National Center for
HEALTHY HOUSING

DATA AND PARTNERS TELL THE STORY:
An Evaluation of the Building for Health Program

2022 | SEPTEMBER

Table of Contents

I. INTRODUCTION

In 2019, Local Initiatives Support Corporation— Connecticut (LISC-CT) was awarded a three-year grant by the Hartford Foundation for Public Giving (HFPG) to create its Building for Health program. Building for Health is a collaboration between health, housing, and energy-related organizations. It seeks to improve the health of lower-income families and individuals in the Greater Hartford area by improving housing quality and energy efficiency. A more energy-efficient home is expected to directly reduce energy costs for the residents. The removal of hazards in the homes is expected to indirectly reduce healthcare costs related to healthcare utilization (e.g., urgent care visits for injuries or asthma exacerbation) or medicines (e.g., use of inhalers for asthma attacks). Fewer adverse health events are also expected to result in a reduction of lost work- and school days, as well as offering the intrinsic benefit of improved well-being. By lowering their cost burden, the households can reallocate their limited resources to other essential needs.

In spring of 2022, the National Center for Healthy Housing (NCHH) was selected by LISC-CT to perform an independent evaluation of their Building for Health program. LISC-CT requested an evaluation of the program with a particular interest in answering two questions:

- What are the strengths and limitations of the Building for Health referral process?
- What is the value of the program from the perspective of program partners and residents?

LISC-CT stated an interest in looking at the program outcomes over the past three years as well as trends and opportunities should the program continue.

Through data and program analysis, NCHH has evaluated the efficiency, strengths, and limitations of this program. This report includes results from our approach to utilize data and perspectives of program partners to evaluate Building for Health's three components, which include a cross-sector referral system between health, housing, and energy partners; building capacity among affordable housing owners or community development corporations (CDCs); and green and healthy housing policy advocacy.

II. METHODOLOGY

NCHH performed a quantitative data analysis of the cross-sector referral system and interviewed program partners to evaluate the past three and a half years of program performance.

QUALITATIVE DATA ANALYSIS

For the data analysis, NCHH coordinated with LISC-CT and Tohn Environmental Strategies to gather all relevant existing internal evaluations, reports, and quantitative data from the One Touch cross-sector referral system. Through simple descriptive analyses, NCHH evaluated the referral system's ability to streamline and improve client access to service delivery including lead-safe, healthy homes, and energy programs. For evaluation purposes, NCHH divided the activities of the Building for Health/One Touch referral system into three phases. **Phase One** ran from January 2019, when the program was launched to February 2020, when the program was suspended due to the COVID-19 pandemic. **Phase Two** ran from September 2020, when the program restarted, until October 2021. The end of Phase Two is somewhat arbitrary, but November 2021 marks the point when a second energy efficiency provider joined the system. Almost all referrals initiated before November 2021 have been addressed in some way (completed, in process, or closed because of client refusal or inaction to participate). **Phase Three** ran from November 2021, when the second provider joined, through the end of June 2022, when the HFPG grant period ended. A higher proportion of referrals in Phase Three remain open or unresolved. Although Building for Health continues to operate, referrals initiated after June 30, 2022, are not included in this analysis. The results from NCHH's data analysis can be found in the Data Findings Section.

PARTNER PERSPECTIVES

Over the course of one month, NCHH conducted 15 interviews with 16 individuals representing partner organizations to assess the value of the program from the perspectives of program partners. These organizations included CMC Energy Services Inc., Connecticut Children's Medical Center (CT Children's), Eversource Energy, Hartford Foundation for Public Giving, HE Energy Solutions, Mutual Housing Association of Greater Harford, Putting on AIRS, Sheldon Oak Central Inc., Southside Institutions Neighborhood Alliance (SINA), and Tohn Environmental Strategies LLC. These interviews allowed NCHH to gather insight into the perspectives of partners who were involved in all three components of the Building for Health program including the cross-sector referral system, capacity building, and policy advocacy. These lived experiences were combined with the cross-sector referral data analysis to evaluate the program. The results from NCHH's partner interview begin in the Partner Perspectives section.

ASSESSMENT OF NATIONAL STATEWIDE PROGRAMS

NCHH identified other programs across the country that combine energy, housing, and/or health improvements or that operate as referral systems between partners from different sectors, including energy, healthcare, cities, and nonprofit organizations. When outlining this approach, NCHH heard of an interest from funders in learning what other states have done in this area that could inform project partners, especially CT Children's, should the program continue and expand statewide. Reflecting this interest, NCHH focused the search on programs that included participation from either energy or healthcare/hospitals (and, ideally, both). Some of the resources consulted included VEIC's *Energy-Plus-Health Playbook*, the BUILD Health Challenge, the Database of State Incentives for Renewables and Efficiency, and a systemic review of screening and referral care services from CDC. Appendix B to this report compiles a list of regional, state, and local programs from these and other sources, which could provide models or ideas for an expanded Building for Health program. A discussion of these programs is available in the Assessment of National Statewide Programs section.

III. BUILDING FOR HEALTH: I. CROSS-SECTOR REFERRAL SYSTEM

OVERVIEW

To achieve benefits of reduced energy costs for residents, reduced costs related to healthcare utilization or medicines, reduced lost workdays and school days, and improved well-being, Building for Health adopted the One Touch assessment tool. One Touch is a cross-sector referral system that streamlines the delivery of lead-safe, healthy homes, and energy programs to meet client needs. An identically named program exists in multiple communities and is managed and directed by Ellen Tohn of Tohn Environmental Strategies. Under the Building for Health program, a consortium of health, healthy homes, energy efficiency, and social services providers agree to collaborate via a shared database and survey tool that allow providers to initiate and respond to requests for assistance to serve clients better. Examples of assistance include providers of healthy homes repair services requesting energy efficiency services and providers of energy efficiency services requesting healthy homes repairs. Other client needs, such as job training and/or smoking cessation, can be identified in the cross-referral system. Regardless of which organization first services a home, the assessment activates referrals for other health, housing, energy, or job programs.

The Building for Health team initially identified Frog Hollow as a pilot neighborhood for program implementation because the area had known lead and asthma issues, because SINA had already been engaged in that area, and because of its proximity to CT Children's. The pilot neighborhood program later expanded to North Hartford, and these neighborhoods were then income pre-qualified for energy efficiency opportunities by Eversource, the largest provider of gas and electricity in the Greater Hartford area. Over the course of the program, Building for Health operations expanded to all neighborhoods in Hartford and then statewide.

DATA FINDINGS

PHASE ONE : JANUARY 2019-FEBRUARY 2020

The Building for Health/One Touch referral system began with three main referral system contributors:

- Connecticut Children's Medical Center
- HE Energy Solutions
- Southside Institutions Neighborhood Alliance

Connecticut Children's Medical Center (CT Children's) is located in Hartford and is considered one of the best children's hospitals in the country. As part of its community benefits, CT Children's runs the Connecticut Children's Healthy Homes Program (CCHHP) which delivers healthy homes repair services to clients across the state of Connecticut. CCHHP receives funds from the US Department of Housing and Urban Development and the state of Connecticut.

HE Energy Solutions (HEES) is a women-owned, small business energy efficiency provider that is an approved contractor for Eversource and United Illuminating. HEES is located in Stratford and serves clients statewide.

- Eversource and United Illuminating helped LISC-CT and its contractor, Ellen Tohn of Tohn Environmental Strategies, develop the local referral system. Both organizations participated in monthly meetings, but operationally, HEES was the organization that initiated and/or responded to referral requests.

Southside Institutions Neighborhood Alliance (SINA) is a nonprofit organization that was developed out of a partnership between CT Children's, Hartford Hospital, and Trinity College in the 1970s. SINA serves the southside neighborhoods of Hartford. SINA maintains multiple programs to support neighborhood renewal, including programs advancing housing, safety, and job development and training. SINA was brought on as a collaborating partner, receiving but not generating referrals, and was considered a secondary referral source by the Building for Health program.

During Phase One, 28 referrals were initiated in the cross-referral database. This was an average of two referrals per month. All referrals involved homes within the city of Hartford.

During Phase One, 28 referrals were initiated in the cross-referral database. This was an average of two referrals per month. All referrals involved homes within the city of Hartford.

CT Children's initiated seven referrals, with requests for energy efficiency services and/or job referral assistance. Forty-three percent (43%) of the referrals were successful, with HEES-provided energy assistance to two homes and SINA-provided job referral assistance to one household.

HEES initiated the other 21 referrals, with requests for healthy homes repairs. Fourteen percent (14%) of the referrals were successful, with CCHHP-provided healthy homes repairs to three homes. Services provided included lead hazard control, moisture mitigation, and safety repairs. At one of the homes, HEES was also able to deliver energy efficiency services.

For the 22 referrals that were unsuccessful, the most common reason was that the property owner failed to respond to the referred agency's outreach.For three referrals, the owners declined the offered services.

PHASE TWO: SEPTEMBER 2020-OCTOBER 2021

During Phase Two, the participating agencies were largely the same agencies that participated in Phase One. One additional agency did participate during this phase: Putting on AIRS (Asthma Indoor Risk Strategies). The Hartford Department of Health and Human Services also attended meetings of the referral partners but did not participate actively in the referral system.

Putting on AIRS (POA): Putting on AIRS is a program designed to help families identify and reduce in-home asthma triggers. The Connecticut Department of Public Health funds public health districts to implement this program in their service areas. POA was originally brought on as a primary partner; however, due to limitations

of their workforce, they became a collaborating partner, receiving but not generating referrals, and were considered a secondary referral source.

During Phase Two, 59 referrals were initiated in the cross-referral database; this was an average of 4.5 referrals per month, more than double Phase One's total. From September 2020 to early February 2021, all referrals were in the Greater Hartford area with most in Hartford and one in Manchester. During this period, the pace of referrals was similar to Phase One (two per month). Beginning in mid-February 2021, agencies began including referrals from other regions of the state, and the average number of referrals increased to over 5.5 per month. For all of Phase Two, 36% of homes with referrals were from Hartford and 2% of homes with referrals were from the area surrounding Hartford, thus 38% of homes with referrals were in the HFPG service area in Phase Two.

During Phase Two, 59 referrals were initiated in the cross-referral database; this was an average of 4.5 referrals per month, more than double Phase One's total.

CT Children's initiated 22 referrals for energy efficiency services and/or job referrals. Twenty-three percent (23%) of the referrals were successful, with HEES providing energy efficiency services to four homes (one additional job is still pending). SINA also provided job referral assistance to one of the households.

