

The
**BUILD
HEALTH**
Challenge



**New Approaches to
Healthy Housing
Case Study**

*Implementing Preventive Home
Interventions and Mitigating the
Risk of Asthma/COPD and
Lead Poisoning*

**Cleveland, Ohio
May 2019**

WHAT IS THE BUILD HEALTH CHALLENGE?

BUILD seeks to contribute to the creation of a new norm in the U.S., one that puts multisector, community-driven partnerships at the center of health in order to reduce health disparities caused by system-based or social inequity.

Awardees include community-based organizations, local health departments, and hospitals and health systems that developed partnerships to apply the BUILD principles.

To date, BUILD has supported 37 projects in 21 states and Washington, DC.

To learn more about the BUILD Health Challenge, see Appendix A.

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ACKNOWLEDGEMENTS

This report was made possible with the generous support of funders from the BUILD Health Challenge, which include Blue Cross and Blue Shield of North Carolina Foundation, The Colorado Health Foundation, de Beaumont Foundation, Episcopal Health Foundation, Interact for Health, The Kresge Foundation, Mid-Iowa Health Foundation, New Jersey Health Initiatives, Robert Wood Johnson Foundation, Telligon Community Initiative, and W.K. Kellogg Foundation.

SPECIAL THANKS TO:

The participating BUILD Health Challenge implementation sites for sharing their experiences and learnings

The BUILD Health Challenge Executive Steering Committee for its contributions to the report

The Mendez team for conducting the research





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EXECUTIVE SUMMARY //

This report specifically highlights the BUILD Health Challenge related efforts of the Engaging the Community in New Approaches to Healthy Housing (ECNAHH) initiative, based in Cleveland, Ohio.

The collaborative aimed to reduce the occurrence of asthma, chronic obstructive pulmonary disease (COPD), and lead poisoning related to unhealthy housing conditions in three sub-neighborhoods in Cleveland. As of 2011, Cleveland had one of the highest rates of childhood lead poisoning in the United States, with almost one of every five children in the city receiving this diagnosis. Childhood asthma rates were also extremely high, especially for children living in poverty, according to 2008 statewide statistics for Ohio. The ECNAHH target area had the highest concentration of Hispanic/Latino individuals in Ohio (40% of the population), who also bore a disproportionate burden of disease coupled with limited or no healthcare coverage.

Through a series of interviews, ECNAHH partners share how their collaboration interpreted and applied the BUILD principles as part of BUILD's first cohort, the initiative's results, and lessons learned over their two-year effort. The lead partners from each of the implementation sites, representing community based organizations (CBOs), hospitals and health systems, and local public health departments were interviewed over a period of 18 months to not only track their progress but also better understand how they applied the BUILD principles—Bold, Upstream, Integrated, Local, and Data-Driven—to their efforts to improve health in their communities. This report analyzes the results of the various interviews.

At the conclusion of their BUILD award, ECNAHH worked to successfully implement preventive home interventions, and mitigate the risk of asthma/COPD and lead poisoning in their community. The partnership implemented the BUILD framework through a multipronged strategy to tackle home health hazards that directly impact the health of community residents. This resulted in:

- Completion of home inspections and subsequent remediation in 59% of the targeted homes in their area.
- Development of housing policy initiatives that culminated in the enforcement of the existing rental registry, which only had one-third of the rental properties registered when the ECNAHH project began in 2015.
- Increased awareness by community members about the need to reform housing policies in Cleveland. ECHAHH efforts contributed to the community's conversation about new local income tax legislation would bring in an estimated \$80 million in additional funding for city services—some of which will be used to offset the operational costs for city personnel to conduct proactive home inspections moving forward. Residents voted to approve the legislation. City officials then appeared before the city council to make a case about how to spend the additional funds, and of the confirmed 12 city services the council approved, four are related to the ECNAHH initiative. These elements include: staffing the proactive inspection program, inspecting rundown neighborhoods, investigating lead poisoning cases, obtaining resources for a better zoning code, and for quality in-house planning and design services.

The team did encounter a variety of challenges during their work, including in their community engagement strategies, on implementation, with tenants, on data sharing, and regarding running the collaborative itself. In particular, given the nature of their efforts there was concern that enforcement of rental housing codes could result in displacement of tenants by various community stakeholders. ECNAHH in hindsight recognized that they underestimated the impact of cultural and language factors on their ability to implement the healthy homes intervention. Partners realized that there was a need to raise their standards for language translation.

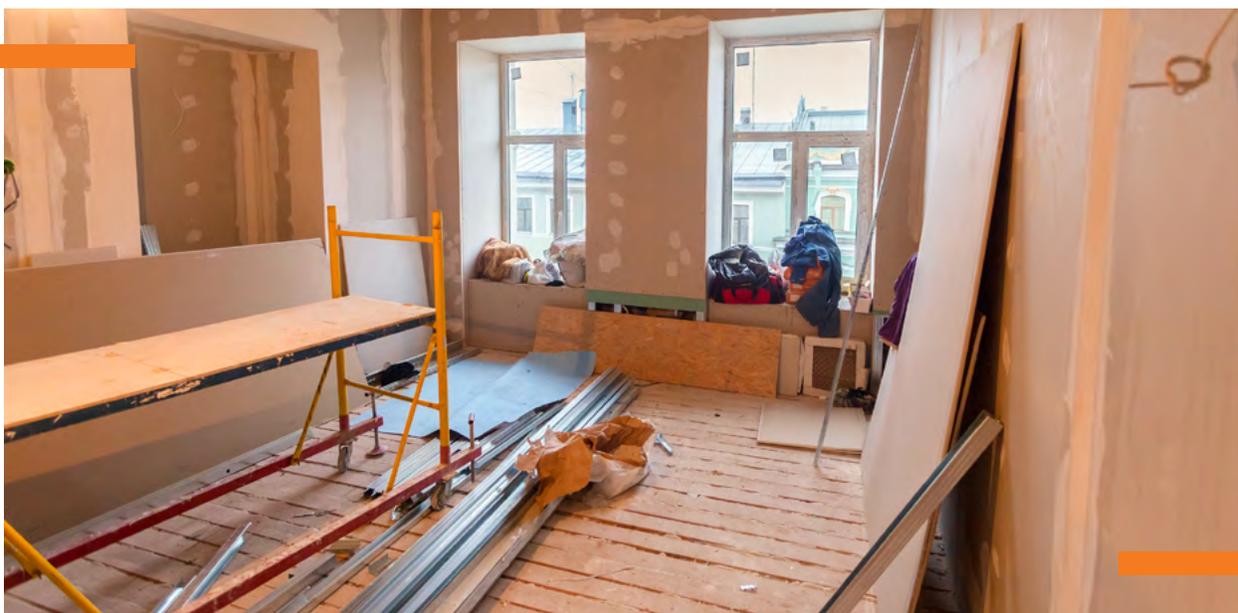
Reviewing ECNAHH's efforts within the context of BUILD, it is clear to see that they were leaders in their data-driven application of BUILD principles. ECNAHH broke new ground in their community by integrating data from multiple sources to expand a publicly accessible data portal for community stakeholders and the public to access data collected from the state, city health department, and other city departments (Building and Housing). The partnership was also able to overcome data use and sharing challenges, such as HIPAA-compliance with data-sharing among partners; tracking participants in the pilot project; information security; and data integrity. Working together, the collaborative ultimately was able to expand the publicly accessible data portal that has changed how organizations and citizens collect and access health and housing related data.

This data-driven strategy helped EC-NAHH to advance the team's efforts to:

- Communicate effectively with city departments and partner organizations
- Collect data on systematic proactive housing inspections
- Enforce the rental registry and increase compliance
- Facilitate systematic communication between the hospital and the Community Development Corporation using housing violation data to identify families with asthma/COPD and lead poisoning in order to map the residential properties likely to pose significant health hazards
- Lay a foundation for the creation of a more user-friendly application for residents
- Identify “hotspots” through city government where substandard housing was located and to pinpoint the specific housing units reported for housing code violations

All partners spoke of how addressing housing as a health issue is becoming an integral aspect of their institutional and programmatic goals and objectives—even outside of BUILD. Their work will continue to improve health outcomes for their targeted residents, especially as the funding secured from the new local income tax is directed towards healthy housing initiatives. Since this effort has ended, the team applied for, and was selected to participate in, the second cohort of BUILD. They are continuing their efforts to address lead poisoning and asthma—but focusing on new areas such as an app-based use for the data collected and policy changes within the city.

For more details about BUILD, the sites, or the methods used in this case study, please see Appendix A. To learn more about how the other six implementation sites leveraged the BUILD model, please see the companion pieces.



THE BUILD PRINCIPLES: A FLEXIBLE MODEL

When applied in concert, the BUILD principles—Bold, Upstream, Integrated, Local, and Data-Driven—represent a powerful model that has the potential to transform community health. The principles are the engine that drives how BUILD operates. The model reflects an innovative and flexible approach to population health that allows each site the opportunity to identify how to leverage the five principles most effectively. No one principle is more important than the other: they are neither mutually exclusive nor independent. They serve to guide BUILD sites as they start to design strategies and approaches within their respective communities.



BOLD

Interventions that have long-term influences over policy, regulation, and systems-level change



UPSTREAM

Solutions that focus on the social, environmental, and economic factors that have the greatest influence on the health of a community rather than on access or care delivery



INTEGRATED

Programs that align the practices and perspectives of communities, health systems, and public health under a shared vision establishing new roles while continuing to draw upon the strengths of each partner



LOCAL

Projects that engage with neighborhood residents and community leaders as key voices and thought leaders throughout all stages of planning and implementation



DATA-DRIVEN

Communities that use data from both clinical and community sources as a tool to identify key needs, measure meaningful changes, and facilitate transparency among stakeholders to generate actionable insights



HEALTH EQUITY

Health equity was not a specific BUILD principle but was explored within the case studies to understand the ways in which BUILD partners integrated health equity in their work. One of the goals of the BUILD Health Challenge is to promote health equity by creating the conditions to allow people to meet their optimal level of health.

ECNAHH RESULTS

“Through BUILD we developed an extensive partnership network with existing and new organizations. We built and continue to build capacity of partner organizations to have a better understanding about equity and application, social determinants of health, housing related health hazards and asthma trigger control using moderate and low-level remediation strategies.”

– ECNAHH Team

Through BUILD’s support, ECNAHH brought together the pieces needed to push an important policy and advocacy agenda forward. This effort aimed to address lead exposure in three neighborhoods in Cleveland, OH. Over the course of two years, ECNAHH partners took an upstream and systematic approach to address the various components of lead poisoning prevention.

Highlights from their BUILD effort include:



Expansion and integration of public health data merging Ohio health data with local data from the city departments (Public Health, Building and Housing). The data-sharing among the city departments facilitated interdepartmental collaboration to address the housing-induced health hazards.



Formulation of housing policy initiatives that culminated in the enforcement of the existing rental registry, which only had one-third of the rental properties registered when the ECNAHH project began in 2015. As part of the rental registry, Building and Housing will include proactive inspection data and 25% of the properties will receive lead dust wipes.



Passage of local income tax legislation to collect revenue to offset the operational costs for city personnel to conduct the home inspections.



Several door-knocking events that reached 300 families. Sixty residents received home hazard assessments, which included lead hazards and asthma trigger identification, and a total of 57 homes have been remediated through the proactive pilot.



Recruitment of asthma patients for which MetroHealth sent out 452 letters to families that met the established criteria (i.e., asthma or COPD patient at Metro, lived in 44109 or Clark Fulton/ Healthy Homes Zone, and is a resident living in housing within the violation data match zone). Thirty-six families consented, from which 27 addresses were referred to EHW, and 18 families completed the initial inspection and remediation following the asthma home visit referral.



ECNAHH'S BUILD INITIATIVE

ECNAHH aimed to reduce the occurrence of asthma/COPD exacerbations and lead poisoning related to unhealthy housing conditions in three sub-neighborhoods in Cleveland.

As of 2011, Cleveland had one of the highest rates of childhood lead poisoning in the United States, with almost one of every five children in the city receiving this diagnosis. Childhood asthma rates were also extremely high, especially for children living in poverty, according to 2008 statewide statistics for Ohio. A community health equity report also showed that culture/language and lack of healthcare insurance were significant barriers to health equity in the target area—in addition to inequities in income, educational attainment, and housing. The ECNAHH target area had the highest concentration of Hispanic/Latino individuals in Ohio (40% of the population), who also bore a disproportionate burden of disease coupled with limited or no healthcare coverage.

Prior to ECNAHH, the CBO partner and other partner organizations identified housing as a social determinant of health for the ECNAHH target area (described further) and identified the “Healthy Homes Zone” (HHZ) where home interventions would be piloted. The U.S. Department of Housing and Urban Development (HUD) defines a “healthy home” as a home that it is dry, clean, safe, well-ventilated, pest-free, contaminant-free, well-maintained, and thermally controlled (see <https://bit.ly/FedHealthyHomes>). More information is provided regarding the home interventions in the next section, Approach. The HHZ comprised three sub-neighborhoods on the west side of Cleveland: Stockyards, Clark-Fulton, and Brooklyn Centre. The HHZ included a large city ward with 27,873 residents and 7,751 homes. This area had a high volume of aging and dilapidated housing stock with a median age of 105 years. This housing stock was characterized by poor plumbing, distressed roofs, deteriorating

foundations, pest infestation, lead-based paint, and poorly maintained carpeting. Of the 7,751 residential properties in this area, 333 were condemned and another 496 were either vacant or abandoned, accounting for nearly 11% of the area’s residential properties.

This amount of distressed housing stock is the result of several factors, including minimal enforcement of the housing code by the city, a lack of financial resources among property owners to remediate their properties to meet the housing code, and a need for equitable community involvement regarding housing issues. ECNAHH implemented home interventions and policy initiatives to address the underlying causes of this property neglect in the HHZ.



DID YOU KNOW?

HEALTHY HOMES MEANS



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



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



Safe: Store poisons out of the reach of children and properly label them. 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.



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



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.



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



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



Thermally Controlled: Houses that do not maintain adequate temperatures may place residents at increased risk of exposure to extreme cold or heat.

Source: HUD, <https://bit.ly/FedHealthyHomes>

Approach

ECNAHH focused on prevention-based housing maintenance and strategically targeted home interventions to prevent asthma/COPD exacerbations and lead poisoning related to the unhealthy housing conditions in the HHZ. ECNAHH's home intervention strategy included the following elements:

1. Housing code enforcement and home interventions (described below).
2. Policy changes that incorporated healthy home principles (described in the Bold section, page 26).
3. Innovative upstream strategies to prevent asthma/COPD and lead poisoning related to home health hazards.
4. Creating sustainable funding for interventions.
5. Expanding a publicly accessible data portal to include and integrate information from public health and building and housing data (housing and health code violations, rental registry with healthy home status, and lead-safe status).

The partnership undertook a multistep process for the home remediation services (further details in the next section). Home remediation involved collaboration among the CBO partner; MetroHealth System; the Cleveland Department of Public Health; Building and Housing; property owners; and occupants. A description of each partner and the role they played can be found starting on page 18.

The subsequent section provides further details, but in short, the partners, community and hospital, provided referrals for the home interventions. Public Health coordinated its efforts of monitoring housing units with Building and Housing. These city departments were responsible for promoting and enforcing home inspections and for repairs to mitigate the risk of adverse health outcomes. Within the city, Building and Housing was responsible for the demolition of condemned residential properties while Public Health oversaw the lead inspections and case management of children diagnosed with lead poisoning. However, Public Health had limited resources for the lead inspections and case management; thus, this department focused on cases with the greatest need for services—those with the highest serum lead levels.

The property owners were responsible for using safe methods for repainting, repairs, and renovations to eliminate the home hazards, while the occupants were responsible for keeping the home clean and uncluttered and for requesting repairs (see diagram regarding “shared responsibility” on page 32 of 106 of the ECNAHH application).

There are two processes for starting a home intervention, the “MetroHealth Referral Process” and the “proactive home assessment” implemented through the BUILD project.

