Achieving Health and Social Equity through Housing

NAPA Social Equity Panel

October 11, 2019
Our mission
Social Determinants of Health

The social determinants of health are the conditions in which we are born, we grow and age, and in which we live and work. The factors below impact on our health and wellbeing.

- Childhood experiences
- Housing
- Education
- Social support
- Family income
- Employment
- Our communities
- Access to health services

Source: NHS Health Scotland
The Ripple Effects of Childhood Lead Poisoning

Healthcare

Academic Failure

Learning Difficulties

Hyperactivity

Speech Disorders

Childhood Delinquency

Costs to Child's Future

Learning Disabilities

Costs to Society

Health Problems

Hyperactivity

Speech Disorders

Childhood Delinquency

Reduced Intelligence/ Lower IQ Scores

Costs to Child's Future

Behavioral Disorders

Crime in Adulthood

Reduced Intelligence/ Lower IQ Scores

Costs to Society

Health Problems

Behavioral Disorders

Crime in Adulthood

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Juvenile Justice

Health Problems

Behavioral Disorders

Crime in Adulthood

Reduced Intelligence/ Lower IQ Scores

Juvenile Justice

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Lead-Based Paint

Although the CDC defines an elevated blood level as ≥5μg/dL, there is no safe blood lead level for children.

Lead poisoned children are

6x more likely to become involved in the juvenile justice system

7x more likely to drop out of school

24 MILLION ESTIMATED NUMBER OF HOUSING UNITS WITH SIGNIFICANT LEAD-BASED PAINT HAZARDS
GHHI’s Background - Lead Poisoning Prevention Impact in Maryland

Lead poisoning cases in Maryland continue to drop

Baltimore (AP) — State environmental officials say the number of childhood lead poisoning cases in Maryland has dropped to its lowest level since testing was implemented nearly 25 years ago.

98% Reduction in Childhood Lead Poisoning

$44.5 Billion Returned to the Maryland Economy (Duke University)
What are health inequities?

“Health inequities are systematic differences in opportunities by which groups can achieve optimal health, leading to unfair and avoidable differences in health outcomes.”
Impact of Poor Quality Housing
The Burden of Unhealthy and Energy Inefficient Homes

- 30M families live in unhealthy homes
- Homes with environmental hazards are making their residents sick
- 14.4M missed days of school each year
- Asthma is the top reason students miss school
- 14.2M missed days of work each year
- Collateral burden of sick children is missed days of work for parents and caretakers
- Low income families spend 20% of monthly income on energy costs
- 3.5% in other households
- Over $155B in economic costs related to these hazards each year
- $81B+ spent on asthma
- $31B+ spent on slip & fall injuries
- $43B+ spent on lead poisoning
- $31B+ spent on slip & fall injuries
- $81B+ spent on asthma
Impacts of Energy Insecurity

- **Energy Insecurity**
- **Housing Instability**
- **High Household Mobility (frequent moves)**

**Economic Impacts**
- Reduced productivity
- Lower job security
- Fewer benefits
  - Paid time off
  - Health insurance

**Health Impacts**
- Exposure to environmental hazards
  - Lead based paint
  - Asthma triggers
- Mental health conditions
  - Stress
  - Anxiety
  - Depression
- Childhood stress
  - Chronic health conditions

**Education Impacts**
- Poor grade level performance
- Lower graduation rates
- Lost earning potential
The GHHI Model: “No Wrong Door”

**Align**
services & funding

**Braid**
relevant resources

**Coordinate**
service delivery

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Philanthropy

Government

Private-sector

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**System**
- Single intake system
- Comprehensive assessment
- Coordinate services
- Integrated interventions
- Cross-trained workers
- Shared data

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**Outcomes**
- Lead-hazard reduction
- Asthma-trigger control
- Household injury prevention
- Energy efficiency
- Weatherization
- Housing rehabilitation
Building a National Movement for Equity

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GHHI’s Research into Health and Energy Equity

- **2009**: Identified Barriers and Opportunities to Make Housing Green and Healthy Through Weatherization
- **2010**: Launched GHHI integrated service model
- **2013**: Federal Healthy Homes Interagency Work Group Advancing Healthy Housing: A Strategy for Action
- **2014**: HUD General Program NOFA providing Priority Points for comprehensive, integrated health and energy approach in HUD funded housing; HUD HHRS
- **2015**: DOE Weatherization Plus Health initiative and 11-6 Policy Guidance
- **2016**: Non-Energy Benefits of Energy Efficiency and Weatherization Programs in Multifamily Housing: the Clean Power Plan and Policy Implications
- **2017**: Weatherization and Its Impact on Occupant Health Outcomes
- **2018**: The State of Equity Measurement: A background review for energy-efficiency programs
- **2019**: Achieving Health Equity through Housing: Understanding Non-Energy Benefits in the United States
Exploring Equity with GHHI’s Recent Publications

