

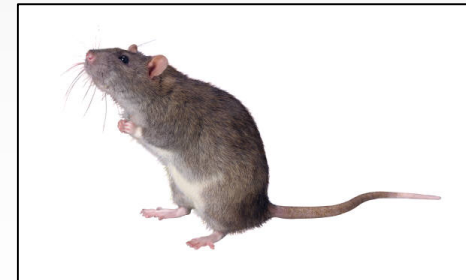
Current health focuses of BA/EA/QCI

- ▶ Carbon monoxide – combustion safety
- ▶ Lead-based paint – RRP
- ▶ Asbestos – don't touch it!
- ▶ Moisture (limited) – modest repairs, ground covers



Current health focuses of health workers

- ▶ Lead-based paint
- ▶ Moisture (limited)
- ▶ Obvious pollutant sources, e.g.
 - Gas stoves
 - Candles
 - Pests



Current building focuses of health workers

- Not much
 - Ventilation?
 - Suspect mold?

Healthy Home Evaluator – Rationale

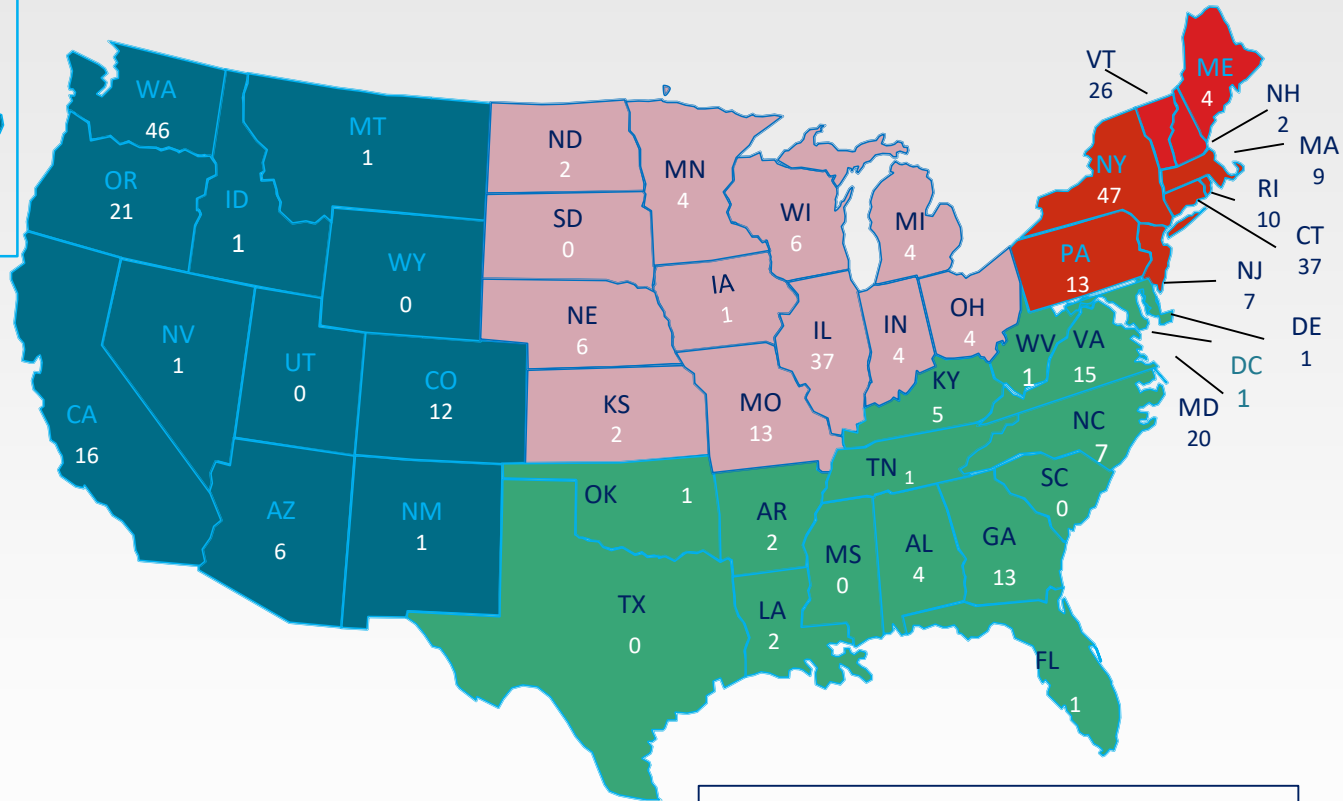
- ▶ Most home health visits are done by people without knowledge of buildings; they focus on what they observe in the living space
- ▶ Energy auditors know
 - How to measure
 - How to find hidden problems
 - How buildings work
- ▶ Let's put that knowledge to use for health



