



# WEATHERIZATION PLUS HEALTH

NASCSP Spring Training Conference  
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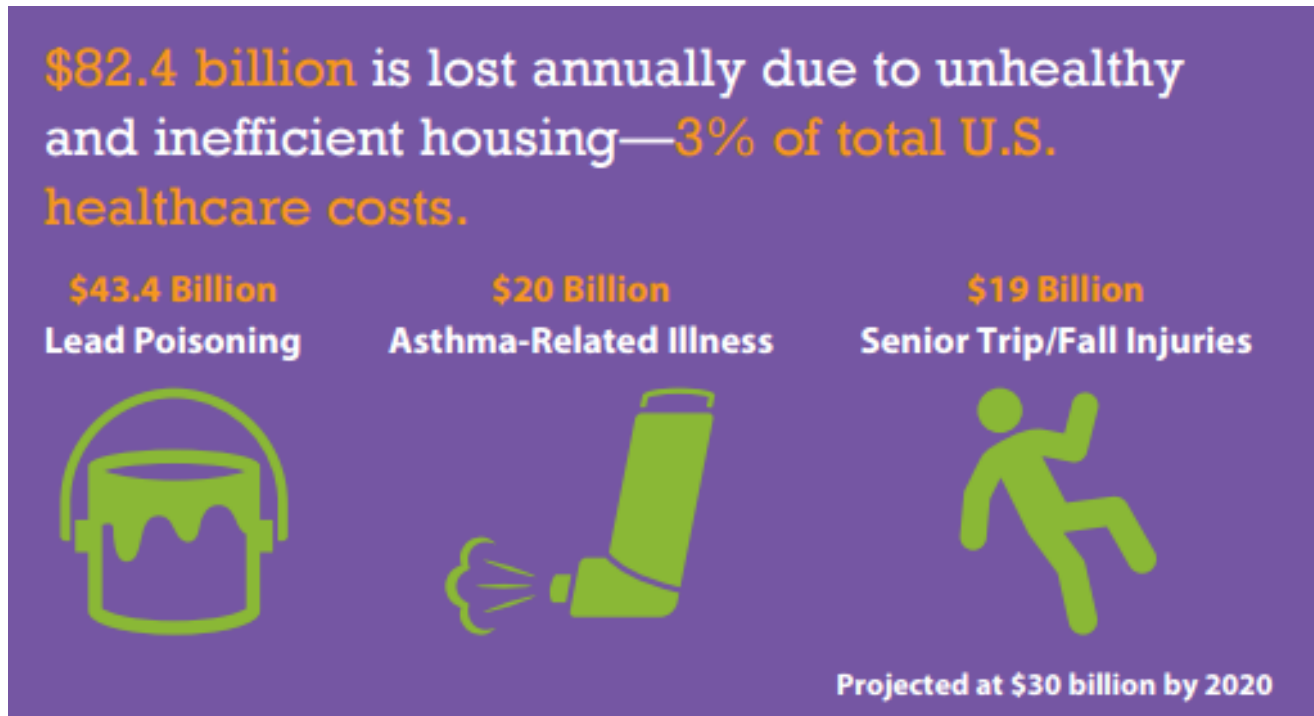


# Overview

- ▶ Making the case for Wx Plus Health
  - ▶ Most recent healthy homes research/data
  - ▶ New healthy homes certification
- ▶ Funding sources
  - ▶ What is available
  - ▶ Advantages/disadvantages
- ▶ Examples in states
  - ▶ What are states already doing?

# Health is on Everyone's Mind

- ▶ Healthcare, especially cost of healthcare
  - ▶ Political focus, media focus
- ▶ Nearly 9 million families across the nation live in unhealthy, energy inefficient homes (Green and Healthy Homes Initiative)



Credit: Green and Healthy Homes Initiative

# 8 Principles of Healthy Housing

## ▶ 1. Keep it Dry

Prevent water from entering your home through leaks in roofing systems, rain water from entering the home due to poor drainage, and check your interior plumbing for any leaking.

## ▶ 2. Keep it Clean

Control the source of dust and contaminants, creating smooth and cleanable surfaces, reducing clutter, and using effective wet-cleaning methods.

## ▶ 3. Keep it Safe

Store poisons out of the reach of children and properly label. Secure loose rugs and keep children's play areas free from hard or sharp surfaces. Install smoke and carbon monoxide detectors and keep fire extinguishers on hand.

## ▶ 4. Keep it Well-Ventilated

Ventilate bathrooms and kitchens and use whole house ventilation for supplying fresh air to reduce the concentration of contaminants in the home.

## ▶ 5. Keep it Pest-free

All pests look for food, water and shelter. Seal cracks and openings throughout the home; store food in pest-resistant containers. If needed, use sticky-traps and baits in closed containers, along with least toxic pesticides such as boric acid powder.

