2014 Gage Awards

Reference #	7491287
Status	Complete
Name of hospital or health system	Sinai Health System / Sinai Urban Health Institute
Name of project	Helping Children Breathe and Thrive in Chicago's Public Housing (HCBT)
CEO name	Alan H. Channing
CEO approval	Check here to confirm that your CEO approves of this project being submitted for a 2014 Gage Award
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Within which of the two categories does your application best align?	Population Health

1. Provide a brief description of the project. (This section should resemble an abstract for a poster presentation or an abstract for a peer reviewed journal. Include an objective, data sources, study design, findings, and conclusions.)	Chicago is one of the nation's hardest hit cities by asthma, with those living in public housing being disproportionately affected. In 2011, the Sinai Urban Health Institute (SUHI) of Sinai Health System, in partnership with the Chicago Housing Authority (CHA), implemented a two-year Community Health Worker (CHW) asthma and healthy homes intervention entitled Helping Children Breathe and Thrive in Chicago's Public Housing (HCBT). The program provided eligible adults and children living in six CHA public housing developments with comprehensive asthma and healthy homes education, as well as assistance with finding a medical home and in navigating the healthcare system. Its primary objectives were to decrease asthma-related morbidity and to improve the family's quality of life. CHWs were hired from the CHA developments served by the program, and underwent extensive training and evaluation prior to conducting home visits independently. HCBT staff worked closely with CHA and its on-site social service providers to develop effective referral systems for program enrollment. Once enrolled in the program, children with asthma and their families participated in a 12-month intervention; adults participated in a six-month intervention. In addition to providing education supporting the medical management of asthma, CHWs conducted thorough home environmental assessments and taught strategies to avoid and reduce asthma triggers. HCBT staff worked with CHA management companies in addressing complex environmental issues. On a case-by-case basis, HCBT staff consulted with other local community organizations to link participants to additional services (e.g., mental health). (See Attachment) Program evaluation was a significant part of the HCBT intervention, and was designed to extensively document all program activities and participant progress throughout the program. Data related to asthma knowledge, medication technique, health care utilization, asthma triggers and quality of life was collected from participants during home visits and via monthly phone calls between home visits. Seventy-three adults and eighty-five children enrolled in the intervention. (See Attachment) The housing issue referral process with management companies resulted in resolution of 86% of housing issues referred throughout the program period. Removal of mold, roaches, rodents, and carpet harboring asthma triggers was an important factor in improving participants' asthma. Asthma symptoms were significantly reduced by 80.5% among children and 60% among adults. Quality of life for both caregivers of child participants and for adult participants significantly increased. Emergency Department visits were reduced by 83% among children and 39% among adults. Eight hundred dollars in asthma-related health care services were saved per child that participated in the program.

	In conclusion, the HCBT project was successful in meeting its objectives and helping to improve the lives of those affected by asthma in Chicago's public housing. CHWs were essential to effectively integrating the asthma and healthy homes intervention into a large public housing system.
1A. Attachment, if applicable (Applicable examples include a peer reviewed journal article, other content published in the literature, or a presentation at a national meeting)	Attachment1ArticlePresentationandDemographicsofParticipants.pdf (1849k)