Relevance

- ▶ Only available to people with a BPI certification for:
 - Building Analyst (BA)
 - Energy Auditor (EA)
 - Quality Control Inspector (QCI)
 - Multifamily Building Analyst (MFBA)
- ▶ Prepares people who know how to evaluate homes from an energy perspective to build on that knowledge to look at homes from a health perspective

BPI HHE Certifications by State



There are 436 BPI HHE Certified Professionals in 43 States Plus DC



“Healthy”?

- ▶ Respiratory ailments
 - Asthma
 - Allergies
 - Lower and upper respiratory tract infections
 - COPD



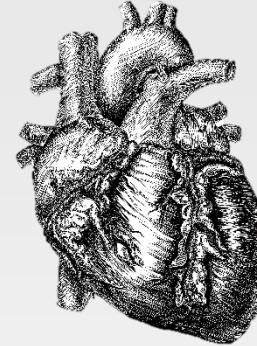
Credit: AFP, <https://www.flickr.com/photos/gasierraclub/5595644959/>

Photo unchanged

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“Healthy”?

- ▶ Other ailments
 - Heart disease
 - Headaches
 - Eye, nose, throat irritation
 - Damage to organs
 - Cancer



Healthy?

Safety problems, including:



Choking and suffocation



Fires and burns



Drowning



Firearms related injuries



Electrical shock



Poisoning



Entry by intruders

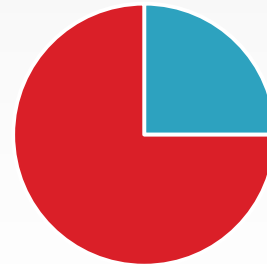


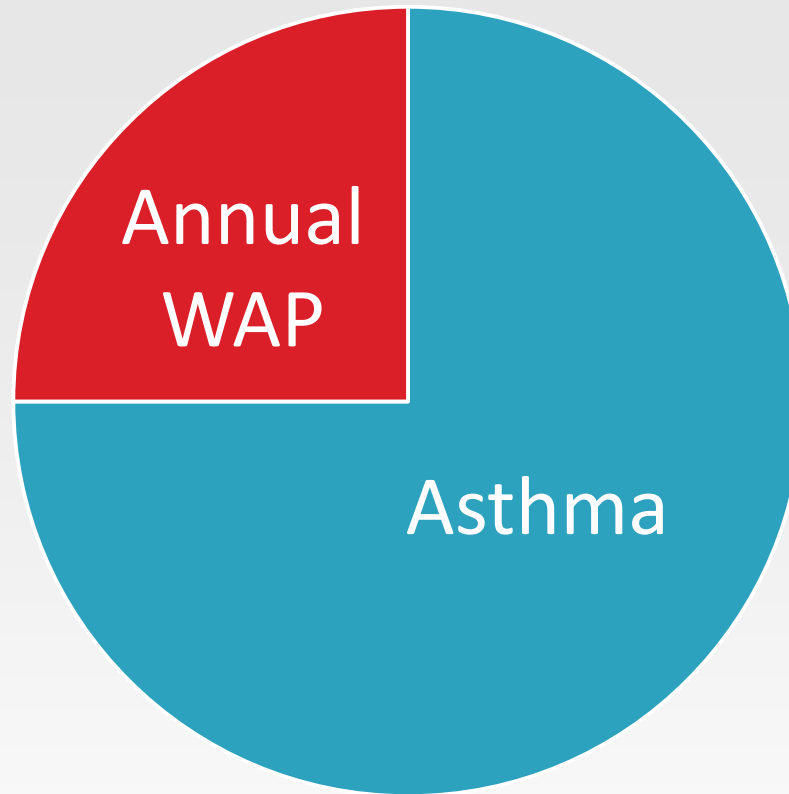
Trips and falls



Healthy?

- ▶ 1 in 12 children in the U.S. has asthma
- ▶ 1 in 8 children in poverty has asthma
- ▶ 1 in 4 households below the poverty line has a child with asthma