## ▶ 6. Keep it Contaminant-free

Reduce lead-related hazards in pre-1978 homes by fixing deteriorated paint, and keeping floors and window areas clean using wet-cleaning approach. Test your home for radon, a naturally occurring dangerous gas that enters homes through soil, crawlspaces, and foundation crack. Install a radon removal system if levels above the EPA action-level are detected..

## ▶ 7. Keep your home Maintained:

Inspect, clean and repair your home routinely. Take care of minor repairs and problems before they become large repairs and problems

## ▶ 8. Thermally Controlled

Houses that do not maintain adequate temperatures may place the safety of residents at increased risk from exposure to extreme cold or heat.

# Weatherization has Health Benefits

- ▶ Anecdotal evidence- WAP providers knew their clients felt better, were healthier
- ▶ National evaluation by Oak Ridge Lab
  - ▶ Fewer asthma symptoms, less allergy symptoms, less hospitalizations
  - ▶ \$4.10 in energy, health, safety for every WAP dollar

## Health and Household-Related Benefits Attributable to the Weatherization Assistance Program



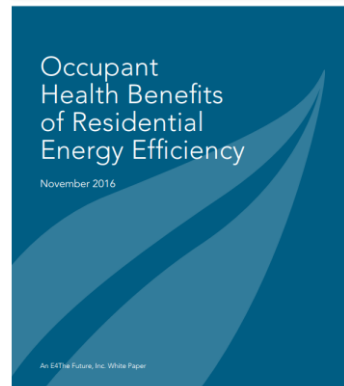
Bruce Tonn  
Erin Rose  
Beth Hawkins  
Brian Conlon

September 2014

# Health Benefits of WAP Greater than Once Thought



- ▶ Massachusetts Special and Cross-Cutting Research Area: Low-Income Single-Family Health- and Safety-Related Non-Energy Impacts (NEIs) Study (*Three3, August 2016*)



- ▶ Occupant Health Benefits of Residential Energy Efficiency (*E4TheFuture, Tohn Environmental, Three3, National Center for Healthy Housing, Nov. 2016*)



- ▶ Home Rx: The Health Benefits of Home Performance (*DOE, Tohn Environmental, National Center for Healthy Housing, Dec. 2016*)

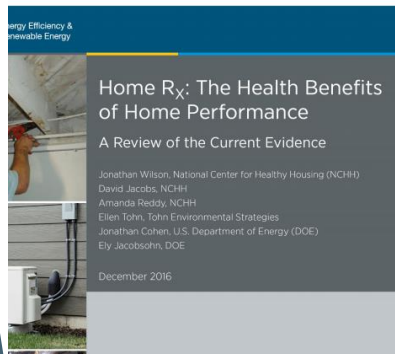
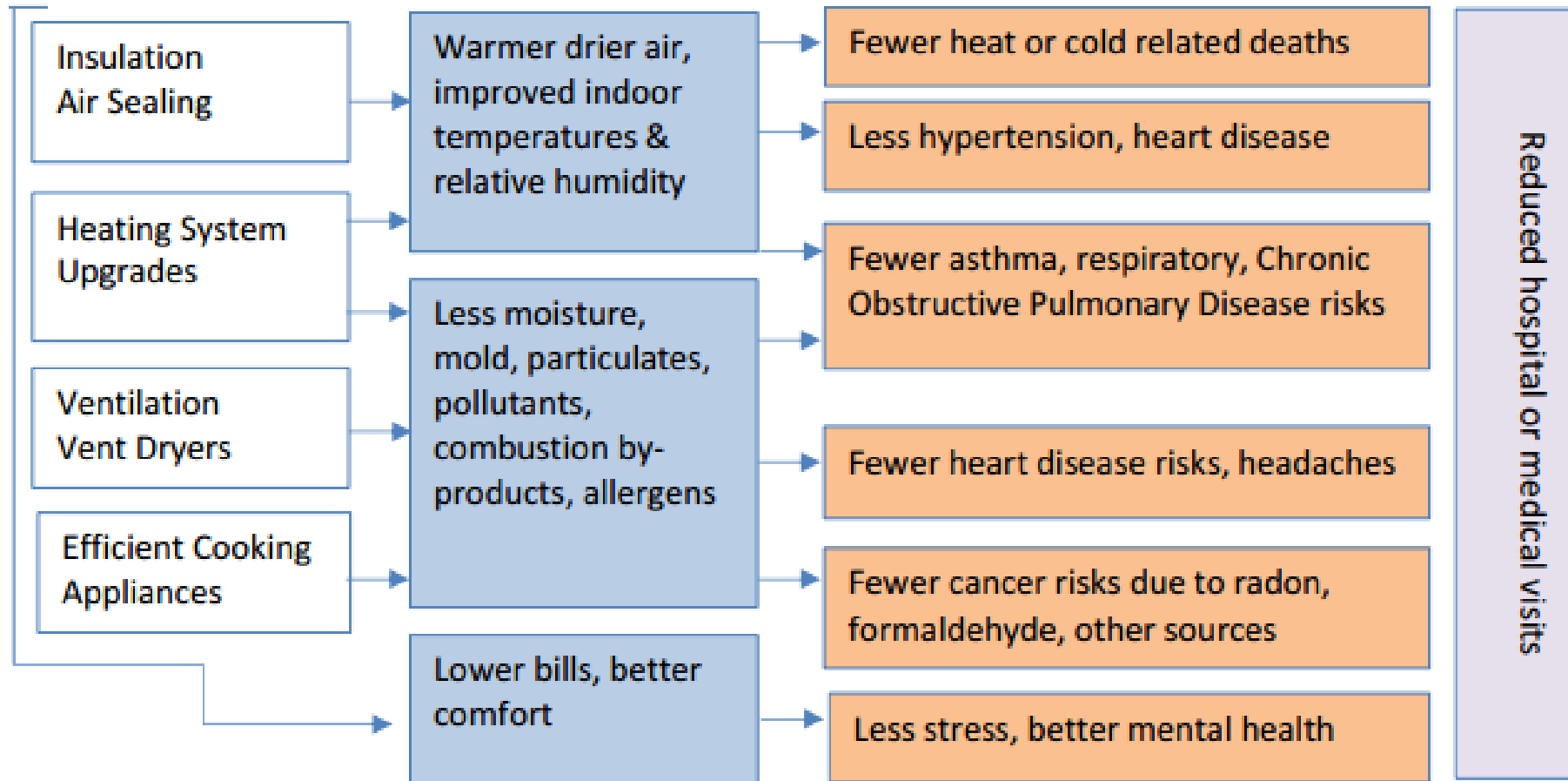