2. Describe the methods use in this project. Include where, why, and how the project was accomplished.	Asthma can be controlled with proper medications and the effective management of environmental triggers. During 13 years of implementing successful Community Health Worker (CHW)-based asthma and healthy homes interventions, SUHI has demonstrated that culturally tailored education in the home can contribute to long-term asthma control and substantially reduce excessive visits to the Emergency Department (ED) and preventable hospitalizations. Because public housing residents are disproportionately burdened by asthma, SUHI approached CHA about partnering to translate the CHW home visit intervention to six CHA developments on Chicago's Westside. Helping Children Breathe and Thrive in Chicago's Public Housing (HCBT), was funded by the Department of Housing and Urban Development (HUD) in March 2011. CHWs were hired from the CHA developments served by the intervention. Upon begin hired, each CHW participated in over 75-hours of rigorous asthma and healthy homes training. Before being allowed to teach independently, CHWs underwent a standardized evaluation process conducted by a Certified Asthma Educator (AE-C) and Asthma Program Supervisor. To maintain the quality of the intervention, CHWs were randomly shadowed and evaluated by their supervisor on home visits throughout the two-year program. Although the project was initially intended to address childhood asthma, a large number of adults expressed interest in the program and need for assistance with asthma control. Thus, HCBT was expanded to enroll adults into a shortened six-month intervention consisting of 3-4 home visits. Children were enrolled in the one year intervention consisting of 5-6 home visits. CHWs were at the heart of the intervention, and provided in-home comprehensive, individualized asthma education on both the medical management of asthma and maintaining an asthma-friendly home environment. CHWs worked with CHA case managers to link program participants with medical and social services. Major challenges faced in the collaboration include tailoring the intervention to the existing housing authority "culture", leveraging established processes and people, and providing a structured approach to communications. To improve the established enrollment and housing referral process with CHA case managers, SUHI and CHA met frequently and exchanged monthly spreadsheets for each CHA site in order to track referrals, enrollment, home visits, and difficult to reach participants. When locally hired, CHWs can quickly establish trusting relationships in their communities. With proper support and mentoring, they can make huge improvements to the health and quality of life of public housing residents. Hiring CHWs for their distinctive competencies – cultural sensitivity, community connections, and their ability to establish trust with families as soon as

	possible – was critical to program success. Other lessons learned included: smoking reduction is more practical than cessation; medication adherence is a key factor for improvement but has many barriers; and working with management companies to modify the home environment is critical.

3. Describe the results of the project. What data was used to support improvement results?	Results suggest progress was made towards all the project's objectives. (See Attachment) Daytime symptom frequency among children decreased from a mean of 4.1 days over 2 weeks before baseline to 0.8 days during follow-up. Nighttime symptom frequency among children decreased from a mean of 3 nights at baseline to a mean of 0.8. Adults saw a 60% decrease in daytime symptoms, and a 38% decline in quick relief medication use. Among children who completed the twelve-month program (n=60), activity limited days dropped 78.5% from 7.9 in the year preceding the baseline to 1.7 during the intervention. Emergency Department (ED) visits among children decreased by 83% and hospitalizations declined by 50% following participation in the program. The average child went from being seen in the ED, hospitalized or visiting an urgent care center 3.3 times in the year prior to the program to only 0.8 times in the year following the intervention. Among adults, ED visits declined by 39%, and overall urgent health resource utilization decreased by 24%. The quality of life (QOL) of the child's primary caregiver was assessed using the Pediatric Asthma Caregiver's Quality of Life Questionnaire (PACQLQ). Adult QOL was assessed using the Asthma Quality of Life Questionnaire (AQLQ). Both questionnaires are validated and extensively used. The tools ask questions in multiple domains, and a change of 0.5 or more has been shown to be clinically significant. The overall QOL score for caregivers of children increased by 0.7 points between baseline and the 12-month follow-up which was statistically and clinically significant. Similar improvements were noted in subscores (0.8 points for emotional function; 0.6 points for activity limitation). For adults, the emotional function sub-score increased significantly, from 4.5 at baseline to 5.8 at the end. The overall adult QOL score also increased significantly from an average of 4.7 to 5.6 over six-months. Significant progress was made with asthma triggers. Among children, 83% suffering from mold/mildew and 100% with evidence of mice in their home had the issue resolved by the 12-month visit. Among adults, by the end of six-months, 42% had eliminated tobacco smoke from their home and 83% of adults who had very noticeable dust no longer had high levels. CHWs were very effective in creating an Asthma Action Plans (AAP). While only 7% of adults had an AAP at baseline, 85% had a completed AAP by the end of six-months; 75% of children had a completed AAP by their final follow-up in 12 months. A cost-savings analysis yielded positive results. Overall, for every one dollar spent on the project, the health care system saved two dollars. Additionally, eight hundred dollars in asthma-related health care services were saved per participating child.