MetroHealth Referral Process for asthma home intervention:

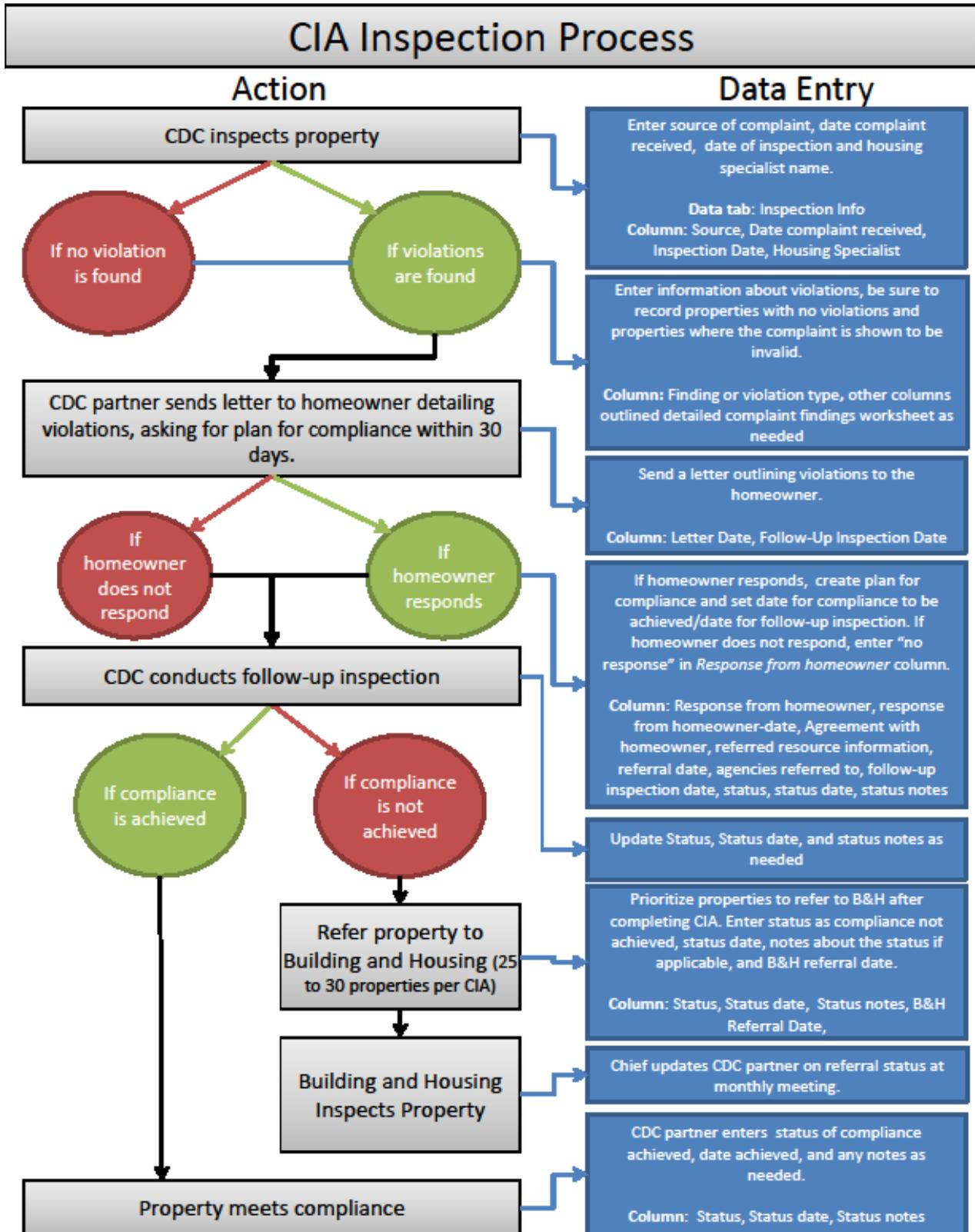
When a referral triggered the request for a home inspection, the process proceeded in the following way:

1. Geocoded housing data was linked to asthma patient hospital data so that program resources could be directed to families in greatest need of home remediation services.
2. The asthma patients living in the distressed home were identified, and the recruitment process was initiated by MetroHealth System staff.
3. The home visit was conducted by Environmental Health Watch (EHW) to determine if there were any asthma triggers and/or home health hazards (such as mold or lead paint chips).

4. If home health hazards were discovered in the inspection, moderate and low-level interventions were completed by EHW to remove the asthma triggers.
5. If additional building or structural changes were required, EHW subcontracted the work needed to mitigate the risk of asthma/COPD exacerbations and lead poisoning.

MetroHealth System (the hospital system partner) referred patients with asthma/COPD exacerbations to the home remediation services. Patients were cross-referenced against Building and Housing data, and they received follow-up calls to seek their consent to participate in the home remediation program. If families consented to participate, the CBO partner scheduled a home visit to conduct a room-by-room assessment of housing health hazards. The CBO partner identified the moderate and low-level home interventions. The CBO partner provided the moderate and low-level remediation and worked with a contractor to provide the higher-level remediation services.





CANDO Code Enforcement Informational Documents.
<http://neocando.case.edu/resources/nst-docs/Routine%20Inspection%20flow%20chart.pdf>. Retrieved on October 20, 2017

The partnership aimed to implement the home intervention in the homes of 50 families: 25 home interventions were assigned to a home where an asthmatic patient resided who was referred to ECNAHH to eliminate asthma triggers in the home, and the remaining 25 families were assigned to proactive home visits for prevention of asthma/COPD and lead poisoning. The CBO (EHW) had a contract with the City of Cleveland Community Development to complete 35 lead-risk and healthy homes assessments under the HUD program and completed more, but not all were in the HHZ.

The steps involved in the proactive home assessment:

Home inspections were first conducted to determine the need for home remediation services that would eliminate housing-related health hazards. A flowchart of the routine home process is included here (see attachment of this flowchart). This process was data-driven, and it primarily involved Metro West Community Development Organization (CDO) and EHW. The following were the steps taken for the pilot proactive inspections:

The ECNAHH team visited and door knocked between 650-750 homes in their target HHZ. As a result, more than 100 residents agreed to a home visits and approximately 60 residents received home hazard assessments, which included lead hazards and asthma trigger identification. The team has since remediated over 39 of those homes, which included asthma patient referrals from MetroHealth. ECNAHH has a total of 82 families in its database from referrals and door knocking.

Furthermore, the home visit prior to any home remediation helped the partnership identify the hazards that needed to be eliminated. The home visiting team looked for a myriad of hazards, some of which included:

- Peeling paint in door jambs, windows, and interior or exterior surfaces
- Leaks under sinks (mold)
- Pests/mice
- Malfunctioning toilets
- Smoke and carbon monoxide detectors
- Worn-out carpeting
- Safety hazards
- Water intrusion

In addition, the inspection elucidated other problems that residents were experiencing. Partners discovered other unresolved problems, such as landlord-tenant issues, that needed to be addressed.

In 2017, Building and Housing inspectors initiated a proactive program to inspect all rental dwelling units in Cleveland on a rolling basis. Building and Housing staff contacted landlords one month prior to the date of the scheduled inspection. Tenants, property managers, and owners were permitted to be present in the residence during the inspection. Tenants could call in a problem and request an inspection. Landlords have to register their units through a rental registration process that is to be completed annually by March 1 online, by mail, or in person for a \$35 fee per unit.

CBO partner

The CBO partner, EHW, has a long history of implementing environmental justice principles in the Healthy Homes Movement and is a national leader that has advanced health equity principles. This partner has more than 35 years of collaborating with the city government, healthcare providers, universities and other CBOs on various healthy home initiatives. This partner has also collaborated on various green housing projects and worked with the city on a Healthy Homes Program funded by HUD.

For ECNAHH, this CBO partner built a grassroots network of residents and community stakeholders focused on environmental health issues in the community. This partner was the lead applicant for ECNAHH and was responsible for managing the overall project and for leading the efforts of ECNAHH in engaging community stakeholders, including the residents. The CBO partner was responsible for project oversight, including overseeing the budget, clarifying partner roles, and creating memoranda of understanding (MOUs) and data use agreements (DUAs). The CBO partner implemented healthy home standards in the home intervention program, conducted visits, and trained partner organizations on healthy home assessments. The CBO also coordinated the efforts of the partners, the resources for home inspections, and education on healthy home standards. In addition, this partner collaborated with the healthcare system partner to link data on health outcomes, healthcare utilization with other data on housing. We did not get the ROI research we were hoping from other data on housing.

Health department partner

The Cleveland Department of Public Health enforces environmental health codes and educates the public about these codes. This partner works with Building and Housing in the sharing and integration of the health and housing data for use in a publicly accessible data portal. This existing data portal will be used to track landlords who register properties and for proactive inspections using standard housing quality protocols implemented and managed by Building and Housing.

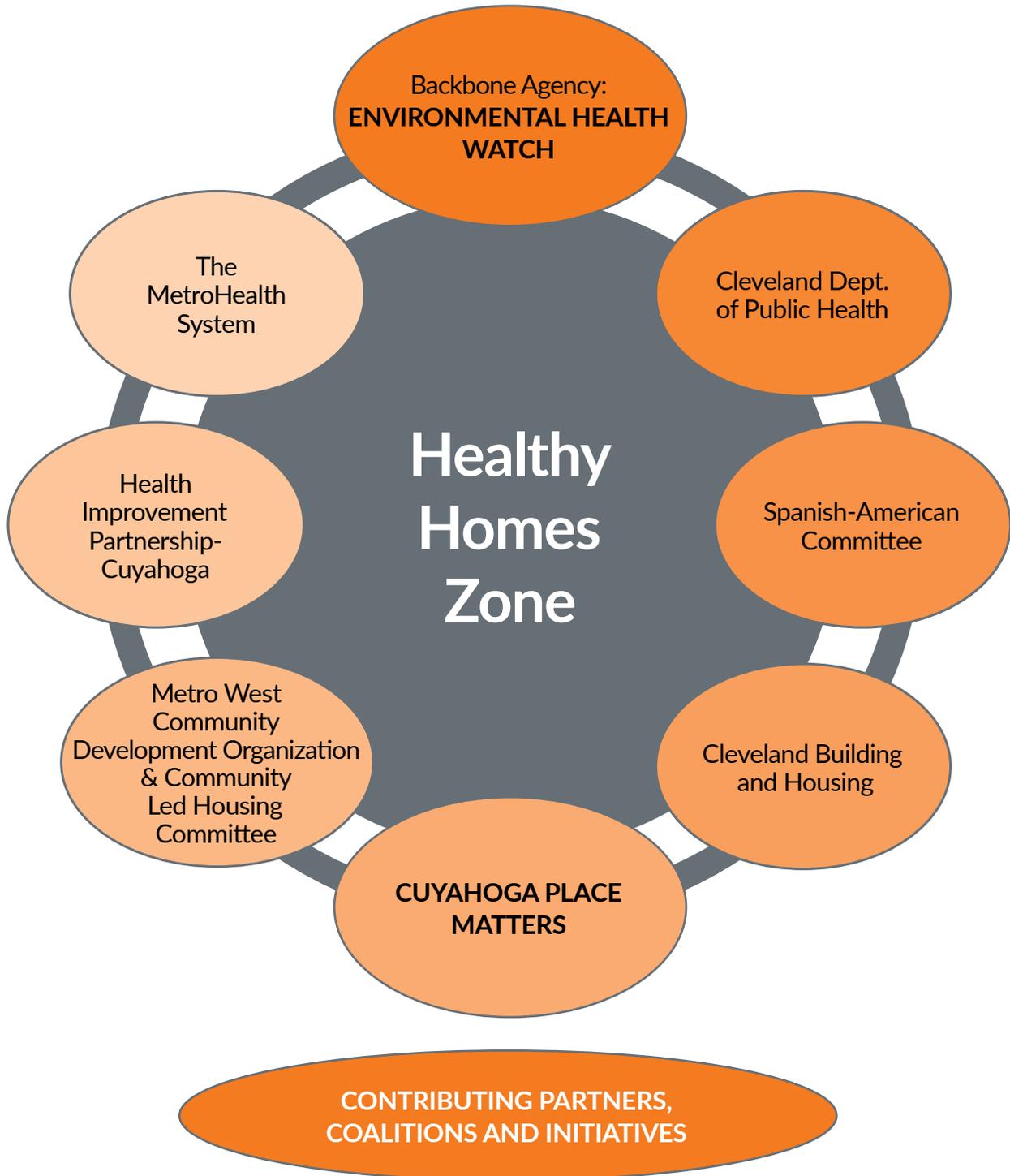
Healthcare system partner

The healthcare system partner, The MetroHealth System, was the first public hospital to integrate EpicCare (Epic), an electronic health record (EHR) system, into its network. Its expertise in EHRs was a key component in the data-sharing among local hospital systems that is also accessible to HHZ residents. As a county hospital, MetroHealth was an integrated system with strong ties to both the county and city health departments. MetroHealth remains to this day, the sole public safety net hospital in Cuyahoga County. Its integrated system encompassed an acute care hospital, a network of urban health centers, a school health initiative, a medical-legal partnership, and a quality improvement collaborative. This partner has historically used a health equity lens to deliver healthcare services and to conduct research on health disparities. Its core mission is to address the social determinants of health (SDOH) that lead to the poor health outcomes prevalent in its predominantly medically indigent patient population.

THE ECNAHH PARTNERSHIP

This partnership comprised three core partners (a CBO, health department, and healthcare system) and at least seven additional partners. The three core partners included:

HEALTHY HOMES ZONE GOVERNANCE MODEL



The additional partners included:

- Other city departments (Building and Housing, City Planning and Community Development).
- Hispanic Alliance, Spanish American Committee, and Metro West CDO.
- Center on Urban Poverty and Community Development (CUPCD): A research institute is housed at Case Western Reserve University (CWRU) that provides an online neighborhood-level data tool, Northeast Ohio Community and Neighborhood Data for Organizing (NEOCANDO). NEOCANDO is a data system connected to the city's Accela data system, which provides neighborhood-specific data on housing conditions, home inspection, and intervention updates. This system enables community stakeholders to make sound, evidence-based policy and practice decisions. The NEOCANDO system included the following information:
 - o Condemnations and scheduled demolitions
 - o Housing violations filed
 - o Privately owned properties that receive housing vouchers
- Center for Achieving Equity (formerly Cuyahoga Place Matters): The project seeks to advance and integrate SDOH into policy and action. The team has incorporated SDOH integration into the agenda of influencing different sectors and disciplines. The team has advocated for the development of policies that will create the conditions for

optimal health, such as safe housing, adequate green space, clean air and water, access to healthy foods, access to quality healthcare, and quality education. Place Matters is a national initiative designed to build the capacity of leaders and communities around the country to identify and address social, economic, and environmental factors that shape health inequities. Since 2006, 19 Place Matters teams, representing communities from 24 counties and three cities, have been working across disciplines and sectors to create equitable health environments for all. These communities represent urban city centers, rural areas, and multi-county collaboratives in nearly every region of the country and vary widely in their historical context and demographic makeup.

- Metro West CDO: They used the housing and health data to identify properties in need of preliminary home inspections. The CBO and CDO conducted and piloted the proactive home visit model.
- Hispanic Alliance and Spanish American Committee: Hispanic/Latino cultural groups focused on the outreach, social, educational, and economic needs of the community. The Hispanic Alliance focused on advocacy, including soliciting the input of Hispanic/Latino residents in order to align their needs with the economic revitalization of the area. The Hispanic Alliance also focused on leadership development and strategic partnerships for this community. The Spanish American Committee was the neighborhood organization responsible for addressing

landlord-tenant issues, especially for Latino and African American residents. This organization had a reported average of 200 to 300 walk-in consultations per month, in addition to telephonic consultations, to connect residents to appropriate resources.