HEES initiated 34 referrals with requests for healthy homes repairs. Twenty-one percent (21%) of the referrals were successful, with CCHHP-provided healthy homes repairs completed in one home and pending in seven other homes. The primary service that was or will be provided is mold/moisture mitigation. HEES will also address an asbestos problem in one of the pending home repairs.

POA initiated three referrals for healthy homes repairs. CCHHP was not able to contact the property owners, so none of the referrals resulted in action.

As of July 2022, three referrals remained open in the system as owners remained interested in receiving services. For the 45 referrals that were unsuccessful, the reasons for closing the referral cases included:

- Twenty-eight (28) owners did not respond to the application requests. (62%)
- Six (6) owners refused services. (13%)
- Five (5) owners addressed mold issues themselves. (11%)
- Three (3) referrals could not be addressed.* (7%)
- Three (3) owners had other barriers to participation. (7%)
    - Over income limit for HUD-funded work
    - Owner could not obtain a historic preservation waiver for lead remediation

**Examples: excessive mold, knob-and-tube wiring*

PHASE THREE: NOVEMBER 2021-JUNE 2022

During Phase Three, one additional organization (CMC Energy Services) became actively engaged in the referral system, and one other program (Waterbury Lead and Healthy Homes) made a contribution.

CMC Energy Services (CMC): Similar to HEES, CMC is an approved energy efficiency contractor for Eversource and United Illuminating. CMC has an office in Wallingford and serves clients across the state of Connecticut.

Waterbury Lead and Healthy Homes (Waterbury HH), a program of the Waterbury Department of Public Health, receives funding from HUD to provide services in Waterbury. For some healthy housing issues it encounters, it will make referrals to CT Children's.

During Phase Three, 80 referrals were initiated in the cross-referral database; this was an average of 10 referrals per month, more than double the Phase Two total.

During Phase Three, 80 referrals were initiated in the cross-referral database; this was an average of 10 referrals per month, more than double the Phase Two total. HEES and CMC submitted 89% of the referral requests during this period. The transition to a statewide referral system continued during this phase. Thirteen percent (13%) of homes with referrals were in Hartford; 26% were in the HFPG service area.

- CT Children's initiated eight referrals for energy efficiency services.
- HEES initiated 45 referrals for healthy homes repairs.
- CMC initiated 26 referrals for healthy homes repairs.
- Waterbury HH initiated one referral for healthy homes repairs.

The referrals resulted in two energy efficiency jobs being completed by HEES. Two other CT Children's referrals are pending action by HEES. Eight of the HEES referrals are also pending, with CCHHP in the process of scheduling inspections of the work needed as of mid-July 2022.

Because many of the referrals were only recently entered into the referral system, a much larger percentage remain open as applications from owners are anticipated. Twenty-seven referrals are in this subset.

For the forty-one referrals that were unsuccessful in Phase Three:

- Twenty-seven (27) owners did not respond to application requests. (66%)
- Eight (8) owners refused services. (20%)
- Five (5) referrals could not be addressed.* (12%)
- One (1) owner addressed mold issues themselves. (2%)

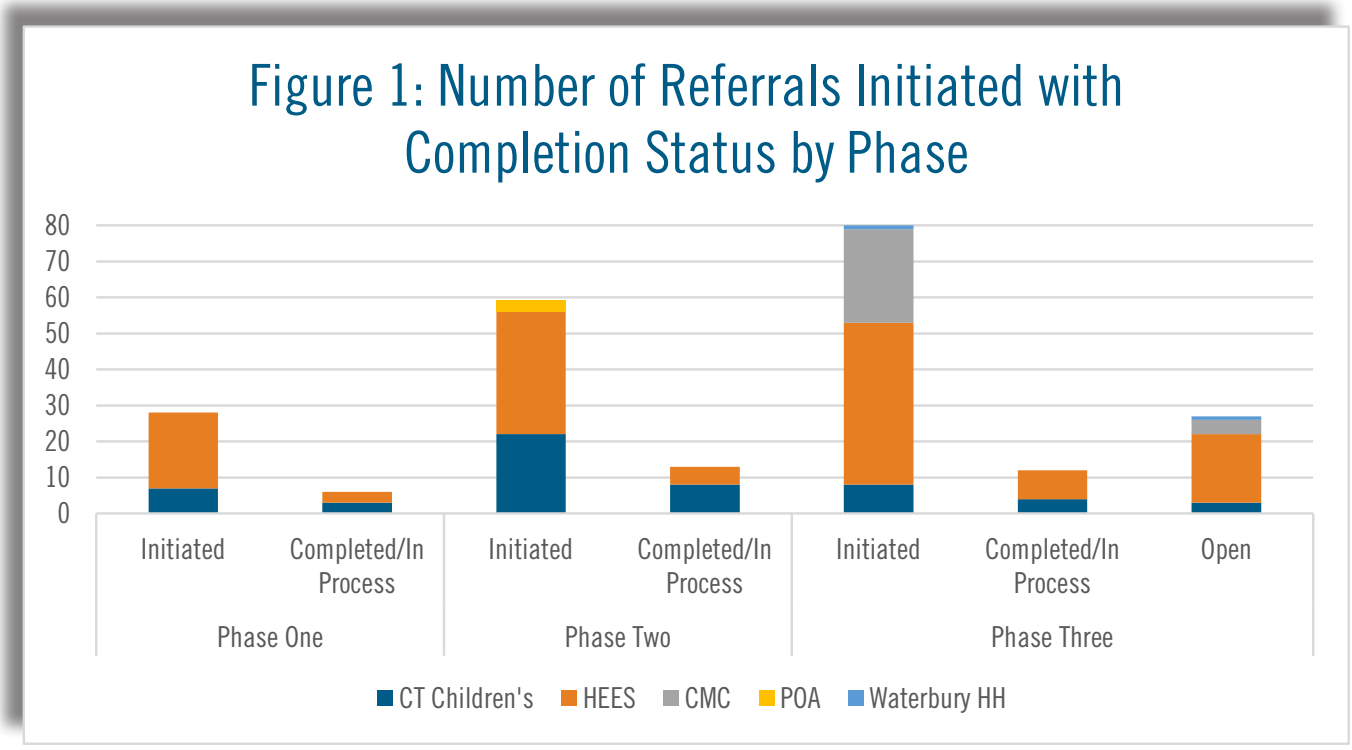
**Examples: request for emergency heat assistance, vermiculite in attic*

SUMMARY OF FINDINGS

Building for Health/One Touch referral system evolved over the course of the grant program.

During the pre-COVID phase:

- All referrals were initiated out of Hartford.
- The pace of referral requests was relatively slow (about two per month).



- Three-quarters of the requests were for healthy homes repairs, and one quarter requested energy efficiency and/or job referral services.
    - Forty-three percent (43%) of requests for energy efficiency/job referral services were successful.
    - Fourteen (14%) of requests for healthy homes services were successful.
- Sixty-four (64%) of referral cases were closed because the property owner did not respond to a request to apply for the referred services.

The 21% overall success rate was promising, but the number of homes receiving additional support was limited to six. Although it is unknown how the COVID pandemic may have affected the agencies' ability to contact and successfully receive applications for service, the non-response rate was similar in later phases of the program.

During Phase Two:

- Thirty-six percent (36%) of referrals were initiated out of Hartford; 38% out of the HFPG service area.
- The pace of referral requests increased (4.5 per month).
- Sixty-three percent (63%) of referrals requested healthy homes repairs, and 37% requested energy efficiency and/or job training services.
    - Twenty-one percent (21%) of requests for energy efficiency/job training services were successful.
    - Twenty-three percent (23%) of requests for healthy homes services were successful (although most of this work is still pending).
- Sixty-two percent (62%) of referral cases were closed because the property owner did not respond to a request to apply for the referred services.

The 22% overall success rate continued the trend from the Phase One, while the number of homes receiving or expected to receive support increased to 13.

During Phase Three:

- Thirteen percent (13%) of referrals were initiated out of Hartford; 26% initiated out of the HFPG service area.
- The pace of referral requests further increased (10 per month).
- Ninety opercent (90%) of referrals requested healthy homes repairs, and 10% requested energy efficiency services.
    - Fifty percent (50%) of requests for energy efficiency services were successful.
        - One referral remains open.
    - Eleven percent (11%) of requests for healthy homes services were successful (with all work still pending).
        - Twenty-six (26) referrals remain open.
- Sixty-six percent (66%) of referral cases were closed because the property owner did not respond to a request to apply for the referred services.

The 15% overall success rate was below that of the first two phases, but 34% of the cases remained open as of the end of NCHH's review period, so the completion rate could increase with time. Considering only referrals completed, in process, or closed, the success rate sits at 23%, comparable to the earlier phases.

PARTNER PERSPECTIVES

STRENGTHS

Buy-In

Throughout nearly all of NCHH's interviews with 11 individuals and seven key partner organizations involved in the cross-referral system, there was an overwhelming sense of equal buy-in and belief in a system that benefits residents and connects them to services and programs via a streamlined process. Interviewees commented that there was critical buy-in from partners and high-level individuals who demonstrated a significant acknowledgement

BUILDING FOR HEALTH/ONE TOUCH REFERRAL SYSTEM: PARTNER PERSPECTIVES

STRENGTHS. There are several areas of the program that partners highlighted as strengths:

- **Buy-in**. There was an overwhelming sense of equal buy-in and belief in a system that benefits residents and connects them to services and programs via a streamlined process.
- **Partnerships and collaboration**. Partners noted that critical partnerships and collaboration resulted from the cross-referral system.
- **Process improvement**. Three major successes resulting from process improvement, include designing the assessment tool, making progress on referrals, and adjusting the income verification process.
- **Assessment tool**. The design of the assessment tool was effective, functional, and user friendly.
- **Progress on referrals**. Partners are continually collaborating to improve the platform to get referrals successfully through the system and completed.
- **Income verification**. Residents from low- or moderate-income census tracts were allowed to bypass the income verification process resulting in less burden for the resident and less administration for partners.