Figure ES1: Occupant Health and Indoor Environmental Benefits of Residential EE



# State Health Data

- ▶ Data=Power=Leverage
- ▶ State department of Health
  - ▶ Health organizations/think tanks
  - ▶ Reach out!
- ▶ Asthma rates
  - ▶ Costs
- ▶ Allergy information
- ▶ Aging in place programs
- ▶ Medicaid expenditures in your state



# BPI Healthy Homes Evaluator (HHE)

- ▶ “The HHE certification builds upon the BPI Building Analyst (BA), Energy Auditor (EA) or Quality Control Inspector (QCI) certifications to verify competencies required to conduct in-depth healthy home environmental risk assessments. The Healthy Home Evaluator assesses home-based environmental health and safety hazards and provides a prioritized list of recommendations to address those hazards.”

# [www.wxplushealth.org](http://www.wxplushealth.org)



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## Find a Provider

Search for community action agencies, weatherization and healthy homes providers in your area. Search by address, city, state or zip code.

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## Find a Provider

Search for community action agencies, weatherization and healthy homes providers in your area. Search by address, city, state or zip code.

### Need Healthy Homes Services?

Find a provider in your area for help.



### Stay Connected

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# Sources of Funding

- ▶ Federal funds
- ▶ State funds
- ▶ Private foundations
- ▶ Healthcare
- ▶ Utilities? Other?



# Federal

- ▶ D.O.E
  - ▶ Increase your health and safety budget- just need a justification
  - ▶ Never denied a State
- ▶ Department of Housing and Urban Development (HUD), Office of Healthy Homes and Lead Hazard Control
  - ▶ Demonstration Grant Program
    - ▶ “Healthy Homes Demonstration grantees must expend at least 65% of the federal funds on direct remediations for housing-related hazards.”
  - ▶ Technical Studies Grant Program
    - ▶ “Improving indoor air quality”- one of specific objectives
- ▶ U.S. Environmental Protection Agency (EPA)
  - ▶ Lead-Based Paint and Lead Hazard Reduction Demonstration Grant Programs
- ▶ Centers for Disease Control (CDC)
  - ▶ CDC’s Healthy Homes/Lead Poisoning Prevention Program

# State Funds

- ▶ Appropriation in State budget
- ▶ Tax or other state fund
  - ▶ E.g. fuel, carbon, mortgage, etc.

# Private Foundations

## National Foundations

- ▶ The Kresge Foundation
  - ▶ “...promote healthy housing and mitigate the impacts of substandard housing.”
- ▶ Robert Wood Johnson Foundation
- ▶ Bill and Melinda Gates Foundation
- ▶ The list goes on...

## State/Local Foundations

- ▶ Skillman Foundation- Detroit
- ▶ Sherwood Foundation- Nebraska
- ▶ The list goes on...

# Examples in States

# Washington

- ▶ You are about to hear from Allen!