History of collaboration among the ECNAHH partners

Prior to BUILD, the ECNAHH partners had worked together for a decade on community public health issues. Both the health department partner and the CBO partner collaborated on work that addressed health equity and SDOH, and they had recognized housing was a significant social determinant of health in Cleveland. The health department partner highlighted the focus of some of their discussions on preventive measures to address environmental health problems:

“ How do we target issues where that integration is between environmental health within the home and medical outcomes and what we know in public health? How do we get those pieces together at every level so that we can reduce these incidences, as opposed to waiting for an incident to happen with a child and then address it? That is what I believe is the underlying iterative process and discussion that has been going on for many years; the BUILD project gave us the lens we needed to focus those efforts. ”



DID YOU KNOW?

Environmental health, as defined by the American Public Health Association, is the branch of public health that: focuses on the relationships between people and their environment; promotes human health and well-being; and fosters healthy and safe communities. The field works to advance policies and programs to reduce chemical and other environmental exposures in air, water, soil, and food to protect people and provide communities with healthier environments.

<https://www.apha.org/topics-and-issues/environmental-health>



Member organizations worked on various efforts, for example, through their participation in health partnerships. For example, the CBO partner and health department partner had leadership roles in several initiatives, such as the Health Improvement Partnership Cuyahoga (HIP-C), a community health consortium of more than 100 representatives from government, academic, nonprofit, and health sectors. Cuyahoga Place Matters, a CBO partner, played a lead role in efforts to eliminate health disparities in the county through capacity building to improve housing conditions and engage the community in neighborhood revitalization.

Evolution of ECNAHH

Through BUILD funding, ECNAHH brought together the pieces that were needed to push an important policy and advocacy agenda forward and to address lead exposure in underserved neighborhoods. ECNAHH partners took a systematic approach in the integration of the various components of the lead poisoning prevention endeavor. One partner reflected on how the timing of the BUILD project propelled the conversation on health equity into action:

“ From our perspective, I think the timing coincided with a moment when national media allowed for that conversation to happen and give context to people when we’re talking about health equity. I think the coincidental timing of the Flint issue raised the level of the media and public awareness to a point where our message about health inequity resonated. ”

ECNAHH was modeled after a recent project undertaken by the CBO partner through the HUD funded Case Healthy Homes and Patients program. The CBO partner collaborated with University Hospitals and the Swetland Center for Environmental Health. This project resulted in the successful completion of remediation in 187 homes, and data collected showed that there was a 58% reduction in emergency room visits for severely asthmatic patients. ECNAHH ex-

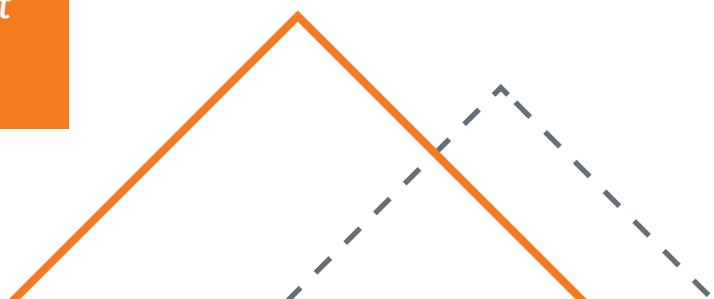
panded these asthma home visit assessment and home remediation efforts for 25 of the HHZ residents who had received clinical care from the healthcare system partner. As part of this expansion of the asthma/COPD-related intervention, a pilot study was conducted in the HHZ to compare cost utilization related to home remediation with that related to ambulatory care, emergency room visits, and hospitalization.

Prior to BUILD, attempts to educate and create awareness of lead exposure had always been present, but the policy and advocacy efforts needed at a neighborhood level were not being properly implemented. The healthcare system partner explained:

““ We have a lead-testing clinic here at MetroHealth, we share a lead-testing site with the city of Cleveland at one of our urban health centers, and we have a chelation clinic in our pediatrics department. We used to have an absolutely fabulous lead clinic nurse who has since retired and she was well known throughout the city. So, advocating for teaching parents how to recognize lead issues in the home has always been on our radar. But, we, to my knowledge, never got into the grassroots efforts of policy to impact people’s homes before we got involved with BUILD.””

The CBO partner took the lead role in city/county policy and advocacy conversations at meetings, testimonies, forums, and public hearings with various stakeholders. The conversation about making lead maintenance certification mandatory led to the idea of pilot testing the home remediation in the HHZ. This partner shared about the deliberation regarding lead abatement:

““ We had suggested that we wanted to work on some proactive housing inspection policy. As we were talking with the partnership, we realized the complexity of the policy changes we were seeking and the reality of the funding situation in the building and housing department. And we said, ‘OK, let’s focus on lead.’ Specifically, we’ve got this lead maintenance certificate on the books—we want to see if we can make it mandatory and pilot proactive inspections in our neighborhood.””



The partners recognized a “culture of collaboration.” For instance, the health department partner described Cleveland as having a very active healthcare community, which allowed them to learn about BUILD through meetings over two years among community groups with shared interests. They described BUILD as an extension of their roles with these other partnerships. The BUILD funding was the impetus for their ECNAHH initiative and enabled the core partners to leverage participation among stakeholders who were interested in either working on a health issue or collaborating on important community issues. The health department partner expounded on this idea:

“*Sometimes the intent is there, but the driving force is not. So, that is where grant funding really is a catalyst. Having a project like this, that is a demonstration project, gets people working toward the goal where the long-term continuation of that is sparked by a program like this—identifying ongoing funding, ongoing agencies that can support the type of work because it benefits the outcomes, or the needs, is really key.*”

Key Accomplishments of ECNAHH

As of August 2017, ECNAHH accomplished important milestones in the endeavor to mitigate the risk of lead poisoning and asthma/COPD among residents in the HHZ. These milestones included the following:

- Expansion and integration of public health data of an existing data portal by merging Ohio health data with local data from the city departments (Public Health, Building and Housing). The data-sharing among the city departments facilitated interdepartmental collaboration to address the housing-induced health hazards.
- Formulation of housing policy initiatives that culminated in the enforcement of the existing rental registry, which only had one-third of the rental properties registered when the ECNAHH project began in 2015. As part of the rental registry, Building and Housing will include proactive inspection data and 25% of the properties will receive lead dust wipes.
- Passage of local income tax legislation that is proposed to bring in an additional \$80 million for city services, some of which will be used to offset the operational costs for city personnel to conduct home inspections.



- Several door-knocking events that reached 300 families. Sixty residents received home hazard assessments, which included lead hazards and asthma trigger identification, and a total of 57 homes have been remediated.
- Distribution of 452 letters from MetroHealth to families that met the established criteria: asthma or COPD patient at MetroHealth, lived in 44109 or Clark-Fulton/HHZ, and is residing in housing within the violation data match zone. From the MetroHealth referral process, 36 families consented; 27 addresses were referred to EHW; and 18 families completed the initial inspection and asthma remediation home visit program.
- Completion of home inspection and subsequent remediation in 59% of targeted homes in the HHZ.

II. ECNAHH'S APPLICATION OF THE BUILD PRINCIPLES

While the five BUILD principles were actualized in different ways for each of the various implementation sites, the first cohort's application of the BUILD model was important in demonstrating its principles. The application and evolution of the model can be helpful to other communities intending to replicate and sustain their upstream efforts as well as to the second cohort of BUILD sites. ECNAHH has taken bold actions via data-sharing among clinical and nonclinical partners and in the implementation of housing and fiscal policies to prevent adverse health outcomes related to home health hazards. The partnerships implemented upstream solutions that were

policy-driven to address the factors that contributed to substandard housing conditions. ECNAHH exemplified an integrated partnership that involved stakeholders from a healthcare system, academic institutions, university, health department, and CBOs. The local community was engaged in the discussions about the housing policies and their potentially negative impact on access to housing in the HHZ. The partnership employed data-driven approaches through the use of geomapping and linked data to provide home remediation services in rental properties that posed the greatest health risk to their occupants.

The following table depicts how ECNAHH specifically chose to apply the BUILD model to address the initiative's unique challenges and provide insights into its outcomes and early lessons learned.

	 B Bold	 U Upstream	 I Integrated	 L Local	 D Data-Driven	 H Health E Equity
Policy & Advocacy	✓	✓		✓	✓	✓
Collaboration	✓		✓	✓		✓
Housing Intervention	✓	✓	✓	✓	✓	✓
Data Platform			✓	✓	✓	✓
Sustainability	✓		✓	✓	✓	
Community Engagement				✓		



BOLD

The BUILD definition of “bold” emphasizes interventions that have long-term influences over policy, regulation, and systems-level change.

ECNAHH brought together several partners who were not traditionally engaged in community health efforts, such as the housing division of the local municipal court and Hispanic/Latino cultural groups (Hispanic Alliance and Spanish American Committee).

The partnership implemented a multipronged strategy to tackle the home health hazards experienced by community residents. ECNAHH formulated changes in fiscal, Medicaid, and housing/rental areas—changes that were **bold**. Also, the partnership engaged multiple streams of funding to support the home interventions.

All three partners had varying degrees of involvement in policy and advocacy work throughout ECNAHH. For example, the health department and community partners have long been involved in discussions and work related to health equity and SDOH.

Partner roles in policy and advocacy efforts

01

PARTNER ROLES: CBO PARTNER

The CBO partner took the lead role in city/county policy and advocacy. This partner shared about their previous accomplishments on policy: *“We are involved in policy and advocacy efforts in a number of environmental health issues. For example, we’ve done work on clean energy and clean air. We’ve done advocacy work on city policy, on county policy.”*

This partner used a variety of forums to communicate with their collaborators and key leaders at the city level. For example, they convened meetings, testified at city council hearings, and engaged with the community at assemblies. The conversation about making lead maintenance certification mandatory led to the idea of pilot testing the target neighborhood.

02

PARTNER ROLES: HEALTHCARE SYSTEM

The hospital partner played a limited role in policy and advocacy efforts pertaining to BUILD, but stated they were *“providing either the government relations team or the marketing PR group with background information, especially as it pertains to BUILD.”* Other ways the hospital partner supported the work included *“supporting written articles and providing comments.”*

03

PARTNER ROLES: HEALTH DEPARTMENT

While the health department was prohibited from engaging in lobbying activities as a government agency, it had a significant role in advocacy for city residents. This partner expounded on their role as a public health agency and persistence that they showed in their advocacy efforts:

“Just being the public health agency and advocating for our constituents to everybody that we need to and keeping those communications going and staying at the table and sometimes forcing those discussions with the policymakers—we may not be able to lobby at the state and federal levels, but we can talk to the state and federal agencies we work with and tell them our concerns directly, which, believe me, we have done over the past year and a half. We have had very direct and intense conversations on all of these issues.”

This partner also addressed SDOH in relation to lead exposure and health outcomes for children. Their upstream approach was to “focus on updating rental registration ordinances to incorporate building inspections to include the healthy homes principles” to align with ECNAHH.

BOLD: FISCAL POLICY CHANGES FOR THE SUSTAINABILITY OF HOME REMEDIATION

ECNAHH disseminated to residents and partners, and discussed in presentations at city council hearings and on the record to city council members, a five-point strategy to eliminate lead poisoning, which included an increase in income for the city if the rental registry was enforced. The policy efforts of ECNAHH on the sustainability of the home inspections resulted in the passage of income tax legislation to support healthy home standards. A referendum was added to the ballot for the November presidential election in 2016. The mayor announced 10 months prior to the election that this was an issue that he wanted to include on the ballot, to see if the residents of Cleveland would support a tax increase from 2.0% to 2.5%. After announcing his plans to seek a tax increase, city officials appeared before the city council to outline each city department's "wish list" and make a case for how to spend the funds. The health department and partnering city organizations in ECNAHH jointly advocated for putting the money toward healthy homes and lead poisoning prevention. The health department partner shared that *"long-range planning advocacy efforts and policy work paid off in that we have laid the groundwork using the BUILD Health Challenge project to demonstrate the need."*

This tax increase went into effect on January 1, 2017, and is expected to raise an additional \$80 million per year to be used on city services. This measure narrowly passed, by a 3% margin. Of the 12 city services this tax increase is supposed to address, four are related to the ECNAHH initiative: staffing

the proactive inspection program, inspecting rundown neighborhoods, investigating lead poisoning cases, and obtaining resources for a better zoning code and for quality in-house planning and design services.

The tax revenue realized will be used to fund 14 new city housing inspectors and other operational costs of the home inspections. The partnership advocated for some cost-sharing measures at city council meetings. Partners sought enforcement of a fee structure that requires that landlords pay \$35 for the registration of their rental properties. They estimated that the rental registration fee would generate approximately \$2.3 million in new revenue for the city. This was successfully implemented in 2017.

ECNAHH anticipated that the overall costs for the home inspections would initially rise with the number of preventive home inspections conducted; however, evidence from other communities with successful proactive home inspections suggested that the overall costs would decline over time, as the number of complaint-triggered home inspections and legal proceedings to enforce housing codes fall.

BOLD: SUSTAINABILITY PLANS THAT INVOLVE MULTILEVEL FUNDING STREAMS

The partnership acknowledged that financial constraints related to the local economy and dwindling government financial support could threaten the sustainability of this initiative. The health department partner elaborated on this threat:

““ There are always challenges: the interagency piece, the potential changes to the national funding of healthcare, is huge. If we don't sustain progress on the healthcare funding front, all the progress we've made over the past four or five years is jeopardized because agencies will again be scrambling for dollars for daily necessary maintenance, and they may not make the best long-term decisions. ””

by seeking multiple streams of funding that would enable the partnership to be less reliant on shrinking Medicaid funding, especially given the uncertain future of the Affordable Care Act. In previous years, the city has relied on Medicaid funding to support this work. In recent years, however, national trends in dwindling funds from Medicaid made it necessary for ECNAHH to explore other funding streams for long-term sustainability.

The health department partner talked about the shift in their approach to seeking funding streams for long-term sustainability:

““ By refocusing on the [funding] process and how we do this and incorporating healthy outcomes into building [inspections] and overall awareness, we've also leveraged local dollars from our local general fund to support these efforts in Building and Housing,

Community Development, and the health department. And, we're successful in getting through a local tax increase specifically geared toward improving services, with a chunk of those services being the health inspection for lead and the building inspection for the rental units. ””

A key reason for conducting the pilot projects was to demonstrate the return on investment (ROI). The partnership worked on documenting a positive ROI in the pilot projects in the HHZ in order to seek Medicaid reimbursement for home remediation work completed. The CBO partner explained how ECNAHH was making the case for health payors to cover the home remediation service to cut healthcare costs:

““ The other piece is that we want to continue to make the case to public insurers that investing in home improvement for patients is going to pay off for them, so we are continuing to try to make the case that interventions for asthma patients will ultimately be financially beneficial. So when we go in and do the home interventions for the asthma patients, MetroHealth will be tracking whether they had reduced hospital stays, reduced ER visits, and then calculating the costs for those savings from our interventions. ””

The partnership leveraged its BUILD funding to pursue multiple sources of funding for the continuation of their asthma/COPD and lead poisoning prevention. Local foundation grants were sought to enable homeowners and landlords to proactively address problems with their rental properties. Revenue was realized through fiscal policy changes, as discussed earlier, and additional grant funding was sought from local foundations.

BOLD: HOUSING AND RENTAL POLICY CHANGES

ECNAHH’s housing policy changes included increased efforts to register more properties and the enactment of ordinances for enforcement of housing code violations. ECNAHH also added provisions for incorporating healthy home principles and eliminating or reducing lead exposure in housing units. ECNAHH and the city of Cleveland collaborated on the drafting and enactment of a new ordinance for proactive rental inspections in the city. The upstream approach of ECNAHH was “focusing on updating rental registration ordinances to be reflective of the healthy homes principles. So, the healthy homes rental registration ordinance provisions are currently being drafted, to incorporate building inspections to include healthy home principles.”

The CBO partner noted their partnership was “advocating for the city to require lead maintenance certificates as part of the rental registry. So, we want the city to, first of all, make sure that more landlords are actually registering. And secondly, [we want] to make sure these landlords are certifying that their houses are lead safe

before they are renting. We looked into the impact this would make on the city’s finances if we were able to get 100% landlord compliance with the registry. We calculated an additional \$2 million in revenue. We advocated for the additional income not to be placed into the general fund, but allocated to assist with the lead program, sustaining the proactive inspection program, and other supports.”