Achieving Health and Social Equity through Housing: Understanding the Impact of Non Energy Benefits in the United States

• Paper is available for download

Publication coming soon: Recommended Metrics for Asthma Programs with Environmental Management Services – Abstract/summary can be found here
Non-Energy Benefits

International Energy Agency defines non-energy benefits as… "the wider socio-economic outcomes that can arise from energy efficiency improvement, aside from energy savings."

Non-Energy Benefits are also known as:

- Multiple Benefits
- Co-benefits
- Non-energy impacts
- Net Benefits
Pathway Linking NEBs and SDOH

Investments in energy efficiency in low-income housing can improve housing affordability, home environmental health, and increase access to healthier choices for families.
Affordable Housing Shortage

Only 35 affordable units for every 100 extremely low income households

Poor quality housing with hazardous conditions is increasingly common for low and moderate income households due to the limited availability of affordable housing stock.

71% extremely low income households spend more than 50% of income on rent + utilities

Deferred maintenance is one of the primary causes of unhealthy housing.

Coupled with energy cost burdens from poorly weatherized conditions, which exasperate budgets and health conditions, families become destabilized.


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Environmental Health Hazards in Housing

**INDOOR AIR QUALITY**
- Combustion Gases & Ventilation
- Volatile Organic Compounds
- Radon
- Environmental Tobacco Smoke

**COMFORT & SAFETY**
- Thermal Comfort
- Home Safety: Unintentional Injury and Fall Prevention
- Fire Safety

**INDOOR ENVIRONMENTAL ASTHMA TRIGGERS AND ALLERGENS**
- Biological and Unsanitary Conditions
- Pest Management

**LEAD-BASED PAINT/LEAD-SAFE WEATHERIZATION PRACTICES**

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**Home Intervention** | **Output** | **Outcome** | **Healthy People 2020 Indicator** | **Social Determinants of Health**
Thermal Comfort

EXTREME HEAT

EXTREME COLD

HEALTH EFFECTS

- Known to cause thermal stress, related to increased mortality rates
- Elderly and individuals in poor health known to be more vulnerable
- Extreme heat and high humidity can exacerbate cardiovascular disease, diabetes, respiratory problems, hypertension
Unintentional Injury Prevention

YOUNG CHILDREN

Annual average of 30,000+ unintentional injury deaths occurring in the home environment

OLDER ADULTS

Falls are the leading cause of home injury deaths

<table>
<thead>
<tr>
<th>Intrinsic Risk Factors</th>
<th>Extrinsic Risk Factors</th>
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<tbody>
<tr>
<td>Advanced age</td>
<td>Lack of stair handrails</td>
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<tr>
<td>Previous falls</td>
<td>Poor stair design</td>
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<tr>
<td>Muscle weakness</td>
<td>Lack of bathroom grab bars</td>
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<tr>
<td>Gait &amp; balance problems</td>
<td>Dim lighting or glare</td>
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<tr>
<td>Poor vision</td>
<td>Obstacles &amp; tripping hazards</td>
</tr>
<tr>
<td>Postural hypotension</td>
<td>Slippery or uneven surfaces</td>
</tr>
<tr>
<td>Chronic conditions including arthritis, diabetes, stroke, Parkinson's, incontinence, dementia</td>
<td>Psychoactive medications</td>
</tr>
<tr>
<td>Fear of falling</td>
<td>Improper use of assistive device</td>
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## Indirect Impacts on Residents

<table>
<thead>
<tr>
<th>Residential Stability</th>
<th>Mental Health</th>
<th>Performance and Productivity</th>
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</thead>
<tbody>
<tr>
<td>Tenant satisfaction with affordability and quality reduces frequency of moves</td>
<td>Substandard housing and economic burdens impact mental health (stress, anxiety, depression)</td>
<td>Residential stability has positive relationship with school attendance and performance</td>
</tr>
<tr>
<td>Energy affordability and environmental health quality improve perception of housing value</td>
<td>Stress can impact asthma maintenance, early childhood development</td>
<td>Academic performance improved through lead hazard control (higher graduation rates)</td>
</tr>
<tr>
<td>Fewer moves improve economic security and mobility</td>
<td>Increased affordability of utilities can reduce tradeoffs for food and healthcare purchases</td>
<td>Academic performance improved through asthma control (higher attendance and grade level reading)</td>
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## Community & National Benefits

