Welcome to the Webinar

Increasing Community Health Worker Impact by Partnering With Weatherization/Healthy Homes

Moderator: Tracy Washington Enger, U.S. Environmental Protection Agency

Presenters:
• Dr. James Krieger, Chief of the Chronic Disease and Injury Prevention Section of Public Health Seattle & King County
• Mr. Joel Gregory, Weatherization Project Manager, King County Housing Authority, Seattle, WA

Wednesday, September 17, 2014
Webinar 2:00 – 3:00 p.m. EDT
Purpose of Webinar

Learn how to improve asthma control by adding weatherization-plus-health structural interventions to an existing Community Health Worker (CHW) home visit program.

• Understand how an asthma program can incorporate structural weatherization interventions to address environmental triggers.
• Learn about the organizations an asthma program could partner with to provide weatherization.
• Learn how CHW-based asthma programs can be the lead-in to weatherization and healthy homes interventions.
**Agenda**

1. Describe EPA’s Commitment to Reducing Asthma Disparities.

2. Presentations:
   - Dr. James Krieger, Chief of the Chronic Disease and Injury Prevention Section of Public Health Seattle & King County
   - Mr. Joel Gregory, Weatherization Project Manager, King County Housing Authority, Seattle, WA

3. Q&A Session in AsthmaCommunityNetwork.org Discussion Forum
Poll 1

What type of organization do you represent?

POLLING QUESTION 1

- Government Agency: 35%
- Healthcare Provider: 17%
- Weatherization/HH Program: 14%
- Community-based Program: 17%
- Other: 17%
Poll 2

How familiar are you with Weatherization Plus Health interventions?

**POLLING QUESTION 2**

- Very familiar: 19%
- Somewhat familiar: 55%
- Not familiar: 26%
Expanding Leadership. Spreading Best Practices. Connecting Communities.

President’s Task Force on Environmental Health Risks and Safety Risks to Children

Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities
Increasing Community Health Worker Impact by Partnering With Weatherization/Healthy Homes

Joel Gregory
Weatherization Project Manager
King County Housing Authority

Dr. James Krieger
Chief of the Chronic Disease and Injury Prevention Section of Public Health, Seattle and King County
Partners

- King County Housing Authority
- Public Health Seattle/King County
- National Center for Healthy Housing
- Highline School District
- Puget Sound Educational Service District
- Neighborhood House
Funding and Oversight

• HUD Office of Healthy Homes and Lead Hazard Control
• University of Washington Institutional Review Board (IRB)
Asthma Today

1 in 12
About 1 in 12 people (about 25 million) have asthma, and the numbers are increasing every year.

12M
About 1 in 2 people (about 12 million) with asthma had an asthma attack in 2008, but many asthma attacks could have been prevented.

$56 Billion
Asthma cost the US about $56 billion in medical costs, lost school and work days, and early deaths in 2007.
Child Asthma Hospitalizations by ZIP Code, 2005-2009
King County, WA

Legend
Rate per 100,000
- 55.8 - 91.2
- 91.3 - 133.0
- 133.1 - 200.9
- 201.0 - 346.0
- 346.1 - 566.0
- < 20 cases

Asthma Inequities
King County
Highline School District

- 17,614 students
- 10 small cities
- 39 schools
- 125,000 people
- 70 languages
- Puget Sound to the West
- I-5 to the East
- SeaTac Airport in the center
Asthma in Highline School District

- Poverty – 13% vs 8.4% King County
- Children in Poverty – 19.2% vs 9.9%
- Asthma Hospitalization – 260/100K vs 192/100K
Purpose of Study

• Compare outcomes to intervention with CHW home education visits alone
• Reduce asthma triggers in low-income households w/ 1 child w/asthma
• Evaluate impact of energy upgrades on child asthma outcomes
• Demonstrate that weatherization + asthma education has more effective, longer-lasting impact on asthma than education alone
Recruit and Qualify

- Current resident
- English 50%, Spanish 32%, Vietnamese 18%
- One child 3 to 17 years old with asthma
- Not participated in Healthy Homes (HH) in last 3 years
- Not well or very poorly controlled
- HUD and Weatherization income guidelines
- Owner of rental willing to participate
The Team

- 1 CHW
- 1 Wx Intake person
- 1 Energy Auditor/Inspector
- 1 HH Auditor/Inspector
- Data Analysts: National Center for Healthy Housing
- Contractors: Heating, ventilation, Wx, flooring
Asthma Triggers: Major Cause of Asthma

Dust Mites
Mold
Secondhand Smoke
Rodents
Cockroaches
Irritant Chemicals
Pets
Substandard Housing: Major Cause of Exposure to Triggers

Underlying conditions increase triggers

- Leaks
- Drainage problems
- Poor ventilation
- Carpeting
- Structural defects
Weatherization Measures That Address Asthma

