Fall 11-10-2010

Delivery of Asthma Management Services by a Federally Qualified Health Center in an Urban Setting

Tyra T. Buckley
Georgia State University

DELIVERY OF ASTHMA MANAGEMENT SERVICES BY A FEDERALLY QUALIFIED HEALTH CENTER IN AN URBAN SETTING

by

TYRA TAYLOR BUCKLEY

J.D., B.A., GEORGIA STATE UNIVERSITY

A Capstone Project Submitted to the Graduate Faculty
of Georgia State University in Partial Fulfillment
of the
Requirements for the Degree

MASTER OF PUBLIC HEALTH

ATLANTA, GEORGIA
2010

INTRODUCTION

As a chronic disease, asthma presents a significant public health challenge nationally and in Georgia. In 2007, over twenty-two (22) million people, including over nine (9) million children, had asthma in the United States (Centers for Disease Control and Prevention [CDC], 2008). In Georgia, 230,000, or ten (10) percent of children have asthma (Georgia Department of Human Resources [DHR], 2008). Asthma is more prevalent among children under eighteen (18) years of age than among adults (CDC, *Table 4- 1*, 2008; CDC, *Table 3-1,* 2008). While asthma affects people of all ages and socioeconomic status, low income and minority populations have the highest asthma morbidity. Among other concerns, children with asthma have higher rates of hospitalization and absenteeism from school than their peers.

The Georgia State University Institute of Public Health received grant funding for the planning and implementation of the Accountable Communities: Healthy Together-Asthma (ACHT-A) program to help address the problems associated with Asthma in Neighborhood Planning Unit V (NPU-V) and among patients of Southside Medical Center (SMC).

Accountable Communities: Healthy Together – Asthma

ACHT-A is a collaborative between the Georgia State University Institute of Public Health, Southside Medical Center, and the Department of Early Care and Learning: Bright from the Start. Currently in its second year, the purpose of ACHT-A is to decrease the burden and experience of adverse affects associated with childhood asthma within NPU-V by the development of a program to address the multiple modalities of educational, medical, and environmental interventions for the management and control of asthma and its symptoms. The program targets children with asthma and those responsible for their care, to include parents, caregivers, doctors, community clinic nurses, and school teachers. Key components of the ACHT-A Program include: parent and child training in asthma management, in-home

environmental assessment and intervention, practitioner training on current best approaches to asthma management, early care provider training, patient navigation and primary care services, and program evaluation.

Through use of these interventions, ACHT-A is designed to achieve the following goals: improve asthma self-management among children; improve access and quality of health services for children with asthma; improve knowledge and awareness among children with asthma, their parents/caregivers, and the general public; and utilize existing community partnerships to implement and sustain integrated, comprehensive, and community-wide strategies.

My capstone project has included three broad activities designed to provide me with practical experience in program evaluation. The first activity involved development of an evaluation plan for ACHT-A so that program staff can make future determinations about the program's effectiveness in achieving desired outcomes. This involved development of the program logic model. As part of this process, I have also assisted in putting systems in place for the tracking and measurement of specific indicators as a second activity. Finally, I have performed a preliminary assessment of selected program activities to establish baseline information about the program, its participants, and SMC staff. This paper will provide an overview of both my experience and the evaluation process, and includes the evaluation plan for ACHT-A.

ACHT-A EVALUATION THEORETICAL FRAMEWORK

Program planning and evaluation is a cyclical process that spans a program's entire life from planning to completion. Therefore, it is important to employ a theoretical framework that is fluid and allows for adjustments and revisions in program implementation. The ACHT-A program and its evaluation protocol utilize two models for their theoretical framework: the Model for Improvement and the Chronic Care Model. These models promote and facilitate continued

review of the program components to ensure that individual systems are working together to help the program meet its stated objectives.

Model for Improvement

The Model for Improvement is used—often in conjunction with other change models—to bring change to an organization at a faster rate (Institute for Healthcare Improvement [IHI], n.d.). The model has two parts and begins with three questions: (1) What are we trying to accomplish; (2) How will we know that a change is an improvement; and (3) What changes can we make that will result in improvement? In addressing these questions, the population is defined and aims are developed. Quantitative measures for improvement are set, and decisions are made to select changes that will likely produce improvements. The second part of the model involves implementation of the Plan-Do-Study-Act (PDSA) cycle, which tests changes and helps differentiate between changes that result in improvements and those that do not. Changes that result in improvements can then be applied to other parts of the organization or replicated at other organizations.

The ACHT-A program, currently in its second year, is actively cycling through the Model for Improvement. The questions in part one have been addressed so that the population, objectives and aims have been developed. In addition, quantitative measures for improvement have been set and decisions about changes that will likely result in improvements have been made. The program is currently in the testing changes phase, where selected changes are being implemented with program participants, staff and physicians at Southside Medical Center. Further utilization of the Model for Improvement will enable the evaluation team to examine the results, make appropriate changes to the program and continue implementation of the program in a manner that produces optimal improvements. These efforts will lead to sustainability of the

asthma program at Southside Medical Center and provide an example that other federally qualified health centers (FQHCs) can replicate in the future.

Chronic Care Model

ACHT-A uses the Model for Improvement in conjunction with the Chronic Care Model, which is particularly suited for the multi-faceted and complex organizational changes needed to provide complete care for chronically ill patients. A significant number of patients with chronic diseases are not receiving effective treatment, which results in inadequate disease control and dissatisfied patients (Wagner, 1997). However, research indicates that effective disease management programs that address the unique needs of the chronically ill can reverse this trend and result in better outcomes than can be achieved with the outmoded emphasis on primary and acute care systems.

