Communities in Action for Asthma-Friendly Environments Change Package

An Approach to Increasing the Effectiveness and Impact of Community-Based Asthma Management Programs

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Five Tested Strategies for Improving Health Outcomes

- **Committed Leaders and Champions**
- **Strong Community Ties**
- **High-Performing Collaborations and Partnerships**
- **Integrated Health Care Services**
- **Tailored Environmental Interventions**

INTRODUCTION

The ***Communities in Action for Asthma-Friendly Environments*** Change Package is a comprehensive tool that synthesizes field data and experiences of successful asthma management programs that include an environmental component. This Change Package is grounded in the University of Michigan Asthma Health Outcomes Project (AHOP); evidence from the community-based chronic care, program improvement, and social change literature; and an in-depth study of highly effective model asthma management programs.

The University of Michigan Asthma Health Outcomes Project

The University of Michigan Asthma Health Outcomes Project (AHOP) enrolled more than 400 asthma programs that included an environmental component and reported measuring positive health outcomes in a study of the factors associated with program success. In its initial analysis, AHOP identified 111 of these programs that reported conducting evaluations that demonstrated improved health outcomes; and published their results in peer-reviewed journals. An analysis of these programs revealed that asthma programs with the following characteristics were more likely to report positive health outcomes: community ties; collaborations and partnerships; work with health care providers; and program tailoring to meet community and individual needs. You can learn more about the AHOP study and its results at www.asthma.umich.edu/ahop.

Six programs identified through AHOP that exemplify the characteristics linked to positive asthma health outcomes have contributed extensively to this Change Package. Through a series of conference calls, interviews, and site visits, case studies of these six model programs were developed to illustrate the key drivers of asthma program effectiveness and how these drivers are applied in the field. Each model program involved in the creation of this Change Package has demonstrated excellence in asthma care and an unbounded willingness to share their expertise:

- The Cambridge Health Alliance's Planned Care Program (Cambridge, MA)
- Urban Health Plan's Relief Streets Program (Bronx, NY)
- Monroe Plan's Improving Asthma Care for Children Program (Rochester, NY)
- The Children's Hospital of Philadelphia's Community Asthma Prevention Program (Philadelphia, PA)
- The Asthma Network of West Michigan (Grand Rapids, MI)
- The New York City Asthma Initiative (New York, NY).

These are comprehensive and highly effective programs and their success is, in part, due to their effective implementation of all of the Change Concepts described in this Package. This Change Package reflects the model programs' strategies, activities, and methods for cultivating and deploying committed leaders and champions; developing and maintaining strong community ties; creating high-performing collaborations and partnerships; integrating and coordinating health care services; and implementing tailored environmental interventions.

The ***Communities in Action for Asthma-Friendly Environments*** Change Package is a work in progress and feedback from participants at the 2006 National Asthma Forum will provide important input for the next iteration of this document. Over time, the *Communities in Action for Asthma-Friendly Environments* Network will help to continually update the Change Package as real-time learning and information exchange drive the ongoing improvement of asthma care.

Communities in Action for Asthma-Friendly Environments
Change Concepts and Tested Strategies

The ***Communities in Action for Asthma-Friendly Environments*** Change Package is designed to help community-based asthma management programs learn about five key change concepts that drive program effectiveness and improve health outcomes for people with asthma. Community-based asthma management programs that use this Change Package will find specific, replicable, and field-tested strategies they can follow to improve asthma health outcomes in their communities.

Change Concepts

I. Committed Leaders and Champions

Committed leaders and champions can significantly affect an asthma program's health outcomes when they aggressively promote a program's core goals; track outcomes and widely disseminate results; commit energy to driving improvement processes forward; and take ownership to ensure the successful implementation of specific steps in the change process. Leaders and champions exist at all levels within an organization; they are defined by their dedication, passion, and commitment to making changes happen. The most effective asthma management programs empower staff at all levels to step forward as champions for particular program processes and foster a culture where staff feel empowered to share their suggestions for improvement and lead their program area's evolution.

Great program leaders share some common traits. Most often, they are senior-level health professionals and managers from the very top of their organizations who can affect financial and strategic plans and create executive level support for new program initiatives. They are high energy, creative people who demonstrate a real willingness to question assumptions and standard practices. Leaders who are committed to improving program outcomes are never satisfied with the status quo; they carefully track their results and seek ways to continually improve. Leaders who inspire their teams to pursue really 'big' goals, such as an 80% reduction in emergency room (ER) visits over one year, display fearlessness and perseverance; communicate program objectives clearly; delegate responsibility; and hold their teams accountable for progress.

Committed program champions also demonstrate creativity, commitment, and a relentless focus on results. They are often managers and other staff-level leaders who take ownership for components or discrete processes within a program, recognize and work to remove barriers to progress, and drive themselves and those around them to make that program component as effective as possible. Champions are often created as a change initiative unfolds when early adopters of process changes become advocates for new strategies after seeing the link between recent changes and improved outcomes.

► Strategies for Action -

1. Leading Cultural Change

1.1. Use Outcomes Data to Promote Change: Leaders and champions across the health care field have demonstrated that great things happen when you foster a culture of continuous and *data-driven* improvement. Whether your program's goal is to reduce ER visits, provide environmental counseling at every intake, or ensure that every patient has a written asthma action plan, widely distributing your performance data will help you achieve results. Tracking outcomes and sharing the data helps program teams visualize their goals and remain motivated to achieve them.

1.1.1. Everyone Should Know the Program's Core Goals: Make sure that staff and partners at all levels understand your core goals. The most effective leaders and champions clearly describe why change is necessary, help program staff and partners develop a common vision of the desired outcomes, and make clear how each team, program component, or individual can contribute to the goal.

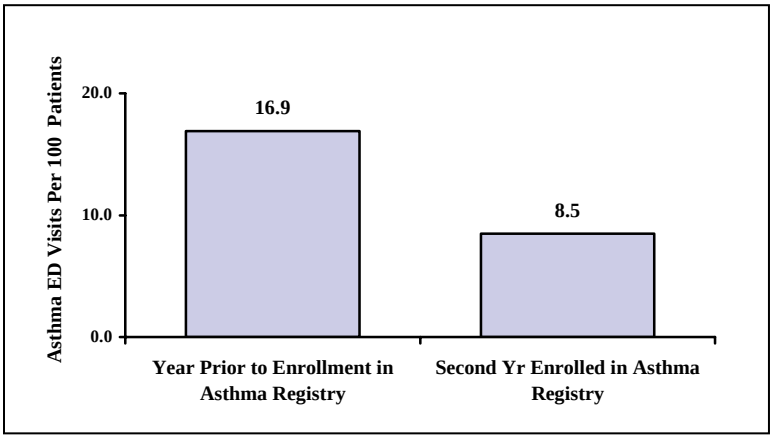
1.1.2. Everyone Should Know How to Measure Progress: Great leaders will ensure that the whole team knows how to evaluate program effectiveness and understands the indicators and metrics used to measure program outcomes.

A Case in Point: Dr. Stankaitis, Chief Medical Officer, and Howard Brill, PhD, Director of Medical Informatics, of the Monroe Plan for Medical Care led a team to develop an evaluation strategy involving quality of life survey data, care management process data, medical claims data, and qualitative interview data. Multiple data collection cycles were implemented over the life of the project and through their partners, Monroe Plan shared their outcomes at team meetings, the Monroe Plan Quality Management Committee, and at ViaHealth's Quality Council.

A Case in Point: The Asthma Network of West Michigan received a call from a local foundation with news that ANWM would receive an unexpected $30,000 grant! The reason: investors looking for a worthy local charity that provided a direct service to members of the community, had a proven "track record," and could demonstrate significant outcomes recognized The Asthma Network's progress. ANWM fit the bill and they were selected to receive the grant based on these criteria alone. Sharing their outcomes data really made a difference.

1.1.3. Share Outcomes Data with *Everyone*: Track your outcomes and regularly share performance data so everyone knows how the program is performing in relation to the goals. Make sure you regularly update staff, partners, service providers, funders, and other stakeholders on your progress against goals. Share information with clinical care teams affiliated with your program so that they know the outcomes they are achieving and know how those outcomes compare with others'. Encourage each clinical care team in your program to achieve established benchmarks of excellence or to exceed the benchmarks to demonstrate what can be achieved.

A Case in Point: Dr. Link, the Chief of Pediatrics and Program Director of Cambridge Health Alliance's (CHA) Planned Care Program, spearheaded an effort to develop an integrated electronic patient registry that houses medical records and helps CHA collect data on hospital stays and unplanned care visits. The registry allows everyone involved with CHA's Asthma Program to see health outcomes at the click of a button. Program partners, including school nurses, pediatricians, allergists, home visitors, and health department staff, can view medical histories online and immediately see trends in



health outcomes and quality of life indicators. CHA used the data from the registry to drive program improvements and demonstrate to staff the health outcomes of their improvement efforts. The system also allows clinical care teams to compare their results with other teams and to recognize areas in which they can improve. The data-driven process changes delivered remarkable results: an 80% decrease in unplanned provider visits and a 50% drop in asthma-related ER visits per 100 patients over two years.

1.2. Link Performance Appraisals to Outcomes: Leaders who achieve great results find ways to institutionalize the focus on outcomes. Effective strategies include recognizing and rewarding staff for their contributions to achieving program goals and pay-for-performance systems that incentivize clinical care teams to provide services aligned with national guidelines.

A Case in Point: The Asthma Network of West Michigan (ANWM) gives out a quarterly MVP award to recognize their employees for their efforts to deliver care to low-income and uninsured children and to train providers on comprehensive asthma management.

