



Green & Healthy
Homes Initiative®



Achieving Health and Social Equity through Housing

NAPA Social Equity Panel

October 11, 2019

Our mission



Social Determinants of Health



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

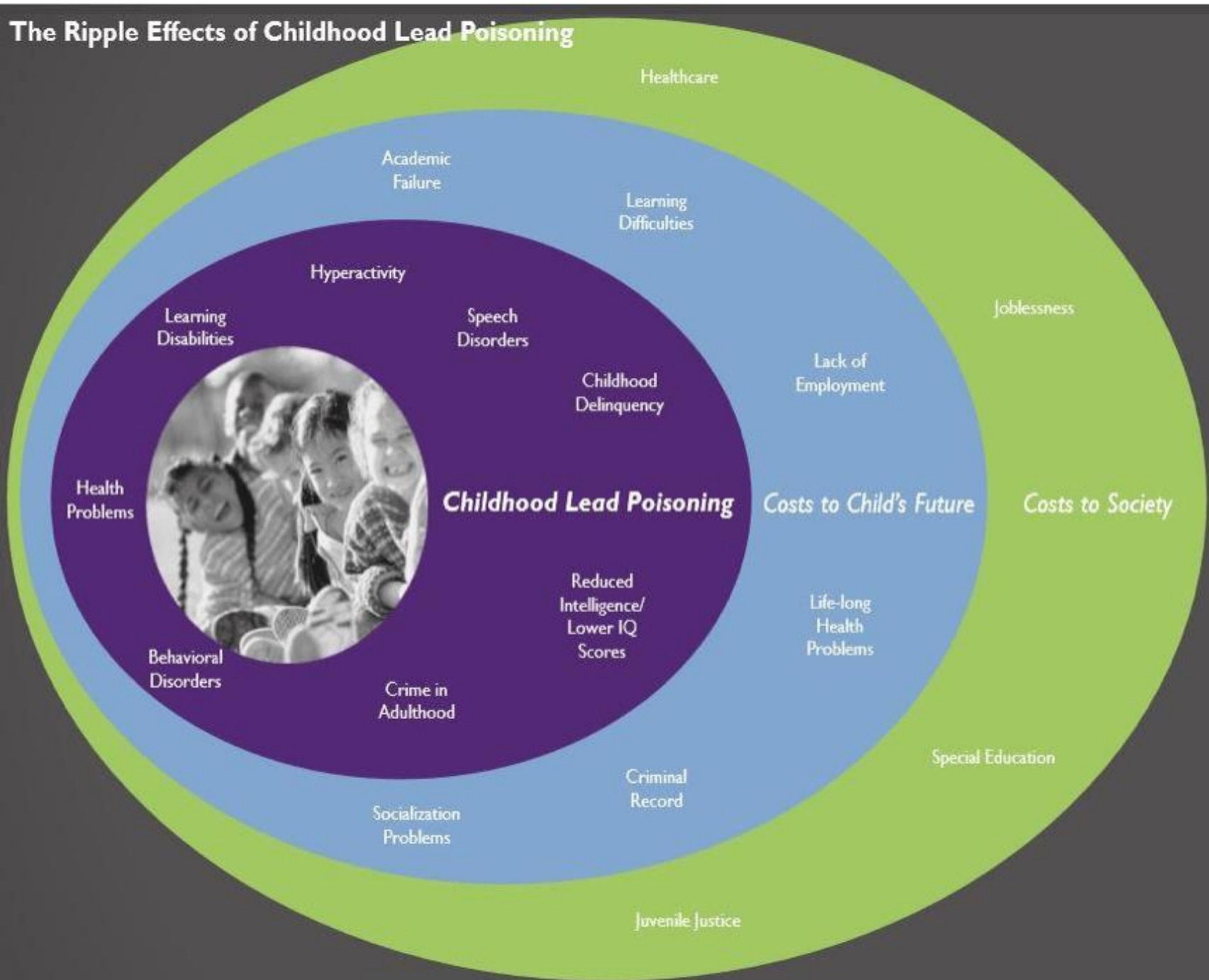


Access to health services

Source: NHS Health Scotland



The Ripple Effects of Childhood Lead Poisoning





Although the CDC defines an elevated blood level as $\geq 5\mu\text{g}/\text{dL}$, there is no safe blood lead level for children