In the U.S. we spend over
\$1 BILLION per year on asthma

“Keep it...” principles of a healthy home

- Keep it



1. Dry



2. Clean



3. Pest-Free



4. Ventilated



5. Safe



6. Contaminant-Free

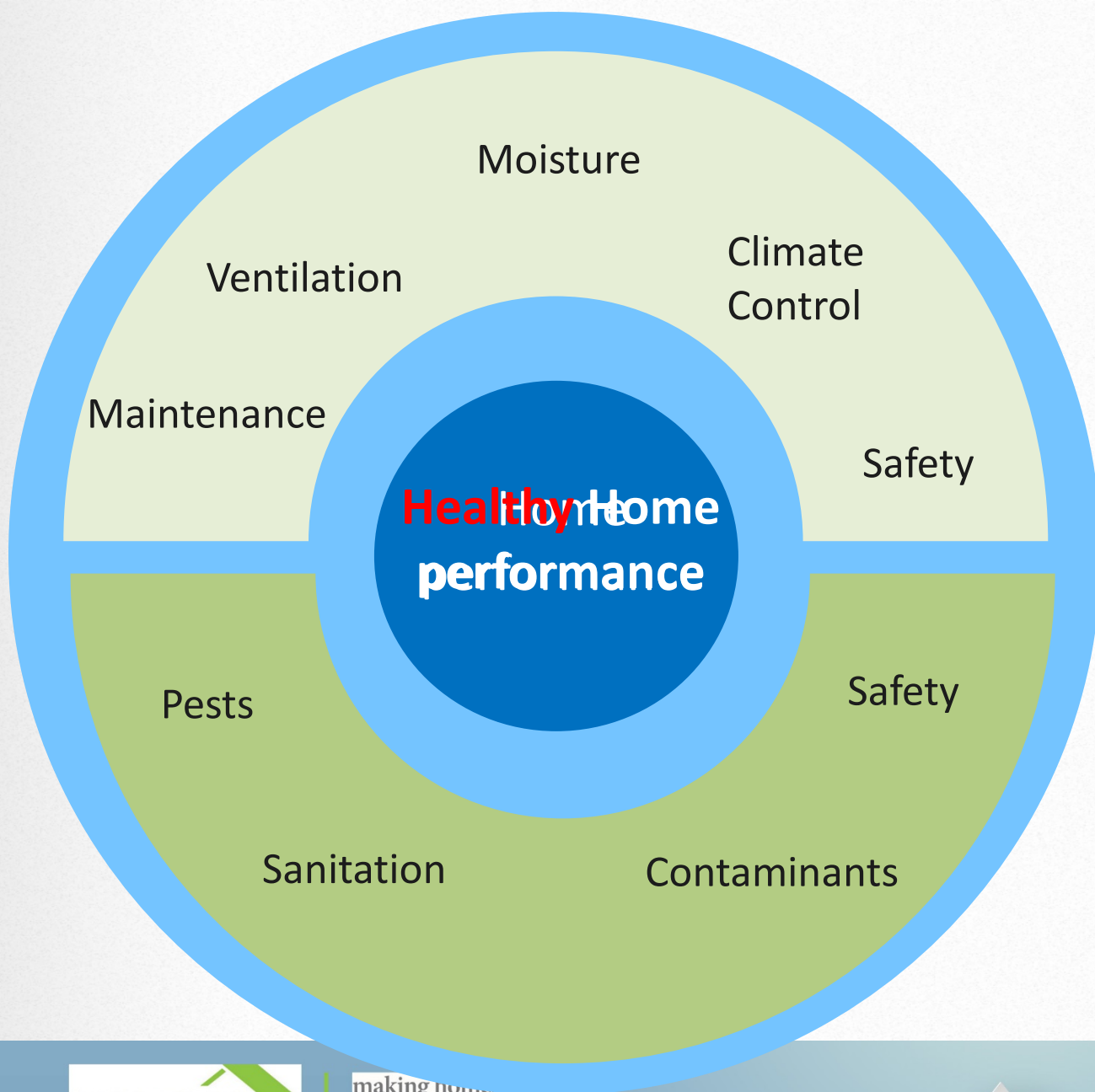


7. Maintained



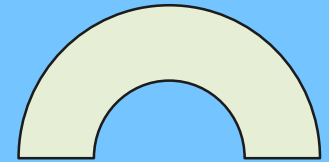
8. Climate Controlled



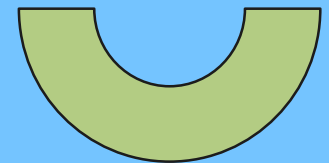


Healthy homes

Areas you already understand



Maybe new to you



Topics

- ▶ Introduction
- ▶ Get people thinking about homes differently

New Focus – Vision Test



Typical assessment	HHE assessment
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____









Toxic Free Tips

for your home, school, work place, and community

Fresh idea!
There are many
uses for white
distilled vinegar.
Look at the flip side
of each card.

Recipes For Safer Household Cleaners

Multi-purpose ☆ Tub & Sink ☆ Window & Mirror ☆
Toilet Bowl ☆ Drain ☆ Oven ☆ Bathroom Mold Remover

Toxic Free
Tips

www.ecy.wa.gov/toxicfreetips

Ecology Publication No. 09-04-017, rev. August 2012
If you need a format for the visually impaired, call 360-407-6700.
Persons with hearing loss, call 711. Persons with a speech
disability, call 877-833-6341.

Multi-purpose **greener** Cleaner

(A multi-purpose cleaner that cleans and disinfects)

- 1 tablespoon soap (flakes, powder, or liquid) – not detergent
- ½ cup of white distilled vinegar
- 12 ounces (1 ½ cups) water



Add the ingredients to a clean 16-ounce
spray bottle. Put the cap on and shake
well.