LIMITATIONS. There are also some areas where partners noted limitations:

- **Missing or disengaged partners.** The key partners who interviewees noted as missing were the City of Hartford (specifically building and code enforcement), clinical programs who could better integrate clinical considerations into the referral tool, and other repair programs. Interviewees from smaller programs also noted staff capacity concerns and a burdensome cross-referral process as reasons they discontinued their involvement.
- **Staff capacity and turnover**. Limited staff capacity and staff turnover were a limitation for many partners.
- **COVID-19**. While the pandemic posed significant challenges and disruptions, the cross-referral partners adjusted eventually, and COVID-19 is no longer a significant barrier or limitation to the program.
- **Referrals: Type of referrals.** Both utility and energy partners and CT Children's struggled with referrals to the Healthy Homes program for mold and asbestos.
- **Referrals: Process of referrals.**. Areas noted for improvement in the referral process include improving communication on referral notes, ensuring that a referral sent to a partner does not come back to the originator, aligning program expectations, expediting construction services, and improving completion rates.

and support of housing as a critical platform for health. Key partners were committed and saw this component of the Building for Health initiative as a priority and significant investment into the community. The majority of interviewees stated that it was worth the investment of their time and that there was a role for Building for Health and cross-sector collaboration in demonstrating social determinants of health and the interconnectedness of health, housing, and energy sectors. Interviewees also noted that they thought One Touch was benefiting residents, getting them services they needed, and connecting them to programs they might not have known about otherwise. Generally, partners supported the concept, the program, and its design to have multiple sectors or agencies involved.

Partnerships and Collaboration

In addition to shared buy-in, partners noted that critical partnerships and collaboration resulted from the cross-referral system. The referral partnership between HEES and CT Children's resulted in a process that flowed well

and was considered highly effective. Partners also stated that monthly partner meetings, facilitated by Ellen Tohn, significantly helped to refine the referral process, define roles, prevent duplication, and follow up on referrals. The collaborative nature of One Touch as a cross-referral system allowed partners to understand each other's programs better and deepened relationships. Despite the challenges described in the next section of this report, CT Children's believes that communication among partners has improved, and partnerships are functioning the way they should be.

Process Improvement

NCHH's interviews with partners using One Touch as a cross-referral system revealed three major successes as a result of process improvement, including designing the assessment tool, making progress on referrals, and adjusting the income verification process.

Assessment Tool

Interviewees noted that Ellen Tohn was crucial in designing the tool to structure the referral types in a useful way. Partners also stated that the design of the assessment tool was effective, functional, and user friendly. The referral survey tool in practice was straightforward, brief, and easy to use.

Progress on Referrals

Interviewees from CT Children's noted that referrals coming from Eversource and HEES gained traction, worked well, and resulted in physical renovations. They also mentioned that, due to adjustments and assigning a new staff member, there has been a significant improvement in getting applications into the system at a good pace and in performing the necessary follow-up. Interviewees also noted that there have been constant adjustments and improvements to the shared platform and database that partners use. Despite challenges with the platform itself, partners are continually collaborating to improve it to get referrals successfully through the system and completed. Partners have demonstrated a commitment to tracking, evaluating, and quality improvement of the referral tool.

Income Verification

Lastly, under process improvement, interviewees spoke to NCHH about adjusting the income verification process for low-income census tracts and how it streamlined that process. Through a collaborative process, partners at CT Children's and Eversource allowed residents from low- or moderate-income census tracts to bypass the income verification process resulting in less burden for the resident and less administration for partners. This expedited the process and was seen by partners as a significant improvement.

LIMITATIONS

Missing or Disengaged Partners

While participation in the Building for Health initiative and using the cross-referral system strengthened relationships and resulted in partnerships and collaboration, some interviewees noted that some key partners weren't participating. The key partners who interviewees noted as missing were the City of Hartford (specifically building and code enforcement), clinical programs who could better integrate clinical considerations into the referral tool, and other repair programs. It was stated that the Healthy Homes program at CT Children's was taking most if not all the healthy homes repair jobs and that having more healthy housing and repair program partners on board would have resulted in more healthy housing work in Hartford. Some interviewees opined that integrating all healthy housing and repair programs and all hospitals or clinics (like Yale New Haven Hospital or Saint Mary's Hospital would have benefitted the One Touch cross-referral system.

In addition to missing partners, NCHH also spoke to two different partners who were initially engaged but who eventually discontinued their involvement. One of these partners was Putting on AIRS (POA), an in-home asthma visiting program. POA's representative stated that they faced multiple challenges in continuing as a partner with the cross-referral system, including staff time and capacity of their program, the design of the survey tool, and the nature of the referrals. Because POA is a smaller program and their staff works a maximum of 14 hours per week, it was difficult for the program to incorporate the additional necessary time and effort on top of their duties as an in-home asthma visiting program. POA also stated that they had to triage the survey tool's questions significantly to optimize their time with their clients, and the clinical considerations of their asthma program were not fully integrated into the tool. Lastly, this interviewee spoke to NCHH about the challenges with the referrals themselves. First, if POA initiated a referral based on an asthma visit to another program, POA had to minimize

the amount of personal health information provided on that referral to other One Touch partners in the database, which was time-consuming for them. Second, if POA received a referral from another partner, POA had to obtain all relevant information themselves, including the patient's medical provider and medical plan but did not have a HIPAA (Health Insurance Portability and Accountability Act) -compliant release to obtain that information. Next, our interviewee noted that the referrals they received were not appropriate for their program; in fact, none of the referrals they received successfully made it through the process. POA believes that Building for Health is a great concept and that POA put in effort to make it work; but it was ultimately a tremendous burden for such a small program, and they could not justify spending the additional time and effort to continue.

The second partner NCHH spoke to who disengaged from the Building for Health program and cross-referral system was Southside Institution Neighborhood Alliance (SINA) about their job referral program. SINA's representative noted challenges like those described by POA in that their door-to-door outreach program had limited staff capacity and only had one part-time dedicated staff member which was further hindered when their part-timer left the organization. The interviewee stated that SINA viewed their participation as a pilot experience, and it was inefficient for them to train a new staff member when they did not view their participation as long term. SINA noted that their job referral program was integrated into the survey tool, but they only received two referrals as a result of participating. Through our interviews, it was conveyed to NCHH that the service-based referrals were more difficult to get smaller programs like POA and SINA to act on versus referrals that were housing or built environment based. Like POA, SINA stated that they support the concept of Building for Health but were unable to continue participating in the cross-referral process.

Staff Capacity and Turnover

Like POA and SINA, who exited the program, CT Children's told NCHH that limited capacity and staff turnover were a limitation for them as well. Some of our interviewees speculated that having a dedicated staff member at CT Children's to run the program would have benefitted the program as a whole and allowed CT Children's to optimize referral pathways. In terms of capacity, interviewees also observed that because CT Children's Healthy Homes program is grant funded, and specifically partially HUD grant funded, they were limited to those grant obligations and requirements. Due to this limitation, investing staff time into Building for Health was an added responsibility versus a process integrated into existing workflow. Lastly, utility partners noted that CT Children's was inundated with other obligations and had limited capacity to respond to their Building for Health referrals. The program and cross-referral system also suffered at CT Children's when a staff member transitioned out of their role, resulting in less engagement from CT Children's during partner meetings and in their daily operations.

COVID-19

COVID-19 disrupted operations, especially for CT Children's and their Healthy Homes program, as they could not switch to remote or virtual inspections. While the pandemic posed significant challenges and disruptions, the cross-referral partners that NCHH interviewed confirmed that they adjusted eventually, and COVID-19 is no longer a significant barrier or limitation to the program.

Referrals: Type of Referrals

Another limitation discussed in NCHH's interviews with cross-referral partners was the challenge resulting from the types of referrals that came through the One Touch system. Notably, both utility and energy partners and CT Children's struggled with referrals to the Healthy Homes program for mold and asbestos. CT Children's attributed this to several factors, including miscommunication about where the mold or asbestos was located in the home (the Healthy Homes program performs work in a resident's living space but not in the attic or basement). It was also observed that some of these referrals were not actually mold- or asbestos-related, so they would be transferred back and forth between CT Children's and the utility and energy partners. Finally, CT Children's noted that they were limited to a specific dollar amount per unit, and some of these mold and asbestos jobs were too expensive, large, and inappropriate for their Healthy Homes program. Utility and energy partners observed that referrals to CT Children's, specifically for window replacements, were significantly delayed: work previously completed in four weeks often took as long as 16. This seemed to be a significant problem for these partners, and all agreed that the referrals should be expedited. In addition to the described limitations of mold and asbestos referrals, our interviewees stated that some referral types were limited because they did not align with CT Children's Healthy Homes HUD and lead-related work. For example, some elements of energy efficiency work cannot be completed if knob-and-tube wiring is found in the attic, but replacement of such wiring is not an activity that neither CT Children's nor any other Building for Health partner can address through their programs. Due to

these limitations posed by referral type, utility and energy partners speculated that One Touch did not significantly increase the number of jobs they received. Specific referral types to and from partners seemed to limit the efficiency and completion of referrals.

Referrals: Process of Referrals

While interviewees remained positive about improving the process, several discussed that some areas still need improvement. Their suggestions included streamlining the referral process by improving communication regarding referral notes, ensuring that a referral sent to a partner would not come back to the originator, aligning program expectations, expediting construction services, and improving referral completion rates. One interviewee noted that while response to referral time is satisfactory, the average time spent completing referrals needs to improve drastically. Incomplete or inappropriate referrals also resulted in lowered completion rates. Next, interviewees spoke to NCHH about improving the referral process by maximizing and equalizing the input and output of referrals. One interviewee observed that some partners referred into the One Touch system but did not receive any referrals, and vice versa. Lastly, interviewees spoke about how to improve the referral process by improving the database itself. Partners were disappointed with how much manual effort was required to maintain, update, and communicate through the database. They also spoke about improving the database to better report on and track referrals, using more of a case management approach. Despite these process improvement observations and needs, CT Children's remains confident that the referral process will improve and become more efficient. All parties currently in the systems are motivated and invested in improving the process.

These observations from interviewees about the limitations of referral type and the referral process are supported from NCHH's data analysis. The insights gleaned from NCHH's data analysis revealed a trend that emerged and continued throughout the program period: The ability for HEES and SINA to respond to referrals was greater than CT Children's ability to respond. This is logical for a few reasons. First, the funding from Eversource was fairly streamlined, so once a home was found to have no hazardous conditions that would cause a deferral, the application and delivery of energy efficiency services could be expedited. This was especially true in Hartford, where CT Children's and Eversource agreed that households in specific neighborhoods would be income pre-qualified. Second, while the SINA job referral program had fewer barriers to respond to requests for support in its territory, they received only two referrals—which, according to our interviewee, was a contributing factor to their reduced engagement with One Touch. Third, CT Children's primary source of funding for healthy homes repairs is a HUD-funded grant with application requirements that owners must fulfil and restrictions on the services it can provide. There are caps on the expenditures that can be made per home, and services are limited to the home's living spaces. A mold or asbestos problem in the attic that could block an energy efficiency firm from providing service might not be an eligible expense under the CT Children's program. Even in cases where CT Children's was successful in reaching potential clients, the barriers to entry into the program likely limited owner participation. Finally, the demand for CT Children's services within the referral system was greater than that for energy efficiency services. Assuming both CT Children's and HEES had similar capacities to provide services, CT Children's would be constrained in the number of homes to which it could respond.