lead poisoned children are



more likely to become involved in the juvenile justice system



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

AP By The Associated Press
October 25, 2017 2:26 pm

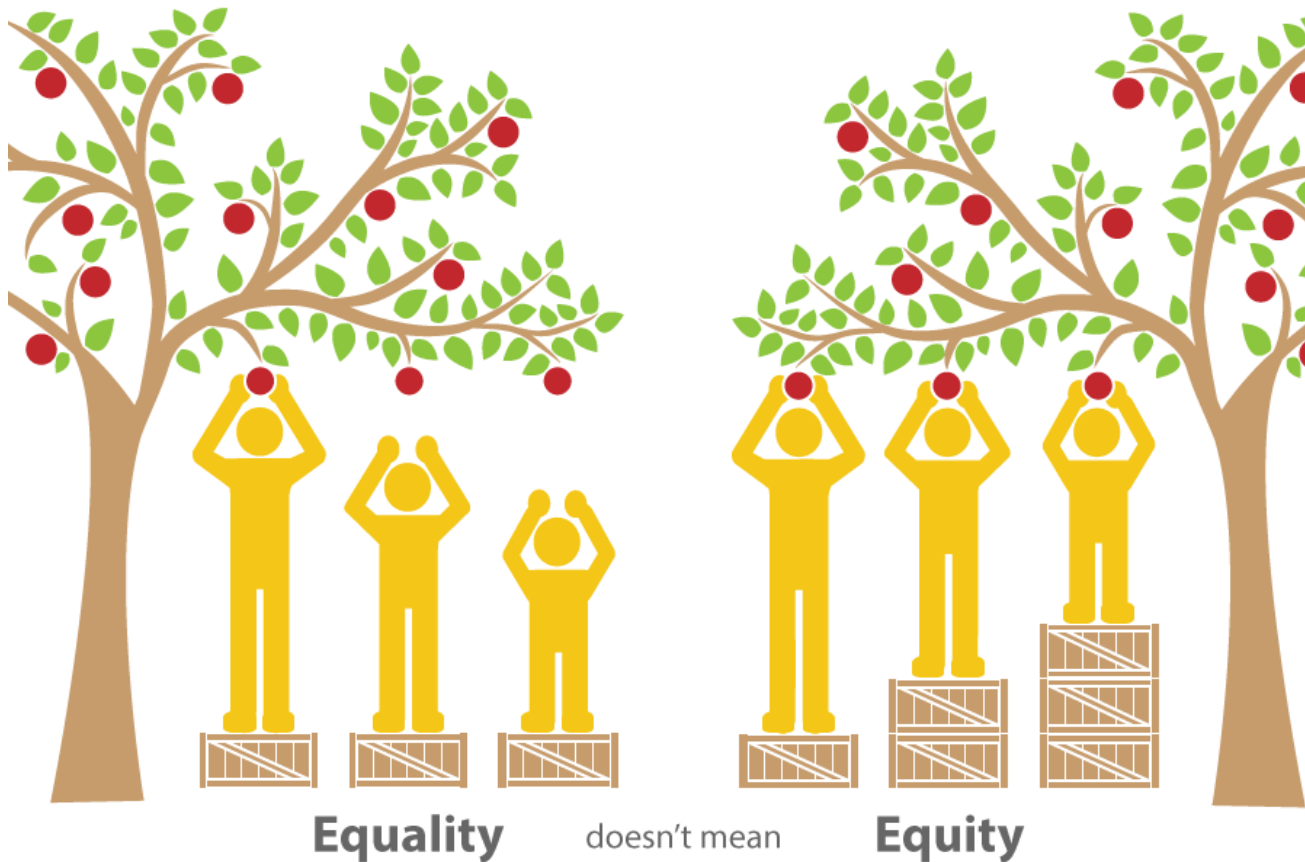
BALTIMORE (AP) — State environmental officials say the number of childhood lead poisoning cases in Maryland has dropped to its lowest level since testing was implemented nearly 25 years ago.