www.ecy.wa.gov/toxicfreetips

Cost per ounce:
This recipe: \$.01
Commercial: \$.12

Tub & Sink **greener** Cleaner

- Baking soda
- Liquid soap (not detergent).
Castile or Murphy's Oil Soap
are good options.



Use baking soda in place of scouring powder.
Sprinkle it liberally on porcelain fixtures and rub with a
wet rag. Add a little soap to the rag for more cleaning
power. Rinse well to avoid leaving a hazy film.
(Baking soda won't scratch the porcelain.)

Baking soda and
commercial scrubs cost
about the same, but the
baking soda is usually
safer and more
environmentally friendly.



www.ecy.wa.gov/toxicfreetips

Window & Mirror **greener** Cleaner

- ¼ cup white distilled vinegar
- 16 ounces of water



Pour ingredients into a clean
spray bottle. Spray on surface.
Rub with a lint-free rag, such as
a diaper or sheets of newspaper.



www.ecy.wa.gov/toxicfreetips

Cost per ounce:
This recipe: \$.08
Commercial: \$.12





Moisture mapping

Determine – it's dry and no significant damage to drywall or floor







Safe



Maintained

Pest free

Dry

Clean

Contaminant free

Topics – Indoor Environmental Hazards

Contaminants	Pests	Safety
Respirable particles	Dust mites	Trips/falls
Nitrogen dioxide	Cockroaches	Fire
Formaldehyde	Mice	Electrical
Volatile organic compounds (VOCs)	Rats	Clutter
Radon	Bedbugs	Poisoning
Moisture		
Lead		
Asbestos		



Topics – Indoor Environmental Hazards

- ▶ ...and where they come from
- ▶ ...and what they do

Particulate Matter (PM_{2.5})

What is it?