> "I feel humbled to have been chosen for the Asthma Network of West Michigan's Quarterly MVP Award. As I think of all the members that belong to the Network and their commitment and dedication, to be considered and chosen as an MVP deepens my commitment. My daughter's affliction with asthma affected the whole family and having all our lives improved for the better with the help of the Network was reward enough for me. My commitment continues with the Network by teaching their children's support group. By seeing all these children that have felt different and excluded because of their asthma triggers mingling with other children with the same feelings and problems and hearing the laughter and chatter during those meetings is reward enough for me. I just wanted to find a way to give back to the organization that positively changed our family's lives; receiving an award for that is overwhelming and further strengthens my commitment to this organization."
>
> *-Kyle Landman, ANWM Parent and MVP Award Winner*

A Case in Point: CHA operates a pay-for-performance model for their health care providers. Financial incentives for physicians and other clinical staff encourage attention to all of the elements in the asthma registry, including severity classification, environmental home visit referrals, and the completion of individualized asthma action plans. The registry is used to produce monthly reports sorted by clinical care site that highlight gaps in compliance. Every provider team in the CHA system receives an individualized report with the names of patients who are "not under control" showing up in red ink at the top of the page. There is a limit on the number of times a patient can appear in the "not under control" listing before a provider team's pay is docked.

1.3. Demonstrate Passion and Perseverance: Leadership is about communication at every level and committed leaders find ways to spread their passion for their programs. A leader's behavior and decisions convey intent and commitment.

1.3.1. Choose Your Goals Carefully: Effective leaders pick goals that they are truly passionate about, that are ambitious and achievable, and to which they are committed even in the face of setbacks.

A Case in Point: The Asthma Network of West Michigan (ANWM) was created twelve years ago by a committed group of health professionals who joined forces to tackle the burden of asthma in West Michigan in the mid 1990's. These individuals not only shared a passion for children with asthma, but also held key positions of leadership in the community and were then able to parlay that passion into action. A key to their early success was a

physician champion (Dr. Gary Kirk) who helped open doors within the healthcare institutions and local foundations and, through his position, leveraged funding from those key stakeholders to provide direct service to ANWM's target population.

1.3.2. Be a Relentless Advocate for Your Program: Talk about your program's goals in every encounter; make sure your team hears you stating your commitment to the "big picture goals" over and over again, and talk to people outside of your program about your commitment. You never know where you might find a new partner and enthusiasm and dedication are infectious qualities that lead to results.

A Case in Point: Dr. Link of CHA is devoted to using outcomes measures to drive program improvement. He is a model leader whose commitment to constantly evaluating and communicating program outcomes has produced impressive results. He insists on a "relentless, commitment to evaluating outcomes," and talks about the importance of outcomes measures to program planning whenever he gets the chance. Dr. Link is passionate about outcomes and has said: "I have no use for process measures; outcome measures are what really matters." Everyone who Dr. Link meets quickly learns about CHA's Planned Care Model and the importance of outcomes data for driving performance improvement.

1.4. Accept Uncertainly and Test New Possibilities: Transformative leaders recognize that the only way to find new solutions is to test the possibilities. They are comfortable with the unknown and provide room for creative solutions to emerge.

1.4.1. Be Willing to Try New Strategies: Many outstanding asthma management programs test out potential process improvements, study their outcomes, and tweak their strategies at a small scale before they get it right. Then, once they know how to make a process improvement really work, they roll out a change process across the program and rigorously implement their proven strategies.

A Case in Point: After recognizing the success of the Improving Asthma Care for Children program interventions, Monroe Plan spread the program from the original target population affiliated with ViaHealth to all members with asthma throughout their service area. Monroe Plan/ViaHealth's Pilot resulted in a decrease in hospitalization—2001: 55 Admits/1,000 Person Years; 2004: 22 Admits/1,000 Person Years—and a decrease in ER rates—2001: 866/1,000 Person Years; 2004: 191/1,000 Person Years.

A Case in Point: ANWM began modestly with 50 children enrolled the first year of funding (1996). The program's founders developed a protocol and crafted into a grant application, which was submitted to the local health care institutions and two local foundations. The founders of the coalition had never written grants before but, working collaboratively, and dividing the grant components among the team, created a protocol which not only received Institutional Review Board approval, but was awarded funding by competing institutions – a feat never before achieved by a community collaborative effort in West Michigan. This initial grant application has served as the model for subsequent grants and incorporated enough flexibility to allow the program to evolve over time and be responsive to the needs of the community.

1.4.2. Create Your Own Champions: Recruit advocates for change from within your pilot group. Make sure your pilot group knows that they are innovators, tell them that they are leaders, and ask for their help spreading improvement strategies. The most effective champions promote strategies related to their job functions—an IT Director makes a great champion for the adoption of an electronic registry; a physician can be the best advocate for changes

to standard clinical practice; a Chief Operating or Finance Officer can convince other decision-makers to reimburse for environmental interventions, etc.

A Case in Point: The Community Asthma Prevention Program (CAPP) has found a number of innovative strategies for creating and deploying champions, including recruiting parents who attend their asthma education sessions to enroll in train-the-trainer courses. When CAPP educators identify particularly motivated parents through CAPP's community asthma education classes, they ask the parents if they would like to become peer educators. When parents accept, the CAPP trainers conduct one formal teaching session and then the parent-trainees accompany experienced asthma educators on at least five community education sessions where the parents are invited to buddy-teach. When the parents are ready, CAPP asks them to lead community education classes in schools, churches, day care centers, and other locations in West and North Philadelphia. Over the past seven years, CAPP has trained 40 parents through this program, and two parents who moved through the training program are now full-time home visitors on CAPP's payroll.

> "Our goal in using a train the trainer model is to leave neighborhoods and communities with lay asthma experts."
>
> *-Dr. Tyra Bryant-Stephens Director, Community Asthma Prevention Program*

A Case in Point: The Asthma Network of West Michigan has created leadership that lasts in its Finance Committee. The committee chair and the treasurer have served in the same capacity for 7 years. As a result, they have targets each month for home visits, a statistical budget, a fiscal year budget, and a year-to-date budget. They are audited annually and have achieved a stable financial foundation. These budgets have allowed the Asthma Network to regulate their growth and enable them to determine true costs and return on investment.

Demonstrating Excellence: Committed Leaders and Champions Achieve Results at Urban Health Plan

Urban Health Plan (UHP) models all of the effective strategies described in this Change Package: committed leadership, strong community ties, high performing collaborations, integrated health care services, and tailored environmental interventions are all part of UHP's comprehensive asthma care program. These components are interrelated and one program element does not operate independently of the others. The actions of the committed leaders and champions described below have an affect on and are affected by UHP's strong ties to the community they serve, their partnerships with other organizations, particularly the New York City Asthma Initiative (NYCAI), and the integrated health care and environmental services that UHP delivers to their patients with asthma. This mini-case study focuses on the leadership theme to illustrate how committed leaders and champions affect program outcomes but it is important to remember that leadership is one part of a suite of key program characteristics that impact program outcomes.

Urban Health Plan

- *Size:* 6,000 patients tracked in asthma registry
- *Community Impact:* 27% of children in the South Bronx have an asthma diagnosis
- *Funding:* Federally qualified community health center
- *Outcomes:* 10 symptom-free days stable over asthma season
- *Contact:* Paloma Hernandez, CEO, Urban Health Plan paloma.hernandez@urbanhealthplan.org

UHP in the Bronx, New York, has an excellent and deeply committed leadership team that includes: the President and CEO; Asthma Educators who are celebrities in their community—"The

Asthma Dude" and "The Asthma Lady"; a Physician Champion—the Section Head of Pediatric Services and Pulmonology; and data-driven improvement champions—the Chief Medical Officer and Vice-President of Medical Affairs. The leadership team at UHP includes executives and staff from across the program who take charge of strategic planning for the program as a whole and for discrete program components. The energy, commitment, and perseverance of the UHP team led to the implementation of a new proven care model at all 13 clinical care sites in their system and the achievement of some of the most impressive asthma health outcomes in the country in a disproportionately affected community: 27% of children in the South Bronx have an asthma diagnosis.

Beginning in 2001, UHP started using the Bureau of Primary Health Care's (BPHC) recommended delivery system design, tracking their health outcomes, and implementing a strategic plan for addressing asthma. Within three years, the BPHC had recognized UHP as an outstanding member of the Health Disparities Collaborative because of UHP's phenomenal results.

Ensuring Consistent Care: UHP's leadership began their change process by developing a system to ensure the consistent capture of patient information. They created standard in-take and follow-up visit forms and introduced a database system for managing patient information. The system was designed to make chart reviews unnecessary and to enable providers and UHP's management team to easily monitor asthma care and health outcomes over time.

Start Small to Get Big: The process leaders and champions at UHP wanted to make sure that upgrades to asthma care led to sustained improvements. One of the ways they ensure this is by continually pilot-testing potential improvements at one clinical site and refining their ideas hundreds of times to get them just right. Paloma Hernandez, the President of Urban Health Plan, and Dr. De Leon, the Medical Director, carefully study outcomes data from their sites and continually tweak the programs to look for improvements in process and health outcomes. When "we see the slope in the line that we're looking for, we launch our spread strategy immediately. We know we have an approach that's working and the data to prove it." When the team sees the outcomes they are looking for, they undertake a major roll-out to train providers and staff at all of their clinical sites on new tools, processes, and systems proven to increase effectiveness and lead to improved health outcomes.

Ensuring Understanding: UHP's leaders worked hard to explain their program's short-term objectives and long-term goals to everyone in their system. Soon, the entire staff understood their charge and knew that their success would be measured by the number of symptom-free days for people with asthma in the UHP system.

Using the Data: UHP developed an asthma classification test for all of their providers and then used the test results to drive clinical improvements. Initially, providers' answers to questions about how they use the classification scheme varied widely. To convince the providers that change was critical, the program champions made sure the clinicians saw the inconsistency in their severity rankings *and* the health outcomes being achieved at the pilot site that used the classification scheme correctly. The outcomes data proved that the new system worked better and motivated providers to make changes to their standard practice.