# Indiana

- ▶ Portion of State of Indiana's mortgage foreclosure multistate settlement agreement to be used Indiana Home Energy Assistance Programs
  - ▶ pass up to 18% onto the weatherization program.
- ▶ The guidelines are:
  - ▶ The funds can only be used for homeowners
  - ▶ The home must have formally been deferred
  - ▶ The funds must be adequate to address the deferral issues and make the home weatherization ready (there are some homes that they still must walk away from)
- ▶ During the 2016 program year the network was able to move 198 homes from permanent deferral to fully weatherized.
- ▶ Mold remediation, Moisture control, Electrical issues, Grading, Roof repair, Gutters, Sump pumps, Pest control, Structural issues, Handrails, Adequate lighting on stairs, Grab bars in bathrooms

# Indiana (Cont'd)

- ▶ 68% state they sleep better in their home
- ▶ 89% have noticed a decrease in their energy bills
- ▶ 95% report improved overall comfort in their home
- ▶ 95% are happy with the delivery of services
- ▶ 25% report improvement in their asthma and allergy
- ▶ 20% report improvement in their anxiety and depression symptoms

# New Hampshire & Vermont

- ▶ One Touch System
  - ▶ Tohn Environmental Strategies
  - ▶ Integrated assessment and E-referral program
  - ▶ Weatherization, lead, Headstart, Health Insurance Navigators, maternal and child health visits, etc.
  - ▶ State “One Touch Coalition”
    - ▶ Partnership of agencies brings One Touch to the state

# New York

- ▶ NYSERDA (New York State Energy Research and Development Authority)
- ▶ New York Department of Homes and Community Renewal
  - ▶ Statewide governmental strategy- cooperation across agencies
  - ▶ Feasibility study
  - ▶ Assessing options- what partners can be brought in?
- ▶ June summit/event

# Stay in Touch with NASCSP

## ► Information Sharing

- [Nascsp.org](http://Nascsp.org)
- Twitter and Facebook @NASCSP
- WAP E-News
- [ebenhna@nascsp.org](mailto:ebenhna@nascsp.org)



# Weatherization Plus Health (Healthy Homes)

Allen Carbert  
Opportunity Council  
Home Improvement Department



## Washington State Weatherization Program

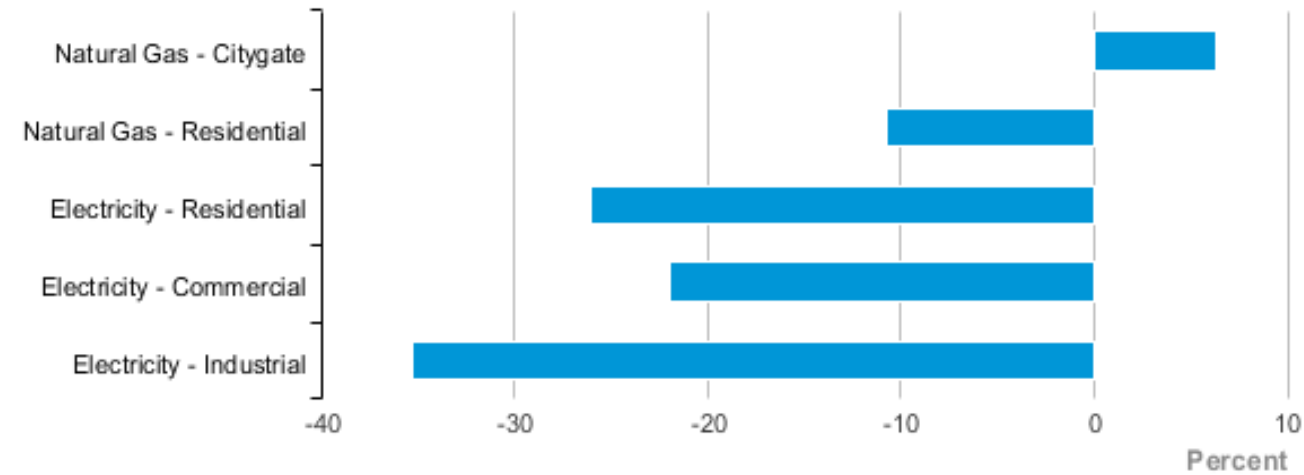
- 3,000 – 4,000 units weatherized annually
- 5 fund sources
- \$20-25 million annual budget
- 28 Agencies delivering services
  - Community Action Agencies
  - Local Government
  - Tribes



Department of Commerce

## Energy Costs in WA State

**Washington Price Differences from U.S. Average, Most Recent Monthly**



Source: Energy Information Administration, Petroleum Marketing Monthly; Natural Gas Monthly; Electric Power Monthly



Department of Commerce



# Cost –effectiveness:

The economic impact of the Weatherization program tends to be low for two reasons:

The tendency of these households to under-heat. (low use...low savings)

And the lack of methodologies to take into account non-energy benefits(e.g. healthcare savings )

# Weatherization

has focused on reducing energy bills ...  
improving comfort ...