A mixture of solid particles and liquid droplets found in the air.

Sources?

Dust, dirt, soot, and smoke sources, chemical reactions from industry

Health impacts?

Exacerbate heart and lung disease, aggravate asthma, decrease lung function, increase respiratory symptoms



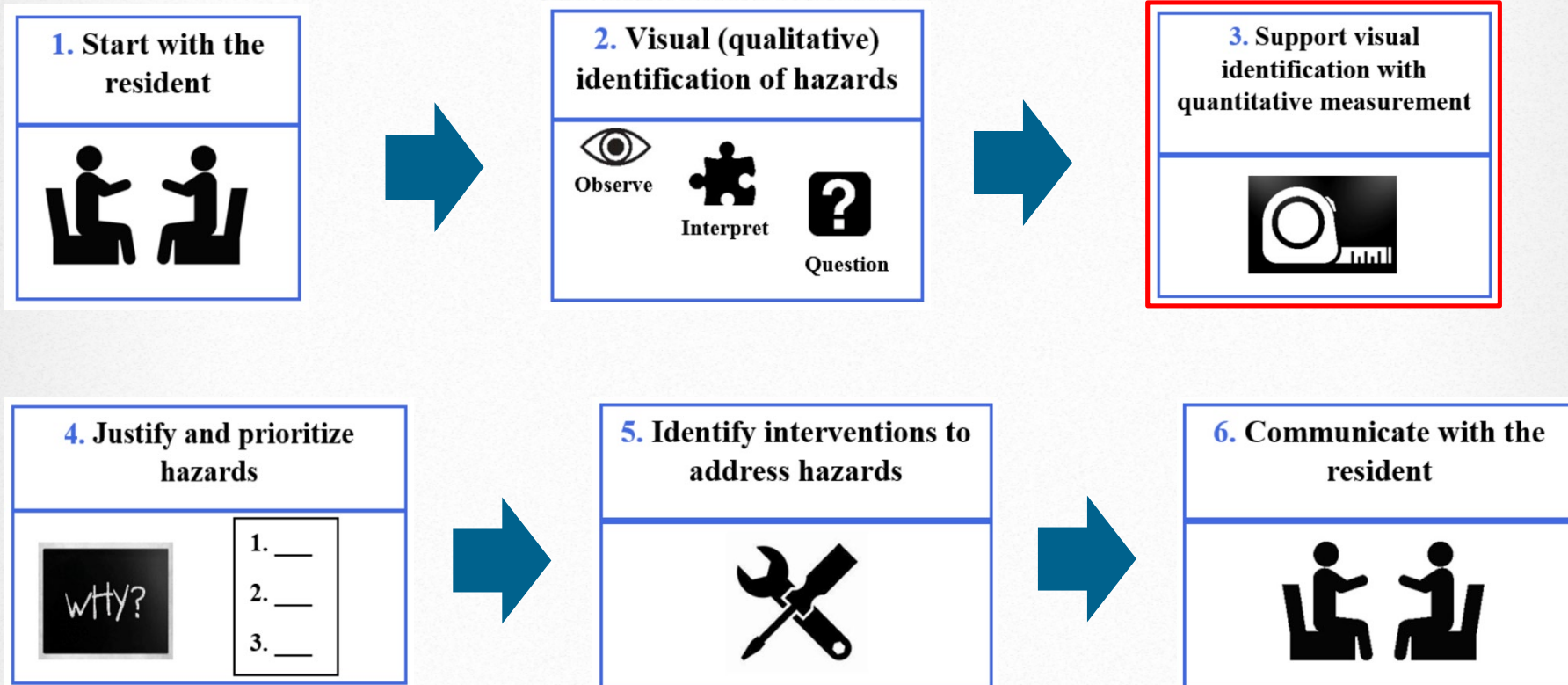
Topics

- ▶ Visual inspections – use your senses
- ▶ Measurements – measure what you need to
- ▶ Justification and prioritization – what are the top issues?
- ▶ Interventions – how to address issues
- ▶ Liability