Other community stakeholders and the CBO partner collaborated with the health department partner and other city departments on policy initiatives. The healthcare system partner played a limited role in policy work, but was supportive of policy and advocacy efforts. ECNAHH aligned targeted healthy home interventions with new housing policies aimed at preventing home health hazards in the HHZ. The health department shared about the changes made to the rental registration ordinance:

“ So, the rental registration was an existing local ordinance, all rental units had to be inspected, and all rental units had to be registered. Inspection really centered on building structural issues and life safety issues. Did they have a smoke detector or carbon monoxide detector? By focusing on the principles of what a healthy home is, we can target a wider range of issues during that same inspection. ”

KEY TAKEAWAYS AND LESSONS LEARNED // BOLD

ECNAHH took bold steps in implementing fiscal, Medicaid, and housing/rental policies as well as multiple funding streams that would ensure that the city would continue to improve the housing stock available to the economically depressed HHZ. The CBO partner recommended and instituted policy changes and a way to engage the city council in the policy formulation discussions. This partner elaborated on this process:

“ I think just recognizing that it does take time to get all of the partners on board—it’s an evolving process, [some of] the [staff] involved [in the initial year] changed. It helps to be flexible and open to adjusting your goals depending on the environment. One lesson learned is the power of a great reporter who went in and wrote article after article on what the city needs to do to change their lead program, a very powerful voice. It took one reporter’s article to change the community. ”

This partnership developed **bold** strategies that involved policy-driven **upstream** solutions to eliminate the poor housing conditions that had been associated with adverse health outcomes. ECNAHH created **data-driven** upstream solutions that involved an **integrated** network of community partners, healthcare systems, local community, and various city departments for implementation. The remaining BUILD principles (Upstream, Integrated, Local, and Data-Driven) applied in the ECNAHH initiative are discussed in greater detail in the subsequent sections.



UPSTREAM

The Upstream principle emphasizes “solutions that focus on the social, environmental, and economic factors that have the greatest influence on the health of a community rather than access or care delivery.”

ECNAHH partners used BUILD as a driver to formulate and implement policy-driven upstream solutions that *“integrate everything from the primary care to the community organization level through the city’s lens.”* The partnership addressed the primary reasons for the distressed housing conditions that were increasing the risk of asthma/COPD exacerbations and lead poisoning. ECNAHH developed main upstream solutions to eliminate distressed housing stock in the HHZ by implementing their healthy homes interventions.

UPSTREAM: PILOT TESTING OF THE PROACTIVE HOME INTERVENTIONS

Many of the ECNAHH partners did not traditionally engage in health-related work. ECNAHH implemented pilot projects to demonstrate the ROI and scalability of healthy home interventions to the city leadership and to local health payors. Partners shared their perspective of ECNAHH: “This was a demonstration project so that the medical funding industry could recognize the implicit value in performing these interventions in the structures where these kids lived.”

ECNAHH aimed to provide compelling evidence for Cleveland’s governmental leaders to codify the healthy home principles in residential properties citywide. For the health payors, ECNAHH aimed to show that home remediation was an essential step in reducing healthcare utilization and costs associated with asthma/COPD and lead poisoning among HHZ residents. ECNAHH ultimately aimed to make the healthy home interventions standard practice and to create funding streams for this work that would be sustainable for the long term. Details about the home interventions and related policies can be found in the Approach (starting on page 13) and Bold (starting on page 26) sections.



Challenges with the upstream solutions

The partnership encountered challenges during the implementation of the upstream solutions: dwindling government funding opportunities, managing long-term collaborations, pushback from state lawmakers, and unintended consequences of the stringent housing policies. The partnership anticipated that it would be a challenge to get government funding for the continuation of the proactive home intervention program and to keep partners engaged in implementing the housing policies after the conclusion of BUILD grant funding. The health department partner

mentioned lack of resources due to state and federal funding cuts over many years, which have significantly hindered health equity work, but *“the BUILD health project helped demonstrate the need for those resources to assist in driving the collaboration, driving the policy and advocacy work—so it really is a unique project and the way we utilize the project has already shown significant impact, well outside the intended scope.”*

One community partner mentioned the challenges of managing longstanding relationships and multiple partners while moving ECNAHH forward:

“ We want to make sure that ultimately the project is something that addresses all of these issues that we’ve identified. So, finding that role for us has been a little bit challenging. I think engaging the building and housing department has been challenging, and we just have to make sure that we stay involved with them and that they’re involved with the BUILD project as well as working on this proactive healthy housing legislation. ”

Although the ordinance to enforce housing codes was being implemented at the local level, there was pushback from some state legislators. These legislators were attempting to usurp local domain, concerned that enforcement of rental housing codes could result in displacement of tenants. The CBO partner elaborated on this pushback from some state lawmakers and the ongoing efforts of some state coalitions and vocal families to continue the proactive rental inspection program made possible by a city ordinance:

“ There was effort by some state legislators to prevent the city from addressing lead through a proactive ordinance. They introduced the latest state budget with some language that would restrict the ability of cities to do this work and just have it done through the state. Cleveland could still address the housing code, but it would not be able to address lead directly. Fortunately, through the work of some of our state coalitions and the testimony of some families throughout the state, we successfully had that provision taken out of the budget. ”

One of the unintended consequences of the proactive inspection has been the heightened concern about tenants and home owners being displaced. City residents have been worried about their plight if the city enforces the lead hazard control order. The health department partner elaborated on the precarious experience that some homeowners may have upon enforcement of this order:

“ Delegation of authority tells us we must go out and placard that unit and indicate it as not safe for human occupation. It must be vacated. That’s a daunting piece when you might be working with a family with limited means, and they’re doing everything they can to maintain the property at the time and to make the improvements that they need to, but they may not be able to drop \$10,000 for windows or \$7,000 to \$8,000 for renovations inside the house. That really is a challenge, and it can be a burden. And it’s hard to quantify if you’re scaring people away and they won’t even let you come in to do the education and the investigation because they’re afraid of the outcome. ”



KEY TAKEAWAYS AND LESSONS

LEARNED //UPSTREAM

ECNAHH enabled partners to work together to implement preventive home interventions to mitigate the risk of asthma/COPD and lead poisoning. All partners spoke of how it is becoming an integral aspect of their institutional and programmatic goals and objectives—even outside of BUILD—and are working to enhance and increase their efforts to address the SDOH in the HHZ.

The partnership took an *integrated* approach whereby a multidisciplinary partnership of organizations, including grassroots organizations, collaborated on a multipronged approach to eliminate unhealthy housing and address language barriers and other sociodemographic factors that impacted community health. The partnership relied heavily on community organizations that provided opportunities for leadership development to the *local* community. The *upstream* solutions implemented in the HHZ were informed by the *data* collected from the health department and other city of Cleveland departments, the hospital system partner, and the CBO partner. The remaining BUILD principles (Integrated, Local, and Data-Driven) applied in the ECNAHH initiative are discussed in greater details in the subsequent sections.



INTEGRATED

The Integrated principle is focused on whether programs “align the practices and perspectives of communities, health systems, and public health under a shared vision.”

The BUILD initiative supported projects that were addressing health inequities through upstream approaches, and multi-sector collaboration, such as data integration and community engagement.

ECNAHH noted that their integrated data portal and collaborative approach were the key strengths of their partnership.

“ We have School Health now with more of an open line to Environmental Health Watch. They have a healthy homes session that's upcoming next week. So, School Health is going to push their flyer out directly to the school nurses in the school. We've got four Cleveland schools that care for families that are in our Healthy Homes Zone, so that message is going to go out in an indirect way, but [it] could have a great direct impact on the BUILD project. I know it has opened conversations with other departments within MetroHealth. **”**

The hospital system partner added that the partnership had enhanced community engagement in their project by improving communication and building relationships. ECNAHH provided a focal point for conversations on community health collaborations. For example, the partnership worked with the Cleveland Metropolitan School District to identify students diagnosed with asthma and sent information home to connect families to the ECNAHH initiative. The hospital system partner shared:

The BUILD funding was also the impetus for various city departments to coalesce around the healthy housing standards. The health department spearheaded biweekly meetings with other departments in the city to tackle the lead poisoning problems among city residents. This partner provided insight on the interdepartmental collaboration in the city:

“ We recognize that the outcomes we were trying to get from a health perspective really centered on building, structural maintenance, and repair issues. But if nobody's looking for those issues on the building inspection end, they would not be captured. **”**

ECNAHH integrated the expertise of its partners into the healthy homes initiative. This partnership exemplified an integrated approach in governance through shared leadership that spanned multiple sectors.

INTEGRATED: GOVERNANCE THAT SPANS ACROSS MULTIPLE SECTORS

ECNAHH partners came together around a common vision and agenda to create the HHZ. The partnership used a nonhierarchical structure in which the three core partners jointly made decisions with their noncore partners. This partnership was grounded in shared goals, and partners developed strategies to fit these goals. Member organizations signed MOUs that detailed their roles and responsibilities in ECNAHH. Support letters from the partner organizations were used to draft the content of the MOUs. This content included reporting requirements, payment

schedules, reporting timelines, and the appropriate language for policy formulation. In addition to detailed MOUs, the partner organizations engaged in discussions through face-to-face meetings. For example, the CBO partner scheduled individual partner meetings when preparing the BUILD grant application to learn how each partner saw their contribution to the collective work plan.

Regarding DUAs for sharing health data, the partnership determined that DUAs between University Hospitals and MetroHealth and between Metro West CDO and MetroHealth were necessary for HIPAA compliance. However, the partnership determined that it was not necessary to establish any DUAs between the CBO partner and the hospital system partner because individual patients had previously consented to participate in the project and agreed to have their contact information shared.

DID YOU KNOW?

The HIPAA Privacy Rule establishes national standards to protect individuals' medical records and other personal health information. It applies to health plans, healthcare clearinghouses, and healthcare providers that conduct certain healthcare transactions electronically.

The Rule requires appropriate safeguards and sets limits and conditions on the use and disclosure of information without patient authorization. It gives patients the right to examine and obtain a copy of their health records and to request corrections.



This partnership relied on efforts of the various workgroups, with key agency personnel from partner organizations serving on at least one of three workgroups: Policy, Outreach, and Implementation. Each workgroup was responsible for a specific aspect of the initiative. The Community Outreach Workgroup was responsible for integrating and engaging community residents in the process; the Policy Workgroup's role was to integrate new housing policy measures within the existing citywide policies; and the Implementation committee developed healthy homes protocols, a referral and payment process, assessment forms, and a resident agreement and tracking system. The partnership monitored its progress and adjusted its goals as needed. A great resource to

the partnership was the project evaluator. This evaluator interviewed partners to gauge their experiences and satisfaction with the collaboration to date. In an interim report, the evaluator stated:

“The backbone organization, [CBO partner], is modeling how to lead in an environment where competing interests might slow progression of

best practices. [The CBO partner] is anchoring the policy discussion and supporting planning practices that ensure authentic community participation in addressing lead poisoning, housing certificate, and community planning efforts in multiple efforts throughout the city.”



KEY TAKEAWAYS AND LESSONS LEARNED // INTEGRATED

Prior to BUILD, the city and county have had several multisectoral health consortia. The decade-long history of collaboration among the core partners and other community partners in Cleveland resulted in an active healthcare community that worked to address the health disparities in the city.

The BUILD funding served as a catalyst for these partners to develop a systematic long-term approach that addressed the root causes of the unsafe and unhealthy housing stock in the HHZ. The health department partner shared that *“projects like this that address social inequities and foster collaborations to address issues that may have been going on a long time but bring a fresh perspective and drive new change are really important.”*

ECNAHH implemented housing and rental policies that aimed to protect the health and well-being of the HHZ community. The health department partner mentioned that *“focusing on the underlying issues that are preventing us from moving successfully toward the health outcomes we want has been [a] significant gain from this process. For example, getting agencies to step back from their activities to see what their actual mission, role, and processes are, and where small tweaks in those could improve our outcomes and our collaborations. That has been a huge piece, huge takeaway from this.”*



LOCAL

The Local principle stresses that initiatives “incorporate a commitment to community engagement so that neighborhood residents and community leaders are key voices and thought leaders throughout all stages of planning and implementation.”

This principle can be understood by examining the community involved in the project's engagement efforts and the processes implemented to ensure residents and stakeholders were involved in various aspects of the BUILD initiative.

The ECNAHH partners had a lengthy history of working with the community and were actively engaged in policy and community development with the Hispanic/Latino community. The three core partners had previously collaborated through their membership in several health consortia, and their partner organizations were involved in various health equity efforts. The CBO and health department partners had leadership roles in a health improvement consortium of community residents and more than 100 agencies from government, academic, nonprofit, and health sectors. The CBO partner was a leader in a health partnership that focused on eliminating health disparities in the county through policy changes and neighborhood revitalization with community involvement. As the lead organization, the CBO partner built a strong network of groups that were mutually interested in environmental health and health equity. This network was diverse and included residents and community stakeholders. The CBO was involved in housing code enforcement with the city and collaborated with the Hispanic/Latino cultural groups to address the social, educational, and economic needs of the community.

ECNAHH was Local in its work through:

01

THE HISTORY OF ECNAHH PARTNERS WORKING WITH THE LOCAL COMMUNITY.

02

STRATEGIES FOR ENGAGEMENT OF THE LOCAL COMMUNITY.

LOCAL: HISTORY OF WORKING WITH THE LOCAL COMMUNITY

Prior to BUILD, the CBO partner, neighborhood CDO (Metro West CDO), and health-care system partner had worked closely on housing issues. This CDO had a long history of working with residents on housing and community development. This CDO had a community organizer, housing committee, and a code enforcement person, who was a liaison to ECNAHH. Two local Hispanic/Latino community organizations (Hispanic Alliance and Spanish American Community) had focused on social, educational, and economic needs of the Hispanic community. The Hispanic Alliance worked on citywide policy issues and specifically on development for the Hispanic/Latino community. The Spanish American Committee is the oldest social service agency that serves Hispanic/Latino individuals by addressing housing issues.