A more **comprehensive approach** is – one that reduces threats to good health: **lead hazards, asthma triggers, carbon monoxide, radon and other health threats** with the same determination as energy savings.

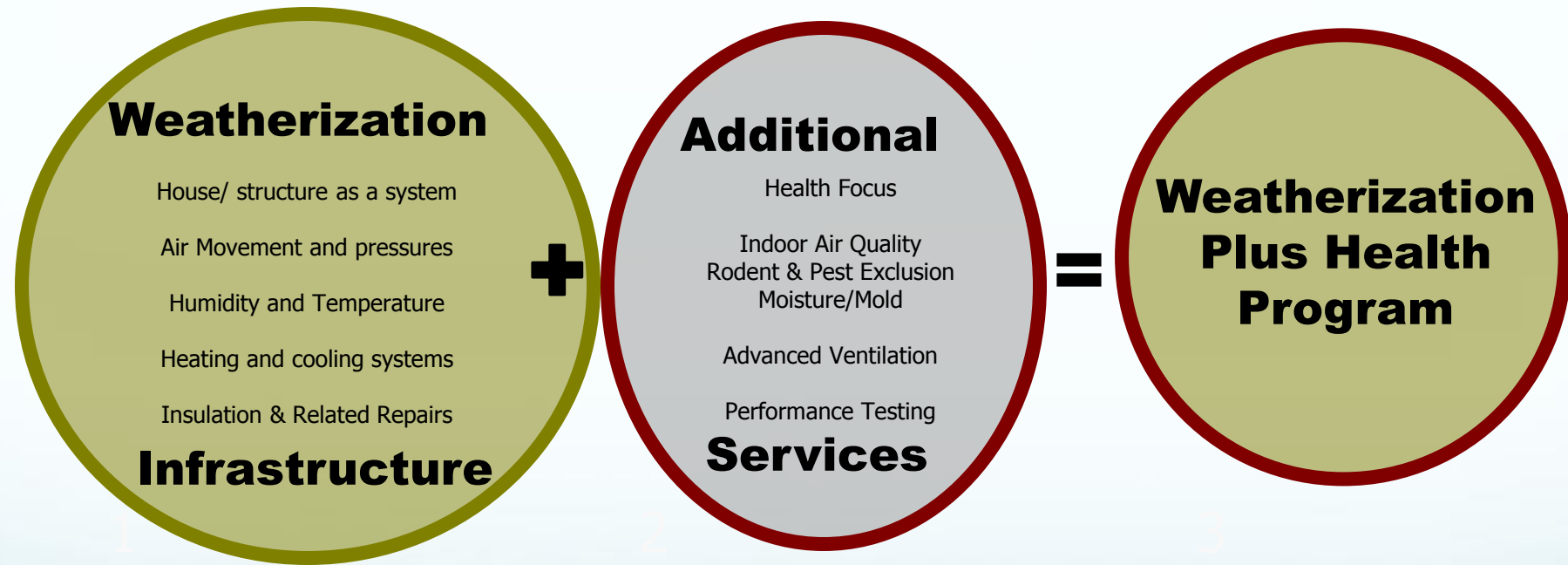
# Weatherization Perception

*While many people still perceive WAP primarily as an energy conservation program, it is clear the work delivered through this program has a significant societal benefit in improving indoor air quality, thus potentially reducing health care needs for many low-income families.*

# Opportunity Council Timeline

- 1993 and 1995 EPA Environmental Justice Grants  
(Used to create Indoor Air Coalition of Whatcom county)
- 2002 HUD Healthy Homes Grant (Pilot project)
- 2005 Head Start starts referring families
- 2008 Energy assistance takes over conservation education role
- 2009 Private donation and commitment of \$100k annually
- 2010 Energy assistance takes the lead in the agency on Healthy Homes
- 2010 Agency receives EPA grant to train home visitors in the community in the 7 principles of HH and to make HH referrals

# WX *Plus* Health Program



# New Zealand Study

## Multiple Benefits of Energy Efficiency

### 2012

- Researchers concluded 90% of the benefit from Energy Efficiency was health related
- Admissions to hospitals for respiratory conditions dropped by 43%
- Days off of School were reduced by 23%
- Days off from work dropped 39%

# Indoor Environmental Intervention Demonstrated to Work

2.2 fewer unscheduled clinic or ER visits

22 fewer days with symptoms

4.4 fewer days absent from school

Results of a Home-Based Environmental Intervention among Urban Children with  
Asthma

Wayne J. Morgan, M.D., C.M., et al

N Engl J Med 2004; 351:1068-1080 September 9, 2004

# Oak Ridge National Lab Evaluation

2012-2015 (Tohn, Rose, Hawkins, Shah, Patton)