- Audit Pollution Source Survey: Biological and Environmental Toxins, Education
- Air sealing: Electrical/plumbing, floor and ceiling
- Ventilation: Strategize with resident
- Insulation: Warming surfaces prevents mold growth
Community Health Worker and Energy Audit/HH Home Visit

- CHW one of four visits
- House complete energy audit + deeper checking for moisture/mold/dust
- Dust collection
Interventions

- Weatherization
- Roach abatement
- Rodent abatement
- Heating system overhaul
- Carpet to hard surface floor
- Mold removal
- Ventilation
Community Health Workers
Bringing Asthma Control Home
Community Health Worker
Home Visits

• 3-5 visits over 1 year

• Assessment
  – Asthma control
  – Trigger control actions
  – Home environment
  – Self-management knowledge and skills

• Self-management support
  – Trigger control
  – Medication use
  – Self-monitoring and action plan
  – Working with medical provider

• Linkage to primary care

• Tenant-landlord communication

• Social support

• Advocacy/referral (housing, food, furniture, jobs, etc.)
CHWs and Their Clients
What is a Community Health Worker?

- Frontline public health worker
- Trusted member with close understanding of community
- Bridge between health & social services and community
- Builds individual and community capacity by increasing health knowledge and self-sufficiency
- A CHW is different from other health professionals:
  - Hired primarily for understanding and connection to populations served
  - Works a significant portion of the time in the community
Community Health Workers

- Lay people from the community
- Share culture, language and life experiences with clients
- Personal experience with asthma
- Skilled at building trusting and supportive relationships with clients
- Bridge between community and service providers
- Receive rigorous and standardized training
Healthy Homes Outcomes

Urgent Care Use

- Symptoms decrease by 25+ days per year
- Quality of life increases
- Urgent health care use decreases 30 - 70%
- Caretaker knowledge and actions increase
- Exposure to triggers decreases
Costs and ROI

- Costs of asthma treatments
  - Home Visits: $1,341/year
  - Inhaled Steroids: Fluticasone 110 ug:
    $2,160/year
  - Xolair: $10,400 - $20,800+

- High vs. Low Intensity projected over 4 years (HH-I)
  - Net savings: $189 - $721

- Medicaid Demonstration Project Preliminary Analysis (annual)
  - Net savings: $14 - $634
  - ROI: 1.3
  - Cost-effectiveness: $18 per symptom-free day
Before

After
Examples of New Flooring
### Average Cost per Unit

<table>
<thead>
<tr>
<th></th>
<th>Single Family</th>
<th>Apartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weatherization</td>
<td>$4,181</td>
<td>$2,243</td>
</tr>
<tr>
<td>Healthy Homes</td>
<td>$3,103</td>
<td>$3,005</td>
</tr>
<tr>
<td>CHW + Supplies</td>
<td>$405</td>
<td>$405</td>
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</tbody>
</table>
## Cost Range ($/dwelling)

<table>
<thead>
<tr>
<th></th>
<th>Apartment</th>
<th></th>
<th>Single-Family</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>HH</td>
<td>Wx</td>
<td>Total</td>
<td>HH</td>
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<tr>
<td>Min</td>
<td>$460</td>
<td>$0</td>
<td>$460</td>
<td>$0</td>
</tr>
<tr>
<td>Med</td>
<td>$2,414</td>
<td>$1,357</td>
<td>$3,888</td>
<td>$2,330</td>
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<tr>
<td>Max</td>
<td>$7,490</td>
<td>$6,612</td>
<td>$12,596</td>
<td>$7,149</td>
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</table>
## Visits and Data Collection

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Enroll Visit Mo 0</th>
<th>Visit 1 Mo 0.5</th>
<th>Visit 2 Mo 1</th>
<th>Visit 3 Mo 4.5</th>
<th>Exit Visit Mo 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signed Consent &amp; HIPAA</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Environ Chklist</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Health Interview Survey</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Wx Audit/Interior Sketch</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allergen Sample Collection</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Education/Supplies</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Weatherization Work Rpt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Education Components & Supplies
Weatherization + Health Work Summary

<table>
<thead>
<tr>
<th>Top 5 HH Tasks</th>
<th>Top 5 Weatherization Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathroom fan timer</td>
<td>Insulate hot water pipes 63%</td>
</tr>
<tr>
<td>Replace carpet</td>
<td>Combustion safety test 45%</td>
</tr>
<tr>
<td>Replace bathroom fan</td>
<td>Reduce air infiltration 45%</td>
</tr>
<tr>
<td>Install CO detector</td>
<td>Install CFLs 40%</td>
</tr>
<tr>
<td>Install smoke detector</td>
<td>Weatherstrip doors 35%</td>
</tr>
</tbody>
</table>
## Asthma Triggers Found