Unlike homes with energy efficiency needs that can still receive healthy homes repairs when hazards like mold and asbestos are absent, the homes with outstanding healthy homes needs often receive neither healthy homes nor energy efficiency services.

Of the 36 total requests for energy efficiency assistance, HEES was able to complete nine (25%) and is in the process of completing two others (6%), while three cases (8%) remain open. Excluding open cases, 33% of referrals were completed or are in process.

Of the 130 total requests for healthy home repairs, CT Children's was able to complete four (3%) and is in the process of completing 15 others (12%), while 29 cases (22%) remain open. Excluding open cases, 19% of referrals were completed or are in process.

The limitations of the program in serving a greater number of referrals for healthy homes repairs have two impacts. First, residents continue to live in homes with hazards such as mold and moisture problems, asbestos, and deteriorated lead-based paint. Second, the referrals for healthy homes services are usually submitted by energy efficiency firms that are unable to provide

services while these hazards are still present. So, unlike homes with energy efficiency needs that can still receive healthy homes repairs when hazards like mold and asbestos are absent, the homes with outstanding healthy homes needs often receive neither healthy homes nor energy efficiency services.

Considerations for the future:

- Can other lead hazard control programs with healthy homes funding in other areas of the state be added to the referral system?
- Given that energy efficiency firms are contributing most of the referrals in the recent phase, the focus should be placed on confirming that their expectations are in line with the system's abilities. In other words, if they are seeking support for hazards in attics and basements that are impeding work, but CT Children's (the lone current healthy homes repair provider) cannot offer this service, then either the energy efficiency firms need to find a different way to address these hazards or another agency that can provide this support needs to be added to the system.
- Related to the last point, energy efficiency firms should be encouraged to ensure they are flagging hazards within the living space that CT Children's can address. If the energy efficiency firms are too focused on addressing conditions that block their work, they might not be taking advantage of the full synergies possible with this referral system.
- The move to a statewide model has meant that fewer referrals have been generated in Hartford. During the eight-month period from November 2021 to June 2022, 10 Hartford homes were added to the referral system: four from CT Children's, three from HEES, and three from CMC. CT Children's was able to address one of the healthy homes repair requests, while the other five were closed due to owner refusal or lack of response. It's unclear whether having another home repair agency from Hartford would have increased the success rate.
- Recently, referrals have almost exclusively focused on home improvements. There may be a catch-22 situation in which the system does not have active providers that offer household services like job training, asthma education, or smoking cessation support, which means the system doesn't encourage requests for such support, which does not encourage such providers to join the system. If support to households is to be an important component of system, there needs to be a concerted effort to add providers and encourage referrals with emphasis matching by location (i.e., adding providers in Hartford but having referrals from Waterbury would not help the situation).

IV. BUILDING FOR HEALTH: II. CAPACITY BUILDING AMONG AFFORDABLE HOUSING OWNERS

The second component of the Building for Health initiative's three-pronged strategy was to build capacity among affordable housing owners or community development corporations (CDCs). This capacity building initially set out to help developers and property managers integrate green and healthy housing strategies and practices through grant funding and training. From NCHH's interviews representatives from three CDCs that received grant funding and training (Sheldon Oak Central, Inc., Mutual Housing Association of Greater Hartford, and Southside Institutions Neighborhood Alliance [SINA]), all four individuals NCHH spoke to view this component of Building for Health as a positive experience with significant impact. Strengths of this capacity building initiative include flexibility, responsiveness, impact, and low grantee burden.

PARTNER PERSPECTIVES

STRENGTHS

All interviewees noted that the flexibility of the grant funding, especially in response to COVID-19, allowed them to modify their original proposed work and optimize their grant funding. Due to the timing of LISC-CT distributing

Strengths of the capacity building component on this initiative are the flexibility, responsiveness, impact, and low burden on grantees.

these grants in early 2020, the pandemic had a significant impact on the CDCs' ability to carry out both daily operations and their original proposed work plan. All interviewees observed that LISC-CT's willingness to pivot and provide flexibility let them use funding meaningfully. This accommodation resulted in the grant funding having a significant impact including helping grantees stay open, use funds for COVID response, and to help keep staff and residents safe. In addition to this flexibility and responsiveness to changing needs due to COVID, interviewees appreciated how LISC-CT as a funder responded and provided them resources as quickly as possible and supported them throughout the process.

In terms of the impact that the grants and capacity building provided grantees, interviewees stated that the funding and support despite the interruptions of COVID had a significant impact and allowed them to accomplish much, including CDC opening their first nonsmoking development, grantees actually saving money at a time when properties were receiving less and spending more, and supporting grantees in pursuing green and healthy housing projects. Two interviewees specifically reflected that they would not have done this work, and the grants compelled them to focus on these types of interventions. Grantees also found trainings helpful and that they learned much throughout the process. When discussing impact with grantees, one interviewee noted that this type of grant funding and capacity building initiative would be both successful and impactful outside of the Hartford area because of its flexibility and a desire of a variety of developers to access a similar opportunity. Overall, grantees were grateful to have access to those funds, felt they accomplished a lot, and considered it a success.

Another strength of this capacity building funding and training was absence of barriers and the low burden on grantees throughout the process. Grantees found the application process easy, straightforward, streamlined, and felt that the time and effort to apply was commensurate with the funding amount. Other than the challenges presented by COVID, grantees did not encounter any significant barriers or challenges. Grantees found working with LISC-CT and Ellen Tohn as a consultant easy and helpful when developing proposals that would have the most impact.

Strengths of the capacity building component on this initiative are the flexibility, responsiveness, impact, and low burden on grantees. Most grantees stated that they plan on continuing work similar to what was supported in their grant and making it a model for other green and healthy projects. All grantees noted that they would consider applying for a similar grant in the future.

The two major limitations associated with the capacity-building aspect of the Building for Health initiative were the awareness and appeal of the grants and one grantee's capacity to initiate and sustain this work.

LIMITATIONS

The two major limitations associated with the capacity-building aspect of the Building for Health initiative were the awareness and appeal of the grants and one grantee's capacity to initiate and sustain this work. In terms of awareness and appeal of the grants, all grantees stated that they heard about the grant opportunity via LISC-CT's direct outreach and due to a long-standing relationship as partners and collaborators with the nonprofit. While this demonstrates a fruitful and mutually beneficial established relationship between LISC-CT and the CDCs, it also indicates that LISC-CT required outreach and recruitment to obtain applicants. Grantees specifically noted that they might not have known about or applied for the opportunity if LISC-CT had not suggested they apply. NCHH has awarded several rounds of smaller grants and has found grant application models with a streamlined application process, a simplified contract, and a standard reporting template that tracks progress and metrics through the project period a successful way to target smaller local organizations. Another limitation of the capacity-building grants that arose from NCHH's interviews was one grantee's capacity at the start and throughout the process: This grantee stated that getting their work underway was difficult and saw their funded project as a shorter-term work plan versus a longer, sustainable effort. Two grantees noted that their plans to sustain this work is uncertain and will depend on the availability of future funding.

Despite these limitations, the response to the capacity building and funding opportunity was overwhelmingly positive. Grantees not only appreciated the flexible and straightforward nature of these grants but ultimately viewed them as successful.

V. BUILDING FOR HEALTH. III. POLICY ADVOCACY

The third and final component of the Building for Health initiative was an effort of partners to collaborate and engage stakeholders across Connecticut to advance the understanding and support of policy issues pertaining to housing, health, and energy.

PARTNER PERSPECTIVES

STRENGTHS

Throughout NCHH's conversations, interviewees pointed to two major policy accomplishments. The first accomplishment was the advocacy that influenced Connecticut's Department of Energy and Environmental Protection's (DEEP) statewide investment into addressing health and safety issues that prevent the completion of residential weatherization and energy efficiency measures. Policy partners presented at several state stakeholder meetings and demonstrated the One Touch tool and cross-referral system. Our interviewees noted that these demonstrations influenced DEEP to imagine a statewide solution involving housing deferral needs and a cross-referral system, which resulted in a funding opportunity, the Statewide Weatherization Barrier Remediation Program. Although CT Children's was not awarded, partners including CT Children's view this investment as a policy accomplishment.

The second policy accomplishment was partner involvement in a collaborative effort to advocate for smoke-free housing requirements in the Low-Income Housing Tax Credit (LIHTC) Qualified Allocation Plan (QAP). Interviewees noted that smoke-free housing criteria for which partners advocated and provided written comments were successfully adopted by the Connecticut Housing Finance Authority (CHFA) into its criteria and point system. While partners acknowledged this was a collaborative effort with other housing organizations involved, interviewees saw this inclusion of smoke-free housing requirements as a success.

LIMITATIONS

Despite this general sense of accomplishment for the policy work that was accomplished, interviewees pointed to three general limitations that occurred during the project period. NCHH heard that COVID-19 not only caused disruptions but also shifted policy and programmatic priorities. In addition to this, partners had limited bandwidth to dedicate to longer-term strategic policy initiatives. Lastly, it was noted through our conversations that the policy accomplishments were admittedly a collaborative effort, and it is difficult to estimate how much the Building for Health partners' advocacy efforts can be credited for these wins.

Overall, the policy advocacy component of Building for Health was seen as a success by the interviewees. Regardless of the limitations described above, all interviewees with insight into the policy efforts saw the engagement of stakeholders and collaboration result in an advancement of green and healthy policy efforts with direct results.

Overall, the policy advocacy component of Building for Health was seen as a success with the engagement of stakeholders and collaboration resulting in an advancement of green and healthy policy efforts with direct results.

VI. ASSESSMENT OF NATIONAL STATEWIDE PROGRAMS

OTHER CROSS-SECTOR PARTNERSHIPS

The Building for Health program is somewhat unique as a partnership directly between a healthcare provider and energy utilities. In researching multiple energy and health partnerships, NCHH was unable to find other examples that directly matched this model; however, many examples exist of programs that offer similar services (home and energy assessments, referrals, and repairs). They are organized by the sector that takes the lead in program implementation and may offer insights about opportunities for working with each sector and new ideas for additional partners to engage in future expansion of the Building for Health program in Connecticut. The full descriptions of each program are compiled in Appendix B.