98% Reduction in
Childhood Lead Poisoning



\$44.5 BILLION
RETURNED TO THE MARYLAND
ECONOMY (DUKE UNIVERSITY)

What are health inequities?



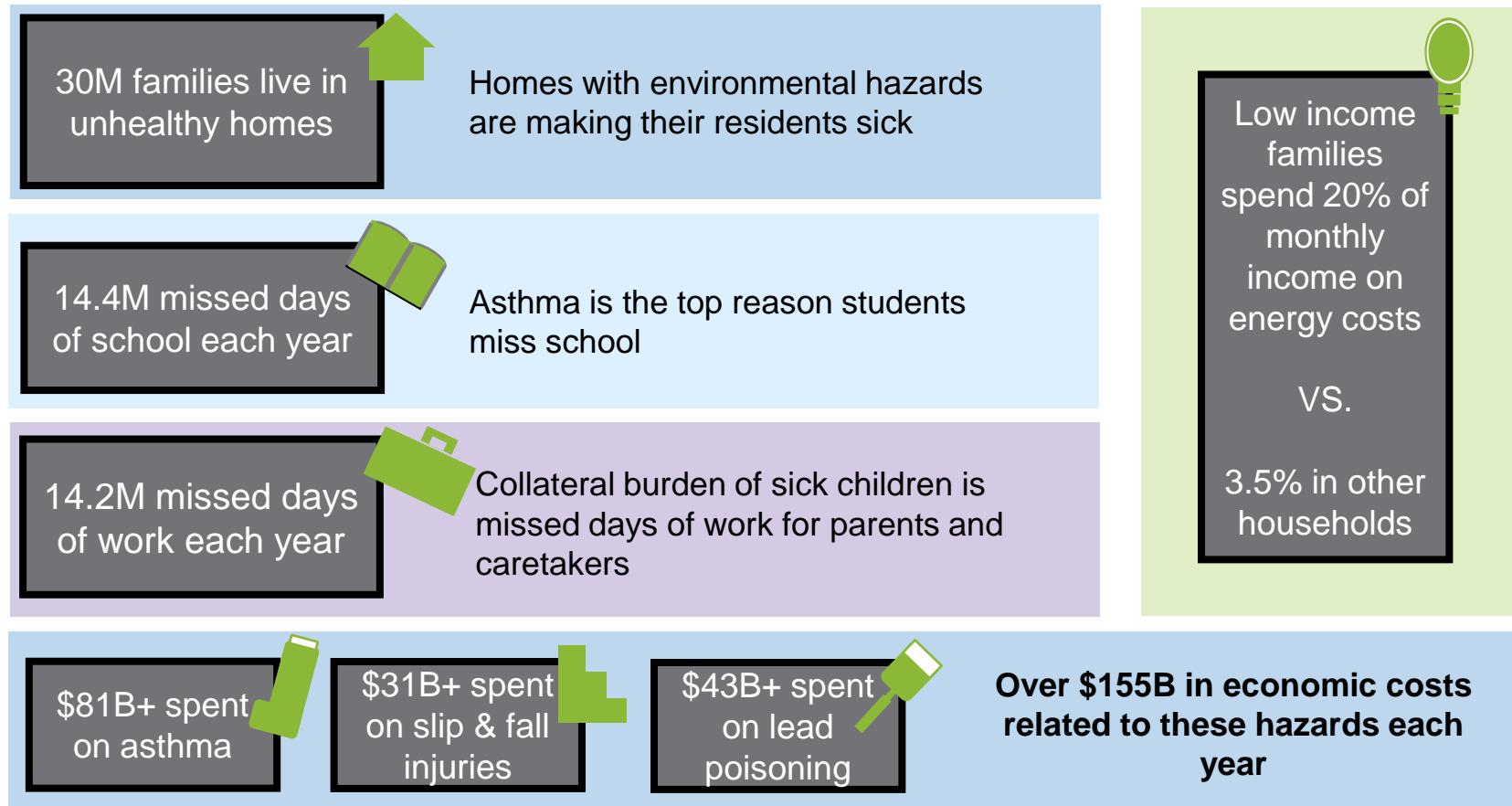
“Health inequities are systematic differences in opportunities by which groups can achieve optimal health, leading to unfair and avoidable differences in health outcomes.”