Instead, patients with chronic conditions need access to disease management programs that include consistent and scheduled appointments with their healthcare providers, with a system in place that enables the provider to follow-up and issue reminders. In addition, there should be an emphasis on best clinical practices and ongoing treatment assessments, as well as patient support to improve and optimize self-management of chronic conditions. Self-management is integral to successfully reducing mortality and morbidity associated with chronic illness ("Curing the System", 2002). This is because chronically ill patients and their families carry the responsibility of following healthcare provider instructions regarding medications and treatment guidelines, tracking their daily health status, modifying and making appropriate behavioral decisions, and coping with stresses associated with chronic illness.

What is needed is comprehensive change in the way that healthcare is provided to chronically ill patients. The Chronic Care Model addresses concerns raised by the ineffectiveness of primary and acute care systems by providing a multi-faceted approach to the chronic care

problem. The Chronic Care Model identifies six areas that must be considered in developing a comprehensive system that addresses effective chronic disease management: (1) organization of health care, where quality improvement is emphasized throughout the organization and reflected in the business plan; (2) delivery system design, where patient-clinician contacts are regular, planned and incorporate patient goals for care; (3) decision support, where treatment guidelines are based on proven best practices; (4) clinical information systems, where an electronic medical records system is in place and fully utilized; (5) patient self-management, where patients play a central role in their care; and (6) community resources, where supportive services are recognized and utilized to assist patients ("Curing the System", 2002; IHI, n.d.).

ACHT-A and its evaluation plan are designed to address all six areas of the Chronic Care Model. First, the program is currently implementing steps to improve delivery system design to ensure that patients are in compliance with primary care visit recommendations, and that program participants are registered with SMC. Second, decision support is being enhanced by physician training in best practices. Third, electronic medical record templates are improving clinical information systems. Fourth, patient self-management is being supported by services that include parent training, the provision of social supports, and in-home environmental assessments. Fifth, community resources are being enhanced by providing early child care provider training, developing Georgia Department of Early Care and Learning (DECAL)-approved training and trainers, and increasing asthma awareness among community-based organizations. Finally, SMC leadership is demonstrating a commitment to actively engage ACHT-A beyond initial implementation, which improves the organization of health care.

There is significant support for the conclusion that collaborative efforts that utilize the Care Model lead to improved health outcomes for asthma patients. Researchers performed an evaluation of various collaborative interventions to determine if the collaborative efforts

motivated greater organizational changes in line with the Chronic Care Model (Cretin, Shortell, & Keeler, 2004) The program evaluation results indicate that significant improvements in health-related quality of life (HRQOL) could be attributed to the program. Similarly, community-based programs involving multi-faceted interventions have made considerable progress addressing asthma in children. Results from the Harlem Children's Zone Asthma Initiative (HCZAI) indicate that the program achieved significant reductions in morbidity for its participants (Nicholas et al., 2005; Spielman et al., 2006). As a collaborative, community-based intervention utilizing the Chronic Care Model, there is every reason to believe that ACHT-A will produce positive results for its participants.

KEY STRATEGIES

My Capstone project has included the following responsibilities: development of the evaluation logic model, reviewing and updating the evaluation protocol, tracking overall progress, managing resources for adherence to objectives, serving as liaison to the Healthcare Georgia external evaluator, collection and compilation of data, compilation of response themes, and performance of a preliminary baseline descriptive analysis for program participants. Implementation of these responsibilities has involved a number of individual steps and tasks. Given the literature, these were the steps I took to develop an evaluation plan that would help us determine if ACHT-A is accomplishing its stated objectives in keeping with its theoretical framework and building on what has been learned from other community-based programs.

A major area of work for me has been to ensure that systems are in place to measure and collect the data we need for an accurate program evaluation. I participated in several tasks within this area. ACHT-A is currently in the process of converting its records into Microsoft Access database, which will allow better tracking and extraction of program data. To prepare for this conversion, I reviewed each participant file for completeness prior to data entry. In addition, I

reorganized the files to make information on program graduates more accessible. Another task in this area has been development and administration of a staff survey for awareness of ACHT-A and the eligibility requirements for the program. As part of this task, I attended a SMC staff meeting.

A second major area has been revision of the Asthma Action Plan (AAP) used by our program participants. While there are a number of examples available from various organizations, we do not feel that they are comprehensive in coverage. For that reason, the Project Director requested that I develop a new one that combined the best elements of the others. After completing the revision, I have been in the process of creating personalized AAPs for each of the children who graduated from our training program. The AAPs include the child's specific medications, physician(s), preferred hospital, insurance and emergency contacts. After receiving their child's AAP, parents are encouraged to take the action plans to their physicians for approval. We hope that increased parent familiarity with a tailored AAP will stimulate increased use of AAPs at Southside. This is only one aspect of the program's efforts to increase the use of AAPs at SMC. There are other activities in process working with physicians to achieve this objective as well.

