Community Health Workers as Drivers of a Successful Community-Based Disease Management Initiative

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In 2005, local leaders in New York City developed the Washington Heights/Inwood Network for Asthma Program to address the burden of asthma in their community. Bilingual community health workers based in community organizations and the local hospital provided culturally appropriate education and support to families who needed help managing asthma. Families participating in the yearlong care coordination program received comprehensive asthma education, home environmental assessments, trigger reduction strategies, and clinical and social referrals. Since 2006, 472 families have enrolled in the yearlong program. After 12 months, hospitalizations and emergency department visits decreased by more than 50%, and caregiver confidence in controlling the child's asthma increased to nearly 100%. Key to the program's success was the commitment and involvement of community partners from program inception to date. (*Am J Public Health*. Published online ahead of print April 19, 2012: e1-e4. doi:10.2105/AJPH.2011.300585)

KEY FINDINGS

- Community health workers who are based in local community-based organizations and have strong ties to the community that they serve are uniquely positioned to initiate and nurture trusting partnerships with program participants.
- Community health workers can move fluidly between the community and the health care settings, bridging gaps in care, providing culturally appropriate education and services, and connecting families to the clinical and social resources they desperately need.
- The strength and success of the Washington Heights/Inwood Network (WIN) for Asthma Program is based in large part on the commitment and active involvement of community partners from program inception to date as well as the frequent exchange of program information and ideas among all partners and staff.
- This hospital–community care coordination model is applicable to other populations and disease areas because of its customizable, culturally sensitive, and holistic approach to education and support.

OBSTACLES IN THE PATH TOWARD GOOD HEALTH

The key to effective chronic disease management is balanced management of medication and lifestyle. Ideally, this balance is achieved by the individual and his or her family in partnership with a health care provider. However, with a complex, fragmented health care system, accessing and navigating local health resources are often difficult, leading to significant challenges for those struggling with chronic diseases.

Common barriers to care are exacerbated in the Northern Manhattan communities of Washington Heights and Inwood, where more than half of local residents are foreign-born, 1 in 4 households is linguistically isolated, and 1 in 3 families lives below the poverty level.[1,2] These circumstances affect how community residents interact with local health care systems and frequently stand in the way of effective chronic disease management.

WIN FOR ASTHMA: BUILDING A BRIDGE TO BETTER CARE

In 2005, community, hospital, and academic leaders came together to address the burden of asthma in Northern Manhattan, where the rate of pediatric asthma-related emergency department visits was approximately 4 times the national average.[3] With support from the Merck Childhood Asthma Network and NewYork-Presbyterian Hospital, the partners developed the Washington Heights/Inwood Network (WIN) for Asthma Program. Based in NewYork-Presbyterian Hospital, WIN for Asthma was designed to bridge gaps in care and to empower caregivers through culturally appropriate education and support. The model selected was an adaptation of community-academic partnerships, in which community and academic partners contribute equally to the development, implementation, and evaluation of the intervention.[4] NewYork-Presbyterian Hospital provided the clinical expertise and served as the administrative base, and partner community-based organizations provided the community base and social service expertise.

At the center of our model were community health workers, who had strong community ties, spoke the same languages as the residents, and were familiar with the obstacles faced by

local families. The community health workers were recruited and employed by 4 partner community-based organizations. The community-based organization supervisors circulated WIN for Asthma Program community health worker job descriptions, and candidates were interviewed by the community-based organization and NewYork-Presbyterian Hospital supervisors. Although there were no minimum education requirements, all community health workers were required to have at least 2 years of experience as a community health worker or in a comparable role.

The community health workers were jointly trained, supervised, and supported by the community-based organizations and NewYork-Presbyterian Hospital. The training curriculum was developed, and continually informed, by partners who incorporated local best practices and evidence-based strategies.[5,6] At the community-based organizations, the community health workers gained additional in-depth knowledge about their community and available social services. At NewYork-Presbyterian Hospital, they gained community health worker core competency skills, learned about pediatric asthma and family-focused disease management strategies, and were trained to conduct hospital rounds and home environmental assessments and to administer surveys and manage the information received from families.

This unique partnership model anchored the community health workers in the community where families could better identify with them and where they could draw on a wealth of social services. It also enabled the community health workers to work as part of a health care team on the inpatient units where they provided culturally appropriate asthma education to all families of children admitted to the hospital with a diagnosis of asthma.

WIN for Asthma was designed for families of children with poorly controlled asthma, defined by any of these criteria: 2 or more emergency department visits, 1 or more hospitalizations, or 5 or more missed school days in the last 12 months. Families of children with asthma were referred by hospital inpatient services, ambulatory clinics, community pediatric providers, community-based organizations, schools, day-care centers, and self-referrals. Within 24 to 48 hours of referral, community health workers telephoned the family with an invitation to participate in the WIN for Asthma care coordination program. All families referred by inpatient services were visited in person, given basic asthma education, and invited to participate in WIN for Asthma.

Once enrolled, community health workers offered families comprehensive asthma education,

Annual graduation ceremony: Washington Heights/Inwood Network (WIN) for Asthma Program.

TABLE 1—Washington Heights/Inwood Network (WIN) for Asthma Program Care Coordination Program Stages and Milestones: Northern Manhattan

Stage 1: Months 1-3	Stage 2: Months 4-6	Stage 3: Months 7-12
Comprehensive asthma education	Education reinforcement	Review goal status and support as needed
Home environmental assessment	Review goal status and support as needed	Service referrals as needed
Goal-setting session	Service referrals as needed	12-mo follow-up survey
Service referrals as needed	6-mo follow-up survey	Bimonthly communication/check-in
Weekly communication/check-in	Monthly communication/check-in	Graduation ceremony

Note. A severe asthma event at any stage will result in intensified services.