Leadership that Lasts—Creating Champions: Urban Health Plan designed a Masterminds program to produce a fleet of trainer-champions to teach others the elements of BPHC's care model. To spread their effective strategy to new sites, UHP sent out their Masterminds to clinical sites where they virtually took over for an entire day while conducting trainings. The program leaders and Mastermind champions called all staff meetings at each site, brought temporary workers in to replace staff for the day so that all clinical staff could attend trainings, and changed out all of the old forms for new forms while the clinical staff attended the trainings to help institutionalize the new system. By the time the training session concluded, clinical staff knew why change was important, understood the data that demonstrated

the effectiveness of the proposed changes, and had tools at-the-ready to implement the new and more effective care model.

Still, some providers were reluctant to change so UHP's leadership nudged them along the path by suggesting that they try the new system for a short time to see if it worked. Then, the leadership made sure that the providers received regular updates on their practice's health outcomes and comparisons to the poorer outcomes the providers had been getting before the change.

The Results: Ultimately, UHP's committed leadership achieved the results they wanted: 80-85% of providers now use the standard asthma classification system during clinical visits; 100% of patients who need it are on anti-inflammatory medication; 60% of patients have self-management goals; and UHP has achieved and maintained ten symptom-free days in a row even during the months when asthma symptoms traditionally spike. UHP's zip code has seen the largest decrease in asthma hospitalizations in all of New York City. Between 1997 and 2000 asthma hospitalization rates decreased among children aged 0-14 years in UHP's community, Hunts Point-Mott Haven, by 56 percent!

II. Strong Community Ties

Programs that have close ties to the individuals and communities they serve are more likely to improve health outcomes for people with asthma. Community engagement should be more than a component of a larger program; *it should be a central focus of all program activity*. Regardless of the size or type of community served, the most effective asthma programs have strong relationships between program staff and community members and the program and other organizations that are embedded in the target community.

Asthma management programs that have the greatest impact on community health demonstrate some common strategies for building strong community ties. These programs *are part of* their service communities; they are visible partners in the life of the community not outsiders who drop in occasionally to deliver asthma care. Great asthma management programs have many points of interaction with their service communities because they know that effective asthma care requires much more than sporadic clinical interactions. The best programs model the same comprehensive approaches to asthma management that they recommend: they are active in the home, at school, at work, at the pharmacy, and at the hospitals, clinics, and providers' offices.

► Strategies for Action -

2.1. Focus on Relationships in Everything You Do

2.1.1. Be Visible: Have at least one program office in your target community and hire staff from the community you serve.

2.1.1.1. Meet Local Needs with Local People: Some of the most effective asthma management programs build close ties to their target communities by hiring from within the community. The people best suited to reach your community may already live there. Program employees from the community have more opportunities to build patient-program rapport in the course of their daily lives than staff that live 'outside'.

A Case in Point: Urban Health Plan is the largest employer in their zip code with 13 sites in their service area. Just about everyone in the Bronx knows about UHP's asthma program and knows someone who works there. One of UHP's Health

Educators is known throughout the South Bronx as the "Asthma Lady". She explains that all of UHP's health educators live in the South Bronx community and "if we don't see our patients at the clinic, we know we will see them on the street, at the bus stop or in the grocery store…when we ask how they are, they know we are asking about their asthma."

2.1.1.2. Hire and Train Locally: It may make more sense to hire people who are well-known in your target community and train them than to hire experienced staff from elsewhere. For example, a home visitor who is also a neighbor may be more welcome, more trusted, and more effective than an experienced home visitor from another area.

2.1.2. Make it Easy to Accept Services: Consider how you can cater to your target community's needs and make people comfortable with your program. Make sure your program team is culturally competent, you can communicate with your target community, and your community can access your program's services easily. For example, if you know most of the parents in your service area work full-time, consider offering home visits on weekends and after work hours, or conduct asthma education sessions at community hot-spots, like the lobbies of popular restaurants or after church services.

A Case in Point: The Children's Hospital of Philadelphia's Community Asthma Prevention Program (CAPP) runs community asthma education programs at sites throughout North and West Philadelphia. Classes for adults and children run simultaneously so caregivers can bring their children with them and avoid child care issues. CAPP offers evening classes, multiple days of the week, in English and Spanish in several locations, such as schools, churches, local YMCAs, etc. All locations are accessible by public transportation and CAPP offers transportation assistance, if needed.

2.2. Treat All Relationships Like They Really Matter (Because They Do): To identify and retain program participants, develop relationships with the individuals and organizations they trust.

2.2.1. Get Involved in Your Community: Leaders and program staff need to demonstrate their commitment to the communities they serve whenever possible. To reinforce your program's community ties, support other community service organizations: sit on nonprofit boards, attend PTA and city council meetings, etc.

A Case in Point: The asthma program at Urban Health Plan has grown through patient word-of-mouth because the UHP staff and mission is visible across the community. UHP's board members sit on other community boards, and the majority of board members are also patients so they make very effective advocates for the program.

A Case in Point: The Chief of Pediatrics from CHA is also the Chair of the Community Children's Health Task Force. This role helps him to demonstrate his commitment to children's health issues, including asthma, and build strong ties to the community CHA serves.

A Case in Point: Monroe Plan's Improving Asthma Care for Children program conducts asthma awareness education at every opportunity across the Rochester community. Staff participate in community and school health fairs and public events, the Plan sponsors a variety of its own asthma awareness/education activities, such as annual World Asthma Day events, and they partner with other community organizations in activities like the annual Asthma Expo, annual Asthma Teaching Day, and Camp Broncho-Power for children with asthma.

A Case in Point: The Asthma Network of West Michigan receives funding from the local Heart of West Michigan United Way. In order to contribute to the West Michigan nonprofit community, the Asthma Network's manager serves on the United Way's Investment Council, donating countless hours to proposal reviews, site visits, and program evaluation in order to make funding decisions on behalf of the United Way.

2.2.2. Be Inclusive as You Plan: Asthma management programs that are achieving impressive health outcomes involve their target communities at all stages of their program planning.

2.2.2.1. Open Up Your Planning Table—Locals May Have the Best Ideas: Identify people who will be affected by or involved in program activities and invite them to help you plan your program strategy. This is a great way to build community buy-in and ownership; the more community stakeholders you involve in developing your program's plan, the more investment the community will have in its success. This strategy works no matter what your target community looks like or who the stakeholders are: students, physicians, state officials, health systems, families, etc. Consider asking service delivery experts (from social service organizations, for example), children's health activists, and community leaders, such as church officials, local politicians, businesspeople, and other prominent individuals to join you as you plan.

A Case in Point: CAPP convened the parents of children with asthma from North Philadelphia to help plan the program's expansion. Before CAPP began delivering services in the community, they had heard from parents about what kinds of home visits, clinical support, and community interaction would work best for them.

2.2.3. Be Responsive and Flexible: The community you serve and your stakeholders will change over time so build in ways to get updates from your community and respond to their evolving needs. If your program can adapt over time to respond to changing needs and changes in the science, you will have a culture of ongoing improvement and will see improved health outcomes.

A Case in Point: Dr. Tyra Bryant-Stephens, Director of CAPP, recognized that while her organization served over 2,000 children, she was reaching only a small fraction of the estimated 30,000 children with asthma in Philadelphia. After hearing from CAPP's parent focus groups and recognizing that her target community needed a different type of service, Dr. Bryant-Stevens initiated a door-to-door asthma screening program.

A Case in Point: Several years ago, a high school student from a suburban school district in West Michigan suffered a fatal asthma exacerbation while on school grounds. As a result, and in response to the urgent request of the school district, staff from the Asthma Network of West Michigan provided asthma educational in-services for the staff of every school in that district – a dozen schools in all – as well as its coaches, athletic directors and physical education teachers.

Demonstrating Excellence: Strong Community Ties Lead to Improved Outcomes for the Monroe Plan and ViaHealth Partnership

The Monroe Plan and ViaHealth partnership for Improving Asthma Care for Children developed very strong ties to their community. Though the program is an exemplar of how the various themes described in this Change Package work together to create effective asthma management programs, this mini-case study focuses on the close ties the program has with its service community and how those relationships enabled Monroe Plan and ViaHealth to conduct highly effective asthma outreach work. With a grant from the Robert Wood Johnson Foundation, the Monroe Plan and ViaHealth created a customized asthma outreach program targeted to their service community's demographic that includes a significant number of low-income Hispanics.

Monroe Plan's Improving Asthma Care for Children

- *Size:* 262 children in IACC pilot project
- *Community Impact:* 5,633 children in Monroe Plan service area with an asthma diagnosis
- *Funding:* Pilot was grant funded, made business case to Monroe Plan board of directors showing return on investment
- *Outcomes:* Improvement in nighttime asthma symptoms, functional limitations, and daytime symptoms
- *Contact:* Deb Peartree, dpeartree@monroeplan.com

Meeting Local Needs with Local People: The Improving Asthma Care for Children Program works incredibly hard to find children with asthma; engage families in the comprehensive asthma care program; and meet the needs of families in the program. One of the reasons Monroe Plan and ViaHealth's partnership has been so effective is that they hired a dedicated Asthma Outreach Coordinator who is from the community he serves. Neil Pedraza, the Asthma Outreach Coordinator for the Monroe Plan and ViaHealth partnership, has lived in the Rochester area for 19 years. He is bilingual and understands the cultural background of his Hispanic clients. When Neil conducts home visits to educate children with asthma and their families, people recognize him, understand him, and welcome his help.

Making it Easy for the Community: Neil Pedraza is like a private detective pursuing effective asthma care for kids. He uses the information about children with asthma in the Plan's database as a starting point for finding families. When he locates a family with a child with asthma in the claims database, he calls them on the telephone, writes them a letter, or visits their home to ask if he can help them to manage their child's asthma. If they agree, Neil brings all of the program's resources to bear to help the family understand asthma and receive the best care possible. Neil has engaged many families in the program, in part because he understands the culture of the families he is reaching out to and knows how to make it as easy as possible for families to accept his help.