Perhaps the most important step was for me to become familiar with all aspects of ACHT-A. As a trainer for parent participants in the asthma management classes, I was very familiar with that aspect of the program. However, my knowledge of the program unrelated to the training component was lacking. To overcome this, I accepted responsibility for development of the logic model for ACHT-A. Work on the logic model has been ongoing with multiple drafts, and has taken the greatest percentage of my time. For this task, I needed to dissect the program into its individual components, analyze those components, and give them their appropriate home within the logic model. This work was done both through brainstorming sessions with the Project

Director and on my own. We determined in one meeting that, given the complexity of the program, the logic model would be easier to use if I reorganized it according to the Chronic Care Model. As a result, our logic model is divided between the six (6) categories outlined in the model. It was necessary to refer to the grant frequently to ensure that all ACHT-A activities and objectives outlined in the grant proposal were covered in the logic model. To give an idea of the complexity of the ACHT-A project, the logic model is six (6) pages, with 31 activities to be measured.

In addition to doing our own work on the logic model, we have been working to meet the requests of the external evaluator as well. To date, we have had two meetings with the evaluator, one in our office and the other with other grantees in Macon, GA. The evaluator has requested completion of a performance measures worksheet for each of our activities. As defined by the Georgia Southern evaluators, performance measures are the indicators used to determine whether program activities were successful in achieving desired immediate, intermediate, and distal outcomes. The ten priority activities that we listed for ACHT-A are: (1) child and parent asthma management training; (2) in-home environmental assessments; (3) current Best Practice Physician training in asthma management; (4) early care provider training; (5) development and utilization of asthma electronic record templates; (6) provision of supportive services including transportation, childcare, and health vouchers; (7) CHW referral and navigation services; (8) patient care coordination; (9) development of DECAL-approved training and trainers; and (10) outreach to community-based organizations and general community awareness.

THE EVALUATION PLAN

Evaluation Goal

The goal of this evaluation is to determine the effectiveness of ACHT-A in decreasing the burden and experience of adverse effects associated with childhood asthma within NPU-V and

patients of Southside Medical Center. This evaluation will investigate whether the individual components of the program designed to address the multiple modalities of educational, medical, and environmental interventions for the management and control of asthma its symptoms are performing as intended. Finally, the evaluation will enable leaders within the program and Southside Medical Center to make decisions about revisions to the program and future sustainability of the program at the medical center.

Evaluation Team

Our team consists of ACHT-A staff, including the Project Director/Principle Investigator (PI/PD) and a Graduate Research Assistant (GRA). Additional support is provided by a Community Health Worker (CHW), for the research project, Southside Medical Center and the external evaluation team at Georgia Southern University.

Table 1

Roles and Responsibilities of the Evaluation Team Members

Individual	Title or Role	Responsibilities
Francesca Lopez, Project Director	Lead On-site Evaluator	Execute the evaluation of each component of the project. Coordinate meetings for the team. Analyze quantitative data, and coordinate the analysis of qualitative data. Ensure the implementation of findings. Oversight of all evaluation activities to ensure the evaluation is conducted as planned.
Tyra Buckley, GRA	Data Collection	Gather and review data, analyze qualitative data. Conduct preliminary assessment. Liaison to external evaluator.
Cassandra Arroyo	External Evaluator	Coordinate and collection of data for external evaluation. Support of internal evaluation efforts as needed.
Southside Medical Center	Stakeholder/Advisor	Participate in design and execution of program evaluation. Provide support and guidance. Dissemination of results.

I. STAKEHOLDER ASSESSMENT

Stakeholders for ACHT-A fall into three categories: those involved in program operations, those served or affected by the program, and intended users of the evaluation findings. The following stakeholders are identified, along with their interests and perspectives, and how

each stakeholder should be involved in the process. The following table summarizes the plan for stakeholder engagement.

Table 2

Stakeholder Assessment and Engagement Plan

Stakeholder categories	Interests/perspectives	Role in the Evaluation	How to engage
Persons involved in program operations			
• Francesca, , Tyra, Catherine	• Fear that lack of long term program funding sources may impact sustainability • Anticipate that results may support hypotheses • See program evaluation as a personal judgment	• Defining program and context • Identifying data sources • Collecting data • Interpreting findings • Disseminating and implementing findings	• Meetings • Direct roles in conducting evaluation
Persons served or affected by the program			
• Program participants/ SMC patients	• May fear or reject program/SMC • Want better and accessible services • May be suspicious of GSU or public health study design of program	• Providing customer perspective • Providing community context • Interpreting findings	• Survey
• SMC	• Want program to be successful & cost-effective to be sustainable • May have concerns/suspicions about SMC/GSU partnership and resent program and staff intervention into its operations	• Disseminating findings to community audiences • Interpreting findings	• Meetings • Inform of findings
Intended users of evaluation findings			
• NPU-V CBO's	• May be suspicious of perceived outsiders to neighborhoods • Hopeful of program sustainability • Improve community health well-being	• Disseminate findings	• Inform of findings
• Clinical staff	• Provide effective and acceptable treatment and care interventions	• Interpreting findings • Modifying practice (if needed)	• Meetings
• GSU, other community researchers and grant seekers	• Positive results could impact future funding success • Interested in ability to replicate results	• Interpret findings • Disseminate findings	• Inform of findings
	• To show effectiveness	• Defining information needed	

• Francesca	• Use findings to enhance the program • To use the program to seek additional funding	from the evaluation • Developing and implementing recommendations	• Direct role in conducting evaluation
• Healthcare Georgia Foundation	• Show positive impact to Board of Advisors for money invested	• Disseminate findings, implement recommendations for future funding announcements	Grantee meetings, contact with program officer

II. BACKGROUND AND DESCRIPTION OF THE PROGRAM AND PROGRAM LOGIC MODEL

Need

Statistical data indicate that asthma disproportionately affects children both nationally and in Georgia. There is a need within NPU-V and the greater population served by Southside Medical Center for a comprehensive asthma management program that addresses the educational, medical, and environmental barriers that exist for vulnerable populations. While other programs exist in the Atlanta Metropolitan area, ACHT-A is unique in its focus on routine primary care for childhood asthma patients and in the extent of services provided to program participants.