UTILITY-LED PROGRAMS

There are several programs conducted by utilities that operate at the regional or state level to provide energy upgrades and/or weatherization to their customers. The programs examined in this category (serving areas in Tennessee, Ohio, New Hampshire, and Oregon) tend to cap their programs by income or provide a sliding scale or combination package of benefits including grants, loans, and rebates. The smaller programs (such as in New Hampshire and Oregon) operate their programs mostly in-house, with some minimal partnerships with other services that provide complementary benefits (such as LIHEAP). However, the two larger programs have stronger and more purposeful relationships with partners that could provide a model for expansion of the Building for Health initiative, especially since Building for Health already has energy partners on board. Tennessee Valley Authority's program, which provides grants to four local utilities for weatherization upgrades, has worked with community partners to expand outreach for the programs, including coordinating with local Weatherization Assistance Program administrators to identify households on the waiting list that could be served by the TVA program. Columbia Gas' WarmChoice program contracts with local organizations to provide the services and maintains a referral network with other health and human services in the state.

CITY-LED PROGRAMS

The most relevant program observed that operates out of a city is DC's Partnership for Healthy Homes. One of the important aspects of this program is that it doesn't have an income cap, although it is restricted to families with children under six or a pregnant family member. Any participating partners can use a simple one-page form to refer a family to the program, and DC will conduct the intake and then guide the family through the appropriate services and repairs. Because the program is open to anyone regardless of income, the help provided to residents could look quite different between households: Solutions may range from referring families to income-limited services, to helping families hire contractors, to working with the DC housing authority on hazards in public housing. The city will also work with code enforcement if a landlord doesn't follow through on needed repairs. The flexibility of this program could serve as a potential model if Building for Health is interested in working with a wider variety of local and state partners.

HEALTHCARE PARTNERSHIP PROGRAMS

There are several peer-reviewed studies of the impacts of referral programs operated out of healthcare systems. The general model followed in these studies are for healthcare practitioners to conduct screenings, often in routine visits like well-child checkups, and then refer patients to a community health worker or advocate who will provide information about and referrals to available services and follow up to encourage and help patients register for services. The screening tools used in these programs tend to cover a wide range of needs and services and often include housing or fuel assistance. For example, one program in Boston had 26% of referrals going to fuel assistance programs and 17% to housing programs.

While these programs provide referrals to many different services and sometimes engage very committed advocates to follow up with patients, they do not engage with the providers for these external services. One study, which conducted phone interviews with 102 participants in a referral program operated out of a community health center in California, found that participants generally reported a positive experience with the intervention and the advocates who worked with them, but only about half of them reported using the services to which they were referred. Participants reported that barriers to accessing services included limited availability, ineligibility, complex application processes, limited computer skills or literacy, and language differences.

NCHH also identified two referral programs that appear to be relatively new and in the early implementation stage. Both programs include an initial referral from a healthcare organization (or several) to a nonprofit. In Virginia, Inova Health System refers patients to a weatherization provider for energy efficiency upgrades; in Iowa, various healthcare providers refer patients to a nonprofit partner, and that program coordinates asthma home visits and remediation.

NONPROFIT-LED PROGRAMS

NCHH reviewed two local-level programs coordinated by nonprofits (the Bronx Healthy Buildings Program and the Home Preservation Initiative in Philadelphia) as well as the model provided and operated by the Green & Healthy Homes Initiative (GHHI), which operates in multiple places across the country. While all three models operate differently, they share the following general strengths:

- **Variety in partners involved and services provided:** Each of these programs is built around a coordinating partner (in the Bronx and Philadelphia, a single nonprofit operates the program; the GHHI model involves designating a site broker for each community) and brings in a wider variety of partners than some of the other types of programs examined. For example, the Bronx program provides legal aid services to tenants as well as housing and energy assistance, and the Philadelphia program partners with a university for evaluation.

- **Leveraging targeted data:** Both Philadelphia and the Bronx work with healthcare institutions to identify hotspots in need of intervention, using asthma emergency department and hospitalization rates.

- **Variety in funding sources sought and obtained:** GHHI and the Bronx program in particular focus on braiding together and leveraging funding for home improvements from a variety of sources. For example, the Bronx program has worked heavily with local policymakers to spur additional investment in buildings, and one GHHI site in Syracuse braided funds from different levels of government (including HUD lead hazard control grants and support from the state attorney general's office) as well as private and philanthropic funds.

Overall, these factors support approaches that are somewhat more holistically and systems-change focused, supporting goals beyond just unit-specific home improvement, such as workforce development, increased tenant education and agency, community revitalization, and greater investment from policymakers. These models could provide new ideas and approaches for the Building for Health program if there is interest in expanding the types of partners involved or building on the policy work of the existing program.

VII. CONCLUSIONS

The Building for Health program has offered three areas of support for lower-income households in the Greater Hartford area and with time, across the state of Connecticut:

1. A cross-sector referral system to address housing repair and energy efficiency needs,
2. A capacity building component that included small support grants for community development organizations in Hartford, and
3. Actions to advance state public policy in the health, housing, and energy efficiency spaces.

The program faced multiple challenges, the greatest being the impact of the COVID pandemic. Most discretionary housing sector operations were placed on hold from March 2020 through the summer of that year, while in the aftermath, organizations were cautious to take on new initiatives. Another challenge involved organizations experiencing staff changes and the subsequent impact of having to onboard and train new staff. Most nonprofits also had to develop new operating systems to address very real staff and resident concerns about their safety and how best to deliver in-home services as the pandemic evolved.

In this context, an important underlying strength of the Building for Health program was its flexibility and its ability to pivot to meet the needs of its clients. Examples of their flexibility include the following:

- Allowing the community development organizations that received support grants to use them for COVID-related operations. The perception of "healthy housing" as it had been changed dramatically in 2020, with the need for cleaning and safety protocols to prevent viral spread taking priority over the need to address other housing-related health risks.
- Adopting new models for home assessments, including remote inspection protocols.
- Allowing homes in a section of Hartford to be income prequalified so homeowners would not need to complete income applications for multiple programs.
- Expanding the service delivery area for the cross-sector referral system from Hartford to statewide to take advantage of available funding resources.
- Using the opportunity to advocate for Connecticut to allocate federal COVID relief funds to address housing hazards that have blocked some households from receiving energy efficiency services.

This last opportunity may be one of the least-recognized impacts of the Building for Health program. Over the three-year program period, energy efficiency firms submitted 126 requests for assistance to address health-related hazards in homes. Many of these requests were initiated because the firms could not help their clients with their energy efficiency needs until these hazards were addressed. Per program rules, air leakage in the walls and ceilings should not be tightened if it might exacerbate housing hazards and threaten resident health. The Building for Health program demonstrated that there are opportunities for a program like CT Children's to make these repairs—11 clients had received or were receiving such services as of July 2022, with another 23 cases open for possible follow-up. But it also showed that CT Children's could not serve many homes because of program capacity, program skills (e.g., it cannot address electrical hazards), and limitations about where work could be performed within the home (e.g., in the living space but not in unoccupied attics or basements). Both the strengths and limitations of the program demonstrated the need for the State of Connecticut to allocate $12.3 million of its federal COVID relief funds for the Statewide Weatherization Barrier Remediation Program to address hazards blocking energy efficiency for households in need.

Both the strengths and limitations of the program demonstrated the need for the state of Connecticut to allocate $12.3 million of its federal COVID relief funds for the Statewide Weatherization Barrier Remediation Program to address hazards blocking energy efficiency for households in need.

In addition to this policy victory, the Building for Health program received positive grades from community development organizations that participated in its capacity building program. The support helped with COVID-related housing activities, while also delivering on some of the original expectations for the program. For example, the program assisted an organization with smoke-free housing policies; but although the program offered positive results, neither LISC-CT nor the community organizations had plans to continue this initiative. Were they to reconsider their decision, one area where this component of the program might be improved would be the grant design. The number of applicants was lower than LISC-CT expected and required direct outreach to encourage participation. Although the organizations that did receive support through the Building for Health capacity building program didn't feel burdened by the process, other agencies may have been deterred from applying. NCHH has found that simplifying the grant application/grant administration process for capacity-building "mini-grants" has been a successful strategy to attract interest from small organizations that already feel overextended.

With the completion of the initial three-year HFPG grant, the administration of the cross-sector referral system is transitioning from LISC-CT to CT Children's. With this transition, there are opportunities for CT Children's to learn from the program's successes as well as its current limitations.

- **Invested partners**: The cross-sector referral system is a valued resource for the participating agencies. It provides CT Children's with a source of referrals to identify households in need of healthy housing services. It has also served as a resource to refer clients in need of energy efficiency services to trained contractors who can provide services with utility funding. For energy efficiency firms, the referral system has been a vehicle to seek help for clients they cannot serve unless housing hazards such as mold and asbestos are addressed.

- **Effective process**: The referral system processes have evolved and are more effective than at the start. The partners now hold monthly meetings to review case files; this has improved the ability of the group to triage cases, thus advancing priority cases, while closing inactive cases. The tracking database procedures are continually refined so that referrals are less likely to be overlooked. Moving forward, CT Children's is committed to funding the continuation of monthly partner meetings, and participating partners have committed to collaborate on streamlining the data tracking system. Participants feel the system is becoming more sustainable and will soon reach a point where Ellen Tohn can step back in her role as a consultant.

- **Breaking down silos**: The referral system has been helping between one in five to one in four clients (20% to 25%) procure additional housing services to improve their well-being, services they would not have received if these programs had remained siloed. Partners indicated that while they would like more of the referrals to reach a successful conclusion, the inability of the programs to get owners to sign up for the referred services, especially healthy homes repairs, is a fundamental limitation. Even if actions could be taken to improve the completion rate, it is unlikely that it will surpass 50%.

- **Capacity constraints**: Owner interest is just one barrier to referral completion. CT Children's has an excellent program, but with approximately nine out of every ten monthly referrals in the Building for Health program going to this organization, CT Children's does not have the capacity to respond to all requests in a timely manner. Recently, the Waterbury Lead and Healthy Homes program joined the referral system, and other healthy homes repair programs should be considered.

- **Programmatic constraints**: CT Children's is somewhat constrained in the services it can provide. The new funding from the Statewide Weatherization Barrier Remediation Program should offer two related opportunities. First, the Building for Health program should consider coordinating with International Center for Appropriate and Sustainable Technology (ICAST), the organization selected to manage the Barrier Remediation Program, to address activities that cannot be completed by CT Children's. Second, the program should reinforce the benefits for energy efficiency firms referring housing hazards that are not a barrier to their work. This has always been true; but without the new Barrier Remediation option, referrals to eliminate barriers have been a priority for the energy efficiency firms.

- **Local prioritization**: The program has evolved into a statewide program because the key participating organizations all have resources to work statewide, and they all have identified needs across the state. In addition, agencies were not getting as many initial requests for service in the Greater Hartford area to trigger referrals. The program should consider whether it needs to add partners in Hartford that can initiate more referrals in that community.