- Study of Medicaid Cost Reductions through a Weatherization plus Health program model
- 18 month controlled evaluation study
- Looked at medical history (Medicaid and physician records)
- 30 Weatherization plus health households
- 30 Weatherization only households
- 30 Healthy homes only households

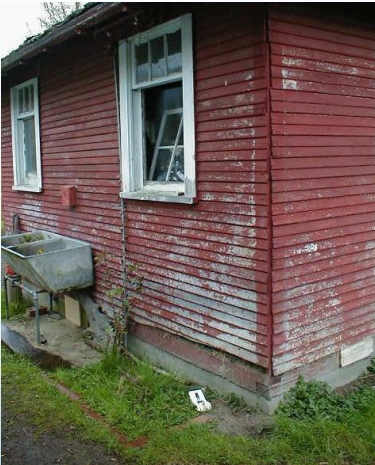


# ORNL study findings

- “Statistically significant decrease in annual asthma-related Medicaid costs for all study groups collectively.”
- The services delivered by the participating agencies in this study significantly reduced healthcare costs for Medicaid-insured children with asthma residing in Northwestern Washington State.

# Health & Housing Connection:

Link between health & indoor environment is well established



- Asthma triggered by indoor environmental conditions
- Lead poisoning from old paint
- Radon, carbon monoxide and other toxic substances cause health threats

*“The connection between health and dwelling is one of the most important that exists.”* Florence Nightingale

Florence Nightingale, OM, RRC English social reformer and statistician, known as the founder of modern nursing.

- Born: May 12, 1820, Florence
- Died: August 13, 1910, Park Lane



# Advocacy at State level for Weatherization plus Health model

- Community Action Network and Asthma coalitions
- A champion in the legislature Rep. June Robinson
- Result .....House Bill 1720

## WA's Weatherization Plus Health Initiative



### House Bill 1720 – 2015/16

*...The legislature further finds that there is emerging scientific evidence linking residents' health outcomes such as asthma, lead poisoning, and unintentional injuries to substandard housing.*



# Weatherization Plus Health

- Funded by State Matchmaker Dollars
- Administered by the Department of Commerce
  - \$10 million dollars 2015-2017 biennium
  - Up to \$2 million for “Basic” Weatherization plus Health
  - \$2.5 million for ‘Enhanced” Weatherization plus Health
    - Funded Five programs
    - Innovative approach
    - Washington State University set up evaluation methods and data requirements

# WX *Plus* Health Program

## **Improve Indoor Environment**

Additional measures that improve the indoor environment and build on basic weatherization and education component

## **Education Component**

Visual survey of indoor air and health issues  
interview with client  
Develop action plan for behavior changes and implementation  
Low cost, no cost materials

## **Basic Weatherization**

A weatherization audit, energy saving measures  
combustion safety

Do No Harm adds to Basic Weatherization such  
elements as Lead Safe work practices, Asbestos  
Awareness