Given the physical location and demographics of NPU-V, the burden of asthma is higher here than many other areas in the Atlanta Metropolitan area. The six neighborhoods that comprise NPU-V are Adair Park, Mechanicsville, Peoplestown, Pittsburgh, Summerhill, and Capitol View. NPU-V, located in southeast Atlanta, straddles two major freeways, which bring a great deal of pollution to a densely populated residential area. In these economically difficult times, NPU-V neighborhoods have a disproportionate number of vacant lots and abandoned homes compared with other areas of the city (*Neighborhoods Count,* 2004). Demographically, a large majority of residents, 92 percent, are African American. Children comprise 35 percent of the population in NPU-V, compared with 22 percent for the City of Atlanta. NPU-V residents tend to be poor with 59.3 percent of children living below the poverty level, compared to 38.3 percent city-wide. The unemployment rate in 2004 was 12.8 percent compared to 6.8 percent

city-wide. As with other demographic indicators, there are significant health disparities between residents of NPU-V and other areas in the city as well. Located within NPU-V, ACHT-A and Southside Medical Center are uniquely situated to address the clear need of local residents in particular.

Context

In previous years, Southside Medical Center offered asthma services within the context of an on-site asthma clinic. Many people in the community remember when this clinic was available. With asthma prevalence rates increasing, there is a void within NPU-V and among SMC patients that has not been completely filled by other service providers. ACHT-A is able to benefit from new and existing eligible SMC patients, as well as recruit new participants from the surrounding community. It is also a significant benefit that the program and SMC are located within NPU-V and work to maintain a positive relationship within the community.

Target Population

ACHT-A targets children two (2) to seventeen (17) years of age with asthma and those responsible for their care, including parents, caregivers, doctors, community clinic nurses, and school teachers.

Objectives

ACHT-A was designed with the goals of improving asthma self-management among children; improving access and quality of health services for children with asthma; improve knowledge and awareness among children with asthma, their parents/caregivers, and the general public; and utilize existing community partnerships to implement and sustain integrated , comprehensive, and community-wide strategies. In order to achieve these overarching goals, program objectives were identified for years one and two.

1. Increase the number of pediatric asthma patients who receive evidence-based asthma disease management services.
2. Create an Asthma Primary Care Home for NPU-V at Southside Medical Center.
3. Increase the average number of primary care visits among SMC pediatric patients from a baseline of 1.2 visits to 3 visits per year, by the end of 12-month follow-up period. By the end of Year One, a completed baseline appointment and have a scheduled follow-up.
4. Enroll 50,100 and 150 children and parent/caregivers into the program providing appropriate asthma education and environmental intervention services, and conduct 15 community asthma management seminars by end of Years 1,2,and three respectively
5. Create an institutional presence of Asthma Management training and staff resources for creating asthma friendly early childcare centers within the Georgia Department of Early Care and Learning (DECAL) organization.
6. Participate in quarterly conference calls with Foundation staff.
7. Participate in evaluation with Georgia Southern University.

Stage of Program Development

The program is currently in year two of implementation.

Resources/Inputs

ACHT-A staff, including community health workers (CHWs), SMC partnership including staff, facilities, and limited supplies, Health Care Georgia Foundation funding, SMC electronic medical records (EMR), SMC Special Supplemental Nutrition Program for Women, Infants and Children (WIC), EMR migration funding, SMC physicians and clinicians, Wee-Wheezer and American Lung Association training kits, DECAL partnership, Community-based organizations (CBOs).

Activities

The program's activities are divided and categorized on the logic model according to the Chronic Care Model's six elements. Activities within the six areas can be summarized into the following: staff training and implementation of referral protocol by all SMC and WIC staff, recruitment into ACHT-A, patient care coordination and tracking for compliance with follow-up appointments, physician training and implementation of Current Best Practices, development and implementation of EMR and CBA checklists by SMC physicians and clinicians, child/parent asthma management training and environmental assessments, provision of support services to participants, development and implementation of early care provider training, community outreach with CBOs, and activities related to marketing ACHT-A and integrating the program into SMC for future sustainability.

Outputs

As a result of ACHT-A, additional staff were hired and trained to conduct parent/child trainings, training protocols were developed and utilized for parent/child trainings, environmental assessment protocols were developed and utilized to conduct assessments, SMC referral protocol developed, determinations about participant eligibility and referrals into the program have been done, physician trainings and dialogue sessions have been conducted, an EMR indication for Asthma Action Plans (AAPs) will be created, EMR templates developed and utilized by physicians, pre/post-test for participants, development of program AAP, provision of transportation, childcare and health care vouchers for program participants, early care provider training protocol, early care provider computer-based training module, community trainings, ACHT-A video for waiting rooms, ACHT-A web page.