- **Providing services beyond physical upgrades**: The program has been successful as a referral system to upgrade housing conditions. It has not had much success recruiting and retaining programs that offer social services such as job training/referrals, asthma education, or smoking cessation. Among the challenges may be partly cultural (e.g., the referral system that housing organizations feel comfortable with may differ from a referral system that a public health group expects) and partly practical (e.g., participating in a referral system may not be time efficient if few referrals are generated for the services the organization provides). If a wider range of services is to be a component of the referral system, the flow of referrals for such agencies and in response to these agencies must be intentionally managed.

Observations from the other state and local programs reviewed support these conclusions; compared to some other programs, the Building for Health program's multisectoral foundation is a strength, and there are several other sectors and groups that have played a role in other programs and could be activated in Connecticut to expand the scope of the services offered or fill some of the needs identified (like the need for more home repair vendors). These types of partners include local community actions agencies, which often offer a variety of services that serve residents in their homes (e.g., Meals on Wheels), local affiliates of national home repair programs like Rebuilding Together and Habitat for Humanity (in addition to the volunteer-based core services provided by most local affiliates, larger programs may have more capacity to hire private contractors for more complex issues), health outcome-focused home visiting services that target issues like asthma and postnatal or early childhood needs, legal aid organizations, and other healthcare institutions. There may be other partners to engage in the same realm as the Building for Health partners that already work successfully with the program, including other energy efficiency contractors partnering with Connecticut utilities to provide services to customers and, depending on the capacity of each site, other grantees of HUD's lead and healthy homes grants. When considering expansion or continuation of the program and engaging new partners, the Building for Health team should consider what specific needs they're currently unable to meet and what additional services they would like to make available to residents and seek partners accordingly.

The Building for Health program laid a significant foundation to enhance housing conditions and improve health of residents in Hartford and across Connecticut. There remains strong interest in maintaining and expanding the One Touch data-referral system to serve additional households, but some improvements should be considered. By engaging additional partners (especially in the city of Hartford), collaborating with the Weatherization Barrier Remediation Program, emphasizing referrals for hazards beyond energy efficiency barriers, and considering changes to make the system more inviting for other social service providers, the program will likely yield a higher success rate and serve more households in need.

National Center for
HEALTHY HOUSING

This report was prepared by the National Center for Healthy Housing for the Local Initiatives Support Corporation— Connecticut (LISC-CT) and the Hartford Foundation for Public Giving (HFPG).

September 2022

APPENDIX A. SUMMARY OF REFERRALS IN BUILDING FOR HEALTH REFERRAL SYSTEM

PHASE ONE: JANUARY 2019 – FEBRUARY 2020

Number of Referrals	Initiated By	Status	Completed by	Within Hartford	Within Greater Hartford (excludes Hartford)	Outside Greater Hartford
2	CCHHP	Completed	HEES	2	0	0
1	CCHHP	Completed	SINA	1	0	0
4	CCHHP	Closed	-	4	0	0
3	HEES	Completed	CCHHP	3	0	0
18	HEES	Closed	-	18	0	0
28				**28**	**0**	**0**

PHASE TWO: SEPTEMBER 2020 – OCTOBER 2021

Number of Referrals	Initiated By	Status	Completed by	Within Hartford	Within Greater Hartford (excludes Hartford)	Outside Greater Hartford
3	CCHHP	Completed	HEES	2	0	1
1	CCHHP	Completed	HEES/SINA	1	0	0
1	CCHHP	In Process	HEES	0	0	1
2	CCHHP	Open	-	2	0	0
15	CCHHP	Closed	-	11	0	4
1	HEES	Completed	CCHHP	0	0	1
7	HEES	In Process	CCHHP	0	1	6
26	HEES	Closed	-	3	1	22
3	POA	Closed	-	2	0	1
59				**21**	**2**	**36**

PHASE THREE: NOVEMBER 2021 – JUNE 2022

Number of Referrals	Initiated By	Status	Completed by	Within Hartford	Within Greater Hartford (excludes Hartford)	Outside Greater Hartford
2	CCHHP	Completed	HEES	1	1	0
2	CCHHP	In Process	HEES	1	0	1
3	CCHHP	Open	-	1	0	2
1	CCHHP	Closed	-	1	0	0
8	HEES	In Process	CCHHP	1	0	7
19	HEES	Open	-	0	0	19
18	HEES	Closed	-	2	2	14
4	CMC	Open	-	0	1	3
22	CMC	Closed	-	3	6	13
1	WHH	Open	-	0	1	0
80				**10**	**11**	**59**

CCHHP: CT Children's/Healthy Homes Program
HEES: HE Energy Solutions
SINA: Southside Institutions Neighborhood Alliance
CMC: CMC Energy
POA: Putting of AIRS
WHH: Waterbury Healthy Homes Program

APPENDIX B. NATIONAL STATEWIDE PROGRAMS

NCHH compiled examples of existing programs that offer similar services to the Building for Health program (home energy assessments, referrals, and repairs). These examples are organized by the sector that takes the lead in program implementation. This appendix provides full descriptions of each program and the **examples marked in green are partnerships or service delivery ideas** that could represent an expansion of the Building for Health program.

UTILITY-LED PROGRAMS

TENNESSEE VALLEY AUTHORITY: HOME UPLIFT PROGRAM

Structure: Tennessee Valley Authority (TVA) provides grants to four local power companies (Electric Power Board of Chattanooga; Knoxville Utilities Board; Memphis Light, Gas and Water; and Nashville Electric Service). The local grantees supply a 100% match, and funds are used for energy efficiency and weatherization upgrades for income-qualified residents. Two of the four programs are managed by the local power company, and TVA manages the other two programs.

The program was piloted in 2018 and launched in 2020. In 2021, the Tennessee Department of Environment and Conservation, through the Office of Energy Programs, provided additional grants to these recipients to expand the program.

Services Provided: The program covers upgrades and improvements to HVAC, duct work, insulation, air sealing, refrigeration, windows and doors, water heaters, and lighting. Ten percent (10%) of the budget is allocated to repair work necessary to complete the upgrades.

Eligibility: Households at or under 200% of the federal poverty level or 80% of the area median income are eligible (cutoff varies by location). The program was initially limited to homeowners, but the grantees are now able to use 50% of their funding to assist rental properties.

Impact: The four locations combined served 768 homes in FY21 and are projected to serve 1,300 homes in FY22.

The pilot program had an accompanying program evaluation which measured the benefits, including health outcomes. The final report, published in March 2022, found that recipients reported decreases in the following categories:

- Number of days their sleep, physical health, and mental health was not good;
- Noise interfering with sleep;
- Households being unable to fill prescription medication due to cost;
- Exposure to extreme temperatures in the home;
- Exposure to drafts and dust;
- Observations of mold and standing water.

Sectors and Partnerships Discussion: The programs are primarily administered by the energy sector, either by the local grantees or by TVA. The programs hire contractors to conduct the work in the homes, and a third party affiliated with TVA conducts the final inspection and verification of work.

Each of the four locations has established different partnerships with other local groups to improve outreach and recruitment. The Memphis program works with the local Weatherization Assistance Program administrators to identify and conduct outreach to households on the waiting list. The Knoxville program partners with **Centro Hispano de East Tennessee** to identify barriers and improve outreach to the Hispanic community.

For more information, consult the following references:

Tennessee Department of Environment and Conservation (n.d.). Home Uplift. Retrieved from https://www.tn.gov/environment/program-areas/energy/state-energy-office--seo-/programs-projects/programs-and-projects/clean-energy-financing/clean-energy-financing/home-uplift.html

Rose, E., Marincic, M., Tonn, B., & Hawkins, B. (2022, March 1). *TVA Home Uplift metro areas final report on non-energy impacts*. Knoxville, TN: Three3. Retrieved from http://www.threecubed.org/uploads/2/9/1/9/29191267/tva_home_uplift_metro_areas_nei_report_march_2022.pdf

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. (2022, June). TVA's Home Uplift program: Reaching underserved communities [DOE/EE-2621]. Washington, DC: Department of Energy. Retrieved from https://www.energy.gov/sites/default/files/2022-06/bto-hpwes-tva-casestudy-v5-061622.pdf

LANE ELECTRIC COOPERATIVE

Structure: Lane Electric is a private, member-owned nonprofit cooperative electric utility serving the areas around Eugene and Springfield in central western Oregon.

Services Provided: In addition to free energy audits and inspections, the cooperative offers a variety of grants, loans, and rebates for HVAC repairs, heat pump installation, and weatherization measures including insulation and window replacement.

Eligibility: Members are limited to one weatherization loan or grant and one heat pump loan or grant each year. Funds are available annually on a first-come, first-served basis. Rebates, no-interest loans (dependent on credit union approval), and grants covering 25% of the cost (up to $1,000) are available to all members. Low-income members are eligible for expanded grant amounts (up to $1,500 for weatherization and $3,800 for heat pumps). For this program, if the utility member/beneficiary is a renter, the owner of rental property must match funding.

Impact: In 2021, the cooperative completed 25 weatherization projects, and members redeemed 163 heat pump and appliance rebates.

Sectors and Partnerships Discussion: The cooperative operates the benefits in-house. They also maintain information about the LIHEAP operators in their program area and track and discuss distributed LIHEAP funds in annual reports.

For more information, consult the following references:

Lane Electric Cooperative. (n.d.). Current programs. Retrieved from https://laneelectric.com/programs-services/current-programs/

Lane Electric Cooperative. (2022). *Lane Electric Cooperative annual meeting 2022*. Eugene, OR: Author. Retrieved from https://laneelectric.com/wp-content/uploads/2022-Annual-Meeting-Packet.pdf

DSIRE. (2022, June 2). Lane Electric Cooperative—Commercial/residential weatherization and energy efficiency grant program. Retrieved from https://programs.dsireusa.org/system/program/detail/2469/lane-electric-cooperative-commercial-residential-weatherization-energy-efficiency-grant-program

New Hampshire Electric Cooperative

Structure:New Hampshire Electric Cooperative is a member-owned nonprofit electric cooperative serving 118 communities and 85,000 members in New Hampshire, mostly in the center of the state. The cooperative partners with local community action agencies to administer their energy efficiency program.

Services Provided: The cooperative provides an energy audit and recommends energy efficiency improvements. Services are provided by community action agencies and can include air sealing, insulation, thermostats, hot water saving measures, lighting, health and safety, and HVAC replacements.

Eligibility: Income-qualified members can receive up to $8,000 in benefits. The program is open to both owners and renters, including those of apartments.

Impact: Unclear—energy efficiency/social responsibility was about $4.7 million of the cooperative's budget in 2021.