Neil and program staff visit families in their homes and bring educational materials in English and Spanish with them on their visits. They provide basic education about asthma and medical and environmental asthma management strategies. During the home visits, outreach workers take a medical history, demonstrate how to use medical devices, and help to educate children and their families about ways to control asthma. Neil works with children and families to identify the asthma self-management goals they want to achieve and to develop joint strategies to realize those goals.

Depending on what they find during the home visits, the outreach workers may refer children to specialists for allergy skin testing. When skin testing is deemed appropriate, the outreach workers conduct home environmental assessments. Asthma outreach workers will also attend doctor's appointments to make sure that the children with asthma and their families understand everything that goes on during a visit and that the families' needs are addressed by the providers.

Expanding the Model: Leveraging its success with its project with ViaHealth, the Monroe Plan has expanded its Improving Asthma Care for Children Program throughout its entire service area to include rural areas and Binghamton, New York. One of the challenges the program has faced is figuring out how to reach the rural counties. They followed their original strategy—to hire or partner with trusted people from the target service community rather than starting from scratch with new people. Monroe Plan decided to build on an existing visiting nurse program that was already providing home care visits to the rural population and found an effective way to quickly develop strong ties to a new community.

The Results: When Monroe Plan began its efforts to improve asthma care, 51% of people with asthma enrolled in ViaHealth were categorized as having moderate to severe asthma. After the program's extensive outreach effort to coordinate the delivery of better care to children in the community, the percentage of children categorized as moderate to severe dropped to 25%.

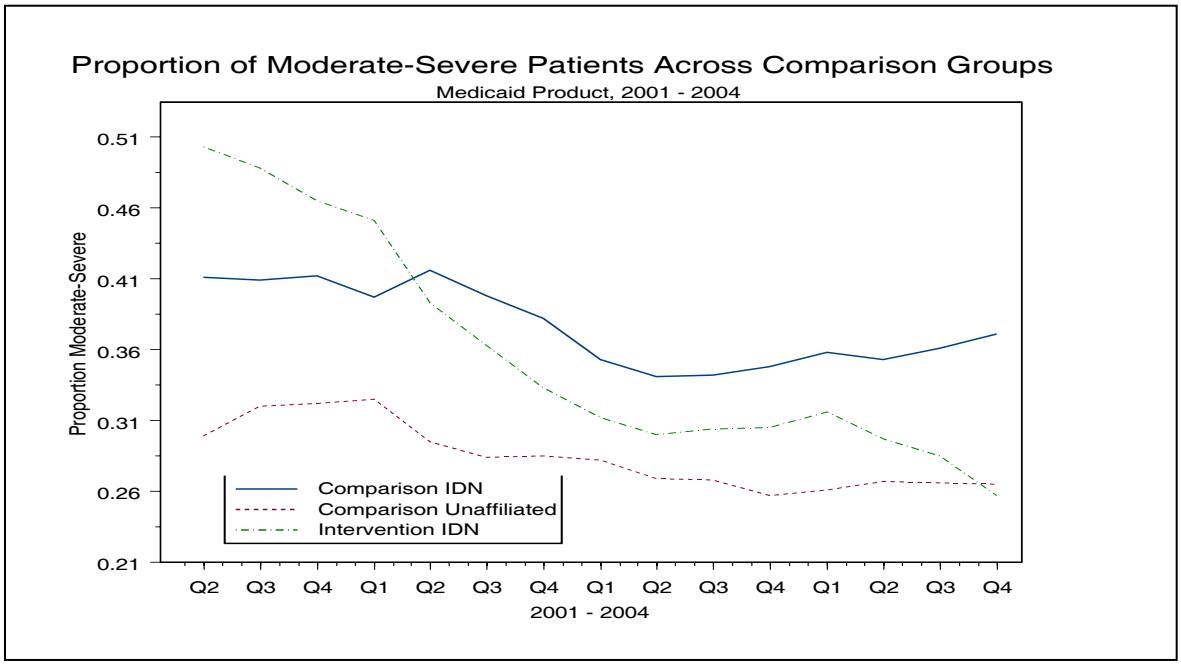


Figure 2. Proportion of Moderate-Severe Patients across Comparison Groups during Pilot Project

III. High Performing Collaborations and Partnerships

The most effective asthma management programs collaborate with other agencies and institutions. Collaborations and partnerships, of any type and to any extent, can have a positive impact on health outcomes. The many benefits of collaborating include improved program sustainability, increased credibility in the community, more community support and buy-in, and better and more strategic program planning and implementation. Whatever your program model, you can improve your outcomes by looking for collaborators and partners to help you design your program, reach your target community, deliver care and services, evaluate your outcomes, and sustain and expand your program. By partnering, your program can access other organizations' core competencies and can minimize your need to take on roles that are new to you. By applying the best suited individual or organization to the right tasks, you will leverage every program participants' resources to the greatest effect—consider the efficiencies that come with practice—and maximize your chances for success and long-term sustainability.

In addition to helping you connect to your service community (see **II. Strong Community Ties**), collaborations to provide technical assistance, take policy action, and provide resources to support a program can lead to positive asthma health outcomes. Some of the most effective asthma management

programs are collaborations that include Federal, State, and local government agencies, community-based organizations, hospitals, health systems, health plans, and many others.

► Strategies for Action -

3.1 Be Ready to Partner with Everyone: The asthma management programs that achieve impressive health outcomes seek support from a variety of partners, including hospitals and health systems, government agencies, such as state and local health departments, schools and school systems, universities and academic institutions, voluntary organizations and non profits, pharmaceutical companies, pharmacies, asthma coalitions, and others.

A Case in Point: The New York City Asthma Initiative (NYCAI) formed when several community groups came together and joined with the Department of Health to address the disproportionately high asthma rates in a section of the Bronx called Hunt's Point. A group of organizations and individuals dedicated to social justice convened a meeting in 2000 with community-based programs, like the South Bronx Clean Air Coalition, medical providers, like Urban Health Plan, managed care plans, including the Medicaid Program run through the Department of Health, and K-12 schools and day care organizations. The community meeting led to the formation of five committees each tasked with addressing a critical issue related to the asthma problem: medical standards of care; school and early childhood; environment; research; and the organization planning committee, which served as a steering committee. People were assigned to the committees based on experience, expertise, and interest. This system meant that each committee knew how to accomplish the tasks assigned to it and minimized the time required to make new contacts, explore existing policies, etc. These committees developed recommendations, position statements, and key strategies that quickly led to tangible success. For example, the schools committee partnered with the Office of School Health to streamline student access to asthma medications at school and improved school asthma management policy; the research committee successfully advocated for the passage of a bill to require hospital ERs to report the reasons for ER visits to the city so that the coalition could better track asthma-related ER visits.

3.1.1. Build on What Already Exists: When designing your outreach strategy, environmental home visit component, or any other program component, consider contracting with existing agencies to provide services. Even if a potential partner has not delivered the particular service you are looking for, if they have a presence in your target community already, you can train them to deliver services or education more easily and sustainably than your program can penetrate a new community. It makes better financial sense to partner with existing providers to deliver your program, particularly if the service provider is from your target community (see **II. Strong Community Ties** above).

A Case in Point: NYCAI recognized the potential for increased asthma rates in lower Manhattan after September 11, 2001. To reach the pediatric population at risk in this area, the Department of Health collaborated with the Centers for Disease Control and the New York Academy of Medicine to design a simple form to help day care providers recognize symptoms associated with asthma. The form was distributed widely throughout lower Manhattan. Day care providers learned to follow the eight-question list for determining if a child has probable asthma. If, after reviewing the form, a day care provider thinks asthma is likely, they refer the child to a health care provider for a confirming diagnosis. Nineteen out of twenty children referred from the day care centers that use this form have received confirming diagnoses from health care providers. NYCAI found an effective and relatively easy way to manage the potential increased incidence of asthma by partnering with an existing service in the target community, day care providers in lower Manhattan that had ready access to the at-risk population, young children.

A Case in Point: When CAPP expanded their asthma management program to North Philadelphia, they looked for partners already providing community services in the area and subcontracted for services. CAPP partners with Habitat for Humanity, the local YMCA, and the school district to reach out to children with asthma and their caregivers and to find locations for community education classes.

3.1.2. Always Share Everything You Can: Great programs find collaborators and partners who will share their resources, materials, and program planning responsibilities. In the most effective collaborations, the partnership initiator and the new partner are both ready to share. If your program offers up resources, materials, and time, you stand a better chance of receiving a similar offer from another organization down the road. But reciprocity is not the only reason to share; it also makes sense as a way to build buy-in, strengthen a partnership, and create a sustainable model—don't think of sharing as giving your resources away, but as leveraging your resources to greatest effect.

A Case in Point: Urban Health Plan joined the Bureau of Primary Healthcare's Health Disparities Collaborative, a project that facilitates information and resource sharing between programs working to achieve improved health outcomes for people with asthma. Within three years of joining the collaborative, UHP had benefited so much from the relationship, that they had met all of their original asthma management goals. UHP was then able to share their innovations with other members of the collaborative who benefited greatly from UHP's expertise in managing asthma in low-income Hispanic communities.

3.1.2.1. No Need to Reinvent the Wheel: You can conserve your program resources and benefit from someone else's hard work if you use existing materials and tools.

A Case in Point: When the Monroe Plan expanded its Improving Asthma Care for Children Program beyond ViaHealth, it decided to embrace several key aspects of the provider education program from the Children's Mercy Hospital in Kansas City, Missouri (Children's Mercy Hospital was one of two winners of the first-ever National Environmental Leadership Award in Asthma Management that EPA presented in 2005). Children's education strategy had prepared providers to deliver environmental counseling during clinical visits and the Monroe Plan incorporated aspects of that education program to prepare its providers to do the same. After completing five educational sessions, providers within the Monroe Plan are eligible for reimbursement for asthma education that includes environmental counseling. Most recently, Monroe Plan has collaborated with the Regional Community Asthma Network (RCAN) of the Finger Lakes region to deliver the educational sessions that allow providers to receive asthma education reimbursement.