TABLE 2—Washington Heights/Inwood Network (WIN) for Asthma Program Outcomes: New York, NY, September 2006 to November 2010

Key Indicators	Baseline, %	12-Month Follow-Up, %	Change, %	*P*
Asthma symptoms reported in the last 4 wk: child experienced wheezing, tightness in the chest, or cough during the day	74	53	−28	<.001
Asthma symptoms reported in the last 12 mo				
Child was treated in the emergency department for asthma	82	39	−52	<.001
Child stayed overnight in a hospital because of asthma	43	16	−63	<.001
Child missed school because of asthma	88	51	−42	<.001
Asthma management strategies				
Caregiver has an asthma action plan	30	77	+159	<.001
Child's school has a current asthma action plan	28	78	+179	<.001
Steps were taken to reduce potential asthma triggers in the home	72	92	+28	<.001
Caregiver self-efficacy: caregiver feels in control of her or his child's asthma	61	97	+59	<.001

Note. Numbers may vary as a result of missing values. For each question, only those individuals with responses for both baseline and follow-up were included. *P* values correspond to the McNemar χ^2 test with Yates correction. The total sample size was n = 212.

a home environmental assessment to identify and address household triggers, strategies to help families set goals, and referrals for clinical and social services. In stage 1 (the first 3 months), families received the greatest concentration of education and services. In stages 2 and 3 (months 4–12), program intensity decreased as families gained confidence in controlling their child's asthma and progressively attained more asthma management goals. The education and services provided were customized to the family, and goal-setting strategies enabled caregivers to take the lead in developing, and attaining, their asthma management goals (Table 1).

EVALUATION AND DISCUSSION

Between September 2006 and November 2010, 472 families enrolled in the WIN for Asthma Program. Community health workers used a standardized instrument to interview participants at baseline and 6 and 12 months. We used pairwise bivariate analysis to examine program effect on asthma morbidity and caregiver self-efficacy among program graduates. After 12 months, hospitalizations and emergency department visits decreased by more than 50%, and caregiver confidence in controlling his or her child's asthma increased to nearly 100% (Table 2).

Early challenges included clarifying shared supervisory roles and encouraging hospital personnel to refer patients to WIN for Asthma. The unique partnership model that emerged empowered community health workers to move fluidly between the community and the hospital, supporting families in each setting and connecting them to clinical and social resources they desperately needed. These referrals enabled caregivers to address social stressors that frequently interfere with asthma management.

Key to the program's success was the active involvement of community partners from program inception to date. The process of creating the care coordination model was continually informed by partner, community health worker, and participant feedback (see the box on the next page). Although a strong foundation was set early on, it took several years to create the care coordination model that

Partner, Staff, Provider, and Participant Interviews Conducted by RTI International: Washington Heights/Inwood Network (WIN) for Asthma Program

Community Partner Interview

"Our families face so many other challenges that asthma is at the bottom of their list. They are facing eviction, losing Medicaid, domestic violence, and other issues. [When] the family doesn't understand what their provider is saying, the family asthma worker can say, 'I can go with you to see your provider,' and I think once a worker can go with the family, it brings them closer, and the worker can explain more to the families with these issues about asthma."

Health Care Provider Interview

"The [community health workers] from WIN deal with a lot more than our case managers do, which is mainly clinical and telephone follow-up unless deemed medically necessarily. [The community health workers] do go with the members to their doctors' appointment, so they are really advocating."

Community Health Worker Interview

"I'm very happy [with my supervision]. Something that you need is to be confident with the people who are around you, and I'm receiving that from my supervisor and the other staff members."

Program Participant Interview

"The asthma worker has changed my life. Before getting involved in the WIN program, I visited the emergency room at least 10 times a year. My daughter has not had an asthma attack since she started the program, which is a year ago. The asthma worker has also taught me about asthma medicines and has given me clear instructions on how to administrate medicines. I was finally able to understand."

Note. Interviews were conducted by Research Triangle Institute (RTI) International in 2008 and 2009. All appropriate institutional review board and Health Insurance Portability and Accountability Act protocols were followed.

exists today and to produce the outcomes that support its success. On June 17, 2010, WIN for Asthma was honored by the US Environmental Protection Agency with its 2010 National Environmental Leadership Award in Asthma Management.

We attribute the reduction in asthma emergencies to increased asthma management confidence and skills, but it could be a result of improvements in asthma care through mechanisms other than WIN for Asthma. To address this limitation, we are currently comparing our findings with data from a comparison group of nonparticipants.

NEXT STEPS

After the Merck Childhood Asthma Network grant ended in 2009, NewYork-Presbyterian Hospital elected to support WIN for Asthma and to expand it to serve families struggling with other chronic diseases, including adult asthma, diabetes, and congestive heart failure. ■

About the Authors

At the time of the study, Patricia J. Peretz was with the Community Health Outreach and Marketing Department, Ambulatory Care Network, NewYork-Presbyterian Hospital, New York, NY. Luz Adriana Matiz and Mary McCord were with the Division of General Pediatrics, Department of Pediatrics, Columbia University, New York, NY. Sally Findley was with the Heilbrunn Department of Population and Family Health, Mailman School of Public Health, Columbia University. Maria Lizardo was with the Northern Manhattan Improvement Corporation, New York, NY. David Evans was with the College of Physicians & Surgeons Pediatric Pulmonary Division, Columbia University.

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Contributors

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Human Participant Protection

Informed consent was obtained from participants at the time of interview. The study protocol was approved by the Columbia University Medical Center institutional review board.

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