3A. Attachment, if applicable (Only graphically displayed data such as charts will be accepted. Data should include baseline and improvement data)	Attachment3-Results.pdf (346k)

4. Describe what happened as a result of the project. Was the improvement related to the intervention? Can the project be duplicated by other organizations?	The HCBT project was successful in meeting its objectives, as well as navigating many challenges. As a result, Sinai/SUHI learned valuable lessons for on-going program improvement and successful collaboration with key partners. To build capacity and partnerships, findings have been shared with community residents, public housing officials, medical providers, and the larger public health community and we continue to disseminate this work to additional audiences when possible. Data analysis demonstrates that the program achieved its two primary objectives of morbidity reduction and improved quality of life. Specifically, asthma symptom frequency declined, urgent health resource utilization decreased, and activity-limited days were reduced. Outcomes reveal statistically and clinically significant improvements in participants' quality of life. All intermediate objectives (to decrease the number of asthma triggers in the home environment; improve asthma-related knowledge; and improve access to medical care and use of an Asthma Action Plan) were also achieved. The program was also found to result in significant cost-savings ($800/child/year). Throughout the course of the intervention, several participants wrote letters to the program and their CHW, expressing their gratitude for being a part of the program as well as for what they had learned and accomplished throughout the intervention. (See Attachment) Several presentations on the HCBT program have been made, garnering substantial interest from various audiences. The HCBT program was highlighted nationally through presentations at the American Public Health Association's 2012 Annual Meeting, joint CHA-SUHI presentations at the 2013 Health Center and Public Housing National Symposium, and in an Environmental Protection Agency webinar. Principal Investigator, Helen Margellos-Anast, and Project Director, Melissa Gutierrez have submitted an article for publication summarizing Sinai's six asthma interventions, including some outcome data from HCBT, and are awaiting notification on acceptance. We plan to write a publishable manuscript in the next few months summarizing final outcome data from HCBT. The HCBT program was also featured in the August 2013 edition of The American Public Health Association newspaper, The Nation's Health. SUHI staff sought and received funding for a new HUD-funded project, Helping Chicago's Westside Adults Breathe and Thrive (HCWABT), which began November 1, 2013. The opportunity to more formally test the CHW asthma intervention with adults, one of the first of its kind across the nation, directly stems from the successes of the HCBT project discussed throughout this application. There are over 1.2 million households within public housing nationally. The experiences of the HCBT program reveal the strides that can be

	made towards improved health for public housing residents when non-traditional partners establish innovative and effective collaborations. Amidst a rapidly reforming health system, efforts to support our most vulnerable residents via collaborations which bring resources into the context of their community are imperative.
5. Describe how patients, families, and if appropriate, community was included in the work.	The recruitment and enrollment process began with “kick-off events” in CHA developments served by the program. All residents were invited, and over 300 attended. Other enrollment activities included door-to-door screening, attending CHA and other community events, and working with other community organizations to obtain referrals of adults and children with asthma. HCBT staff conducted building education sessions open to all residents. Some topics included smoking cessation, green cleaning and healthy cooking, to name a few. To publicize the events, CHWs distributed flyers to individual households, with assistance from staff at CHA social service agencies and management companies. A total of 346 people attended the seven education sessions. In addition to the building education sessions asthma-specific sessions/events were also provided to all residents. Examples of these sessions included a class on Asthma and Exercise, a Mini Health Fair partnered with Mobile C.A.R.E. Foundation’s asthma van, and asthma basics presentations to local community colleges and community organizations. Two hundred sixty-eight residents attended these six asthma sessions/events. Finally, SUHI participated in community events to provide educational information on asthma. This helped to foster trusting relationships between the program and residents as well as raise awareness about the program and asthma management. On Saturday, June 29, 2013 an end-of-program event was held to thank program participants, celebrate their successes and present program findings to participants. CHWs presented preliminary program outcomes, and program participants providing testimonials about their experiences and what they learned. A video of participant testimonials is available at: http://www.youtube.com/watch?v=ngwNjrOfRiI.
5A. Attachment, if applicable (Applicable attachments include documents created for patients, families, or community members or by them as a result of the project)	Attachment5OutreachEducationParticipation.pdf (1057k)
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