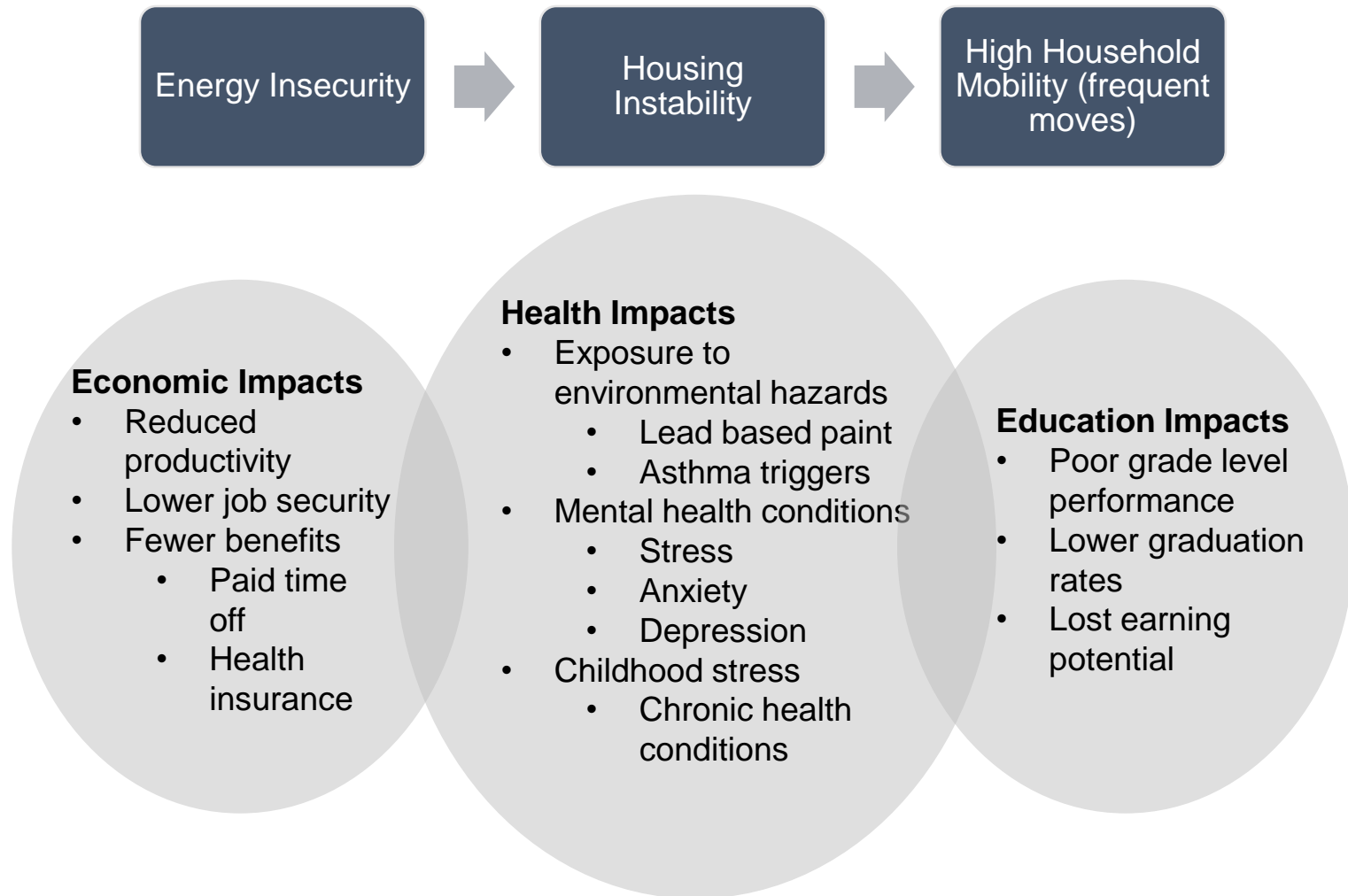
Impact of Poor Quality Housing



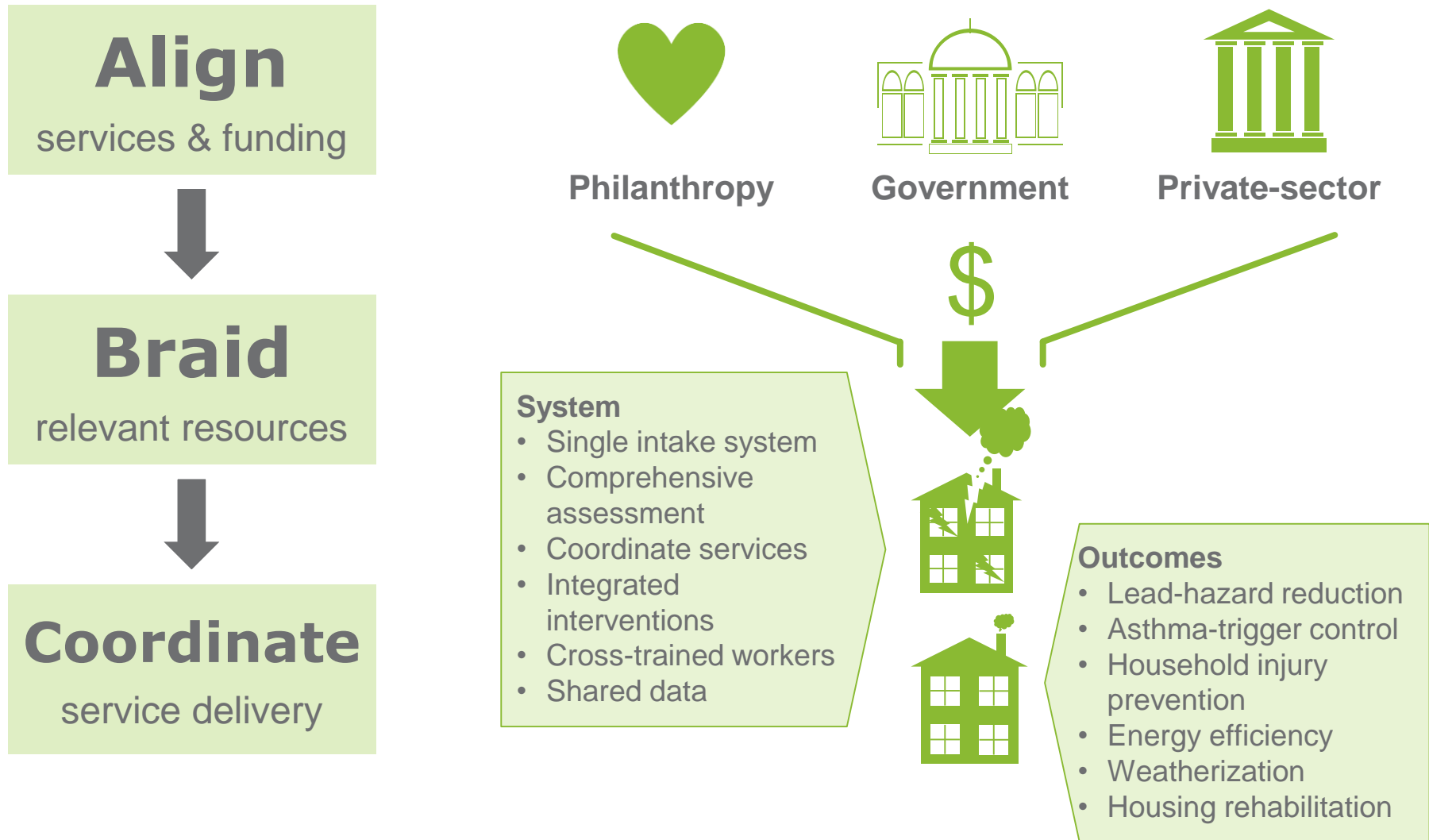
The Burden of Unhealthy and Energy Inefficient Homes