Sectors and Partnerships Discussion: The relationship between this and the regular state WAP program is unclear.

For more information, consult the following references:

DSIRE. (2022, January 23). New Hampshire Electric Co-op—Income-qualified home energy assistance program. Retrieved from https://programs.dsireusa.org/system/program/detail/2165/new-hampshire-electric-co-op-income-qualified-home-energy-assistance-program

New Hampshire Electric Co-op. (n.d.) Home energy assistance. Retrieved from https://www.nhec.com/home-energy-assistance/

New Hampshire Electric Co-op. (2022, May). *2021 annual report to members*. Retrieved from https://www.nhec.com/wp-content/uploads/2022/05/NHEC-2021-Report-to-Members.pdf

COLUMBIA GAS OF OHIO WARMCHOICE

Structure: Columbia Gas is the largest provider of natural gas in Ohio. Through their WarmChoice program, the utility provides weatherization to income-qualified customers, with services delivered through community organizations. The program has been in place for over 30 years.

Services Provided: Columbia Gas partners with four organizations (Mid-Ohio Regional Planning Commission, NeighborWorks Toledo Region, Corporation for Ohio Appalachian Development, and Ground Level Solutions) to provide services to 64 counties in Ohio. Customers can sign up through the provider in their area or through an online portal hosted by Columbia Gas.

Customers can receive a home energy inspection, insulation, air sealing, safety checks for natural gas appliances, and replacement or repairs for natural gas furnaces and water heaters.

Eligibility: Customers at or below 175% of the federal poverty line are eligible for the WarmChoice program. Both homeowners and renters are eligible for the program (and the program also includes a $750 incentive for furnace replacement for landlords). The eligibility may have recently increased as write-ups of this program from 2019 and earlier have the cutoff at 150% of federal poverty.

The utility also operates a similar program, Home Performance Solution Programs, which provides the same services (home energy audits and weatherization) to customers above the income cutoff for WarmChoice. There are three tiers of service (at or below 80% of area median income, 80%-100% of AMI, and over 100% of AMI) which qualify customers for a sliding scale of discounts on the services.

Impact: In 2020, WarmChoice served over 1,200 customers.

Sectors and Partnerships Discussion: Vermont Energy Investment Corporation (VEIC) reported in 2019 that the WarmChoice program has a "strong referral network" with organizations including the Ohio Healthy Homes Network, the Breathing Association, and **Meals on Wheels**, that the program has a low deferral rate, and that they had recently allocated funding to address asbestos, radon, and **some roof repairs in eligible homes**.

For more information, consult the following references:

Levin, E., Curry, L., & Capps, L. (2019, July 1). Section 6: Energy-plus-Health program case studies. In: Energy-plus-Health playbook (pp. 64-79). Winooski, VT: VEIC. Retrieved from https://www.veic.org/Media/Default/documents/resources/manuals/energy-plus-health-playbook-section6.pdf

WarmChoice weatherization and home performance solutions programs (HPS). (n.d.). *Energy Efficiency and Natural Gas Utilities*. Retrieved from https://www.aga.org/sites/default/files/warm_choice_weatherization_and_home_performance_solutions_programs_-_columbia_gas_of_ohio_-_final.pdf

Columbia Gas of Ohio. (n.d.). Income eligible weatherization. Retrieved from https://www.columbiagasohio.com/energy-efficiency/for-your-home/income-eligible-weatherization

Columbia Gas of Ohio. (2020). *Giving*. Retrieved from https://www.columbiagasohio.com/docs/librariesprovider5/rates-and-tariffs/2020-giving-back-report.pdf?sfvrsn=55533951_6

CITY-LED PROGRAMS

DC PARTNERSHIP FOR HEALTHY HOMES

Structure: DC's Lead and Healthy Housing Division, under the Department of Energy and Environment, leads this program alongside their other lead and healthy homes programs. Participating partners refer homes by completing a simple form identifying potential hazards. DOEE then conducts an intake process and provides services to address the hazards.

Services Offered: The housing issues captured on the referral forms are chipping or peeling paint, mold, water damage or leaks, pests, excessive dust, and renovation or structural concerns. Referrers rate each issue from minor to severe. After receiving a referral and completing the intake process, DOEE conducts a home environmental assessment and energy audit, creating a technical assistance roadmap that lists the identified hazards, needed fixes, and potential health impacts. DOEE also provides the family with information and an asthma management diagnostic and case management coordination.

DOEE will then guide the families and property owners through the technical assistance roadmap and assist in completing repairs. This can look different depending on the residential circumstances and may include connecting income-qualified families with funding sources and other programs, providing information to help property owners conduct repairs safely, **working with DC's housing authority when the family lives in public housing**, and **collaborating with code enforcement if a landlord doesn't follow through on needed repairs**.

Eligibility: The program is restricted to families that that have a child with severe and poorly controlled asthma, a child under age six with a blood lead level of concern, or where a house with health or safety issues also has a child under six or a pregnant woman residing. There is no income restriction on the program.

Impact: Unavailable.

Sectors and Partnership Discussion: The program is set up to make referrals easy for any participating organization or agency: The program's one-page form only requires basic contact information for the family and a quick assessment of potential health hazards.

In delivering services, the Lead and Healthy Housing Division works with other DC agencies including the housing authority and code enforcement and can connect eligible residents with other district services like weatherization. Information about currently participating referral partners is unavailable.

For more information, consult the following references:

DC Partnership for Healthy Homes. (2016). *Healthy home*s. Retrieved from the District of Columbia Department of Energy and Environment website: https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/Healthy%20Homes%20Brochure%202016.pdf

District of Columbia Department of Energy and Environment. (n.d.). DC Partnership for Healthy Homes. Retrieved from https://doee.dc.gov/node/880292

District of Columbia Department of Energy and Environment. (n.d.). Healthy housing program referral form. Retrieved from https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Healthy%20Homes%20Referral%20Form.pdf

FORT COLLINS HEALTHY HOMES PROGRAM

Structure: The City of Fort Collins Healthy Homes program provides a free home assessment to all residents. After completion of the assessment, they provide referrals to the utility-run Efficiency Works Homes program.

Services Provided: The city's home assessments take about 90 minutes. Master home educators (volunteers, working in teams of two) provide a radon test kit, smoke alarm, and carbon monoxide alarm, and suggest 3-5 recommendations to the residents for actions based on identified issues. The educators can also provide a referral to the Efficiency Works Homes program.

The Efficiency Works program is a collaboration between several regional utilities, including Fort Collins Utilities, that offers energy efficiency services to customers. Through Efficiency Works Homes, customers can pay $60 for a

home energy assessment. Fort Collins Utilities operates an additional program called Epic Homes that adds further benefits—customers who have received the home energy assessment may access rebates and low-interest loans for upgrades.

Eligibility: There is no eligibility limit on the Fort Collins program. Epic Homes' services may be limited by the type of home.

Impact: According to the VEIC report, the Fort Collins program provided over 900 assessments from 2011 (when the program was started) to 2019. The city received $200,000 in ARP funding from EPA in 2021 to build on the program.

Sectors and Partnership Discussion: Fort Collins Healthy Homes and Efficiency Works Homes are two unrelated programs with a minimal referral relationship.

For more information, consult the following references:

Levin, E., Curry, L., & Capps, L. (2019, July 1). Section 6: Energy-plus-Health program case studies. In: *Energy-plus-Health playbook* (pp. 64-79). Winooski, VT: VEIC. Retrieved from https://www.veic.org/Media/Default/documents/resources/manuals/energy-plus-health-playbook-section6.pdf

City of Fort Collins. (n.d.). Air quality: Healthy homes indoor air quality assessments. Retrieved from https://www.fcgov.com/airquality/healthyhomes-assessments

Efficiency Works. (n.d.). Efficiency Works for homes. Retrieved from https://efficiencyworks.org/homes/

City of Fort Collins. (n.d.). Utilities: Epic Homes. Retrieved from https://www.fcgov.com/utilities/epichomes

U.S. Environmental Protection Agency. (2021, July 13). EPA announces $200,000 to City of Fort Collins, Colorado to support Healthy Homes program [Press release]. Retrieved from https://www.epa.gov/newsreleases/epa-announces-200000-city-fort-collins-colorado-support-healthy-homes-program

NONPROFIT-LED PROGRAMS

BRONX HEALTHY BUILDINGS PROGRAM

Structure: This program is led by the Northwest Bronx Community and Clergy Coalition, which works with a variety of partners and data sources to identify multifamily homes in need of retrofits to improve health and energy outcomes. NWBCCC works with tenants, property owners, and partner agencies to secure services and funding to make the necessary improvements. During and after buildings are engaged in the program, NWBCCC conducts evaluations on the impacts of the renovations.

The project was started in 2015 with initial funding from the Build Health Challenge. The pilot phase was completed in 2017, and the program received additional funding that year from the Bronx Partners for Healthy Communities Innovation Fund to expand the program.

Services Provided: One of the main sources of data driving the program is **asthma hospitalization data** provided by healthcare institutions serving the Bronx. For example, in 2019, the program worked with Monterey Houses, a 233-unit NYCHA development, after St. Barnabas Hospital identified the property as having a high rate of residents who had visited the emergency room with asthma.

After NWBCCC identifies a building, they work to secure improvements through a variety of different angles. This can include **educating tenants and helping form tenant associations**, coordinating with partners to have community health workers conduct asthma home visits, working with landlords to recommend and undertake repairs and improvements, and **working with other stakeholders to secure financial resources for significant upgrades**. For example, NWCCC's work with one building led NYCHA to invest $3 million in roof repairs, and the work with Monterey Houses resulted in a local council member's office to invest $50,000 in the building project and another $224,000 in upgrading the building's playground.

NWBCC also provides training to property managers, tenants, and other community members on topics like IPM to increase workforce capacity and trains community members to conduct surveys for the evaluation arm of the program.

Eligibility: The program focuses on multifamily buildings in the Bronx with high asthma and asthma hospitalization rates.

Impact: In addition to the specific examples discussed above, as of 2019, the program had worked with six buildings, securing IPM in three of them, trained over 300 people in their housing rights, and referred more than 140 to home-based asthma services.

Sectors and Partnership Discussion: The program is a true multisector effort. Partnerships critical to the success of the program include the healthcare partners, who provide the asthma data driving the program targeting, and other community-based organizations, which provide asthma services through community health workers. The program has partnered with city agencies, including the NYC Department of Health and Mental Hygiene, and has spurred investment by NYCHA. **NWBCCC also partners with legal aid organizations and others to provide additional housing and legal services to residents**.