How the course works

- ▶ Presentations
- ▶ Exercises
- ▶ Site visit
- ▶ HHE certification exam

Key Steps



Tool Options

Basic environmental measurement tools:

1. Combustible gas meter
2. Smoke stick
3. Carbon monoxide detector
4. Thermo-hygrometer (Portable psychrometer)
5. Infrared thermometer
6. Moisture meter
7. Infrared camera

Basic airflow measurement tools:

1. Blower Door
2. Manometer
3. Exhaust Fan Flow Meter
4. Powered Flow Hood and/or Capture Bag
5. Duct Pressurization Fan





Combustible gas meter



Dragon Puffer with Pencil Stream Adaptor

Smoke stick



Carbon Monoxide detector



Thermo-hygrometer



Infrared thermometer/camera



Moisture meters



Advanced contaminant sampling tools:

1. Particle mass sampler
2. Particle counter
3. Carbon dioxide detector
4. Formaldehyde sampler
5. Multi-gas detector
6. Nitrogen dioxide detector
7. VOC sampler
8. Radon sampler/monitor
9. Mold swab/tape sample
10. Dust vacuum
11. Lead XRF analyzer





Particles



Carbon Dioxide



Formaldehyde



VOCs



Radon

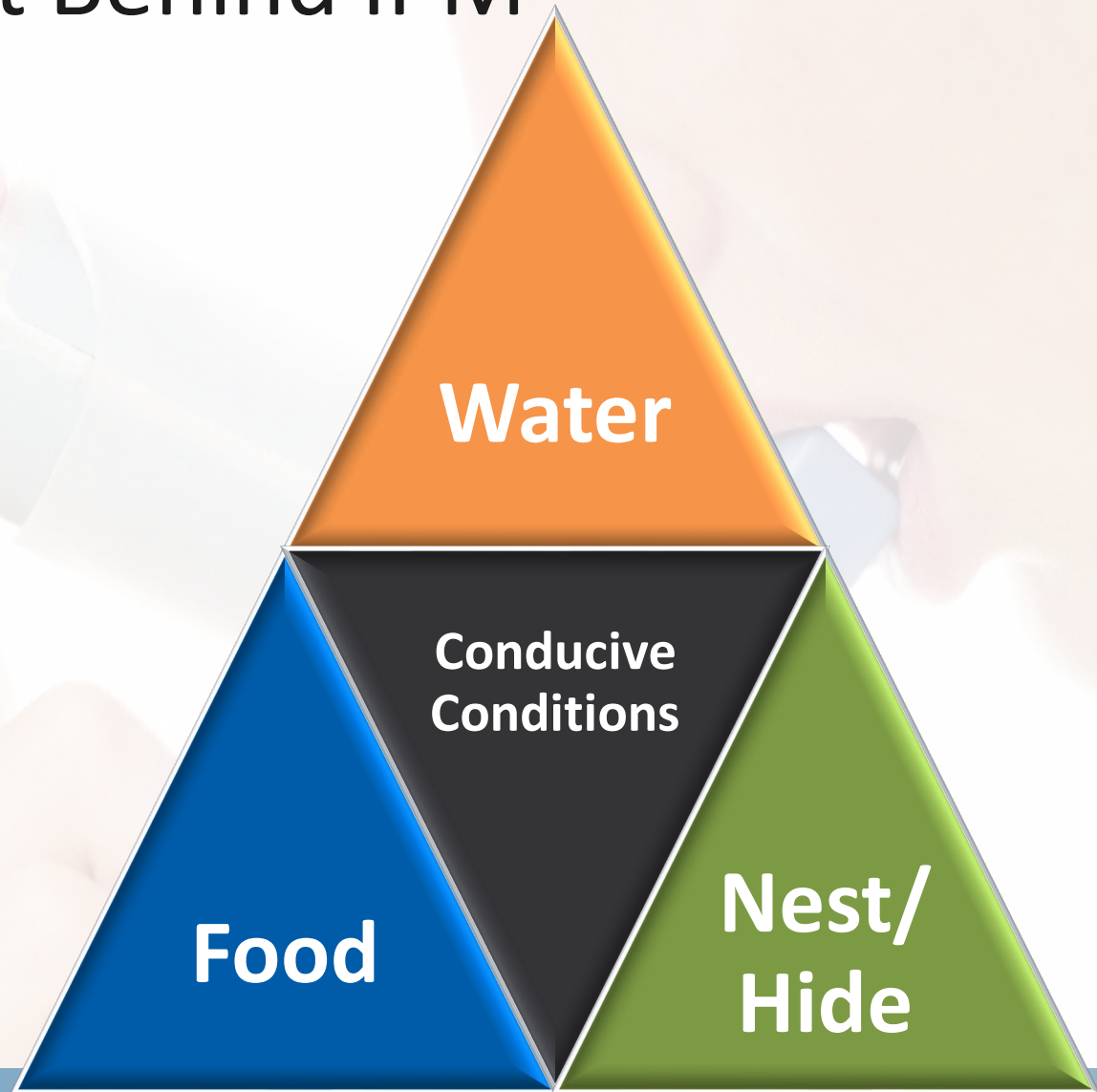


Multi-gas Detector

Special focus on pests

- ▶ This is one area that most BA/EAs do NOT look at much
- ▶ Identification
- ▶ Measurement (dust samples)
- ▶ Treatment
 - Integrated Pest Management (IPM)

The concept Behind IPM



The Six Steps of IPM

Steps

Description

1. Inspection and Identification

Inspect the property and identify the pests.

2. Exclusion

Keep the pests out of the house.

3. Educate residents

Help residents understand their important role in managing pests.



The Six Steps of IPM

Steps	Description
4. Sanitation	Make sure food, water and hiding places are not available to pests.