Residents also voiced their concerns about gentrification and displacement, as well as property neglected by landlords. Vocal resi-

dents provided invaluable information to the partnership. For example, it was members of the community who raised concerns about the potential of the home interventions leading to gentrification and the subsequent displacement of current residents. The CBO partner provided examples of other concerns and issues expressed by vocal residents:

“ ... there is a potential for gentrification in the neighborhood and people to be displaced, and looking at how that is happening in the neighborhood right now and how that affects people’s perception of housing, and how potentially [the] city is now enforcing some things which might impact landlords which will in turn impact tenants. And so, that is a concern that has been brought up that we are being mindful of. I think that the Hispanic groups have brought up some things about how there are some Latino landlords that may not respond to outreach in exactly the same way that non-Latino landlords would. So, that they are, for example, less likely potentially to participate in a program where you get recognition for doing things because they don’t necessarily want to be on the public’s radar. ”

The result of local media coverage on lead poisoning in Cleveland reinvigorated community engagement around lead poisoning. According to the health department partner, there were about 40 articles that drew attention to “*lead poisoning prevention challenges from the local level all the way up to the state.*” The health department elaborated on the impact of this coverage on community engagement:

“ There’s been a ton of media information over the past two years related to the lead poisoning prevention that has engaged the community and re-engaged some of the initiatives that were interested in lead poisoning but had fallen off over the decades. So, we have a lot more community engagement. We have had some new local groups spring up that have a focus on dealing with lead poisoning prevention and health inequities in Cleveland. So, those are going to help. The BUILD process has actually positioned us to bring those kinds of inputs or interest groups into the mix as opposed to having them being on the outside and just trying to chip away at their own specific interests. ”

While the community had been engaged prior to ECNAHH’s launch, partners reported that the initiative had a long way to go before it could truly involve the community in the decision-making process regarding the development of new strategies and innovations. One partner remarked: “*Well, I don’t think we’re there yet. Right now, I think we’re still in the phase of identifying those residents that want those programs in their home.*”

The partners shared that a major obstacle to community engagement was a mistrust of agencies due to fear of deportation or other negative consequences for receiving services. Also, community engagement was not at the forefront of the process for the ECNAHH partners at the inception of the initiative. One partner remarked:

““ I think originally we expected [a partner] to play a greater role—in fact we even budgeted a member to get a small stipend for working with us, coming to meetings, doing some outreach, but it didn’t materialize, so we have relied more heavily on some of our other partners. I don’t know if we will identify a person, so that will change how we are doing outreach—we haven’t conceptualized the main vehicle for outreach, but it didn’t turn out to be quite as robust of a community engagement vehicle as we thought it would be. ””

Demographic profile of ECNAHH partners

Metro West CDO, Hispanic Alliance, and Spanish American Community personnel share a similar demographic profile as area residents. One partner described the demographics of the CBOs that served the Hispanic community in the neighborhood. Some of the partners were raised in the local community, which solidified the relationships that were built:

““ Several staff members actually reside in this neighborhood and are representative of the demographics of the neighborhood. There are a lot of Latino professionals that work in the neighborhood or [that] have seen the development of the neighborhood for many years. Some are residents as well so they’re professionals but also subject matter experts. As far as some of the partners that we work with, absolutely there is the same kind of makeup, the same socioeconomic status, same race, and same ethnicity. As far as my role, I’m Hispanic. I grew up in this neighborhood. I don’t currently live in this neighborhood, but I’ve worked here for more than 20 years. I’m much more familiar with really connecting with the community on that level. ””

LOCAL: STRATEGIES FOR COMMUNITY ENGAGEMENT

ECNAHH leveraged the rapport that its community partners had developed with the Hispanic/Latino community. Given the linguistic marginalization, community partners, including the Hispanic Alliance, Spanish American Committee, and Metro West CDO, played a pivotal role in advocacy for the community. ECNAHH educated tenants and homeowners about healthy home standards to mitigate the risk of adverse health outcomes, including asthma/COPD and lead poisoning. The partnership also educated residents about their tenant rights and how to talk to their landlords. EHW developed presentations that included tenant rights information and distributed relevant materials. Hispanic Alliance helped to translate and delivered the presentation with EHW. Moving forward, resident engagement for the second cohort of BUILD is more intentional, including journey-mapping processes with renters, several community conversations, and working toward the formation of a healthy homes resident lead advocacy team and building capacity for policy and advocacy.

A major goal of ECNAHH was to ensure that community engagement efforts provided support for residents to take ownership of any community-related issues and become their own advocates. The hospital partners described steps taken to strategically engage community residents on housing issues. The hospital system partner shared about input from community residents:

“Community engagement is really taking all those different data and the places that they’re touching the community. And we come to the table to talk about that and see where the strengths are and how we can strategically engage in the community. So that’s how we can strategically engage in the community—based on each and every individual’s input—and that’s really helped us be more focused.”

For strategies on community engagement, the partnership focused on:

1. Community outreach efforts.
2. Fostering communication with HHZ residents.

Community outreach

ECNAHH partners shared how community outreach first began with regular face-to-face meetings before reaching out to the larger community:

“ We have really spent a lot of time planning for this and thinking about what the best way to engage the community is and how to target people. So, our community outreach workgroup meets monthly. We wanted to lay the groundwork and make sure we had plans before we went out to community events. Now that we have a handle on what is happening in the city and what the potential is, we can communicate that to the public and provide some good information when we are out talking to people.”

The partnership formed a Community Outreach Workgroup to strategize ways to engage community residents. The workgroup used a resource called the Tool for Health and Resilience in Vulnerable Environments (THRIVE) to develop the community outreach strategy (visit, <https://www.preventioninstitute.org/tools/thrive-tool-health-resilience-vulnerable-environments> to access the tool). THRIVE is a framework and tool that helps communities determine how they can improve their health and physical environment and promote health equity. This tool comprises 12 community determinants of health and safety that are grouped into three interlinked domains of environment:

- Social-cultural environment (people)
- Physical environment (place)
- Economic/educational environment (equitable opportunity)

Based on THRIVE, this workgroup developed a strategy for outreach in the Hispanic/Latino community, including door-knocking, and created an interview tool. This workgroup learned about the

CONCEPTUAL FRAMEWORK OF TOOL FOR HEALTH AND RESILIENCE IN VULNERABLE ENVIRONMENTS (THRIVE)



Source: The Prevention Institute. THRIVE Overview and Background: Tool for Health and Resilience in Vulnerable Environments.

<https://www.preventioninstitute.org/sites/default/files/uploads/THRIVE%20overview%20and%20background.pdf>.

Retrieved on October 20, 2017.



importance of engaging both landlords and tenants for successful home remediation. During the implementation of ECNAHH, the partnership modified the strategy for recruiting community residents to prevent loss to follow-up. One such modification was to immediately follow up on initial outreach contacts to schedule assessment appointments.

The partnership engaged the local community in a myriad of ways, including door-to-door recruitment for the healthy home pilot project and community meetings on home remediation, and around specific health issues of significance to the community. Once the partners started building rapport, they tapped into the expertise of residents who shared an interest in the neighborhood issues, including the deplorable housing conditions. It was also important for ECNAHH partners to allow the community members to voice their concerns about other health issues of interest to the community, such as the existence of a food desert in the neighborhood. One partner elaborated on the impact of their engagement with the community:

“ We leveraged those relationships and began to gather those Latina faith leaders that we had been connected to. So, we gathered them together and started to talk to them about food and the food desert and the food insecurity and the food inadequacy in this local neighborhood. And these were not just Latina faith leaders, they were also residents and some of them were subject matter experts. We’ve had a whole process, almost about a year now of engaging with them to develop what they felt were the gaps or the needs to address, particularly food. We’ve learned to really be collaborative and play our position. ”

Fostering communication with community residents

Most of the families in the HHZ were Spanish speaking, which presented a language barrier and made it challenging to enroll families in the home remediation. However, ECNAHH took several steps to address this challenge. Previously, the CBO partner had relied on bilingual family members for the language translation. One of the ECNAHH partner organizations hired a bilingual lead risk assessor as a subcontractor from the city lead program. A MetroHealth bilingual

staff member assisted with enrolling families and scheduling appointments with asthma patients. Also, all community meetings included bilingual presentations, materials, and discussions that were inclusive of the Spanish-speaking individuals. Hispanic Alliance built its capacity to deliver education about healthy homes to the community by involving a resident leader in these efforts. The information was translated and delivered by the resident leader to other community residents, and these efforts resulted in increased awareness about healthy home standards.

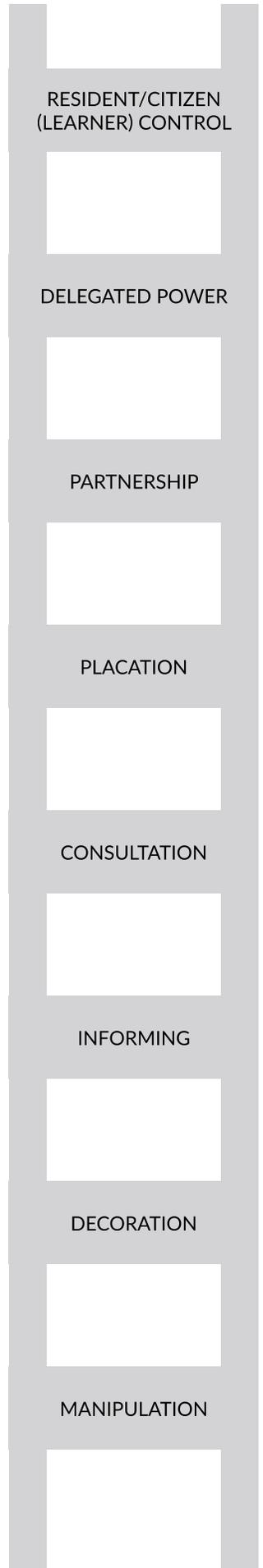


KEY TAKEAWAYS AND LESSONS LEARNED // LOCAL

The existing health consortia and networks of community-embedded organizations enabled the partnership to take advantage of BUILD funding to develop upstream solutions that addressed the root cause of asthma/COPD exacerbations and lead poisoning among community residents.

Partners disclosed that they did not expect the types of challenges they faced in their efforts of community engagement. The partnership underestimated the impact of cultural and language factors on their ability to implement the healthy homes intervention. Partners realized that there was a need to raise their standards for language translation. They realized they needed to hire professional staff to provide translation services during encounters with residents, such as the home visit. Interpreters got involved in landlord-tenant issues to educate residents about their options. Also, the interpreters were essential for the partnership to gain insight into the lived experiences of the HHZ residents and to learn about the challenges that residents faced that could lead to housing disinvestment and unaffordability. Both housing problems had been closely linked with increased asthma/COPD exacerbations and lead poisoning.

Engagement of the community gave partner organizations insight on potential barriers to enrollment in the home remediation services, such the linguistic isolation experienced by the Spanish-speaking residents in the HHZ and the tenants' housing problems. First, partner organizations learned that they needed professional translators for home visits and other services offered to the Spanish-speaking residents. Second, partner organizations understood the root causes of residential property neglect and the credibility issues surrounding promises to eliminate the unhealthy housing conditions.



In assessing each site's efforts related to community engagement and participation, we used Arnstein's ladder of participation. It includes eight typologies or "rungs" with respect to participation or engagement. Each rung corresponds to the extent to which citizens/residents/community members hold power in determining the end result or goal. The following table describes each rung of the ladder:

LADDER OF PARTICIPATION

LEVEL OF ENGAGEMENT	TYPE OF PARTICIPATION	DESCRIPTION
Nonparticipation	Manipulation	Directed by staff and tend not to be informed of issues. May be asked to "rubberstamp" decisions already made by staff.
	Decoration	May be indirectly involved in decision or "campaigns" but are not fully aware of their rights, their possible involvement, or how decisions might affect them.
	Informing	Informed of actions and changes, but their views are not actively sought.
Tokenism	Consultation	Fully informed and encouraged to express their opinions but have little or no impact on outcomes.
	Placation	Consulted and informed. Views are listened to in order to inform the decision-making process, but this does not guarantee changes.
	Partnership	Consulted and informed in decision-making processes. Outcomes are a result of negotiations between organization/staff and community/residents.
Learner Empowerment	Delegated Power	Organization/staff inform agenda for action, but community/residents have responsibility for managing aspects or all of any initiatives/programs. Decisions are shared.
	Resident/Citizen (Learner) Control	Community/residents initiate agendas and have responsibility and power for management of issues and to bring about change. Power is delegated to community/residents and they are active in designing their education.

While partners did seem to have an element of community engagement in their work, particularly through resident involvement, the partner institutions were leading most of the solutions. According to Arnstein's ladder of participation, this level of community engagement is consistent with consultation. Based on interviews at the time, community residents were informed about initiatives and community input was sought in some cases, but only certain community members are included in the decision-making process.



DATA- DRIVEN

The Data-Driven principle elevates the “use of data from both clinical and community sources as a tool to identify key needs, measure meaningful changes, and facilitate transparency among stakeholders to generate actionable insights.”

The partnership integrated data from multiple sources to expand a publicly accessible data portal for community stakeholders and the public to access data collected from the state, city health department, and other city departments (Building and Housing).

One partner highlighted the benefits of having a data portal that was readily accessible to the public:

““ The healthy homes rental registry [provides] the data feed to the public so they can see [if] properties they’re looking at have issues. That’s a huge takeaway. That’s something that is such a foundational piece: giving people access to information that they can use to make better healthcare decisions. Whether or not they realize it’s a healthcare decision, picking a house that’s healthy, picking a house that you know [is] clean, lead free, doesn’t have some of the challenges that a housing unit can have that can lead to poor health

outcomes, they may not think about it at the time. They’re looking for a place they can afford. So, if we can make it easier for them to pick a healthier place, that’s a long-term win.””

ECNAHH expanded the city departmental collaborative database, which included a Citizen’s Access Portal that allowed users to see public health data when looking up the housing code permit and violation data for any given address, with ultimate goal of reinforcing safe housing standards and empowering consumers to find healthy homes. This expanded data portal was a starting point that enabled ECNAHH to also accomplish the following:

- To communicate effectively within the city departments and among partner organizations
- To gain evidence regarding the ROI of the home remediation
- To collect data on systematic proactive housing inspections
- To help to enforce the rental registry and increase compliance
- To facilitate systematic communication between the hospital and the housing authorities to identify families with asthma/COPD and lead poisoning in order to map the residential properties likely to pose significant health hazards
- To lay a foundation for the creation of a more user-friendly application for residents

The portal can be found at <https://ca.permitcleveland.org/public/Default.aspx>. Information could be accessed once an individual created an account. The portal went live in May 2017.

As one health department worker put it, “this whole project is to try to integrate those data streams that we have and create a public-facing portal that can help provide to a more educated consumer an opportunity to look at what they can do with their budget to have an impact on rental and healthy home issues.”

DATA-DRIVEN: SYSTEMATIC COMMUNICATION AMONG ECNAHH PARTNERS

The public data portal served to establish systematic communication among the city departments to identify families with asthma/COPD in order to map them to properties likely to pose significant health hazards. The city departments, CBO partner, a university research center, the state health department, and other community partners shared health, housing, and sociodemographic data. The CBO partner shared:

“ We are providing funds to the city to update their database system, which will enable them to communicate between the partners, so building, housing, and community development can input the health protected lead data directly into a database that will provide the foundation for a public portal. ”

The health department partner added:

“ The integrating of the data project was not very well spelled out initially, but we further refined which systems we’re talking about, in between the divisions and processes we’re using. So, we’ve done some business process flow mapping and identified which systems actually need to capture the data and which systems need to share the data. ”

The partnership used the expertise of the hospital system partner as an anchor for creating a seamless network in which data on health outcomes were shared among partners. The hospital system partner tracked the asthma/COPD data of local community residents. The CBO partner shared that “we are working with MetroHealth to look at their asthma patient database and see if there are some matches, we have matched up housing violations and asthma patients to see what the universe looks like. The numbers give us an indication of violation “hot spots” and where asthmatic patients live in our targeted Healthy Homes Zone.”

Among the city departments, city personnel shared data to identify “hotspots” where substandard housing was located and to pinpoint the specific housing units reported for housing code violations. Detailed descriptions of the public data portal are presented below regarding collection, sharing, and use of the data.

DATA-DRIVEN: DESIGN OF DATA COLLECTION

The Partners

The expanded data portal was made possible in part by BUILD funds that EHW granted to the health department—about \$75,000 to finish the process and expand the portal. Other than EHW, there were five partners who contributed their expertise to the data portal expansion. The partnership relied on CWRU Poverty Center NEOCANDO data, city planning, CWRU’s CUPCD, and the health and housing data they already had to begin the process (see Table 1). This table shows how various partners contributed to the data collected. There were data-sharing agreements between most but not all partners.

Using the System

The expansion of this Accela data portal housed at the City of Cleveland Building and Housing Department demonstrated that partners with different jurisdictions and priorities could seamlessly share data. Various databases were cross-referenced to combine data and displayed in the platform. Ultimately, the data feeds integrated to populate the platform include building violations, health code violations, rental registration status, and lead-safe status updates. Housing information could be searched by address and data category. Data housed at the Poverty Center (NEOCANDO) was obtained from a variety of sources, including city public schools, the hospital system and health department partners, the state health department, Building and Housing, and the housing division of the municipal court. The hospital system partner had access to managed care organization data. This partner built

PARTNERS AND DATA CONTRIBUTIONS

PARTNERS	DATA CONTRIBUTIONS
Managed Care Organizations	Health data on asthma, COPD, lead poisoning
MetroHealth	Health data on asthma, COPD, lead poisoning
CWRU NEOCANDO	Housing and social indicator data
Cleveland Department of Building and Housing	Housing codes, violations, remediation
Ohio Department of Health	Health protected lead data
Cleveland Public Health Department	Lead data, mold, and pest inspections
Cleveland Department of Building and Housing Rental Registry*	Number of units registered at outset of project

the EHR platform, Epic, with International Classification of Diseases codes classified by zip codes.