Outcomes—Short Term

Given the complexity of the program, this list is not exhaustive. A list of short-term outcomes include: increase primary care visits of enrollees, 100 percent participant assignments

to CHW as health navigator, documented monthly interaction between CHW and parent, increase number of patients with AAPs, increase number of physicians trained, increase number of peak flow meters prescribed, paper-based checklist usage by physicians, 90 percent retention in ACHT-A, increase parent knowledge and retention, increase number of primary care visits of enrollees, increase number of AAPs in use, asthma training for childcare providers available, conduct training for DECAL in each region, increase community awareness of asthma and its triggers, improve organizational structure for the housing of ACHT-A at SMC, create ACHT-A fit into SMC organizational goals and operations, and improve policy development and financing of childhood asthma management.

Outcomes—Intermediate

A list of intermediate outcomes include: decrease in self-reported emergency department visits 3.5 to 2.5 over 12 month follow-up period, decrease number of days absent from school, increase number primary care visits by children, average baseline visits of ACHT-A participants increase from 1.2 to 3 during 12 month follow-up, physician best approach checklist uploaded into system, 100 percent SMC physician training in current best practices in asthma management, 90 percent of pediatric asthma patients referred to ACHT-A by physicians, automatic reminders for providers to update AAPs, maintain parent/child knowledge attained between post-test and 3 month test, decrease number of ED visits, decrease number of days absent from school, 90 percent in-home environmental assessments complete, increase AQOL scores, provide asthma management training for 150 early childcare providers by end of year 2, increase in directors/staff that are DECAL-trained, in-person and online training for early childcare providers, 15 training seminars for lay community members trained on asthma management and triggers, increase CBO awareness of asthma management programs at SMC, 100 children and parents enrolled into ACHT-A, CHWs on SMC staff trained to conduct outreach and asthma

management training, SMC Medical Director present for core planning team meetings, and reduce social barriers of transportation and childcare associated with keeping medical appointments.

Outcomes—Long-term

Long-term outcomes include: SMC medical home for asthma, improvement of childhood asthma outcomes in NPU-V, guideline checklist completely integrated in EMR, improvement in parent/child QOL, DECAL asthma management training course for center directors and staff completed in each region, at least 1 approved asthma management for childcare providers trainer in each of 6 DECAL regions, increase in NPU-V early care provider registration for training, and increase in early childcare providers incorporating training into care environment.

Logic Model

See Appendix A for program logic model, which is divided into the six (6) Chronic Care Model categories.

III. FOCUS OF THE EVALUATION

Stakeholder Needs

The core users of the evaluation findings will include the Project Director/Principal Investigator, SMC leadership and clinical staff, HGF and CBO representatives. These stakeholders will be using the findings in different ways and for different purposes. Specifically, the Project Director/PI will need and want to know whether the program is working or not and how to enhance or refine the program. They will use the evaluation results to implement changes to increase the effectiveness of the program.

SMC leadership will want to know whether the program is effective so that decisions can be made about sustaining the program within the medical center. SMC clinical staff will be interested in clinical outcomes of the evaluation so that adjustments in clinical practice can be

made if needed. Finally, representatives of CBOs will be interested in social health outcomes. They will use the results for community advocacy.

Evaluation Questions

Although there are a number of evaluation questions that could be generated for a program with this complexity, the evaluation team prioritized the following as representing the most important aspects of the program that could be examined at this time.

To determine if the program has been implemented as planned:

- Are program participant trainings, home assessments and follow-up contacts taking place according to schedule and as planned?
- Are appropriate guidelines and protocols being adhered to by staff related to trainings, home assessments and follow-up contacts?

To determine if the program is meeting its objectives:

- Have program participants experienced the desired changes in knowledge retention, self efficacy and behavior (i.e. use of peak flow meter, AAP, green cleaning methods, etc)
- Have participant days absent from school and ED visits decreased?

Evaluation Design

Due to the complexity and number of components involved in the program, multiple data sources will be utilized for this evaluation. A sample of parents/children who enrolled in the program but did not attend any of the sessions or otherwise take advantage of program services will be asked to complete a quality of life survey and used as a comparison group in some measurements. In a limited number of instances, baselines will be established from the data collected during the evaluation.

Resource Considerations

Resources available for the evaluation are somewhat limited. Our staff is small and highest priority is given to various aspects of administering the program. The evaluation team is only able to devote a limited amount of time to the evaluation. This time must also be shared with assignments given by the external evaluator. The program's unique position within SMC means that the evaluation team has access to many needed data sources, including patient medical records and clinical records. Other data sources have been developed by the program and are within our access and control, including quality of life surveys, staff and physician surveys, attendance sheets, pre-tests and post-tests for the parent training program.

Evaluation Standards

The evaluation will be useful to the program and meet grant requirements. The data should be feasible to collect, and we have already devised systems to provide most of the data that will be needed. Propriety is already addressed though participant consent forms and adherence by staff to research guidelines regarding privacy and confidentiality as well as general discretion. Again, this is further enhanced by the program's location within a medical facility that already stresses and adheres to principles of patient privacy and confidentiality. Even though we will rely in large part on self-report data, the accuracy of the strategy is acceptable. Follow-up home assessments and information in patient medical records regarding emergency department visits will provide additional indications of whether asthma management strategies are being employed by participants.

IV. GATHERING CREDIBLE EVIDENCE: DATA COLLECTION

Indicators

Indicators in the context of this evaluation are measures of program activity. To ensure consistency and accuracy of the evaluation, the indicators required to address our specific

evaluation questions are given further clarification in the program benchmark column of the following table.