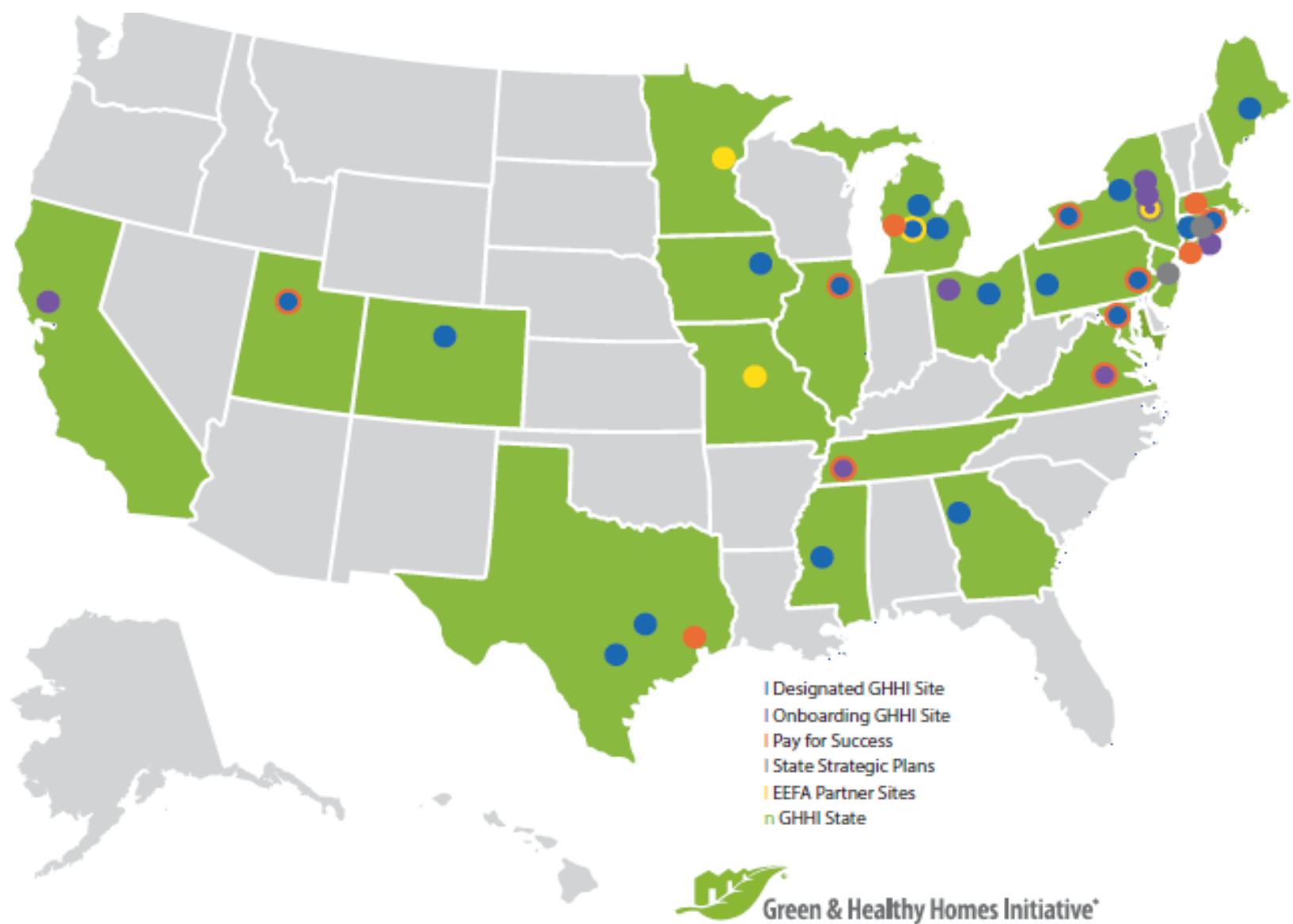
Impacts of Energy Insecurity



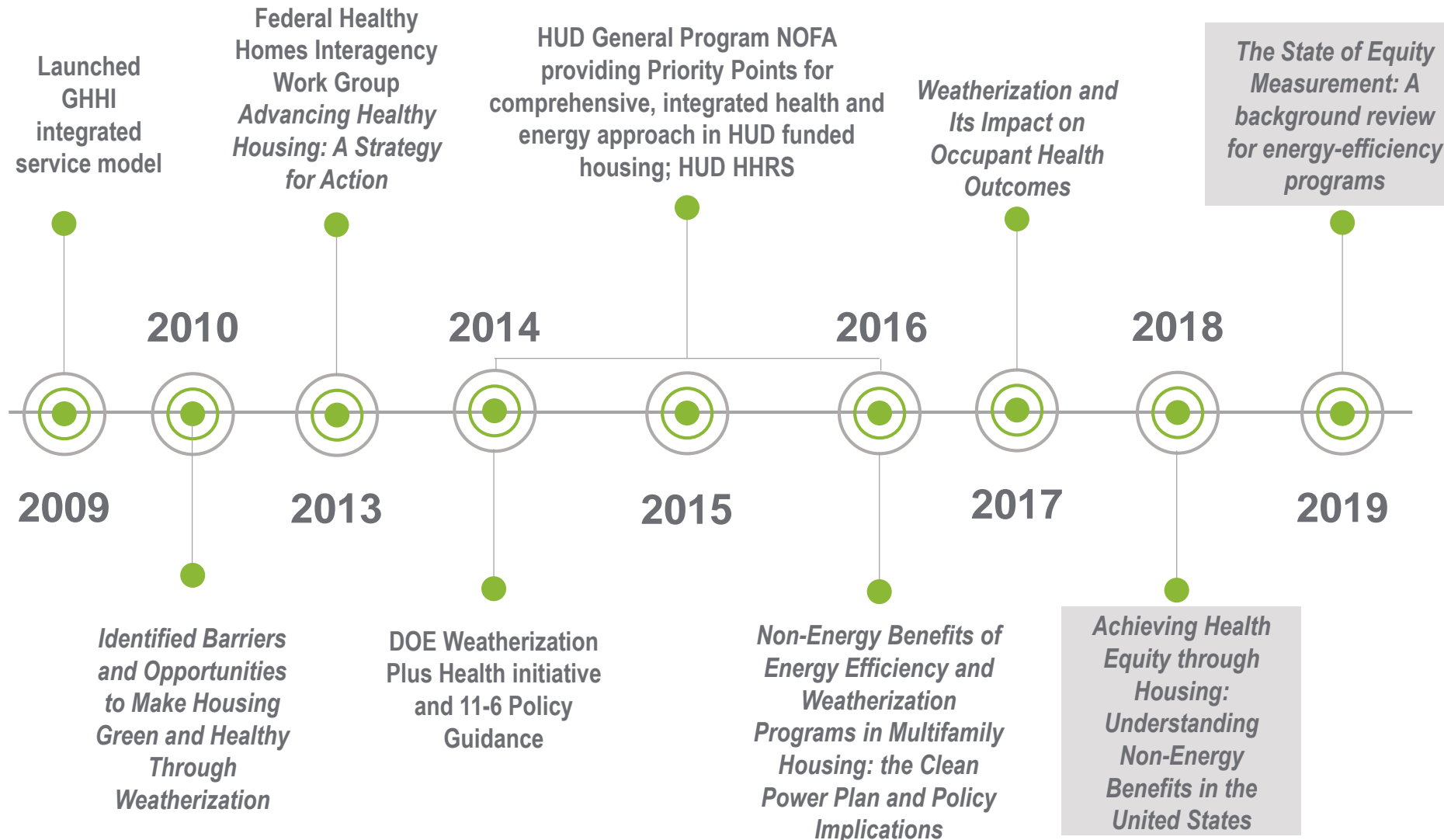
The GHHI Model: “No Wrong Door”



Building a National Movement for Equity



GHHI's Research into Health and Energy Equity



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

 Green & Healthy Homes Initiative



- Paper is available for [download](#)



- 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.