Data fell into four domains: health outcomes and healthcare cost utilization, SDOH, lived experiences (of patients, residents, property owners), and partnership effectiveness.

Data on health outcomes from the Metro-Health EHR (e.g., ambulatory care, hospitalizations, emergency room visits):

Data on SDOH was collected from a research institute affiliated with a local university and from several city departments (e.g., Building and Housing):

- Home ownership (rent versus own)
- Distressed housing (foreclosures)
- Housing condition (e.g., presence of mold, peeling paint)
- Family structure
- Poverty level

The partnership used community meetings, phone calls, and door knocking activities to find common ground with landlords for support in implementing changes to housing policy and to collaborate with the landlords on efforts to improve the quality of housing in the HHZ. Qualitative data was collected via focus groups and patient and client interviews:

- Input from landlords regarding the home remediation program and ways to improve the program

- Input from tenants/homeowners on their housing conditions, awareness of health hazards in their residence, and experience of asthma/COPD and/or lead poisoning

In terms of metrics addressing partner engagement, the ECNAHH partners felt that quantitative metrics, such as the number and type of data-sharing agreements, were not the best indicators of partnership effectiveness. Instead, these partners used qualitative metrics related to the partner engagement and analysis of social networks. The ECNAHH partners explained that “we are looking at how the different partners work together.”

Furthermore, the partners elaborated:

“ One of our metrics was the number of partners involved in data-sharing and integration. Now that we have that system up and running, we have the Public Health Department sharing information with Community Development and Building and Housing and also the state. ”

There was also a qualitative assessment of the partnership’s effectiveness. For details on the questions regarding partnership effectiveness, please refer to the appendix.

DATA-DRIVEN: DATA USE, ANALYSIS, AND INTERPRETATION

Epic data and Accela housing violation data in NEOCANDO were used to identify risk-stratified patients for home visit referral and to evaluate effectiveness. The intention was to get cost utilization, but more piloting and engagement with the appropriate department will be a next step. Metro West CDO pulled violation data and cross-referenced it with known asthma/COPD patient medical record data to target the healthy home assessment where there was the greatest risk for adverse health outcomes. A housing dataset from NEOCANDO provided information on housing conditions and financial distress indicators. The Accela database enabled the city departments to merge the health and housing data, and these departments were able to share information. (The city hosts Accela, which is exported into NEOCANDO weekly; NEOCANDO is hosted by CWRU CUPCD.)

Housing data was geocoded and analyzed to examine SDOH. Data on SDOH was stratified by location and risk profile, relative to housing violations, asthma/COPD and lead poisoning. This stratified SDOH data was then used to determine the lead-safe status of a property and the risk for respiratory health problems. The data was further used to inform decision-making processes of the partnership.

The hospital system partner worked on customizing their platform to include SDOH fields in the EHR system to prompt physicians to consider the nonmedical factors that impact the health outcomes of their patients. This partner explained:

“ When [physicians] see a patient, [they] can put the patient into the appropriate context. So, they know where the patient [lives], what environment surrounds the patient when the patient is not in the office. That takes physicians’ willingness to take the time to note that information, but it also takes the technology to make that information readily and easily available. ”

DATA-DRIVEN: SHARING WITH NONTRADITIONAL PARTNERS

Data-sharing was a key component of ECNAHH for mapping where home remediation was most needed. Geocoded housing and health data was linked to identify the residential properties where occupants either had experienced asthma/COPD exacerbations or lead poisoning or were at greatest risk for these health conditions. ECNAHH rallied nontraditional partners in its healthy home intervention initiative for a multisectoral collaboration. For example, the housing division of the Cleveland municipal court worked with the CBO partner, health department partner, Building and Housing, and the neighborhood CDO to share data



on housing court cases. Data collected from the housing court indicated there were more than 3,000 evictions in the HHZ. By sharing data across sectors, the ECNAHH partners were able to develop long-term solutions that would mitigate the risk of evictions related to housing code violations and landlord-tenant disputes.

ECNAHH leveraged the expertise of the healthcare system partner and the university research centers to provide real-time data on health and housing. As a national leader in the use of EHRs, MetroHealth facilitated the merging of health data with housing data to pinpoint residential properties with significant home health hazards. For the interventions, two pilot studies were conducted to assess effectiveness of the asthma home visits and scalability of the home interventions.

The healthcare system also used the data from ECNAHH to identify patients with uncontrolled asthma/COPD. These patients were often seen as “super-utilizers” due to their overwhelming use of medical

services. The MetroHealth system referred such patients to ECNAHH for home intervention, in hopes that environmental triggers would be addressed and complications of their diseases minimized. The hospital system partner was closely working with the CBO to coordinate referrals for home interventions in the target neighborhood and to determine the effectiveness associated with the home intervention.

ECNAHH used geospatial data to locate distressed or foreclosed properties in the HHZ. Based on 10 data sources from ECNAHH partners and the city planning department, the partnership developed maps to locate hotspots where substandard housing existed within three zip codes in the HHZ. The health department partner and Building and Housing built their capacity to convert all the address data into parcel numbers so that maps could be created. These parcel numbers were merged with other data on the Accela platform to generate lists. The partnership continues to update the list of distressed homes to identify those slated for demolition.

DATA-DRIVEN: ACCOMPLISHMENTS

The ECNAHH CBO reported that its interviews with the landlords were highly informative. Some themes discussed by the landlords included:

- Their perception of the proactive home inspections and the lead abatement efforts.
- The way that they had dealt with housing codes in the past.
- Their perception of the new housing code enforcement efforts.

These interviews culminated in the partnership engaging a prominent real estate company in a discussion about “potentially integrating our data into their systems moving forward.” One change that the partnership has made is in the collection of data on the priorities of the community. As of August 2017, the partnership had collected qualitative information on the concerns of residents.

They noted the progress that their partnership had made when they shared:

“One of our metrics was the number of partners involved in data-sharing and integration. Now that we have that system up and running, we have the Public Health Department sharing information with Community Development and Building and Housing and also the State... One of our metrics was having increased rental registration and so the city is making

a considerable effort to increase that number because this is tied to their inspection program.”

Data Use and Sharing Challenges

The partnership experienced some data use and sharing challenges:

- 1) HIPAA-compliance with data-sharing among partners
- 2) Tracking participants in the pilot projects

1) HIPAA compliance with data-sharing among partners

Information security, data integrity, and medical privacy issues were considered while combining data feeds for public use. The prioritization and compromise process helped the healthcare, public health, and housing partners decide which data to include and how to include it in ways that protected patients and families. The city made sure that all data was de-identified prior to being uploaded to the public data portal. Health data was shared with the CUPCD. Health and housing data was accessible to local community organizations, including CDOs. Although the data portal had been fully completed, one partner explained: “It is ready to go, but it needs to go live and so the final element of that is approval from the mayor.” This partner continued: “Once the city data system does go live, that’s going to be the big new thing that people will be able to use to identify if a house is currently lead safe or not, or at least had a clearance within the last period of time.” [Note: the data portal is now live, and accessible at <https://ca.permitcleveland.org/public/Default.aspx>]

To remain HIPAA-compliant, partners shared that they were taking the following protective measures:

“ We have protections on all that data on our computers. We’re used to working with protected health data at [the nonprofit organization] when we do the interventions. But, I think the overall strategy is to let the entities that already have a protected health research environment set up and analyze the data that the community works with, which is de-identified data and housing data that is an indicator of health, but not health data. ”

2) Tracking participants in pilot studies

To avoid loss to follow-up, the partnership worked with the Institutional Review Board to develop a referral and research project for patients with asthma/COPD. This project aimed to evaluate the efficacy and cost utilization after home visits, combined with data from the Metro West CDO, dating back to 1999. If these patients “touched the system within the past two years, they received a letter, and if they don’t call us, we followed up within a week to 10 days with a phone call.” For the next BUILD award, EC-NAHH plans to integrate smartphones as a solution to loss to follow-up and dissemination issues.

CHALLENGES

Another practical challenge was internet access for people using the site. Also, the site was not compatible with mobile devices, which were the only avenue for many residents to gain internet access. It was daunting to track residents due to incomplete address information.



KEY TAKEAWAYS AND LESSONS LEARNED

A key component in making the home interventions successful was the use of the public data portal that the partnership expanded.

Data on housing inventory from Building and Housing and Community Development were linked with health department data on health outcomes through resources from BUILD and general funds available in the city. The expansion of the existing Accela system to include public health data enabled partners and the public to learn about home hazards in the community, and these data facilitated communication among the various city departments, community-embedded stakeholders, BUILD partners, and residents.



HEALTH EQUITY

A BUILD goal was to address health disparities — that is, reduce differences in core health outcomes — caused by systems-based or social inequity.

Furthermore, there was no requirement for sites to address health equity, although many sites saw this as an opportunity to further develop their equity-based work. BUILD continues to learn from awardees' efforts as they make progress toward achieving health equity.

ECNAHH's commitment to health equity can be understood by examining three of its practices and values:

1. The methods and information gathered to understand how ECNAHH instituted health equity
2. Definition and shared vision for addressing health equity
3. The results of understanding the various components of ECNAHH's work with respect to health equity, through the use of tools and a framework

Process for Understanding Sites' Approach to Health Equity

During the application process, ECNAHH was asked to describe the health disparity issues affecting the community. The EC-

NAHH partners participated in individual interviews and a follow-up group interview; they also completed a self-assessment related to equity. This information enabled the researchers to gain an understanding of the ways in which the partners understood and instituted health equity throughout their initiative. Each component was designed to uncover how the partners defined and approached health equity using a framework called R4P.

The © Hogan and Rowley R4P Framework (2010) is a theory of change for designing an equity approach to reversing the unfair, avoidable consequences of inequity. This framework was used to query partners about the ways in which they may attempt to achieve equity through the five domains of R4P: (1) Repair past or historical damage/harm/setbacks; (2) Remediate, or reduce the impact of existing stressors that diminish outcome goals; (3) Restructure policies, procedures, job descriptions, meeting agendas, and other institutional structures to remove the production and sources of inequity; (4) Remove the institutional sources and vestiges of racism, classism, sexism, and other "isms"; and (5) Provide culturally and socioeconomically relevant health/education/clinical services to all populations so that they can achieve equity in outcomes, and further provide structural supports to ensure that all populations have the tools and resources to carry out educational/clinical recommendations.

The self-assessment portion of the health equity interview was designed to guide partners in reflecting on their BUILD initiative and their organization with respect to health equity based on the Brooks Equity Typology© (see appendix).



Definition and Shared Vision for Health Equity among partners

The exact definition of health equity varied among the partners, but their definitions were similar in tone. The partners demonstrated that they had a clear understanding of health equity, and they were attempting to incorporate health equity into their work. A partner noted that their respective organizations “all essentially say the same thing, but with a spin on health of patients for us [the hospital], healthy homes and environment for [CBO partner], and the public health and housing inequities from the city’s perspective.”

The healthcare system partner shared that their partnership was using HUD’s Healthy Homes model as the conceptual basis for their health equity work. This framework theorizes that people spend most of their time in their homes, and because unhealthy homes impact the health of residents living in substandard conditions, focusing on improving the home will ultimately lead to better health outcomes. They continued to explain

that the CBO partner had been implementing this model long before ECNAHH, but that the innovative approach to addressing health disparities, taking a systematic, proactive tack via policy change, was encouraged by the ECNAHH partnership:

“ I think the unique aspect of this has been incorporating patients with respiratory illnesses into the Healthy Homes model. A lot of the work has been done in asthma, particularly with the little guys, pediatric patients, but there has been little attention to other inhabitants in the home—the adults, the parents, and those with more severe forms of lung disease like COPD. ”

R4P OVERVIEW AND DESCRIPTION OF DOMAINS

The following section describes each of the R4P domains, as described earlier, and the ways in which ECNAHH addressed each domain.

Repair

We asked partners to describe the historical forms of marginalization and oppression experienced by the local community and how ECNAHH attempted to repair or address these past injustices. Partners were in the initial stages of acknowledging the sources

of historical marginalization. According to the partners, poverty, distrust of government, redlining, decreased healthcare access, and racism were sources of this marginalization. The community was linguistically isolated, and many residents were not assertive with their landlords because they feared exposing their undocumented immigrant status. The CBO partner noted that institutional practices that marginalized a population were evident in lending practices.

The healthcare system partner underscored the importance of this historical analysis as it acknowledged the reality that the homes were very old, and while the inhabitants changed over time, the homes did not. The partner offered context on how historical residential redlining continues to impact their community today:

“ [We] looked at the current maps and compared them to prior maps and found that a lot of the homes were in need of repair now and remediation. A lot of the homes of patients that are most affected are in the very communities where redlining took place almost a century ago. ”

The health department partner had similar reflections on the community's marginalization. This partner discussed contributing factors that included several socioeconomic issues and migration patterns that resulted in “much higher turnover and much less maintenance of the properties.” This partner also noted that other factors that contributed to this marginalization—in particular, the demographic shift and migration patterns—dated back to the 1960s and 1970s, and these patterns were driven by segregation and racial and social inequality.

DID YOU KNOW?

Redlining is the practice of denying a credit worthy applicant a loan for housing in a certain neighborhood—even though the applicant may otherwise be eligible for the loan. The Federal Reserve Board notes that “the term refers to the presumed practice of mortgage lenders drawing red lines around portions of a map to indicate areas or neighborhoods in which they do not want to make loans.”

Moreover, “redlining on a racial basis has been held by the courts to be an illegal practice. It is unlawful under the Fair Housing Act only when done on a prohibited basis. Redlining an area on the basis of such considerations as the fact that the area lies on a fault line or a flood plain is not prohibited.”

https://www.federalreserve.gov/boarddocs/supmanual/cch/fair_lend_fhact.pdf



The healthcare system partner offered another aspect to the marginalization of the community, noting that while their hospital was a national leader in the use of sophisticated EHR systems, the patients who had the greatest health disparities and limited access to healthcare were the least likely to have to access to an EHR. These patients lived in neighborhoods that lacked the infrastructure for internet access.

Having provided an overview of the origins of the community's historical marginalization, the partners reported that they aimed to integrate the geomapping, inspection, and remediation processes with the health information. One partner described what ECNAHH was doing to *"integrate the healthcare and the insurance end of it so [that] they see these kinds of repairs, especially in the neighborhoods where there are these social economic challenges, can lead to reduced negative health outcomes, which is linked in turn to lower costs for the healthcare system."*

The CBO and healthcare system partners discussed their efforts to repair/remove the historical marginalization of the community. The CBO partner was involved in rallies that were held at the local headquarters of a prominent paint company as a way for their community to protest the use of lead in the paint produced by some of the company's subsidiaries. Although the partners did not directly engage the paint companies, partners leveraged their funding to receive HUD dollars to conduct lead assessments and lead abatement.

Regarding Repair, the healthcare system partner noted the nationwide trend of consolidating healthcare systems that result in many people losing access to healthcare. Unlike many other hospitals, the healthcare system partner seized the opportunity to expand and establish clinics in most neighborhoods in the county:

“When several of the other major health institutions in [the city] were building new facilities in outer-ring suburbs, removing easy access to primary care, [we] realized there was a huge urban population that was no longer being served. We purposefully located primary care practices in those urban neighborhoods and built, over the course of just shy of 10 years, nine freestanding health centers in urban communities.”

The healthcare system partner spoke of the immediate need to improve and repair the infrastructure to help get patients connected to the EHR system. This partner explained that there was a nonprofit organization that was currently working with the Federal Communications Commission to increase the bandwidth in underserved communities and to lower the cost of ownership or leasing of internet services.