Conservation education

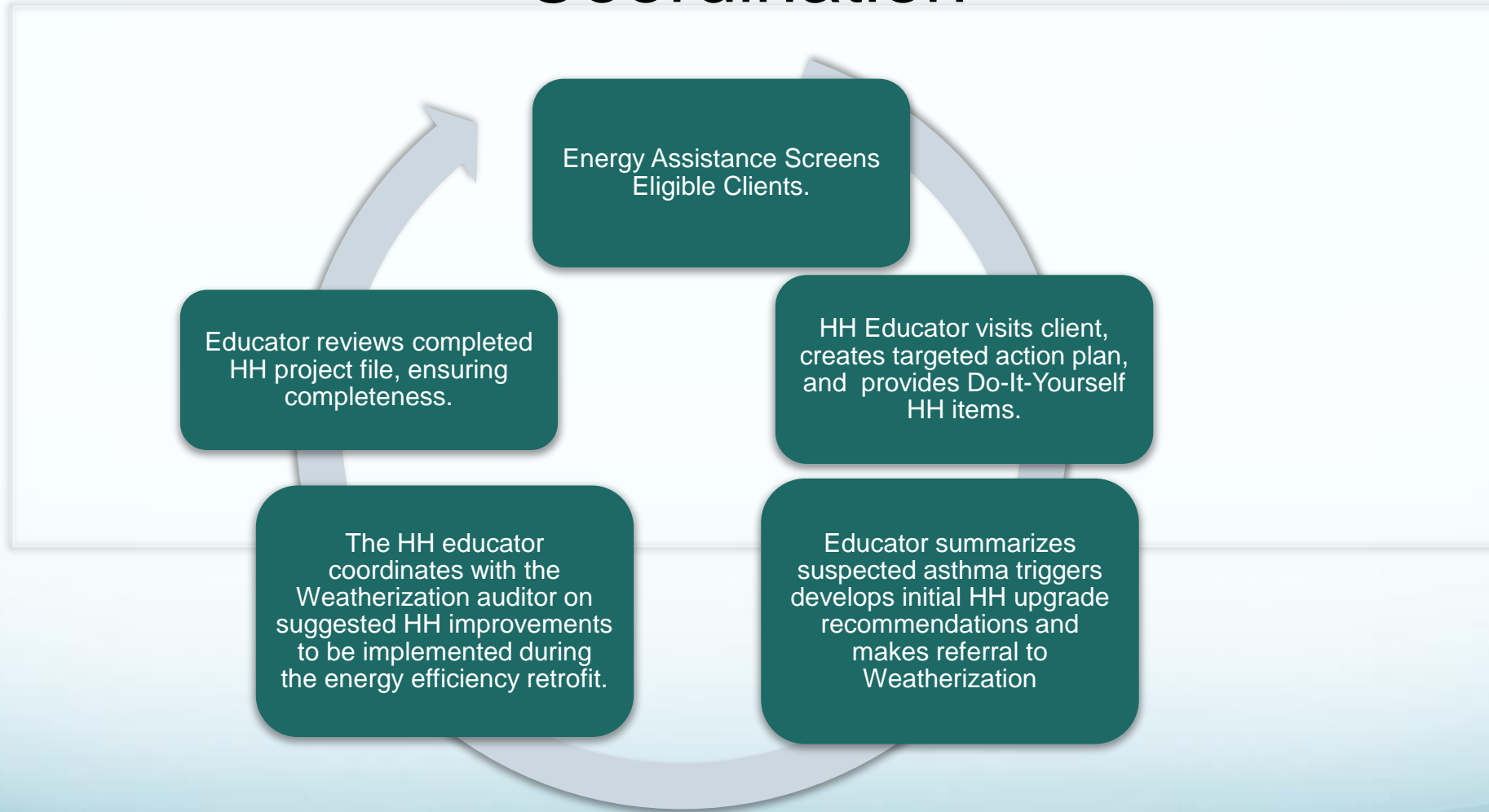
# Estimating Costs

Experience with the WX Plus Health pilot project indicates that roughly 15%-20% of the homes will require this additional level of service.

Our current healthy homes related project costs are approximately \$2,500 per home on top of the weatherization grant.



# Education & Weatherization Coordination



# Funding Possibilities

- Insurance Providers
- State and Federal Dollars
- HB 1720
- Lead Grant
- Private foundation
- Medicaid Transformation
- Social Impact bond. “Pay for Success Financing”

# Additional Funding Strategy

- Transformation Medicaid Waiver Application
  - Leveraging non-Medicaid resources to achieve health and quality of life in for Medicaid's Asthma population
- Advocacy effort by State Community Action network and Asthma Coalitions to provide state funding for Healthy Home education and interventions

# Medicaid Waiver

- Which Medicaid Transformation Goals are supported by this project/intervention?
- ☒ Reduce avoidable use of intensive services
- ☒ Improve population health, focused on prevention
- ☒ Accelerate transition to value-based payment
- ☒ Ensure Medicaid per-capita growth is below national trends

# Community and Inter-agency Partnerships

Energy Assistance

Early Learning and Family Services

Weatherization & Home Repair

Building Performance Center

Whatcom and Island County Health Departments

Northwest Clean Air Agency

Health Ministries Network (interfaith)

Health Clinics

Tribal Representatives

# Implementing *WX Plus* Health

## Essential Ingredients



**Buy-in from Staff & Agency board**

**Technical Expertise and Training**

**Integrated & Efficient Systems**

**Partnerships**

**Funding**

# Challenges

- Communication between referral partnerships and agency
- Condition of low income housing stock
- Information overload. Topics of energy, durability, air quality and healthy living
- Additional credentialing NEHA, HHE
- Trying to make case with insurance providers
- The cost of acquiring program participants is substantial.
- Finding eligible clients in eligible homes is a challenge.
- Deferrals are common, not ample resources for 'Wx' readiness