3.2. Collaborate with Established Organizations to Build Credibility: Asthma management programs can increase their credibility within the community by collaborating with respected and well known partners. Fundamentally, excellent community-based asthma management requires a community partnership because few organizations can do it all. Highly effective community-based asthma management requires advocacy, clinical care, environmental interventions, economic support, political will, and a lot of social capital. In many communities, one organization or individual is known for their skills and dedication in one of these areas. To maximize your program's effectiveness and increase your program's sustainability, find these community experts and organizations and ask them to sign on to your mission.

A Case in Point: CHA is a member of the Healthy Children's Task Force in Cambridge, Massachusetts. The task force has been active for over 20 years and includes the superintendent of area schools, providers outside of the CHA network, housing organizations, nursing

representatives, universities, and local politicians. Working through the Task Force, CHA has been able to institutionalize many aspects of their Planned Care Model by convincing local officials to build in budgetary support for program components such as home visits. Their position on the Task Force also helped CHA to create highly effective working relationships with the school system, Department of Public Health, and the city government's housing inspection agency, organizations that have been critical to the effective implementation of CHA's Planned Care Model for asthma management.

Demonstrating Excellence: High Performing Collaborations and Partnerships Lead to Improved Outcomes in West Michigan

Asthma Network of West Michigan

- *Size:* 381 families case managed in the past year, provided education to over 3,468 community members
- *Community Impact:* 94,500 people in West Michigan
- *Funding:* Annual budget of $326,000, receive reimbursement from 5 health plans for intensive case management services
- *Outcomes:* Emergency department visits decreased by 25% in one year
- *Contact:* Karen Meyerson, Manager Asthma Network of West Michigan, meyersok@trinity-health.org

The Asthma Network of West Michigan (ANWM) is dedicated to serving low-income children living in urban areas that are traditionally underserved. The program specifically targets uninsured and underinsured children and seeks to demonstrate the business case for comprehensive asthma care by delivering care that helps disproportionately affected children stay out of the ER. ANWM has two goals: 1) to educate those caring for individuals with asthma—physicians, nurses, school and daycare personnel, parents and children, and adults and family members—using the National Institutes of Health Guidelines; and 2) to intensively case-manage low-income children and adults with moderate to severe asthma. ANWM is a model program that exemplifies all of the key strategies for program success presented in this Change Package. The network has many strengths that we could profile and its success is, in part, due to its grounding in the effective strategies presented here: ANWM has very committed leaders, strong community ties, integrated health care delivery systems, and a tailored environmental strategy. This mini-case study focuses on ANWM's partnerships because the results of their collaboration strategy are so remarkable. ANWM is creating a sustainable program to deliver care to a traditionally underserved population; demonstrating positive health outcomes and cost savings; and receiving reimbursement for their work from health care plans.

ANWM was founded as a collaborative so the dedication to partnering to achieve results was built in to the program design from the beginning. The network emerged when a group of competing hospital systems came together to improve asthma health outcomes community-wide. Matt Kilroy, the founder of ANWM and a respiratory therapist, describes the program's philosophy towards partnerships simply: "Never be afraid to collaborate with anybody" and "Leave your badges at the door...partner to achieve a shared goal and not for organizational advantage." ANWM has taken this advice to heart and their network of partnerships includes almost 30 sponsors and a long list of program participants, including Priority Health, Blue Care Network, Community Choice Michigan, Molina Health Plan of Michigan, three acute care hospitals, the American Lung Association of Michigan, the Kent County Health Department, Grand Valley State University, many private practices and visiting nurse services, and a long list of other collaborators.

Partner for Effective Services: ANWM is a cooperative between area health care providers, health care plans, institutions, non-profit organizations, and the community. Everything that ANWM does is the result of a partnership and the network knows how to maximize the contributions of each network member. By defining specific tasks and assigning responsibility for them to one of their standing

committees—advocacy, education, fund development, finance, marketing and membership, research—ANWM has steadily worked to accomplish the network's goals. "Each committee is an integral part of the whole; attacking the asthma issue from differing perspectives—resulting in a total that is greater than the sum of its parts." ANWM's cooperative structure is also a key to their program's sustainability. The plans and funders who support ANWM's work joined in the planning process for the program and share in the benefits the network creates, so they have many good reasons to continue supporting the program.

The centerpiece of ANWM's program is an intensive home-based asthma education and case management program for children and adults with moderate to severe asthma. Specially trained nurses or respiratory therapist case managers conduct home-visits—up to 18 home visits per case depending on need. Baseline assessments, goal development in the form of an asthma action plan, patient and family education, care conference with the primary care physician, asthma education for school personnel, and psychosocial interventions all combine to make this approach so effective. While ANWM employs strategies predicated on the national guidelines for asthma care, their inter-disciplinary team delivers its innovative and effective program of in-home asthma education and case management. Key to their approach is the utilization of a medical social worker (MSW), whose services augment the clinical case management team. While the case managers focus on specific asthma management and control issues, the MSW helps the family access additional resources to meet their basic needs. ANWM case managed families typically have multiple stressors, ranging from environmental to financial to socio-legal; the utilization of the MSW to identify and assist with a family's challenges and barriers to care leads to greater effectiveness in caring for the child's asthma.

ANWM recognizes that children with asthma have many "caregivers" including their parents or guardians, schools, clinical care providers, and the children themselves. ANWM reaches all of these caregiver groups through asthma fairs, in-services, Grand Rounds, small group settings, and telephone information hotlines. In schools, ANWM coordinates care with the school nurses, but also educates athletic coaches, physical education teachers, and principles on proper asthma management. ANWM helps motivate the school community to be an active partner in children's asthma care by discussing the links between attendance rates and asthma management. ANWM's partnership with schools has created a new group of advocates for effective asthma care, helped address risk factors commonly found in school environments, and created a recruitment channel for bringing high risk children into ANWM's program: many of ANWM's program participants come from school referrals.

ANWM collaborates with a wide variety of groups to augment the case management services they provide. And when partnering, ANWM follows a strategy that recognizes individual and organizational expertise and applies it to the mission of improving the quality of life for people with asthma and their caregivers. ANWM never creates a new program when community knowledge and capacity already exist; they collaborate instead. When they recognized the need for a summer camp for children with asthma, instead of designing the program from scratch, ANWM partnered with the Children's Miracle Network and local area doctors and nurses to volunteer and help manage the camp. When it came time to create their Web site, AANWM engaged a strong partner and saved resources by asking a local Eagle Scout troop to develop their site.

Sharing to Produce Results: ANWM undertook an extensive data collection effort to assess the results of their case management program. They looked to the local university, Grand Valley State University, for help with their evaluation program. Working with graduate students, ANWM designed a study to track health care utilization and hospitalization outcomes for the children in the ANWM program. In the first study, ANWM followed 34 children for one year. Within that time, they were able to demonstrate a cost savings of $55,000 to Priority Health because ANWM's home-based intensive case management program was keeping children out of the hospital and away from the ER. Upon seeing the results, Priority Health quickly agreed to reimburse ANWM for their home visit program.

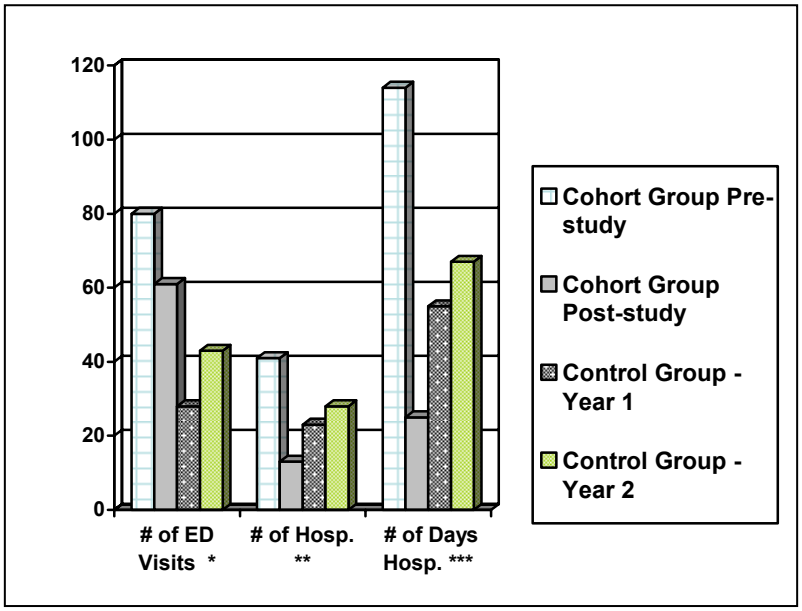
Type of Charge	*Pre-Study (# of encounters over 1 year)**	*Study (# of encounters over 1 year)***
ED charges	$18,357	$11,787
Inpatient charges	$67,972	$19,277
Total charges	$86,329	$31,064

* prior to entry in program; ** after entry in program

To make sure that local health plans recognized the return on investment, health outcomes, and utilization results that ANWM was achieving, the network's leadership met with Medical Directors from four other health plans. Once the other plans saw the cost savings to Priority Health associated with ANWM's program, they agreed to also reimburse ANWM for visits to the homes of people with asthma enrolled in their plans. ANWM engaged a fifth plan, the Health Plan of Michigan, by simply filing for reimbursement after providing services to a plan member. "No one told us we couldn't," said Karen Meyerson. And it worked. The plan reimbursed ANWM for their claim and became a new partner supporting the network's program.