### Study Group: CHW + Weatherization + HH

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Baseline %</th>
<th>Exit %</th>
<th>Change %</th>
<th>Baseline %</th>
<th>Exit %</th>
<th>Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pet</strong></td>
<td>27.1</td>
<td>24.0</td>
<td>-3.2</td>
<td>17.2</td>
<td>29.9</td>
<td>12.7</td>
</tr>
<tr>
<td><strong>Mold</strong></td>
<td>53.5</td>
<td>7.0</td>
<td>-46.5</td>
<td>48.7</td>
<td>21.0</td>
<td>-27.7</td>
</tr>
<tr>
<td><strong>Cockroach</strong></td>
<td>14.3</td>
<td>25.3</td>
<td>11.0</td>
<td>13.1</td>
<td>12.0</td>
<td>-1.2</td>
</tr>
<tr>
<td><strong>Rodents</strong></td>
<td>15.6</td>
<td>2.2</td>
<td>-13.4</td>
<td>6.7</td>
<td>3.5</td>
<td>-3.2</td>
</tr>
<tr>
<td><strong>Smoking</strong></td>
<td>6.9</td>
<td>0.0</td>
<td>-6.9</td>
<td>1.8</td>
<td>3.2</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Trigger</strong></td>
<td>1.8</td>
<td>0.8</td>
<td>-1.0</td>
<td>1.2</td>
<td>0.7</td>
<td>-0.5</td>
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<tr>
<td><strong>Uncontrolled</strong></td>
<td>100</td>
<td>28.8</td>
<td>-71.2</td>
<td>100</td>
<td>51.6</td>
<td>-48.4</td>
</tr>
</tbody>
</table>

### Comparison Group: CHW Home Visits
• Caregiver quality of life improved significantly more in study group (p = 0.002)
• Triggers decreased more in study group (p = 0.089)
Reported Outcomes

- Cleaning results similar in study to comparison
- Weatherization likely reduced asthma triggers
  - Dust mite allergen levels
  - Moisture and water damage
  - Modest decline rodents
- IPM not a formal part of Wx + Health
Strengths and Limitations

+ High retention rate
+ Availability of comparison group
+ Serving vulnerable populations
+ Agency knowledge

- Small sample size
- Restricting qualifications
- Not randomized
- Limited repair funding in Wx
What have we learned from visiting 1,400+ homes?
Implementing Home Visits

• Visitor: CHW with caseload of 50 - 60 clients
  – Shares culture and life experiences
  – Personal or family experience with asthma
  – Well trained: 40 hours initial training, weekly in-service training
  – Well supervised: structured work environment, activity monitoring, clinical backup

• Client: Poorly controlled asthma

• Number of visits: Initial and 3 follow-up

• Visit Content
  – Assessment
  – Medical self-management skills
  – Trigger reduction self-management skills
  – Effective communication with medical provider
Policy Priorities

- Home visits for *all* low-income people with uncontrolled asthma
  - Inclusion as a covered benefit by health plans
  - Incorporation into medical homes
  - Certification of community health workers
  - Development of community capacity to provide home visits
  - *What else?*
Emerging Opportunities

- **ACA**
  - ACOs and CCOs – aligning incentives for use of CHWs?
  - Prevention and Public Health Fund – funding?
  - Community benefits – funding?
  - Patient-Centered Medical Home – integrate CHWs?

- **More...**
  - CMS Medicaid regulation – reimburse for preventive services by unlicensed professionals (including CHWs) recommended by licensed professional
  - Health Impact Bonds
  - 30-day readmission penalty

- **What else?**
Conclusions

• Improved coordination between weatherization and public health programs may result in greater improvements in both the home and the health of children with asthma.
Information

Available upon request: questionnaires, article, brochures

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Discussion with

DR. JAMES KRIEGER &
MR. JOEL GREGORY
Exploring Weatherization + Health in Your Community

What tips can you offer about the day-to-day leadership and communication between your organizations that contributed to making this an effective project between two publicly funded programs?
Exploring Weatherization + Health in Your Community

What do you suggest are steps health and HH professionals can take at the local, state, regional and national levels to carry your results forward to other communities?
Poll 3

Based on what you learned in the webinar, which of the following actions will you prioritize for your program?

POLLING QUESTION 3

- Develop or improve our current Weatherization Plus Health program (14%)
- Develop or improve our current partnerships (53%)
- Improve our data collection and evaluation methods (16%)
- Other (3%)
- None of the above (14%)
Additional Resources

- EPA’s Asthma Change Package: [http://www.asthmacommunitynetwork.org/interact/changepackage](http://www.asthmacommunitynetwork.org/interact/changepackage)
- EPA’s Value Proposition Toolkit: [http://www.asthmacommunitynetwork.org/resources/valueprop](http://www.asthmacommunitynetwork.org/resources/valueprop)
- Community Health Worker Training Resources: [http://www.asthmacommunitynetwork.org/chw_programs](http://www.asthmacommunitynetwork.org/chw_programs)
- Weatherization Plus Health Podcast: [http://www.asthmacommunitynetwork.org/podcasts/episode/14613](http://www.asthmacommunitynetwork.org/podcasts/episode/14613)
Conclusion of the Webinar

Increasing Community Health Worker Impact by Partnering With Weatherization/Healthy Homes

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