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>Community Resilience</th>
<th>Macro Economic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Higher economic security related to lower rates of heat or eat tradeoffs</td>
<td>• An area’s ability to thrive rather than survive</td>
<td>• Green job creation</td>
</tr>
<tr>
<td>• Greater economic security increases healthy options (i.e. retention of grocery stores)</td>
<td>• Reduced stress, increased ability to recover from emergencies &amp; disasters</td>
<td>• Increased investments in housing market</td>
</tr>
<tr>
<td></td>
<td>• Ability to be disaster ready and prepare for climate change</td>
<td>• Increased property values</td>
</tr>
</tbody>
</table>

In 2008, WAP created:

- 8,560 fulltime jobs
- $476 million in annual incomes
- $1.22 billion of economic output
Current Efforts to Promote Equity with Housing
GHHI Healthy Homes Services

Assessment Team

• Environmental Health Educator
• Environmental Assessor / Energy Auditor

Comprehensive Scope of Work

Cross-Trained Inspectors and Contractors

• Lead Hazard Control
• Weatherization
• Mold remediation
• Integrated pest management: gel baits, glue traps, reducing entry points, cleaning/behavioral change
• Venting kitchen, bathroom, and dryer
• Removal or steam cleaning of carpets
• Air filtering system installed in child’s bedroom
• Air conditioners and dehumidifiers
• Structural repairs (e.g. plumbing, patching, carpentry)
• Injury Prevention (e.g. fall for older adults)
• Quality Assurance / Quality Control Assessment
National Campaign to End Lead Poisoning

- Lead-Free Future Act – introduced by Congressman Jared Golden
  - $12 B in Lead Clean-Up Grants over 5 years ($2.4 B annually)
  - $500 M over 5 years for the CDC

- Opportunity Zone Lead Remediation Impact Act of 2019 – Introduced by Congressman Elijah Cummings
  - Developers that invest in opportunities donate at least 2% of their investment into a lead hazard remediation fund

- GET THE LEAD OUT – Introduced by Congressman Tim Ryan
  - $100 B to remove lead pipes and lead paint from homes across the US
Empowering local stakeholders

- Lead Catalytic Awards
- Lead Summit 2.0
- Continued Federal, State and Local Policy Advocacy – HUD Budget
- Lead Toolkit Release

- Identified Over 40 funding sources supporting lead hazard reduction directly
- Potential users, unmet needs, additional data sources
- Real world examples, strategic implementation guidance, and categorize by source and needs
Energy Efficiency and Health Projects

• ComEd’s Healthy Homes Pilot
  • Partnership between Elevate Energy, Presence Health, ComEd, and GHHI
  • Coordinating a home-based asthma services program with ComEd’s income-eligible multifamily energy efficiency program
  • Developing pilot to deliver coordinated intervention to 20 families in at least 2 multifamily buildings

• Tennessee Valley Authority
  • Invested in reducing the number of deferrals due to health and safety hazards

• Energy Efficiency for All
  • Partnership across 12 states to increase the support for energy efficiency in low-income, multifamily residential buildings
  • Exploring opportunities to alter policies and practices at the state- and local-level that foster a more seamless ability to connect energy efficiency and healthy homes
Advising Anchor Institutions

- Penn Medicine Lancaster General Hospital
  - Lancaster County’s largest health system
  - Recently selected lead hazards in housing as a priority area for investment in addressing Social Determinant of Health, to improve long term outcomes for their patient population
  - Working with GHHI to determine the landscape of lead poisoning prevention resources and needs in the County, and plan for an investment that maximizes impact and leverages existing resources
- UMass Memorial
- Boston Medical
- Amita
- LeBonHeur
- Erlanger
Working with States to Make Meaningful Investments

GHHI is a technical advisor to New Jersey on implementation of our 2018 New Jersey Lead Poisoning Prevention Action Plan.

New Jersey Governor announced plan to seek $500 million bond to replace full lead service lines and remediate lead-based paint hazards statewide.

Paired with:

• Mandated lead inspection and disclosure at point of sale, including paint and drinking water.
• Certification of lead safety for rental properties.
• Development of the state’s lead remediation workforce.
• Mandated blood lead testing for school entry.
Coordination of State Resources
New York

**Goal**
Build capacity for services throughout the state and design an integrated delivery model

**Outcome**
Reduce energy usage, asthma episodes, household injury and lead poisoning and related energy and medical costs

**Approach**
Evaluate the possibility of supporting energy, health and housing services through sustainable public and private funding.