Collaborate for Credibility: Many of ANWM's members participate on state-level committees and task forces on asthma. Members of ANWM participate on the Michigan Asthma Advisory Committee, Michigan Consortium of Asthma Coalitions, Michigan Asthma Pediatric Mortality Review Panel, Michigan Surgeon General's Primary Care Initiative Taskforce, and the Asthma in Schools Work Group. These relationships help ANWM build support for their program model and enlist partners to advocate at the state level for their program's care model.

Results: ANWM has demonstrated that the cost of comprehensive asthma care is $2,500 per person for up to 18 home visits per year, *and* that comprehensive care leads to a 64% decrease in hospital admissions; a 46% decrease in length of stay; a 60% decrease in ER visits; and improved medication usage. ANWM has conclusively shown that the reductions in health care cost (utilization and ER visit costs) exceed the cost of having a child in their intensive case management program: the net savings for a child in their program is ~$800 per child per year. Five health plans are now reimbursing ANWM for some of their costs under a standard nursing home visit code and one of the health care plan partners recently said, "We're not giving you enough money for your services." That partner is now negotiating a higher rate of reimbursement for their Medicaid, Commercial and Medicare members. ANWM's partnership strategy has helped them to build an intensive case management program for at-risk children and to demonstrate their program's value to their health plan collaborators. The plans, for their part, recognize that ANWM can deliver high quality asthma care to a particular population and they are willing to pay ANWM for their work.



IV. Integrated Health Care Services

Programs that work with healthcare providers and have support from clinical care teams can improve health outcomes for people with asthma. It is critically important for community-based asthma programs to address not only the behavioral and environmental aspects of asthma, but also the clinical aspects to ensure patients receive care that is consistent with the national guidelines. Highly effective community-based asthma management programs are diligent about ensuring the consistent delivery of effective clinical care, help providers incorporate best practice guidelines into their practices, and create community networks that can support people with asthma in the environments where they spend time.

Field-tested approaches for reaching clinical care teams and motivating them to consistently follow the national guidelines for asthma care include raising provider awareness—physicians, nurses, respiratory therapists, case managers, and everyone else involved in asthma health care—of the national guidelines, disseminating tools that help providers follow the guidelines, and presenting models that demonstrate the health outcomes providers can achieve by adhering to the guidelines.

► Strategies for Action -

4.1. Educate Clinical Care Teams: Asthma programs that are reducing ER visits, hospitalizations, and unplanned clinical visits help clinical care providers to follow the national guidelines for asthma care. Great programs demonstrate each component of the guidelines, support providers as they change their standard care practice, and conduct periodic checks to ensure adherence.

A Case in Point: The Monroe Plan has offered training opportunities for resident-based practices to educate new residents on asthma community practice guidelines. They have found that variations in asthma care narrowed following the training sessions and have seen significant improvements in patient severity classifications.

4.1.1. Enlist Physician Champions to Educate Providers: One of the most effective ways to reach physicians is to have their peers provide training on care improvement strategies.

A Case in Point: Providers receive four to five educational sessions through CAPP's provider training program. One full-time clinical coordinator visits clinical sites every week for three to six months and conducts case review sessions and asthma education. Providers also have a mechanism to submit their asthma cases to CAPP for review and assistance. CAPP's Program Director, Dr. Bryant-Stevens conducts case reviews with the providers to help them to apply the national guidelines.

4.1.2. Help Clinical Care Teams to Continuously Improve: Effective programs create a mechanism for monitoring the delivery of clinical care, and regularly update providers on how they are doing, where they can improve, and how to make changes. Many programs also provide incentives for clinical care teams to follow the national guidelines (see **I. Committed Program Leaders and Champions, Strategy 1.1 Use Outcomes Data to Promote Change** for more examples of this strategy in action).

A Case in Point: Urban Health Plan's asthma severity assessment form went through hundreds of revisions until the program's leadership felt comfortable using it to promote consistent asthma care. Paloma Hernandez, UHP's President, described her approach to program improvement: "We constantly reassess and fine tune our program." But once the form worked well, UHP's spread strategy ensured that all providers in the system

understood how to use the form, the benefits of the form, and the health outcomes that sites using the form correctly had achieved. To further help educate clinical care teams on the national guidelines, UHP includes the guidelines on their Asthma Form, posts the guidelines in exam rooms, and trains all members of the care team on use of the forms.

UHP tracks whether providers are using the Asthma Form through their Access database that serves as a central repository for information gathered during in-take and follow-up visits. They share monthly process and outcomes data from each care site with the care teams and highlight the results that sites that consistently use the forms and follow the guidelines are achieving. Between 80-90% of providers now complete the forms; UHP has observed a correlation between form completion and positive health outcomes; and they are developing an incentives system to reward providers for completing the forms.

A Case in Point: The Asthma Network of West Michigan has taken a lead role in disseminating the Michigan Asthma Resource Kit (MARK), an educational tool kit containing provider and patient education, to providers throughout West Michigan. Developed by a statewide task force of asthma experts coordinated by the Michigan Department of Community Health (which included members of the Asthma Network), volunteers and staff of the Asthma Network of West Michigan disseminated one-quarter of the 4,000 MARK kits printed by the state.

4.2. Address Clinical Care Teams' Needs: When asthma management programs design systems and processes that are convenient for providers, providers are more likely to support them. Involve health care providers and administrators in the planning, implementation and general oversight of your program to get their buy-in.

A Case in Point: Before the CAPP program expanded from West Philadelphia to North Philadelphia, the program's leaders coordinated with MDs and RNs in North Philadelphia to conduct a needs assessment. The providers helped CAPP determine their best strategy for expansion and CAPP educated and engaged the providers around the value of environmental home visits as a component of effective asthma care.

4.3. Promote Patient and Clinical Care Team Interaction: Asthma management programs that find ways to create strong relationships between care providers and people with asthma achieve positive health outcomes. The kinds of relationships programs need to foster transcend what some might view as "traditional clinical interaction." When people with asthma feel comfortable in a clinical setting and believe that they know their providers, they are more likely to receive effective treatment, follow self-management recommendations, and better control their asthma.

4.3.1. Help Providers Deliver New Services: Providers who work with their patients to, for example, create individualized asthma action plans and diagnose environmental triggers during clinical visits, have stronger relationships with their patients and are more likely to achieve positive health outcomes. If such steps or other components of the national guidelines are new to your providers, help them learn how to deliver the recommended services to people in their care.

A Case in Point: Sixty percent of Urban Health Plan's members with asthma have self-management goals that they developed in consultation with their providers. Providers, health educators, and medical assistants engage patients around their self-management goals and train patients to understand their individualized asthma action plans and environmental trigger diagnoses. UHP's patients have learned to work with their clinical care teams to manage their asthma resulting in some of the most remarkable health outcomes in the country.

4.3.2. Promote Patient Education at the Clinical Care Site: Asthma management programs with components in a provider's office or clinical site achieve positive results. One strategy for promoting broader patient interaction at the point of service is to provide patient and caregiver education in a clinical setting.

A Case in Point: Urban Health Plan trains their health educators in the national guidelines for asthma care and in motivational interviewing techniques and then stations health educators at each clinical site at the point of care.

4.4. Facilitate Communication and Coordination Across the Asthma Care Team: One of the most effective ways to deliver integrated health care services is to link up the different service providers who regularly interact with patients in your program. Make sure that your program's health care delivery is coordinated by helping home visitors, community educators, school nurses, and others involved in delivering care communicate with the primary care team.

A Case in Point: Monroe Plan's asthma outreach staff attends clinical visits with the families they visit and helps children with asthma and their families to coordinate their asthma care with their clinical care team. This gives outreach staff a chance to share the results of their home assessments and work with the providers to diagnose environmental triggers and provide tailored medical and environmental counseling.

A Case in Point: Case managers from ANWM meet with providers to develop customized asthma management plans for children in their program. Working together, the ANWM case managers, social workers, and asthma educators, work with the primary care providers and/or specialists to develop individualized approaches for each patient. During a care conference with the provider, the case managers ensure that providers agree with their approach and that each child in the program has a tailored asthma management plan. They continue their conversations with the clinical care team overtime to share their findings and revise the care plans. Finally, ANWM shares information on children in the program with the schools or health care plans that referred the case to them originally. This approach to asthma care has helped ANWM achieve a 64% decrease in hospital admissions; a 46% decrease in length of stay; a 60% decrease in ER visits; and improved medication usage for children with asthma in their program. The ANWM case managers also provide asthma education to school/daycare staff and/or grandparents, etc., so that the entire care continuum for that child is educated about asthma in general and that child's asthma in particular.

A Case in Point: Since 1999, ANWM and Priority Health have partnered to provide case management services to Priority Health's managed Medicaid pediatric population with moderate to severe asthma on a fee-for-service basis. Priority Health has since extended this relationship to include select commercial and adult patients. This relationship, the first between a managed care organization and an asthma network in this country, underscores the value of ANWM's services and Priority Health's commitment to its members. A referral process complete with home visit, care conference, and discharge worksheets now exists between the two organizations to link their asthma programs. As a result of this partnership, ANWM now coordinates care, and receives reimbursement from, four additional health plans in West Michigan.

A Case in Point: Urban Health Plan's Asthma Form is not only used to ensure standardized asthma care at all clinical sites, but it is also a tool that helps encourage coordination across the care team. The Asthma Form is a shared document that is completed by providers, medical assistants, and health educators.