Table 3

Indicators and Program Benchmark for Evaluation Questions

Evaluation Question	Indicators	Program Benchmark
1. Are program participant trainings, home assessments and follow-up contacts taking place according to schedule and as planned?	• Number of parent/child trainings completed • Number of home assessments for graduates completed • Documented follow-up contact	• 1 cohort/month except December • All graduates have had initial home assessment • At least once per month contact with each graduate
2. Are appropriate guidelines and protocols being adhered to by staff related to trainings, home assessments and follow-up contacts?	• Parent/child training protocol • In-home environmental assessment protocol • Follow-up protocol	• Using adapted Wee Wheezer/Open Airways training protocols • Using the survey, checklists, and providing handouts and supplies to all graduates according to protocol • Confirming scheduling of appointments and providing reminders or addressing support needs
3. Have program participants experienced the desired changes in knowledge retention, self efficacy and behavior?	• Asthma management knowledge • Increased belief in ability to manage asthma • Changes in behavior regarding use of peak flow and AAP	• Improved score on test of basic asthma questions after training • Knowledge and awareness of asthma triggers and avoidance, use of green cleaning alternatives • peak flow meter usage and AAP usage/knowledge
4. Have participant days absent from school and ED visits decreased?	• Number of school absences • Number of ED visits	• Decrease in number of days absent from school • Decrease in self-reported ED from 3.5 to 2.5 over 12 month follow-up period

Data Collection

Data collection will take place according to the plan outlined in Table 4.

Table 4

Data Collection Plan

Indicator	Data Sources	Collection

		Who	When	How
Number of parent/child trainings	Training attendance records	Runner during class sessions	Every session	
Number of home assessments for graduates	Environmental assessment survey/checklist	CHW/Staff	Usually between 3rd and 4th sessions	
Documented follow-up contact	Staff notes from conversation	Staff assigned to specific cohort	Once per month	Review
Parent/child training protocol	Curriculum, training attendance records, AAPs	Staff	Following every session	Review records of training sessions and attendance, materials presented, AAP's
In-home environmental assessment protocol	Environmental Assessment protocol and guidelines	CHW/Staff	Following every in-home assessment	Review of survey/ checklist and other documents from home visit
Follow-up protocol	Staff notes from conversation documenting	Staff assigned to specific cohort	Once every month	Review of staff notes for appointment times, reminders, other topics of conversation
Asthma management knowledge	Pre/post-tests	Tyra	Before session 1 and after session 4	Collect test results
Increased belief in ability to manage asthma	Quality of life surveys	Staff assigned to specific cohort		Administer written survey at follow-up home assessment
Changes in behavior regarding use of peak flow and AAP	Quality of life surveys	Staff assigned to specific cohort		Administer written survey at follow-up home assessment
Number of school absences	Quality of life surveys	Staff assigned to specific cohort		Administer written survey at follow-up home assessment
Number of ED visits	Quality of life surveys	Staff assigned to specific cohort		Administer written survey at follow-up home assessment

Plan Timeline

See Appendix B for the program and evaluation plan timeline.

V. JUSTIFYING CONCLUSIONS: ANALYSIS AND INTERPRETATION

Analysis

The evaluation strategy will include qualitative and quantitative measures to assess the desired outcomes of the program. We will integrate the tools of participant focus groups, surveys, and database analysis for assessment. Data for the measurement of utilization of asthma action plans in program participants will be measured via quarterly meetings between CHWs and program participants to discuss self-reported hospitalizations, ED visits, activity limitation, symptom frequency and sleep disturbances. Routine primary care visits as part of asthma action planning will be measured via data extraction on kept appointments through SMC.

Interpretation

Stakeholders, including ACHT-A Project Director/Principal Investigator, and staff, SMC leadership and clinicians, and CBO representatives will be included in a scheduled meeting to interpret the findings. In addition, there is an advisory board consisting of two parent graduates of the program, a SMC physician representative, and ACHT-A staff that will review the findings of the evaluation. The data from the evaluation will be compared to the established program benchmarks. Stakeholders and those involved in the program operations will be given an opportunity to justify the findings and make recommendations accordingly.

VI. ENSURING USE AND SHARING LESSONS LEARNED: REPORT & DISSEMINATION

Dissemination

Evaluation findings will be disseminated via various channels. Presentations will be given at the program staff meeting and to the health care providers at regular staff meetings.

Use

The Project Director and staff will use the findings to refine program strategies for ACHT-A. The findings will help guide the program to focus on areas that are highest priority for effective service delivery. Clinicians will use the findings to make improvements in evidence-based practices, if needed. SMC will use the findings to continue plans toward sustaining

ACHT-A at the medical center following conclusion of the grant. CBOs will use the evaluation to enhance overall community education and awareness of the program. In addition, some community organizations will use the findings to support other multi-faceted, community-based initiatives.

PRELIMINARY ASSESSMENT

Methods

In order to establish a baseline for future evaluations, specific questions on the participant program Intake, Quality of Life, and In-home Environmental Assessment forms were examined. Responses were counted, and in some instances, scored to determine factors such as the existence of triggers in children's homes, self efficacy, knowledge of asthma and its triggers, and the impact of emotional and social stresses on participants' quality of life. Most of the data was then converted to provide data in percentages to provide a big picture perspective of the preliminary findings.