**Commitment**
$10,000,000 in NYSERDA funding for pilot implementation

**Partners**
NYSERDA, NYSDOH, NYHCR
Coordination of State Resources
Connecticut example
Innovative Healthcare Financing

- Allegheny County - UPMC and Allegheny Co. Health Department
- Baltimore - Priority Partners MCO
- Buffalo - Oishei Children’s Hospital and IHA MCO
- Chattanooga - green|spaces and Erlanger Children’s hospital
- Chicago - Presence Health, Elevate Energy, & NextLevel MCO
- Cincinnati - People Working Cooperatively
- Connecticut Medicaid and CT Greenbank
- Grand Rapids - Priority Health MCO, Healthy Homes Coalition of West Michigan, HealthNet of West Michigan
- Houston - UnitedHealthcare & Baylor
- Houston - Community Health Choice MCO
- Indiana - Indiana Joint Asthma Coalition
- Iowa – Healthy Homes Des Moines and IME (Iowa Medicaid)
- Marin - Contra Costa Health Services & MCE
- Memphis - Le Bonheur Children’s Hospital & UnitedHealthcare, Amerigroup, and BlueCare
- Minneapolis - MN Energy Efficiency For All
- New York City - Affinity Health Plan, AIRnyc, & AEA
- New York City - LISC and Healthfirst MCO
- New York Medicaid and NYSERDA
- Oregon - Community Services Consortium
- Philadelphia - National Nursing Care Consortium
- Richmond City Health District and DMAS (VA Medicaid)
- Rhode Island - State Medicaid and Integra Accountable Entity
- San Antonio - SA Asthma Collaborative
- Salt Lake - University of Utah Health Plans and Salt Lake County
- Springfield - Health New England MCO, Baystate Health, Public Health Institute of Western Mass
- Worcester - UMass Memorial Hospital
### Incorporating Healthcare Resources:
Developing an Innovative Healthy Homes Funding Toolbox

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Example States</th>
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<tbody>
<tr>
<td><strong>Hospital Community Benefits</strong></td>
<td>Assessment and remediation of asthma hazards (pilot)</td>
<td>Chicago</td>
</tr>
<tr>
<td><strong>CHIP State Plan Amendment</strong></td>
<td>$119M to remediate lead hazards</td>
<td>Michigan, Maryland</td>
</tr>
<tr>
<td><strong>Medicaid Managed Care Organizations</strong></td>
<td>Assess and remediation of asthma triggers (pilot)</td>
<td>Michigan, Maryland, Utah</td>
</tr>
<tr>
<td><strong>Medicaid Home &amp; Community Based Services</strong></td>
<td>Home accessibility modifications</td>
<td>Most states</td>
</tr>
<tr>
<td><strong>Medicaid Demonstration Waivers (1115)</strong></td>
<td>‘flexible services’ includes air conditioners for asthmatics</td>
<td>Oregon, North Carolina</td>
</tr>
<tr>
<td><strong>Medicare Advantage</strong></td>
<td>‘supplemental benefits’ includes home repairs for fall prevention</td>
<td>St. Louis</td>
</tr>
</tbody>
</table>
CHIP Health Service Initiative
Maryland example

• Medicaid/CHIP children with EBL or moderate to severe asthma qualify for environmental case management program conducted by local health departments
• Each year, the State share is $860,000 ($360,00 from MDH-GHIII contract) and federal share $6,340,000
• $14.4 million 2017-2019
• EBL children receive lead hazard reduction
• Health Service Initiatives fit within a state’s CHIP administrative budget 10% cap
• GHII provides training to local health departments who are implementing the environmental case management program
Innovative Funding Models

Fig. 1 Lead Fund Concept

1) Capitalize fund

State Share (one-time appropriation)

Private Capital (upfront grants, loans)

Lead Poisoning Prevention Fund

2) Disburse funds to state and local lead programs

3) Fund revenue recycled back into the fund

4) Fund revenue streams pay back investors and recycle back into the fund to grow program scale

State administered programs
- Home Repair Fund
- LHC Gap Funds
- Education and Workforce
- Education and Workforce
- Education and Workforce

Local administered programs
- Rental Certification
- EPA RRP Enforcement
- Property Tax Increment Financing
QUESTIONS?

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