Demonstrating Excellence: Cambridge Health Alliance's (CHA) Outstanding Clinical Care Model Achieves Unparalleled Results

Cambridge Health Alliance

- *Size:* 1,800 children with asthma in registry system
- *Funding:* $250,000 budget, initiated with Robert Wood Johnson Grant funding
- *Outcomes:* 50% drop in asthma related ER visits from one year prior to enrollment to the second year in the registry, 100% of patients who need it are on controller medication
- *Contact:* Laureen Gray, Program Director, Planned Care lkgray@challiance.org

CHA is an exemplary program that could model any of the Change Package's key drivers of program success. CHA employed all of the effective strategies outlined above to improve their asthma health outcomes. They created program champions across their community through collaborations, provider education, and staff recognition programs. They developed strong community ties by hiring culturally competent and community sensitive staff, participating in community improvement projects, and listening to community leaders from outside the health care community as they planned their program. They collaborated with a wide variety of players, including politicians, schools, local government officials, other hospitals, and health plans to identify candidates for participation in their Planned Care Program for asthma, deliver services, including home environmental interventions, and to build program sustainability. At the center of CHA's program lies a remarkably effective integrated health care model. In this mini-case study, we highlight CHA's health care services because their story demonstrates a very effective process for educating clinical care teams; building provider support for a change process; supporting clinical teams as they transform their standard processes; and promoting integrated and coordinated services across the entire care team.

Innovation to Promote Provider-Patient Interaction: All clinical staff at CHA have been educated and encouraged to follow the National Heart Lung and Blood Institute Guidelines and CHA's leaders and champions helped providers learn to use the right clinical visit codes to get reimbursed for environmental education and counseling. CHA made sure that providers had the resources, staff, and incentives they needed for more robust patient interactions and clinical care that is consistent with national guidelines.

One of the most impressive and successful aspects of CHA's change initiative was their relentless and repetitive attention to monthly outcomes data that was shared with all care providers across their system. The outcomes data helped CHA's program champions overcome provider resistance to change because it clearly demonstrated the difference in outcomes between those practices that were engaging the Planned Care Model in its entirety and those practices still following outdated asthma management strategies. CHA also has a pay-for-performance model that is described in detail under **I. Committed Leaders and Champions** above (see strategy **1.1.4 Link Performance Appraisals to Outcomes**.)

Continuous Quality Improvement: Many asthma management programs have encountered provider resistance to change at some point in time and CHA's experience was no different. But their solution to provider resistance was truly innovative. Instead of exhorting providers to change because it "is the right thing to do," CHA simply put the data to prove the case in front of their clinical care teams. They asked providers if they were following the NHLBI Guideline to conduct asthma severity assessments. When the providers greatly over-estimated the percentage of their patients who had been classified for asthma severity, CHA's leaders conducted a chart audit and put the actual percentage in front of those providers. Dr. Link, CHA's Chief of Pediatrics and the Planned Care Program Director, said that to achieve real success, "it is imperative to put outcomes data in front of everyone who is involved with a program and provide access to the data as a way to involve all staff in your program's management."

Encourage Communication Across the Care Team: CHA's asthma registry is a highly effective communication tool that links schools, clinics, hospitals, outreach workers, and other members of the care team in a real-time conversation about children with asthma in their program. The registry is such an effective communication tool that it actually enables a patient care team to assemble around a patient even when the team is separated geographically. Dr. Link described an instance where a child with asthma was about to be admitted to an ER outside of CHA's system for an asthma attack. The attending physician knew Dr. Link so called him before admitting the child. Dr. Link was in his car on a busy street in Boston when the call came in, but he called back to the CHA office and requested that someone call up the child's record in the registry. Dr. Link listened by phone as his colleague related the medical history contained in the registry. The registry included information on every time the child had visited the school nurse for asthma, seen his provider for a regular check-up, and information on any unplanned visits and hospitalizations. Within minutes, Dr. Link knew that this child did not have severe asthma, had never been admitted to the ER for asthma before, and knew what course of medical treatment the child had responded well to in the past. He called his colleague at the ER back, advised him on the medications the child had responded well to previously, and suggested that the child may not need to be admitted. And he was right. Within hours, the child's asthma improved and he was sent home without an admission. The attending ER doctor was stunned by the efficiency and effectiveness of Dr. Link's virtual care.

Addressing Clinical Care Teams' Needs: One of the things clinical care providers need most is help from the community to manage asthma so that people with asthma do not show up in the ER. A provider can prescribe a very effective medical and environmental management protocol, but if patients don't follow it, the clinical interventions fail. CHA recognized the need for broader community involvement in children's asthma management so engaged schools in the care of children with asthma. School nurses involved in the CHA program assess and treat children according to evidence-based guidelines and CHA's asthma program has helped school administrators see the value in this approach by demonstrating that it keeps kids in school. CHA has helped the schools become critical clinical control points. Now, when a student with asthma visits the school nurse, the child's condition is recorded in the registry, the treatment provided gets recorded, and at the child's next clinical visit, the provider can quickly review the child's recent asthma trends.

Clinical care teams also can't see into people's homes so they won't always know what environmental triggers might be exacerbating someone's asthma. To address the environmental component of asthma, in keeping with the NHLBI Guidelines, CHA engaged the Healthy Homes Program run out of the municipal Department of Public Health and tied to the city's inspection services. The service allows clinical care teams, including school nurses, to refer child patients to the Healthy Homes Program when they suspect environmental triggers may not be well managed. The Healthy Homes Program is funded by the city and partnering with it helps CHA deliver comprehensive asthma care in a way that is sustainable. This partnership also helps children with asthma and their families access other city services they may require to address issues affecting their asthma symptoms, such as structural problems with available housing, etc. The mission of the city's Healthy Homes Program is to lower the frequency of childhood asthma attacks, and help families make their homes safer. The program provides families with free asthma education and home assessments to check for asthma triggers and other safety hazards. After identifying concerns, the Healthy Homes staff gives the families items, such as mattress covers, smoke detectors, and cleaning supplies to help them manage asthma triggers at home. The program also loans out a special vacuum to help clean away pollen and dust mites. In coordination with the clinical care team at CHA, school nurses, and others, the Healthy Homes staff develops asthma education and care plans for every child they see.

The Results: CHA's results are truly astounding. The registry has provided CHA with a mechanism for tracking their outcomes on an ongoing basis so they can observe the connection between changes to standard care practices and improved outcomes. Since implementing the Planned Care Model, people with asthma who have been in the registry for over one year have experienced an 80% reduction in unplanned hospital visits and a reduction by 50% in asthma-related ER visits.

V. Tailored Environmental Interventions

Effective community-based asthma management programs tailor their interventions to fit an individual's health and education needs. In particular, programs tailored to respond to individual participants' exposure and sensitivity to environmental asthma triggers are more likely to improve health outcomes. The most effective programs help people with asthma learn about the role of environmental management in asthma control and provide guidance on ways to manage their individual triggers. To improve health outcomes, great programs make sure that program participants know their personal triggers and steps they can take to limit their exposure to those triggers.

► Strategies for Action –

5. Promote Awareness of Environmental Triggers and Provide Tailored Management Support

5.1. Educate Clinical Care Teams on Environmental Trigger Assessment and Management: Clinical care teams benefit from basic education on environmental triggers, diagnosis of individual sensitivities, and management techniques for minimizing exposure to triggers at home, work, and school. When providers know how to educate patients about their environmental triggers and about resources to help manage triggers, asthma health outcomes improve.

A Case in Point: Urban Health Plan trains providers, health educators, and medical assistants to engage patients in environmental self-management and to help patients understand how to follow their individualized asthma action plans that include their environmental trigger diagnosis and tailored environmental management strategies.

5.1.1. Assist Providers with Environmental Management: Providers may feel that they do not have the time or resources they need to provide comprehensive environmental asthma management. By making providers aware of where they can find help, such as through the local Department of Health, or from community groups and organizations that focus on asthma, your program may improve provider adherence to the environmental component of the national asthma care guidelines.

A Case in Point: CAPP made it easy for clinical care providers to address the environmental asthma management by giving them a simple way to refer patients with asthma to the CAPP program for education and in-home interventions. Providers who previously recognized the importance of environmental asthma management but did not provide it because they felt they didn't have the time or capacity, now address environmental factors because they know that with CAPP's help, they can.

The AIRNow Web site: The AIRNow Web site – www.airnow.gov – can help patients protect their health by reducing their exposure to air pollution. The site provides daily air quality information for locations across the country and includes information and educational materials about the cardiovascular and respiratory health effects associated with outdoor air pollution exposure. You can also find information a new web-based training course for health care providers, "Ozone and Your Patients' Health," at www.epa.gov/air/oaqps/eog/ozonehealth/index.html.

CDC's Environmental Triggers of Asthma Course - The Case Studies in Environmental Medicine (CSEM) are a series of self-instructional publications designed to increase primary care provider's knowledge of hazardous substances in the environment and aid in the evaluation of potentially exposed patients. One course covers environmental triggers of asthma. Learn more about the course at: http://www.atsdr.cdc.gov/HEC/CSEM/asthma/index.html.

5.2. Promote Assessment of Trigger Sensitivity and Exposure in Clinical Interviews: Evidence shows that people with asthma whose environmental triggers are diagnosed during a clinical visit are more likely to take steps to manage their environmental triggers and achieve better health outcomes. Encourage your clinical care team to work with patients to identify their personal triggers and develop specific management plans.

5.2.1. Diagnose Environmental Triggers: During a clinic visit, assess sensitivity through skin tests or blood tests, and assess exposure by asking questions about the home environment, the school or work environment, personal behaviors such as smoking, seasonal worsening of asthma symptoms, and other probing questions to help people understand their triggers, and tailor interventions to improve outcomes.

A Case in Point: Dr. Stankaitis of the Monroe Health Care Plan contributed to the Rochester Health Department's Community Care Guidelines for Asthma Care. Those guidelines recommend that clinical care providers assess patients' exposure to and the clinical significance of irritants, particularly secondhand smoke, and allergens (mold, dust mites, cockroaches, animal dander, pollen, chemicals), and that providers focus on counseling to avoid secondhand smoke and keep home environments smoke-free. The Rochester Guidelines make clear that skin testing is preferred but not necessary and that clinical care teams can gather information on environmental exposures through effective interviewing techniques.