Results

Parents in the program were given a pre-test prior to beginning training, and a post-test once the training was complete. As Figure 1 reveals, the results indicate that the average scaled pre-test score for participants was 66 percent. Average scaled post-test scores increased to 83 percent, which represents an average increase of 17 percent. This appears to show that parents have learned enough from the training to significantly improve their performance on the test instrument.

Looking at data from the in-home environmental assessments, dust/dust mites were the most prevalent trigger identified. Dust and dust mite trigger improvement opportunities were identified in 100 percent of the homes assessed (Figure 2). This is due largely to the fact that none of the homes visited had dust mite mattress and pillow covers on the beds of the asthmatic

child participant, which are important for trigger avoidance. None of the homes visited were utilizing air vent filters, and many of them had never changed or knew how to change the air filters associated with the HVAC systems. The program provides these supplies along with door mats for the control of dust/dust mites in the home of our participants. In addition, the program provides air vent filters as a further dust control intervention. Again, none of the participants had vent filters prior to receiving them from the program. The second and third most prevalent triggers identified during the home assessments were pests and moisture respectively. In the case of participants who rent their homes, elimination of pests and moisture—including mold and mildew—can be problematic. This is because renters have only limited control over their unit and no control of the remainder of the premises. The pest or moisture problem is likely to recur in individual units unless the entire premises are effectively treated. Some participants need assistance with getting their landlords to cooperate in making repairs, and ACHT-A is seeking partnerships with other organizations that specialize in these types of problems.

Given the demographics of NPU-V, the results shown in Figure 3 regarding insurance are not surprising. Only one percent of participants had private insurance, whereas 95 percent of program participants had some type of Medicaid insurance coverage. The remaining four percent of participants had no insurance coverage.

The Quality of Life Survey was used to measure parent responses in four areas: self-efficacy, social, emotional, and education regarding asthma. Self-efficacy refers to a person's belief in his or her ability to succeed in a given situation. For example, parents are asked to respond to the following statement measuring self-efficacy in the survey: "I know how to take care of my child's asthma." Social statements in the survey refer to the degree to which a parent feels that his or her child's asthma is disrupting the parent's or family's ability to participate in activities. An example from the survey is "My family is upset with the restrictions my child's

asthma puts on them." Emotional statements in the survey measure the degree to which parents are experiencing negative and positive feelings associated with their child's asthma. An example of an emotional statement is "I panic every time my child coughs or wheezes." A positive response from a parent on this question will result in a low score since this may be indicative of stress and other undesirable impacts on mental health. Finally, education statements measure general asthma knowledge. An example of an education question is "My child's asthma has no effect on his/her homework or grades." The responses were scored into high and low categories. The results indicate that parents scored highest in self-efficacy with 85 percent (Figure 4). This demonstrates that parents had a strong sense of their ability to manage their child's asthma. Parents scored high in the social area as well with 77 percent, which indicates that parents generally did not feel that their children's asthma interfered with their social lives. Parents needed the most improvement in the area of education. 90 percent of parents scored low in this area, demonstrating that there is a great need for the asthma management training provided by ACHT-A. Over half of parents scored low on the emotional questions, indicating significant impacts on mental health and overall sense of well-being. This is not uncommon with parents of children with a chronic illness and could indicate the need for support groups or parenting circles to help them learn to cope with the mental health aspects of their situation.

Parents were asked a number of questions about the severity of their child's asthma and the degree to which it impacted their daily activities. When asked the number, 83 percent of parents indicated that their child had awakened with symptoms (coughing, wheezing, or tightness of chest) at least 1-3 times in the past month (ACHT-A, 2010). Figure 5 illustrates that 74 percent of parents reported their child experiencing moderate to severe asthma symptoms in the past two weeks. Fifty-six percent of parents reported their child experiencing two or more asthma-related absences from school in the past six months (Figure 6).

When asked if their child owned or had been prescribed a peak flow meter, 72 percent of parents marked "no" as their response (Figure 7). We have some questions about whether parents are over-reporting due to confusion about what a peak flow meter is. However, even if the data represents a true count, there is clearly a need for improved evidence-based practice from physicians and clinicians. Similarly, 92 percent of parents indicated that their children did not have an Asthma Action Plan (Figure 8). Most did not know what an action plan was. Additional questioning during the intake process and discussions during training underscored the lack of knowledge parents have regarding this aspect of asthma management.

The data indicates that 54 percent of child participants were hospitalized in the last six months with asthma-related problems (Figure 9). We believe that parents may have under-reported this due to issues associated with recall or embarrassment. Regardless, the data indicates that the majority of program participants have uncontrolled asthma.

Figure 10 shows that over 60 percent of program participants go to their primary care physician for treatment of asthma-related symptoms. However, 38 percent of participants seek treatment at an emergency department. There is an opportunity for significant improvement in this area. Specifically, E.D. burden could be reduced if patients made regular, scheduled wellness visits. While 64 percent of participants indicated that their child had gone to 1-3 wellness visits in the past 6 months, 32 percent indicated that they had gone to none (Figure 11). In examining participant files, it is worth noting that several of the children who had not gone to any wellness visits experienced severe asthma symptoms and more absences from school. Finally, 54 percent of participants indicated that their child saw a primary care physician during the past 6 months when experiencing asthma-related symptoms 1-3 times (Figure 12).