Remediate

The domain of Remediate in the R4P framework explores current or existing local policies or practices that may have had a negative impact on the local community and the ways in which ECNAHH may have helped remediate or reduce the impact of these detrimental policies or practices. This domain overlaps with repair, the domain discussed above. ECNAHH partners considered the ways they were attempting to influence policy and address the marginalization of the community evident in its disproportionately high rates of lead poisoning:

- (a) Voluntary compliance with the housing code
- (b) Difficulty obtaining affordable housing
- (c) Unreasonable rent hikes
- (d) Fragmentation of services
- (e) Lack of community engagement

(a) Voluntary compliance with the housing code

A prevailing mindset among policymakers was that code enforcement was onerous for landlords; however, this led to the neglect of housing code enforcement, which resulted in the high rates of asthma/COPD exacerbations and lead poisoning among community residents. To mitigate these adverse health outcomes, the partnership passed city ordinances to enforce housing codes impacting the entire City of

Cleveland. Instead of voluntary compliance with the housing code, as of March 2017, landlords were mandated to obey the rental registry. The CBO partner explained how this enforcement was carried out:

“ We want enforcement of the existing rental registry, to eventually get all the landlords registered with the city as a starting point. That way we can actually make sure that they are meeting code, meeting policies, and paying fees that can support the work of the health department and the Building and Housing department.”

(b) Difficulty obtaining affordable housing

The health department partner explained that many renters did not have a lot of housing options. Therefore, renters tended to choose substandard housing either because the rental costs fit within their budget or because poorly maintained residential properties were on the rental market. This partner explained their approach to integrating information between *“the building structure inventory and any health complaints so that the public would have direct access to that information to help them make better decisions, easier decisions, with their rental dollars, which can have an impact on their health outcomes.”*

(c) Unreasonable rent hikes

Another current practice that had a negative impact on the community was gentrification. Landlords had been raising the rent despite deteriorating housing conditions, and this has resulted in people relocating and being displaced. One partner elaborated:

““ *The resolution was that the landlord gave people money to relocate for their security deposit, but it calls out the issue that displacement is actually a problem in our communities. We know that [when] we start putting these burdens on our landlords, we will react and some of that will be passed on to tenants and we want to make sure displacement is addressed.* **””**

The CBO partner worked to remediate the impact of these current practices. Landlords utilizing ECNAHH funds were required to freeze the cost of rental housing for some time. Given that ECNAHH was investing in their rental property, landlords were barred from using the home remediation to justify rent hikes for improved properties.

(d) Fragmentation of services

The workflow for home inspections was fragmented. There was a disconnect in the current processes of addressing property

complaints and home health issues. The city investigated substandard housing issues on a case-by-case basis without examining the underlying health problem that was evident across several cases. Furthermore, because the homes that were being inspected were rental properties and the community was transient, the city was unable to keep track of the health problems experienced in previous residencies. The health department partner described the pervasiveness of this problem:

““ *Getting to the actual property level for the complaint may be separated from the initial call that we receive. So, we may never receive a call or a referral for a health issue in a home and address the complaint issue. We don't get to the underlying issues. There might be a mold complaint that comes in or we might get a child referred to us for lead poisoning—we'll address that individual issue because that's the structure of the system that is in place. But really, there's a more holistic housing issue. We may not even get tied in with the asthma issue—they call in because there are insects in the home. So, we might address that issue and then never be able to tie the housing complaint to the conditions that allowed for the insect infestation or tie the insect infestation to the asthma. We might have addressed our piece in that, but never tied those [two] pieces together.* **””**



(e) Lack of community engagement

The partnership experienced some trouble with recruiting participants for the home interventions. The CBO partner connected this recruitment problem with the history of mistrust of the city and other ECNAHH partners. This partner explained the historical context of this mistrust:

“ There is some history of mistrust there that we have had to overcome. I think that this city is aware of that and it’s really important to build trust with the community. And I think that our home intervention program in the specific neighborhood tries to build some of the trust back because we are actually helping them. We are trying to help connect people to resources and get them enrolled in the lead program. There were a couple

of families that had some lead issues in the past that weren’t adequately addressed, and we want to go back to them and say, ‘The city is now actually going to help you.’ So we’ve been working to enroll the family in the current lead program and it has been a challenge. And I think the only way we can actually address that is to deliver on the promises that we’re making now: ‘We will do some home repairs with you, and yes, the city will come in and fix your lead problem.’ ”

The hospital system partner made institutional changes toward remediation by creating a community engagement department that hired four community advocates to help address pressing problems in the neighborhood.

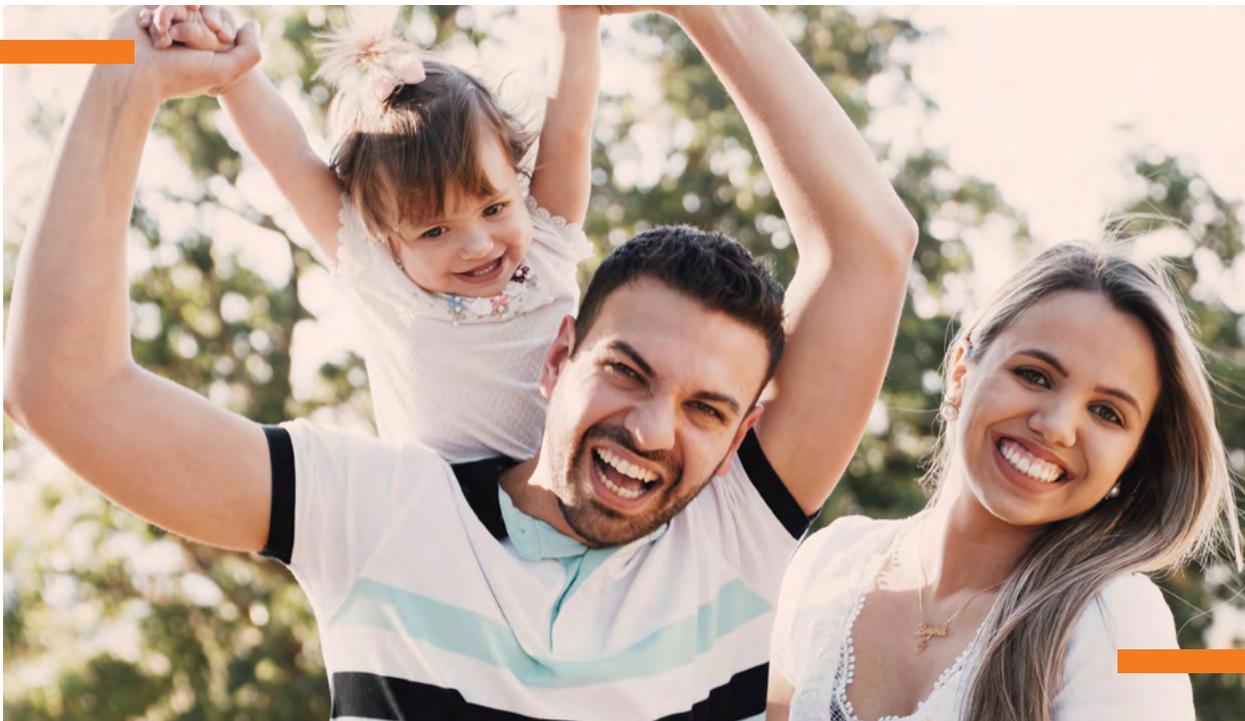
Restructure

ECNAHH partners discussed ways in which they attempted to change or restructure institutional, organizational, or administrative policies and procedures that systematically excluded or had a negative impact on the community. The partnership worked to restructure the current policies and practices in several ways, including:

- Conducting outreach efforts to build rapport with the Hispanic/Latino community.
- Improving communication by translating materials into Spanish and providing translation for community encounters.
- Partnering with the Hispanic/Latino community on healthy home issues.

- Promoting community engagement by providing stipends for community representatives in the budget.
- Implementing hiring practices through which individuals, such as community advocates, were hired by partner organizations.

The health department partner spoke of the role that ECNAHH played in enhancing the efforts of partner organizations that were working on restructuring policies and procedures that had excluded communities in the past, saying the partnership helped them with *“identifying those areas where each of the agencies might have already been doing work and played out the natural cooperation and collaboration points.”*



ECNAHH created opportunities for interagency collaboration and for the use of *“an organizational structure that can be flexible to bring in additional thoughts and input and keep these players at the table and moving these issues forward.”* The partnership restructured procedures for information-sharing among member organizations. Partners shared data from several sources, and this data was merged into one data portal, which gave the partnership the capacity to identify residents’ health risks at the housing parcel level. The availability of health risk data at such a granular level was well received by staff physicians at the partnering hospital system. This partner envisioned a future EHR system that would enable clinicians to *“track the social determinant piece.”* The hospital system partner explained:

“When a physician repeatedly sees a patient with exacerbated asthma, they are not just looking at what they are prescribing for these kinds of things, but also things like, why—at the home level, the environment level—why is the individual still not making any improvements in their health?”

Remove

The domain of Remove explores ways in which ECNAHH identified and removed institutional forms of racism, classism, sexism, heterosexism, and other direct forms of exclusion.

Partner organizations strove to identify and acknowledge the ways that institutional racism resulted in poverty, substandard housing, and related adverse health outcomes. The CBO partner worked toward *“acknowledging [obstacles created by institutional racism] as a start, and we are remediating them by trying to redirect funding and investment to address these problems.”* For example, this partner acknowledged institutional racism by mapping health disparities across the city and HHZ.

The health department partner shared similar sentiments about the racial inequities but focused primarily on economic inequities in a large urban city. The economic challenges led to a huge exodus of city residents that resulted in a significant depopulation over the last two decades. People who had the financial means were able to move away from the city, which resulted in socioeconomic segregation. The partner explained:

“Part of the BUILD Health Challenge area is a larger Hispanic ward of Cleveland. So, that’s actually a neighborhood centering kind of draw, which increases the influx of folks in the community that are in that group, but also cements the socioeconomic issues in place with cultural economic factors. That may impact housing, access to housing, or people’s health-seeking options.”

The healthcare system partner added that while ECNAHH had not yet actually removed the sources of oppression, it had heightened awareness *“of the inequalities that exist in the neighborhood that we reside in.”* One disparity that the hospital system partner discovered was that there was a technology divide in the city. Community residents lacked internet access; thus, it was understandable why patients from the HHZ and similar neighborhoods were not accessing their medical records remotely. The hospital partner reported that this discovery had *“broadened an awareness that social determinants, despite our best efforts to deliver services to everybody regardless of ability to pay, play a much deeper role in outcomes that are associated.”*

The healthcare system partner is located at the heart of the neighborhood, and its partner organization *“acts as an anchor and provides a lot of resources for cutting across those cultural, racial, and socioeconomic barriers.”* Many community partners had worked alongside the health department partner *“to create systems that don’t continue as barriers or enable those barriers to be continued.”* The health department partner shared their partner organization had provided training on cultural competency and literacy to the staff prior to BUILD. The health department partner had worked to remove barriers to healthcare services, and this partner was collaborating with community partners who were leading the cultural competency effort in the city.

Provide

The domain of Provide identifies ways in which the partners assessed and

incorporated the unique needs of the community when providing services for their initiative. ECNAHH incorporated the community’s needs into its services to HHZ residents, including:

- Addressing tenant issues that were unrelated to home inspections (such as landlord-tenant problems, evictions, and unreasonable rent hikes).
- Providing professional bilingual Spanish translators to assist with communication during home visits, such as inspections.
- Creating housing information that was consistent with healthy home principles and making it readily accessible to the public to help them make informed decisions about housing options.

THOUGHTS ABOUT APPLICATION OF R4P MOVING FORWARD

The hospital system partner found the R4P framework especially useful because of its emphasis on the historical context:

“ I think from a health equity standpoint, the framework works really nicely because it ties history into the present, which is not the common way we think about these projects. We kind of think in the now. I like that the framework ties in pre-existing problems that are related to what is happening right now. ”

The partners shared some interesting pieces of advice and takeaways for other organizations looking to work on health equity. One partner shared that the project “has helped align us a lot more toward the issues that are relevant to our patients.” The CBO partner shared that it was important to focus on certain points in time and to keep bringing the group back to those issues to remind everyone of the larger picture:

“ BUILD is all about health equity and social determinants of health, and we really need to talk about that to the community, and we need to make sure that is the basis for everything that we do. So, I think that it is a good reminder for all the partners that this is what is really underpinning this initiative, and I think if you don't keep going back to it, people revert to their old ways without thinking about the larger issues and questions. So, the advice would be to refocus on these basic ideas at various check-in points along the way for a reminder of why we are doing all this. ”

ASSESSING EQUITY CAPACITY

Based on Characteristic Equity Approaches developed by Hogan et al., ECNAHH fell into two categories. One category was the “Cultural-Matching Approach” that “focuses on developing, implementing, and disseminating approaches, usually limited to *education and care*, that match historical, cultural, and social needs and desires” of the marginalized population. To address the linguistic marginalization

of the Hispanic/Latino community, the partnership added bilingual community advocates and professional bilingual translators to their staff. ECNAHH took the “Raise-All-Boats Approach” in its efforts to improve the housing stock. The partnership focused on “improving systems of care for specific outcomes, with the expectation that improved systems will automatically impact all population groups and achieve equity.” For example, the rental registry, lead inspection certificate, and housing code ordinances benefitted the HHZ and other Cleveland neighborhoods.

CHARACTERISTIC EQUITY APPROACHES

CHARACTERISTIC EQUITY APPROACHES ²	DESCRIPTION
Institutionalized-Equity Approach	Builds organizational structure from outset to consider equity in all policies, practices, procedures
Equity-Add-On Approach	Engages in post-hoc actions to graft equity considerations and approaches onto existing (usually non-equity-supporting) institutional frameworks
Cultural-Matching Approach	Focuses on developing, implementing, and disseminating approaches, usually limited to education and care, that match historical, cultural, and social needs and desires of populations of color
Diversity Approach	Focuses on including a more diverse workforce; while organization hires more people of color, it usually does not give them power or resources
Missionary Approach	Provides evidence-based practice in traditional ways, targeted specifically to people of color, usually delivered by people of different ethnicity than population served
“Raise-All- Boats” Approach	Focuses on improving systems of care for outcomes, with the expectation that improved systems will automatically impact all population groups and achieve equity
Selective Approach	Chooses selectively which population or inequity to address as sole programmatic focus (e.g., income inequality but not racial inequities; Latinos but not African Americans)
Concerned, Non-Action Approach	Knows that inequities exist, but does not know how to incorporate equity into programmatic actions
Low-Awareness Approach	Conducts professional work in absence of recognition or consideration of need to address inequities

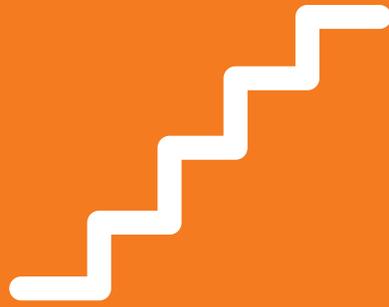
² Hogan VK, Rowley DL, Nahm SG, Brooks PE, Jackson FM, Jones L. Equity evaluation of the First Food Portfolio. To be submitted to WK Kellogg Foundation, April 2014.

KEY TAKEAWAYS AND LESSONS LEARNED

The healthcare system partner also shared that the project “helped align us a lot more toward the issues that are relevant to our patients.”

The CBO partner underscored the importance of focusing on certain points in time and to keep bringing the group back to those issues to remind everyone of the larger picture. Another partner discussed the challenge of reaching a mutual understanding of health equity among partners, especially with new partners who joined after the initial discussions on health equity. The partner shared:

“We’ve done a lot to consider health equity, and we’ve done a lot to determine what each agency’s [definition] of health equity was and what their approaches are. And as a city organization, we’re going to have a political base and will look toward what the city should be doing. That comes from the public. The public is what drives what your city does. That incorporates health equity into it. If it’s not a concern in your local community, it may not reflect in your values. It may not reflect in your mission. But that doesn’t mean as a public health agency, we shouldn’t actively think about it. Now in the [city], we have huge health equity concerns and issues and challenges and awareness. Some agencies don’t. We’re lucky in that our hospital system partner had that lens. You know they’re a county health hospital. So, they definitely dealt with the underserved populations in our community much more so than some of the other healthcare partners did.”