For more information, consult the following references:

Northwest Bronx Community and Clergy Coalition. (n.d.). Energy democracy. Retrieved from https://www.northwestbronx.org/energy-democracy

Northwest Bronx Community and Clergy Coalition. (n.d.). *2019 annual report*. Retrieved from https://static1.squarespace.com/static/5a2021c5e5dd5b3a4dda00d4/t/5e5d306d83e7f96f9d4e0f2a/1583165620479/NWBCCC+REPORT_ENGLISH_PRINT_SINGLE_NO+MARKS.pdf

De Haan, L. (2019, January 3). Creating healthy buildings for asthma patients. Bronx Partners for Healthy Communities website. Retrieved from http://www.bronxphc.org/2019/01/03/creating-healthy-buildings-for-asthma-patients/

Northwest Bronx Community and Clergy Coalition. (2018, March 24). *2017 annual report*. Retrieved from https://static1.squarespace.com/static/5a2021c5e5dd5b3a4dda00d4/t/5abff032aa4a998a3b6f0572/1522528311119/2017+Annual+Report+Website_Reduced.pdf

GREEN & HEALTHY HOMES INITIATIVE

Structure: The Green & Healthy Homes Initiative (GHHI) works both at the local level, providing direct services to residents in Baltimore, Maryland; Jackson, Mississippi; Providence, Rhode Island; and Memphis, Tennessee; as well as nationwide, as the organization partners with and provides technical assistance to other communities to establish and run healthy homes programs.

Services Provided: While the specific partners and opportunities vary by site location, the general GHHI model builds on existing partners, stakeholders, and healthy homes and energy efficiency programs in a community to align services and funding, braid resources together, and coordinate service delivery. The model aims to coordinate services including lead hazard reduction, asthma trigger control, fall/injury prevention, energy efficiency, weatherization, and housing rehabilitation.

A typical onboarding process to establish a program in a community is designed to take about six months, starting with convening stakeholders and conducting an asset and gap analysis, and then moving through creation of a work plan and training staff, and ending with the official site designation and signing of an official compact. To implement this plan, a site outcome broker coordinates regular meetings between a triage team.

Eligibility: Eligibility and other program specifications vary by site location.

Impact: One example of a GHHI site is Greater Syracuse, New York. Over roughly a three-year period from mid-2016 to mid-2019, the program received 231 referrals, completed 184 housing and health assessments, and completed production in 139 units. Most of the funding was supported by Home Headquarters, a nonprofit and NeighborWorks affiliate serving central and upstate New York, with some of Home Headquarters' funding coming from the New York State Attorney General. Other partners that completed provided funding include the Onondaga County Healthy Neighborhood Program, the Onondaga County Lead Program (funded by HUD), and PEACE, a local community action agency.

Sectors and Partnership Discussion: The GHHI model brings together philanthropic, governmental, and private sector funding to a support a single intake system, a comprehensive assessment, integrated interventions and

services, cross-trained workers, and shared data. GHHI has worked with over 30 communities to establish braided services following this model.

For more information, consult the following references:

Green & Healthy Homes Initiative. (2019, May 8). *Greater Syracuse production dashboard 06/01/2016 - 05/08/2019*. Retrieved from https://www.greenandhealthyhomes.org/wp-content/uploads/GHHI_DashboardCombined_050819.pdf

Green & Healthy Homes Initiative. (n.d.). Technical assistance. Retrieved from https://www.greenandhealthyhomes.org/services/technical-assistance-training/

Green & Healthy Homes Initiative. (n.d.). Direct services. Retrieved from https://www.greenandhealthyhomes.org/directservices/

Green & Healthy Homes Initiative. (2020, March). *Partnership development: GHHI learning networks*. Retrieved from https://www.greenandhealthyhomes.org/wp-content/uploads/GHHI_Learning_Networks_Intro.pdf

HOME PRESERVATION INITIATIVE

Structure: The Home Preservation Initiative is a collaborative home repair program operating in Philadelphia. The program is coordinated by the Local Initiatives Support Corporation (LISC). Outreach and intake are primarily handled by two local community development corporations, Mount Vernon Manor and People's Emergency Center. Home repair services are primarily provided by the local affiliates of **Habitat for Humanity** and **Rebuilding Together**, with additional support from the Philadelphia Housing Development Corporation. Drexel University's Dornsife School of Public Health conducts evaluation on the program. Other supporting partners include the City of Philadelphia Department of Public Health, the Healthy Rowhouse Project, and **Drexel University's College of Nursing and Health Professions** and **Jefferson Elder Care**, which are administering a CAPABLE (Community Aging in Place—Advancing Better Living for Elders) program in partnership with Habitat for Humanity.

In 2017, HPI was selected as a recipient of the Build Health Challenge. The funding focused on HPI's partnership with the Children's Hospital of Philadelphia, which also provided matching funding, and expanding the program through having CHOP community health workers conduct asthma home visits. CHOP was also developing a **hot-spotting approach using emergency room and hospitalization data**.

Services Provided: Home repair; the specific services are unclear.

Eligibility: The program is targeted at a federally designated promise zone in West Philadelphia.

Impact: In 2016, Drexel University conducted interviews with residents who had benefited from the program. The most common health benefit reported was improvement in mental health; residents also talked about the health impacts they'd experienced from structural issues, poor insulation, uneven flooring, and moisture.

Sectors and Partnership Discussion: The program involves many different cross-sector partners. The partnership with a CAPABLE program, which coordinates nurses, occupational therapists, and home repair to help older adults age in place, adds an additional dimension. However, information about the further development of the program after the Build Health Challenge funds were awarded and, specifically, the work with CHOP, is not available.

For more information, consult the following references:

Local Initiatives Support Corporation Philadelphia. (n.d.). Home Preservation Initiative. Retrieved from https://www.lisc.org/philly/our-priorities/affordable-housing/home-preservation-initiative/

Build Health Challenge. (n.d.) Home Preservation Initiative for Healthy Living: BUILD 2.0 awardee. Retrieved from https://buildhealthchallenge.org/communities/2-home-preservation-initiative-healthy-living/

Michael, Y., Yano, R., Chen, C., Barber, S., Carroll-Scott, A., & Livengood, K. (2018, January). *Influence of the Home Preservation Initiative on health* [Community brief]. Philadelphia, PA: Drexel University Urban Health Collaborative. Retrieved from https://drexel.edu/~/media/Files/uhc/briefs/Home%20Preservation%20Initiative_CommunityBrief.ashx?la=en

Walens, L. (2017, September 14). Home Preservation Initiative selected for BUILD Health Challenge with CHOP [Press release]. Local Initiatives Support Corporation Philadelphia website. Retrieved from https://www.lisc.org/philly/regional-stories/home-preservation-initiative-selected-build-health-challenge-chop/

HEALTHCARE PARTNERSHIP PROGRAMS

As discussed in the body of the report, we reviewed the following studies of impacts of referral programs operated out of healthcare systems:

This 2019 journal article examines services provided in Southern California.

Schickedanz, A., Sharp, A., Hu, Y. R., Shah, N. R., Adams, J. L., Francis, D., & Rogers, A. (2019, November). Impact of social needs navigation on utilization among high utilizers in a large integrated health system: A quasi-experimental study. *Journal of General Internal Medicine, 34*(11): 2382-2389. DOI: 10.1007/s11606-019-05123-2. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6848288/

This 2018 journal article examines services provided in Queens, New York.

Uwemedimo, O. T., & May, H. (2018, July). Disparities in utilization of social determinants of health referrals among children in immigrant families. *Frontiers in Health, 6*, 207. DOI: 10.3389/fped.2018.00207. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6066553/

This 2015 journal article examines services provided in Boston, Massachusetts.

Garg, A., Toy, S., Tripodis, Y., Silverstein, M., & Freeman, E. (2015, February). Addressing social determinants of health at well child care visits: A cluster RCT. *Pediatrics, 135*(2), e 296-e304. DOI: 10.1542/peds.2014-2888. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4306802/

This 2020 journal article examines services provided in the Bronx, New York.

Fiori, K. P., Rehm, C. D., Sanderson, D., Braganza, S., Parsons, A., Chodon, T., et al. (2020, June). Integrating social needs screening and community health workers in primary care: The Community Linkage to Care program. *Clinical Pediatrics, 59*(6), 547-556. DOI: 10.1177/0009922820908589. Retrieved from https://ncbi.nlm.nih.gov/pmc/articles/PMC7357198/

This 2019 journal article examines services provided in California.

Hsu, C., Cruz, S., Placzek, H., Chapdelaine, M., Levin, S., Gutierrez, F., et al. (2020, February). Patient perspectives on addressing social needs in primary care using a screening and resource referral intervention. *Journal of General Internal Medicine, 35*(2), 481-489. DOI: 10.1007/s11606-019-05397-6. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7018904/

In addition, while we were not able to find examples of healthcare-led partnership programs that appeared to be fully implemented or had program details available, we identified two one-to-one referral programs, which are still in early implementation phases:

INOVA HEALTH AND COMMUNITY HOUSING PARTNERS

In October 2021, Community Housing Partners, a weatherization provider, launched a pilot program in partnership with Inova Health System and Health Care Without Harm. Through the pilot, practitioners at Inova will be able to refer patients who might benefit from energy efficiency and health upgrades to a social worker who will determine eligibility for CHP services. The pilot will serve patients in northern Virginia, including both homeowners and renters. Eligibility is determined by income and age, and households who receive SSI, public assistance, SNAP, or fuel assistance are automatically eligible.

For more information, consult the following references:

Community Housing Partners. (2021, October 19). CHP and project partners launch healthy homes pilot program in northern Virginia. Retrieved from https://www.communityhousingpartners.org/chp-and-project-partners-launch-healthy-homes-pilot-program-in-northern-virginia/

Community Housing Partners. (n.d.). Healthy homes with Inova Health System. Retrieved from https://www.communityhousingpartners.org/energy-solutions/inova/

HEALTHY HOMES IOWA

Healthy Homes Iowa is focused on identifying and addressing pediatric home asthma triggers. The program started in Des Moines and later expanded to include all of Polk County. The program is coordinated by EveryStep, a statewide nonprofit that provides health and human services across Iowa; EveryStep provides outreach and education about the program and coordinates care. Referrals to the program come from several healthcare providers, and other partners provide home visits and remediate identified hazards. The program was funded in the second round of the Build Health Challenge.

For more information, consult the following references:

Every Step Care and Support Services. (n.d.). Healthy Homes Iowa. Retrieved from https://www.everystep.org/provider-resources/healthy-homes

Build Health Challenge. (n.d.) Healthy Homes Des Moines: BUILD 2.0 awardee. Retrieved from https://buildhealthchallenge.org/communities/2-healthy-homes-des-moines/