5. Physical and Chemical Control	Use glue traps (cockroaches), snap traps (mice), and rat traps. Use bait stations for cockroaches and insecticide dusts.
6. Monitoring	Use glue traps and snap traps to control pests and monitor property to make sure they haven't returned.



Liability

- ▶ Health is a more litigious topic than energy efficiency
- ▶ Health is also covered by HIPAA
- ▶ Discussion of liability is included in training
- ▶ Make sure that you have processes and protocols in place to cover your team



Review of steps

EA/BA/MFBA/QCI	HHE
Talk to the resident	Talk to the resident
Visual observations	Visual observations
Measure	Measure
Justify and prioritize	Justify and prioritize
Identify Interventions	Identify Interventions
Circle back to the resident	Circle back to the resident



Does it really matter?

- ▶ Can provide a more complete look at the homes you assess
- ▶ Build models for partnerships with health providers
 - Pilot about to start in Champaign with Carle Hospital
 - Local utilities are also interested in exploring similar programs
- ▶ Can expand/diversify your agencies' offerings, and increase your impact in your communities

Imagine a world...

- ▶ Where homes are not just places where we try to avoid disease...
- ▶ ...but places that promote health

Imagine a world...

- ▶ Where children in poverty don't get sick as much...
- ▶ They don't miss school as much...
- ▶ They don't go to the emergency room as much...
- ▶ Their parents don't miss work as much...
- ▶ Their parents don't miss pay as much...
- ▶ They learn better...
- ▶ Their parents can take care of them better...

We can help make that world

Thank you!

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