CONCLUSION & NEXT STEPS



Partners shared their ideas on the future directions for the project once the BUILD funding ends.

Partners expressed an interest in learning from other implementation sites and how their approach to health equity differs. Specifically, the core partners expressed a need for guidance on the implementation of their citywide proactive rental inspection program.

The CBO partner shared about one city that had succeeded at working with state ordinances as this city was implementing a proactive rental inspection program. This partner thought *“there may be some benefits to having people in the city visit other locations and talk to those folks or bring those people in just to continue that learning and sharing.”*

The ECNAHH partnership plans to expand its catchment area and recruit new healthcare organizations, and the hospital partner will be a key partner in these efforts. The partners plan to collaborate on future policy formulation with other health initiatives, such as the Greater University Circle Community Health Initiative Community Health Action Team (GUCCHI CHAT), to bridge and expand healthy homes initiatives to the east side of Cleveland. As the partnership seeks more funding opportunities from the local foundations and university and health institutions, partners are exploring the idea of expanding the proactive asthma

prevention model citywide and possibly across Cuyahoga County.

The hospital plans to continue its health equity work in the target community. One CBO interviewee elaborated on the hospital’s potential future role:

“ *The hospitals in our jurisdiction [would] engage in community efforts anyway. So, we built some strong relationships, and we actually included in our application for the next BUILD award an expanded set of the partners. So, in addition to the current hospital partner, we have additional major healthcare organizations in [the city] that we’re trying to bring into the loop in this to expand the neighborhood scope of the project. So, we currently are focusing on one specific neighborhood and the hospital that abutted that neighborhood. We have another neighborhood where the other two hospitals about where we’ve been working on a similar, parallel project, and we’re looking to expand the scope of this in the second BUILD project.* **”**

Another hospital interviewee added:

““ The hospital’s transformation and the redevelopment of West 25th Street opens up a whole lot of opportunity for new businesses to take root here and again support the people who live here. So, one of our hopes is to attract a grocery store. I have strong hopes that our transformation really will build some economic development for the people in this neighborhood. Part of the transformation will, beginning in the fall, offer an employee housing program that will provide renovation assistance, rental assistance, or down payment assistance to employees who want to live in—roughly a three-mile radius of the hospital. And so, having more employed people in the neighborhood should produce a demand for the services to support them.””

The partnership plans to continue working with CWRU and adding new components to this collaboration. For example, CWRU law students are interested in drafting and proposing future legislation for citywide proactive inspections and lead maintenance certificates.

Although the partnership worked through the basics of sharing data with the public, the ECNAHH partners wanted to devote more time to thinking deeply about how they share data—what the best and most innovative practices are to get information out to the public “in a way that they can use it, act on it, and interact with it.” Relatedly, they are looking ahead to their next BUILD proposal, in which they are focusing on data and better instituting systems to get this data out to the public. As mentioned earlier, they plan to use smartphones and mobile apps in an attempt to reach Cleveland residents and patients who do not have regular internet access and who lack access to the existing public portal. Overall, the partnership is focused on implementing a system that is user-friendly and easily accessible to the community.

ECNAHH sought collaborations with local community health initiatives, especially those affiliated with the academic hospitals and university in the neighborhood where the target community resides. The partnership hoped to secure more funding opportunities for these collaborations. One physician-scientist, affiliated with this hospital, was awarded a federal grant to study SDOH, nonmedical interventions, and their impact on health. This scientist hoped to collect these pilot data for future research funding, including National Institutes of Health grants, to investigate home remediation through a health equity lens that would inform efforts to secure long-term sustainability for this initiative.

ECNAHH developed evidence-based, policy-driven solutions with a focus on creating a financially sustainable healthy home initiative that would have a transformative effect on residential properties in Cleveland and the families that live in them. One partner shared that their work could also pursue exploring the *“impact of safety on a neighborhood as well as walkability, transportation, and food insecurity.”*

They shared that their work could naturally lead to any of those conversations and projects, but that bureaucracy could pose a challenge: *“It makes me want to have a centralized office that focuses on community partnerships so that we could do a better job of leveraging all of the different things that are happening internally and connecting to other partners who have perhaps already established a partnership with another part of the hospital that we’re not familiar with.”*

Finally, partners believed their work served as a compelling case study for health insurance companies in reducing healthcare costs while ultimately achieving their goal of addressing health hazards in home environments.





APPENDIX A

ABOUT BUILD



BUILD seeks to contribute to the creation of a new norm in the U.S., one that puts multisector, community-driven partnerships at the center of health in order to reduce health disparities caused by system-based or social inequity.

Awardees include community based organizations, local health departments, and hospitals and health systems that developed partnerships to apply the BUILD principles.

To date, BUILD has supported 37 projects in 21 states and Washington, DC.

BUILD AWARDS

Eighteen community partnerships from across the country focused on a wide variety of upstream factors and became part of the first BUILD cohort of community awardees from 2015 to 2017.

Each community collaborative served as a pilot program to address root causes of disease (also commonly referred to as the social determinants of health) in their local area by leveraging multisector partnerships.

Seven implementation awardees received \$250,000, technical assistance, and individual support over two years to strengthen existing partnerships, accelerate more advanced health data and analytics initiatives, and expand their impact. Eleven planning awardees received \$75,000 and technical assistance to kick-start still-nascent projects addressing specific health challenges with a committed group of community partners. Ten of the planning awardees went on to receive implementation awards and funding to continue their efforts.

The partnering hospitals and health system(s) in each implementation award have also committed a 1:1 match with financial and in-kind support to advance the partnership's goals.

To learn more about BUILD, please visit buildhealthchallenge.org.

BUILD HEALTH CHALLENGE SITES

PORTLAND, OR

BUILDing Health and Equity in East Portland

Expanding access to affordable housing, green space, and healthy food

SEATTLE, WA

Seattle Chinatown-International District

Improving economic development, housing, and safety

DES MOINES, IA

Healthy Homes Des Moines

Reducing pediatric asthma through home improvements and education

OAKLAND, CA

San Pablo Area Revitalization Collaborative

Revitalizing local businesses and expanding affordable housing

ONTARIO, CA

The Healthy Ontario Initiative

Developing "health hubs" to foster strong bodies and communities

LOS ANGELES, CA

Youth-Driven Healthy South Los Angeles

Mobilizing youth ambassadors to advance community wellness

DENVER, CO

EastSide Unified

Creating safer, healthier communities for children

AURORA, CO

Increasing Access to Behavioral Health Screening and Support in Aurora

Eliminating health disparities by age five

COLORADO SPRINGS, CO

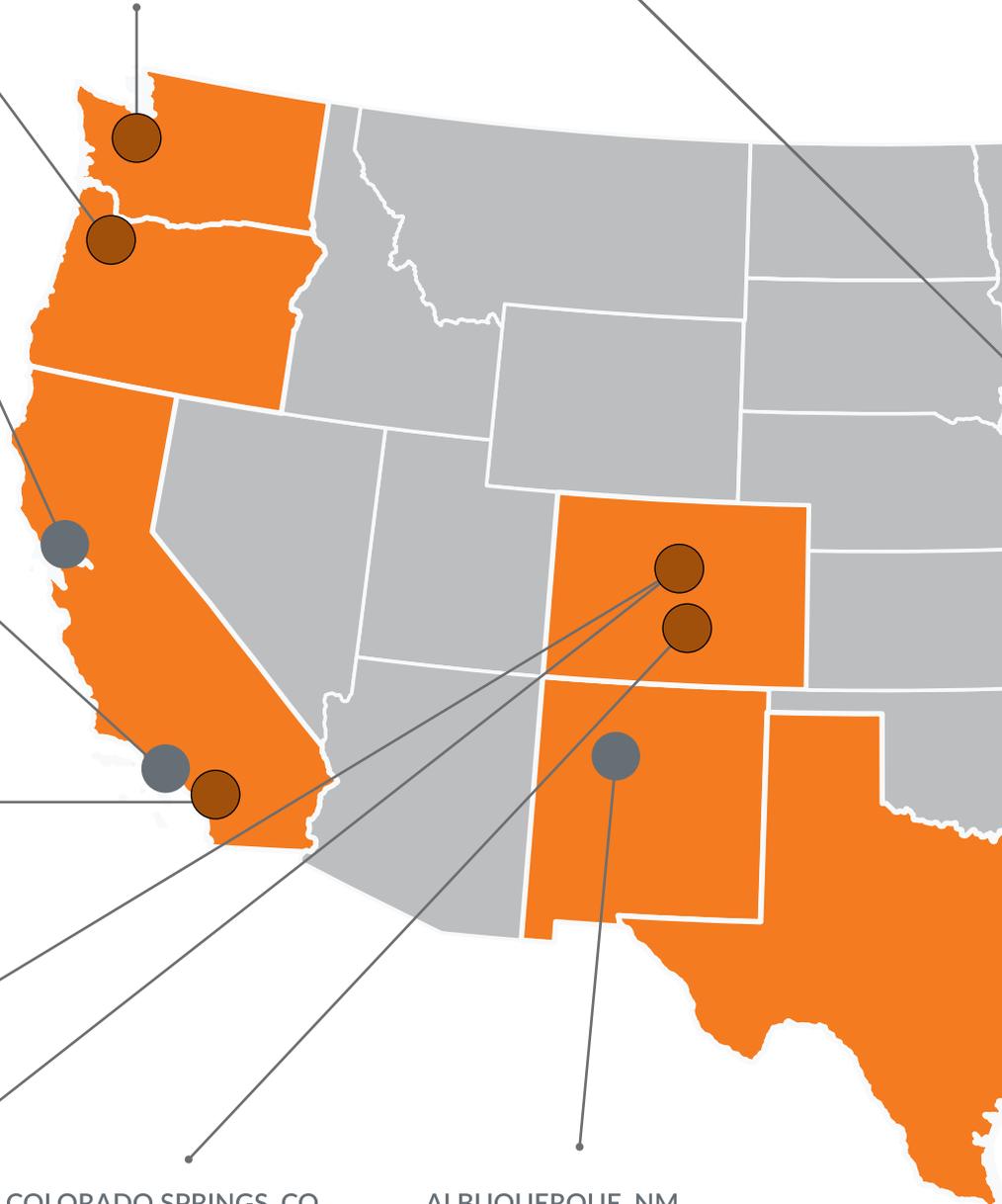
Project ACCESS

Preventing neighborhood violence by engaging community members

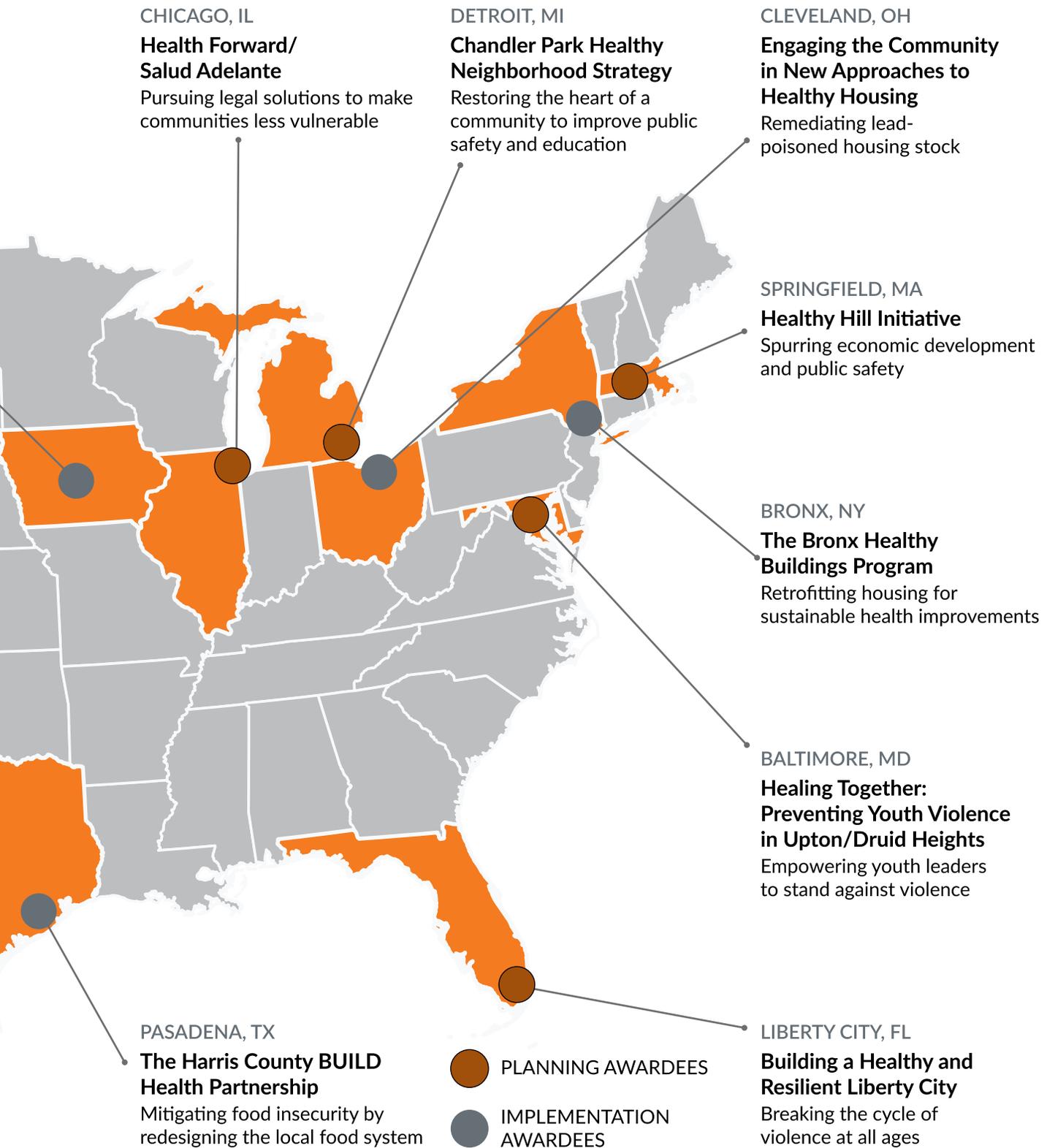
ALBUQUERQUE, NM

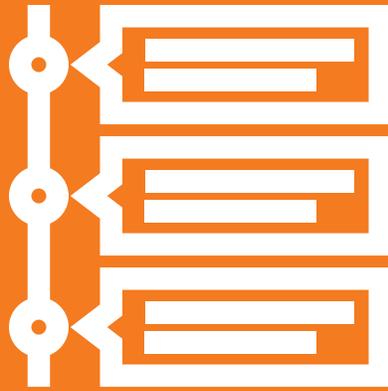
Addressing Healthcare's Blindside in Albuquerque's South Side

Pioneering data-driven approaches to wellness



18 community partnerships in 14 states





APPENDIX B

QUESTIONS

Questions for the qualitative assessment to evaluate the effectiveness of the partnership:

Regarding the effectiveness of the partnership:

- Did the CBO partner, the backbone organization, fulfill its role in the partnership?
- Were community residents and other community partners involved in visioning, strategy development, and interpretation of outcomes?
- What effect did the introduction of new partners have on existing relationships and the formation of an expanded vision and agenda?
- What was the initiative's impact on the systems targeted by the partners?
- What issues of power and control surfaced as a result of having the CBO partner as the backbone organization of the initiative rather than having traditional institutions as the lead partner (e.g., hospital, health department)?
- How was the community voice incorporated at all levels of the partnership?

Regarding the efficacy of the partnership:

- Were partner organizations compliant with the data-sharing agreements?
- Did the partnership demonstrate the ability to replicate and sustain the Healthy Homes model?
- Did the partnership foster relationship-building across sectors among partner organizations?
- Was the partnership successful in its efforts to build relationships with the community?
- Was the partnership effective in creating policy and systems change related to data and community recommendations?



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