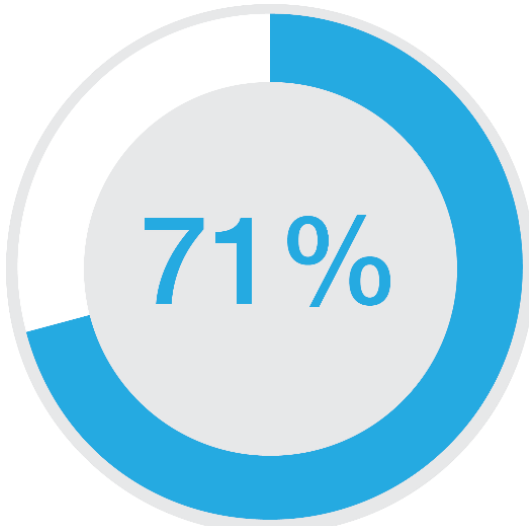


Affordable Housing Shortage



Only 35 affordable units for every 100 extremely low income households

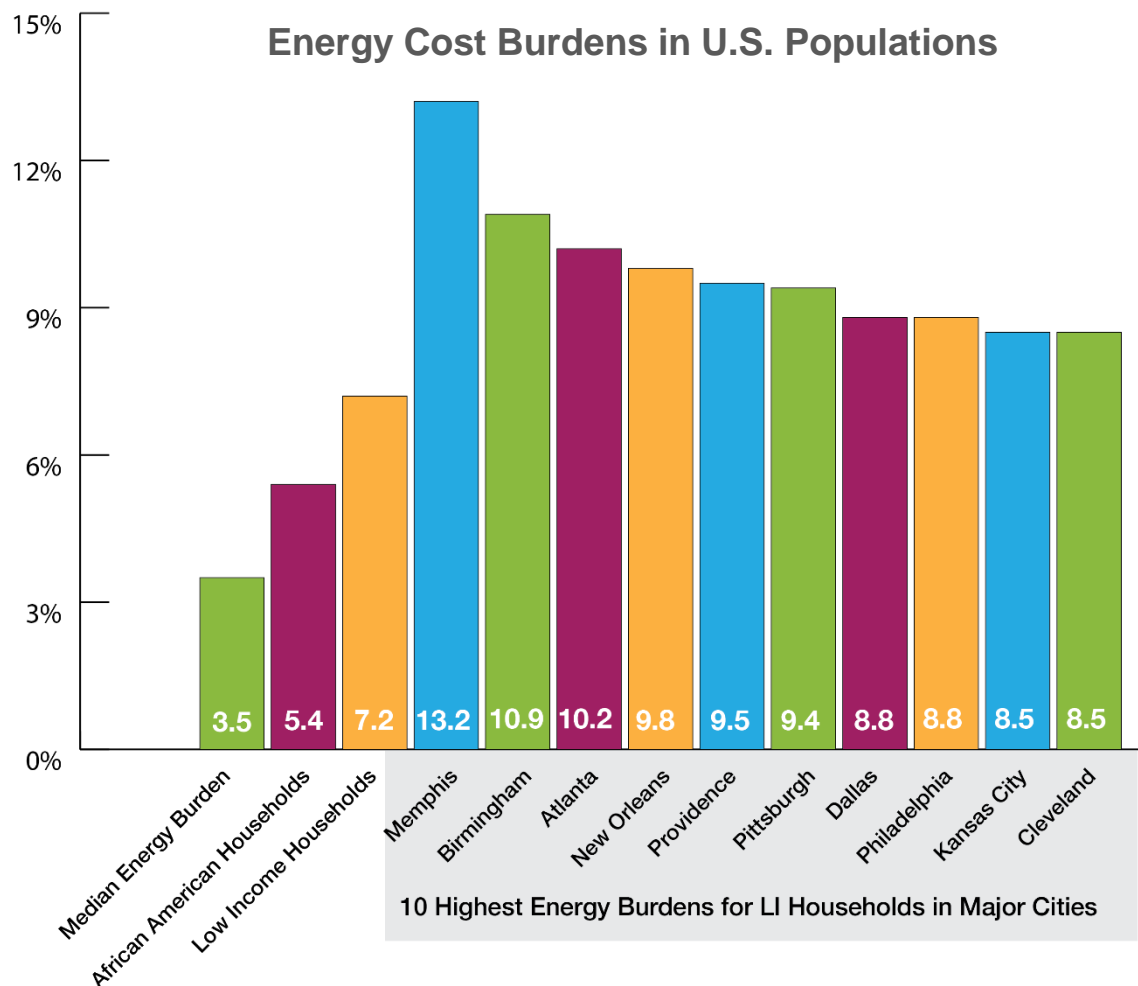
Poor quality housing with hazardous conditions is increasingly common for low and moderate income households due to the limited availability of affordable housing stock.



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

Source: Andrew Aurand, Dan Emmanuel, Diane Yentel, and Ellen Errico. “The Gap: A Shortage of Affordable Homes.” National Low Income Housing Coalition (March 2017). <http://nlihc.org/research/gap-report>

Inefficient & Unaffordable Housing



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.

2.2 million
households experienced utility interruption in 2013

Sources: Ariel Dreihobl and Lauren Ross. Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities. *American Council for an Energy-Efficient Economy* (April 2016) ; 2013 American Housing Survey.