5.2.2. Provide Tailored Environmental Education and Counseling During Clinical Visits: Clinical care teams that take the time to educate people with asthma on how to identify, control, and avoid their environmental asthma triggers can have a significant impact on asthma health outcomes. (See **IV. Integrated Health Care Services, Strategy 4.4** for more on coordinating environmental counseling and interventions with other members of the care team, particularly with home visitors who can help deliver environmental education.)

5.2.2.1. Tailor Intervention Strategies to Individual Sensitivities: Effective asthma management programs record findings about individual environmental sensitivities and tailored management strategies on written asthma action plans, and share the plans with all care providers, including parents and other caregivers, school staff, outreach workers, and home visitors.

EPA provides short videos, easy to read brochures, fact sheets on managing environmental triggers at home, children's coloring books, and other multi-lingual materials that can be used in a clinical setting to help educate patients on their environmental triggers and how to manage them. ***Visit www.epa.gov/asthma to find out how to order materials for your program at no-cost.***

A Case in Point: NYCAI promotes the use of asthma action plans across their provider and health care plan network and through media outreach. Urban Health Plan, one of the Initiative's original partners, emphasizes the importance of written asthma action plans and requires their clinical care practices to deliver written plans that address patients' environmental triggers to patients and their families. "Writing the plan down for the patient makes the biggest difference. When it is written down, the families can't forget it," according to Dr. Acklema Mohammed, a Physician with Urban Health Plan.

5.3. Make Environmental Asthma Management a Reality at Home, School and Work: Successful asthma management programs attend to the environments where people with asthma spend time. Home and school environments are particularly important settings to inspect but you

do not need to conduct expensive air sampling to get an idea of what triggers may be causing problems. If your program can provide or partner to deliver home assessments, be sure that home assessment findings and recommended self-management strategies are shared across the care team, particularly with the primary care physician. If your program cannot deliver in-home services, train patients to assess their own home, school, and work environments by describing common environmental asthma triggers, and common places where asthma triggers are found, such as kitchens, bathrooms, bedrooms, and classrooms.

A Case in Point: Through a series of home visits, which take place over the course of a year, ANWM case managers work with families, schools, and health care providers to assess and control environmental asthma triggers. The ANWM Medical Social Worker works with local housing officials, social service agencies, as well as landlords, to deal with environmental triggers which negatively impact asthma. The ANWM case managers also refer parents (or the patients) who smoke to smoking cessation resources.

5.3.1 Partner to Provide Home Visits: The data shows that the most effective asthma programs have strong partnerships and community ties. Partner with people from the local community and train them to be effective educators and champions for environmental asthma management. You will see the best results when the people conducting home visits are comfortable in the service area and welcomed by your target community. Consider language barriers and cultural competency issues when selecting home visitors. Many effective asthma management programs train lay-health educators to conduct home visits.

A Case in Point: CHA's care team can refer children living in Cambridge or Somerville to the Department of Health's Healthy Homes Program for home visits. A full time nurse and one staff person manage the Healthy Homes Program to make sure that referred families receive prompt and comprehensive home visits. The Healthy Homes Program also provides information through CHA's Asthma Registry to update providers about the findings from their home visits.

A Case in Point: Urban Health Plan's health educators and primary care providers can refer patients with persistent asthma to the visiting nurse service for home visits. The home visitors can coordinate integrated pest management services, if the home assessment reveals a pest problem.

A Case in Point: The Monroe Plan sends culturally competent home visitors from the community to visit families. During the home visits, the asthma outreach staff talks with families about environmental triggers and conducts home environmental assessments. If they find environmental problems during the visits, the outreach staff members will assist families in taking advantage of either plan or community resources to mitigate those problems.

EPA's guide for health plans, *Implementing An Asthma Home Visit Program: 10 Steps To Help Health Plans Get Started*, offers step-by-step instructions on how to implement an asthma home visit program with an emphasis on environmental risk factor management. This guide—compiled with input from seven health care organizations—incorporates these organizations' experiences establishing and operating home visit programs. EPA's *Asthma Home Environment Checklist* helps home visitors recognize and address common indoor environmental asthma triggers and can help asthma programs train home visitors. You can download or order these materials at no-cost through the Health Care Professionals portal on EPA's asthma Web site: www.epa.gov/asthma.

5.3.2 Manage Asthma in the School Environment: Children are disproportionately affected by asthma and children spend a great deal of time in school buildings. It is important to educate school staff, including principals, teachers, school nurses, athletic coaches, and facilities staff, about environmental asthma triggers and steps they can take to reduce asthma triggers in the school environment.

A Case in Point: CHA found that sharing information about the connection between asthma symptoms and school absences helped to motivate school decision-makers to take action to manage asthma.

A Case in Point: ANWM has a strong and highly effective collaboration with the local school system. They work together to identify high-risk children who may benefit from ANWM's intensive case management program and to maintain healthy school environments for children. Since 1994, ANWM has trained more than 5,800 school staff on comprehensive asthma management that includes environmental interventions.

Effective asthma management can best be accomplished through a comprehensive plan that addresses both medical management and avoidance of environmental triggers. Since children spend much of their time in schools, it is important to reduce their exposure to environmental asthma triggers as much as possible in schools. EPA's *Managing Asthma in the School Environment* guide focuses on steps that schools can take to help children breathe easier. You can download or order the guide at no-cost on EPA's web site at: http://www.epa.gov/iaq/schools/asthma/asthma_in_schools.htm.

Demonstrating Excellence: The Children's Hospital of Philadelphia's Community Asthma Prevention Program (CAPP)

Community Asthma Prevention Program

- *Size:* 3,000 families, 1,128 home visits
- *Community Impact:* 1.3 million people living with asthma in the community
- *Funding:* $1.3 million annual budget, fully grant-funded
- *Outcomes:* Statistically significant decrease in inpatient stay and emergency department visits compared to control group
- *Contact:* www.chop.edu/capp

The Children's Hospital of Philadelphia's Community Asthma Prevention Program (CAPP) is demonstrating how effective environmental strategies can lead to health improvements for people with asthma. CAPP is a comprehensive asthma care program that, like the other models described here, exemplifies all of the effective strategies in this Change Package. In this mini-case study, we focus on CAPP's environmental program because it has proven to be a highly effective method for reducing the impact of asthma in a disproportionately affected community, inner-city African-Americans. Since 1998, CAPP has offered home visits to help children with asthma and their families manage environmental triggers. Trained lay-educators visit the homes of families in North and West Philadelphia who are enrolled in the program (children between two and 16 years of age with a diagnosis of persistent asthma who use controller medicines are eligible).

The Goal: CAPP's goal is to decrease asthma-related hospitalizations and ER visits by educating children and their families about asthma and methods for identifying and mitigating environmental asthma triggers at home.

The Strategy – Providers: CAPP educates providers about environmental triggers and how to counsel asthma patients on trigger management. Because members of CAPP's provider network have expressed some reservations about environmental counseling during clinical visits—"there is no time to address asthma triggers during the course of a patient visit"—CAPP encourages providers to refer patients to the home visit program for help addressing indoor asthma triggers. After CAPP delivers the provider training session on comprehensive asthma management, they see an increase in referrals to their home visit program.

The Strategy – At Home: Home visitors work with families for five weeks and then conduct periodic follow-up visits. During their weekly visits, home visitors teach families how to: control a child's asthma; identify environmental asthma triggers, including secondhand smoke, pet dander, mold, cockroaches, and dust mites; identify asthma symptoms; and use asthma medication and devices. They also demonstrate how to reduce common indoor asthma triggers, particularly in children's bedrooms, and provide materials to help maintain environmental interventions. Most recommendations are for low-cost and low-technology interventions that families can easily incorporate into their housekeeping routines. Home visitors typically recommend using trigger-reducing products and techniques in children's bedrooms and removing stuffed toys, open bookshelves, and clearing clutter. CAPP provides roach and mice bait; dusters; mattress and pillow covers; vacuum bags; sponges and buckets; trash bags, shades and shade brackets (to reduce dust from blinds). The visitors also demonstrate how to use these materials and effective cleaning techniques for removing triggers from the home environment.

The Strategy – In Schools: CAPP makes sure that all school nurses in North and West Philadelphia know about environmental asthma triggers and encourages school nurses to champion environmental management techniques to reduce environmental triggers in school facilities. Philadelphia schools are implementing the *IAQ Tools for Schools* (*IAQ TfS*) Program and CAPP works hard to motivate the school nurses to serve on their schools' *IAQ TfS* Coordinating Committee.

> EPA's *Indoor Air Quality Tools for Schools* (*IAQ TfS*) Program is designed to support schools in their efforts to provide healthy indoor environments for students, teachers, and staff. The program features the *IAQ TfS* Kit that shows schools how to carry out a practical plan of action to improve indoor air problems at little or no cost using straightforward activities and in-house staff. The Kit is a comprehensive resource that can be used to educate the school community about IAQ issues, including environmental asthma triggers, and how to manage them. You can download or order the Kit at no-cost. Visit EPA's Web site at http://www.epa.gov/iaq/schools/toolkit.html to learn more.

The Results: CAPP is tracking the effects of home environmental interventions on hospital visits, ER visits, missed school days, missed parent work days, inappropriate use of beta agonists, and nighttime asthma symptoms. In addition to teaching families about asthma and supervising asthma trigger removal in the homes, home visitors are also required to document each visit in a paper chart. CAPP provides individualized follow-up, such as referrals to social services or contact with the primary care provider, based on findings from the home visits. Finally, CAPP is tracking nurse visits for asthma treatment to study the effects of school environmental management. CAPP is continuing to collect data on their environmental program outcomes and so far the pilot tests have demonstrated very promising results. Families that receive home visits, environmental counseling, and materials to help them implement simple environmental mitigations reported fewer cockroaches. CAPP's data shows that these families also experienced a decrease in asthma-related hospitalizations, ER visits, sick visits, and asthma symptoms.