# Additional Services

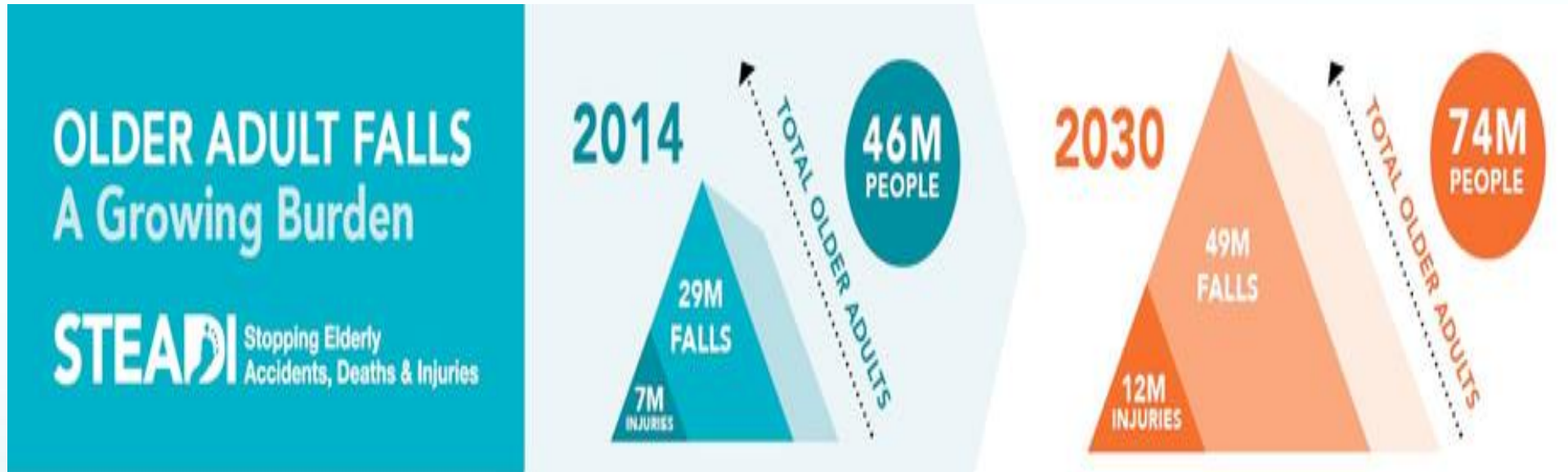
## Fall Prevention

- 2015 Medicare costs for falls alone totaled more than \$31 billion.
- Over 800,000 patients are hospitalized a year because of a fall injury.
- The average hospital cost for a fall injury is over \$30,000.

1. Burns EB, Stevens JA, Lee RL, The direct costs of fatal and non-fatal falls among older adults U.S. J Safety Res 2016:58  
2. Center for Disease Control and Prevention, National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS)

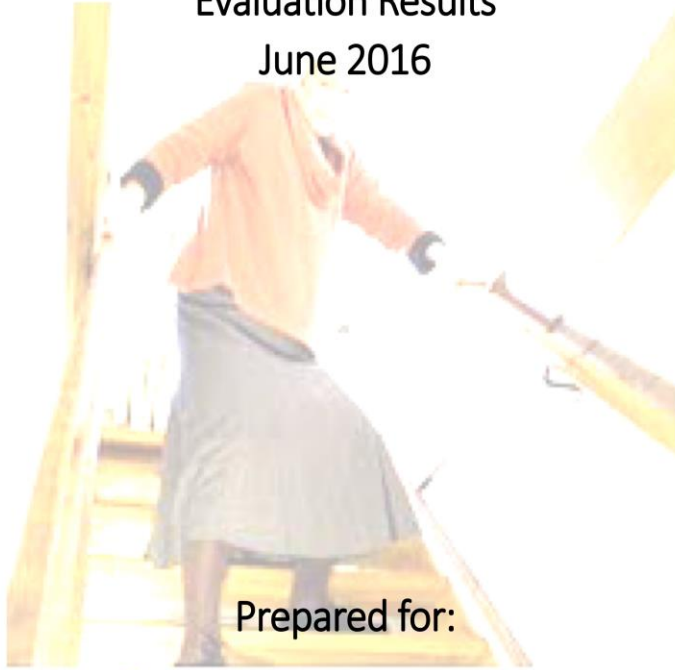


# Older Adults at Fall Risk



# Weatherization Plus Health: Injury Prevention Pilot

Evaluation Results  
June 2016



Prepared for:



Prepared by:



- 49 weatherization clients
- the percentage of clients reporting a fall in the prior six months declined from 94% to 9% following injury prevention work.
- The percentage of clients with a fall requiring assistance also declined (23% to 3%).

Thank you

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Special thanks to John Davies, Director of the Home Improvement Department

Waiver Tool Kit includes:

- Home Environmental Assessment

Open for Public Comment:

- Healthy Home Evaluator (BPI)
- Healthy Home Specialist (NEHA)
- Asthma Educator
- Community Health Care Worker

# Health risks of the families we assist:

- Asthma: children and adults
- Other respiratory illness
- Compromised immune systems
- Chemical sensitivities
- Smokers and exposure to second-hand smoke
- Tripping and falling hazards: elderly

# Eligibility

## Complete Application Questions

Are there any household members with asthma?

Does the person have a confirmed diagnosis of asthma?

Are there any household members with respiratory problems?

Are there any household members with frequent flu like symptoms (running nose, itchy eyes)?

Does anyone in your home have health problems that you feel may be attributed to the indoor environment? If yes explain.

# Healthy Homes Principles

## 7 Elements of a Healthy Home

**The indoor  
environment  
should be...**

**Dry  
Clean  
Well ventilated  
Combustion byproduct free  
Pest free  
Toxic chemical free  
Lead Hazard free**