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





Thermal Comfort

EXTREME HEAT

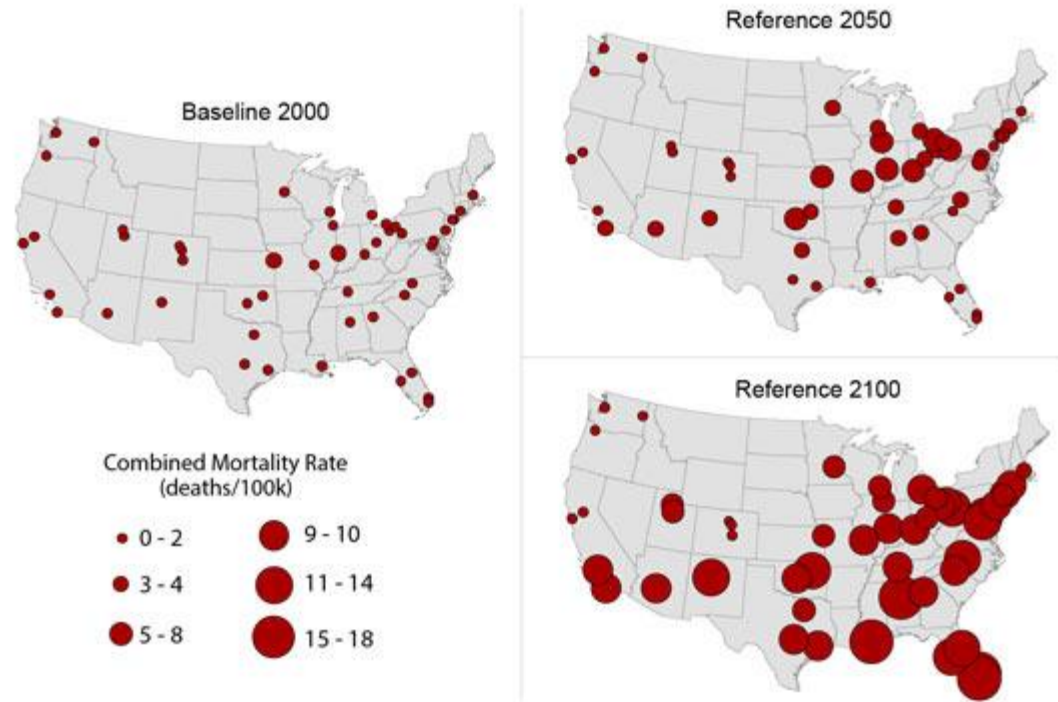
EXTREME COLD

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

Projected Extreme Temperature Mortality in Select Cities Due to Unmitigated Climate Change

Estimated net mortality rate from extremely hot and cold days (number of deaths per 100,000 residents) under the Reference scenario for 49 cities in 2050 and 2100. Red circles indicate cities included in the analysis; cities without circles should not be interpreted as having no extreme temperature impact.



For more information, visit EPA's "Climate Change in the United States: Benefits of Global Action" at www.epa.gov/cira.

Unintentional Injury Prevention



YOUNG CHILDREN

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

Falls are the leading cause of home injury deaths

OLDER ADULTS

| Intrinsic Risk Factors | Extrinsic Risk Factors |
|---|----------------------------------|
| Advanced age | Lack of stair handrails |
| Previous falls | Poor stair design |
| Muscle weakness | Lack of bathroom grab bars |
| Gait & balance problems | Dim lighting or glare |
| Poor vision | Obstacles & tripping hazards |
| Postural hypotension | Slippery or uneven surfaces |
| Chronic conditions including arthritis, diabetes, stroke, Parkinson's, incontinence, dementia | Psychoactive medications |
| Fear of falling | Improper use of assistive device |

Source: Centers for Disease Control. Risk Factors for Falls. https://www.cdc.gov/steady/pdf/risk_factors_for_falls-a.pdf



Indirect Impacts on Residents

| Residential Stability | Mental Health | Performance and Productivity |
|--|---|---|
| <ul style="list-style-type: none">▪ Tenant satisfaction with affordability and quality reduces frequency of moves▪ Energy affordability and environmental health quality improve perception of housing value▪ Fewer moves improve economic security and mobility | <ul style="list-style-type: none">▪ Substandard housing and economic burdens impact mental health (stress, anxiety, depression)▪ Stress can impact asthma maintenance, early childhood development▪ Increased affordability of utilities can reduce tradeoffs for food and healthcare purchases | <ul style="list-style-type: none">▪ Residential stability has positive relationship with school attendance and performance▪ Academic performance improved through lead hazard control (higher graduation rates)▪ Academic performance improved through asthma control (higher attendance and grade level reading) |



Neighborhood

- Higher economic security related to lower rates of heat or eat tradeoffs
- Greater economic security increases healthy options (i.e. retention of grocery stores)

Community Resilience

- An area's ability to thrive rather than survive
- Reduced stress, increased ability to recover from emergencies & disasters
- Ability to be disaster ready and prepare for climate change

Macro Economic Growth

- Green job creation
- Increased investments in housing market
- Increased property values

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



**Strategic Plan to
End Childhood Lead Poisoning**

A Blueprint for Action



Green & Healthy Homes Initiative®



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

Public Data Sources



• Potential users, unmet needs, additional data sources

Key Stakeholder Insights



• Real world examples, strategic implementation guidance, and categorize by source and needs

Develop Roadmap





- 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



- 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

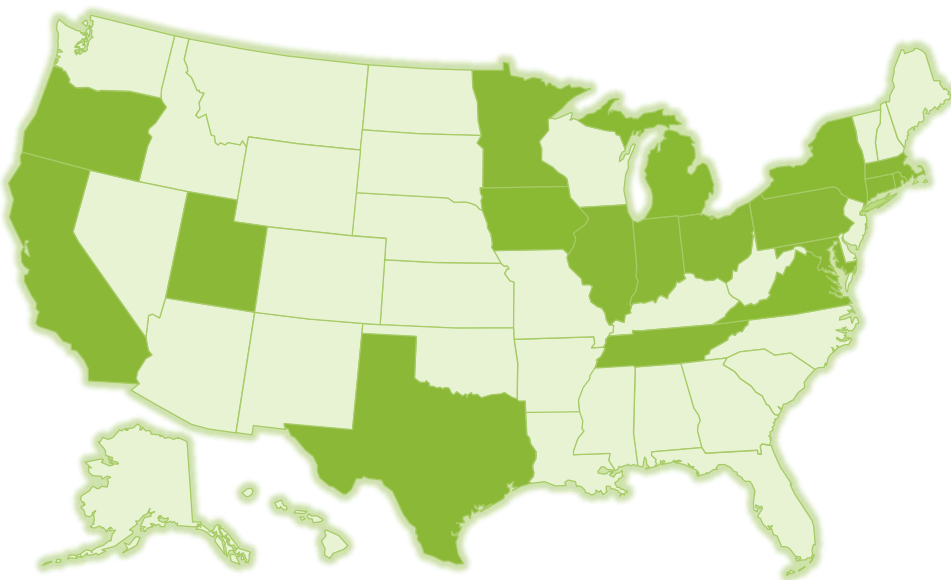


Coordination of State Resources

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

Corporation for
**NATIONAL &
COMMUNITY
SERVICE** ★★ ★



Funders

SSDN



Incorporating Healthcare Resources:

Developing an Innovative Healthy Homes Funding Toolbox



Hospital Community Benefits

Any age (un- & under- insured)

Chicago: assessment and remediation of asthma hazards (pilot)

CHIP State Plan Amendment

Children

Michigan: \$119M to remediate lead hazards

Maryland: \$14M to remediate asthma and lead hazards

Medicaid Managed Care Organizations

Any age

Michigan: assess and remediation of asthma triggers (pilot)

Maryland: assess and supplies to mitigate asthma triggers

Utah: assess and remediation of asthma triggers

Medicaid Home & Community Based Services

Older adults, disabled

Most states: home accessibility modifications

Medicaid Demonstration Waivers (1115)

Any age

Oregon: 'flexible services' includes air conditioners for asthmatics

North Carolina: Healthy Opportunities pilot includes home repairs, rental assistance

Medicare Advantage

Older adults (65+)

St. Louis: 'supplemental benefits' includes home repairs for fall prevention



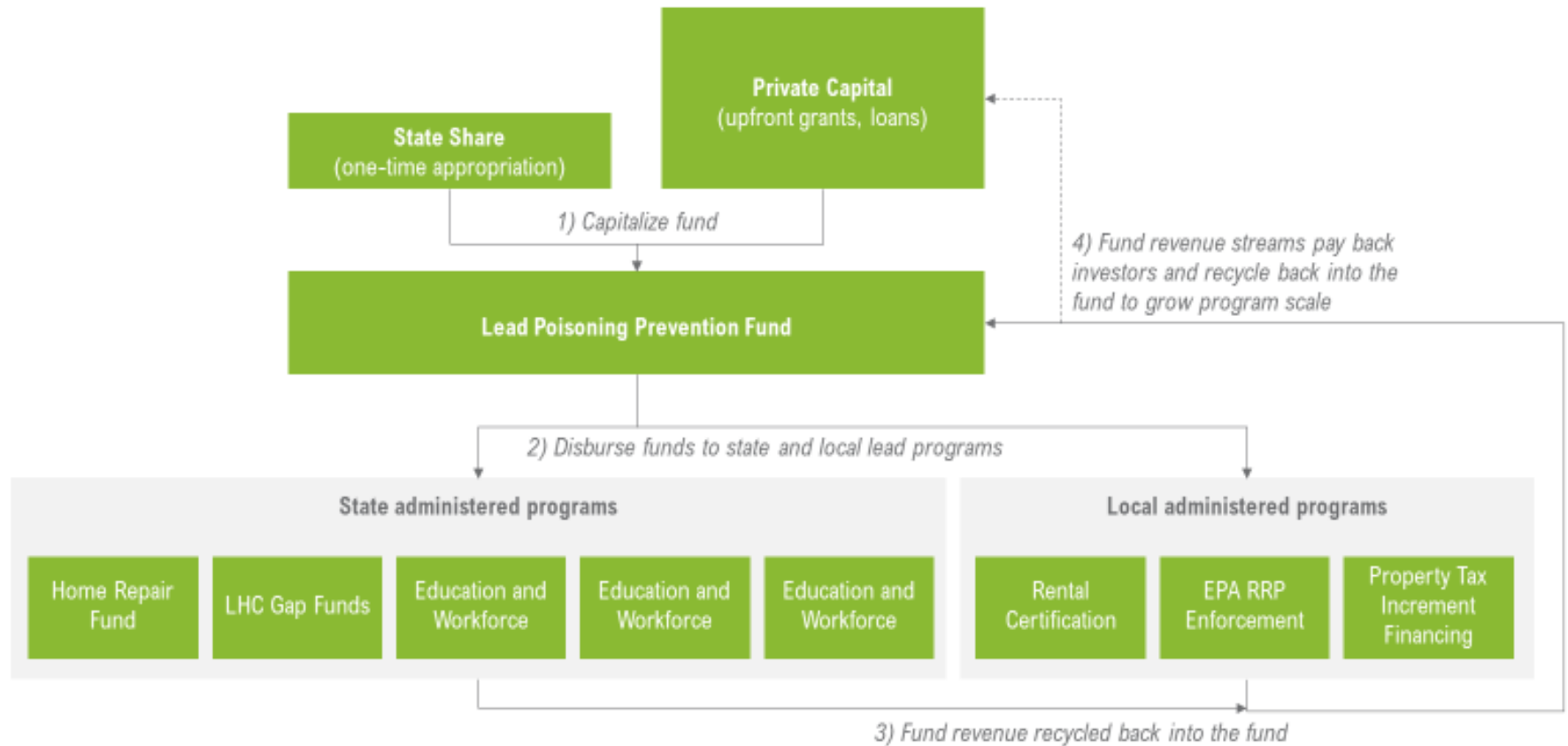


- Medicaid/CHIP children with EBL or moderate to severe asthma qualify for environmental case management program conducted by local health departments
- Each year, the State share is **\$860,000** (\$360,00 from MDH-GHHI contract) and federal share **\$6,340,000**
- **\$14.4** million 2017-2019
- EBL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



Innovative Funding Models

Fig. 1 Lead Fund Concept



QUESTIONS?

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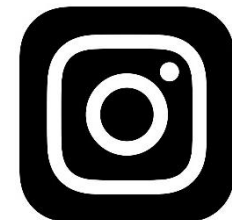
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