To establish baseline data on the institutional changes being made within Southside, we are measuring staff knowledge about asthma and efficacy in ACHT-A program knowledge. The

results of survey responses from front-line staff, who register patients and complete billing, indicate that they have higher efficacy in program knowledge. They have a higher degree of understanding regarding eligibility criteria and how to refer patients into the program, and are more knowledgeable about asthma management than general staff, which includes the entire SMC staff. Figure 13 illustrates a significant difference in asthma knowledge between the two groups.

Conclusions and Recommendations

The preliminary assessment demonstrates that ACHT-A is reaching those with the greatest need among the target audience. This is evident based on asthma management indicators and asthma severity of program participants. Based on significant improvements in post-test results, the program is doing well in training parents. Staff will need to pay close attention to whether this knowledge is sustained in upcoming reassessments. Despite the training achievements, the baseline results indicate that there is room for significant improvements in the overall health of participants.

I would recommend continuation of program activities outlined in the logic model, with particular emphasis on adherence to established protocols. Preliminary evaluation results should be used to ensure that appropriate systems are in place to collect data for measurement of desired outcomes. In addition, staff should perform a full program evaluation of all 31 activities at a future date according to plan specifications.

In addition to these actions, the program has administrative needs that should be addressed to facilitate better implementation of designated activities. Specifically, the program needs additional staff and conversion of data to an ACCESS database. With 31 activities, ACHT-A is a complex program. There are significant staffing challenges in executing both evaluation and program deliverables. This problem is intensified by the lack of a database. A professionally designed ACCESS database would provide for the storage and acquisition of data in a reliable

medium. It would allow program staff to track data and make program adjustments more effectively. Unfortunately, it is beyond the skill set of current staff to create the needed database.

Finally, I would recommend that staff examine recruitment efforts to see if there are any actions that can be taken to increase the number of participants. The program consistently recruits high numbers of parents who express intent to attend the training. However, the actual numbers can be disappointing. This may be an inherent problem with this type of program, but there may be steps that staff can take to increase attendance.

CHALLENGES, LESSONS LEARNED, AND ACCOMPLISHMENTS

With my work during my practicum focused primarily on the training aspect of ACHT-A, my activities were largely independent of other areas of the program. Specifically, I had little understanding of most of the activities involving SMC and its staff. This made it difficult for me to know what we were measuring, what needed creation of a system or tool to obtain measurements, and what or how to create those systems or tools. I have overcome this barrier with continued work on the logic model, by reviewing the grant proposal, and through meetings and brainstorming sessions with the Project Director. This experience has taught me the importance of having an accurate logic model for program evaluation. It is the clearest means of understanding program activities and developing appropriate measures for the evaluation.

Another significant challenge has been related to the limited resources available to the program. ACHT-A is currently only staffed by two full-time people. Despite this, the program is designed to address multiple modalities of asthma management and is fairly complex. While it has been difficult to maintain program activities with such a small staff, it often has seemed impossible with the added evaluation responsibilities required by the grant. Time management has been a tremendous challenge.

Another aspect of this problem is related to the program partnership with SMC. Although we have the benefit of access to patient records, this means that program staff is largely reliant on SMC staff to collect the requested data. This requires follow-up either in person or in emails, and sometimes we have to make multiple requests. In addition, it is challenging making requests to SMC staff who have different priorities as well as different employers.

In addressing challenges caused by available resources, I have had varying degrees of success. I have learned to prioritize items on my work plan according to unpredictable circumstances and to take advantage of opportunities to complete tasks whenever possible. I have also learned that, sometimes, I just have to suspend action on some tasks until I can address them later. I have seen firsthand that there is always more that can be done in community work. Regarding challenges associated with our partnership with SMC, I have learned to be very clear about what data I am requesting and when I need the results. I have also learned to avoid situations where communications can be misunderstood or potentially cause tension or a conflict.

Finally, completing the requests made by the external evaluator while continuing work on our internal evaluation has been challenging. Since the evaluator's focus is different than ours, it is important to always keep that in mind and maintain our own direction with the internal evaluation. At the same time, we also have to be able to see our program from both perspectives. For example, the performance measures worksheet has been particularly challenging to complete. It is time consuming and some of the definitions for requested information seems counterintuitive to what we are doing in our internal evaluation. Despite this, work with the evaluator has helped us analyze the program in greater detail and identify additional measures and data that we need for the evaluation.

Despite the challenges, the greatest benefit of my capstone project has been the opportunity to perform program evaluation activities in a real-world setting. The limited

resources available to the program enabled me to take a key role in the program evaluation that I would probably have been unavailable in a larger organization. In addition, the capstone project has given me practical experience working in a community setting. Working within Southside has provided me with a unique perspective regarding community health and chronic disease management. I have been able to overcome the previously mentioned obstacles to achieve several notable accomplishments. Specifically, I have expanded my knowledge and experience regarding the program evaluation process by applying principles learned in a classroom setting to an existing program. I have also implemented new systems to measure program outcomes. Most importantly, I have completed the ACHT-A logic model, which consists of 31 activities. During an evaluation meeting, our logic model was highlighted by Georgia Southern as the benchmark for other grantees.

References

Accelerating Change Today A.C.T for America's Health. (2002). Retrieved from http://www.improvingchroniccare.org/downloads/act_report_may_2002_curing_the_system.pdf

Centers for Disease Control and Prevention. (2008). *Current asthma population estimates in thousands by age* [National health interview survey].

Centers for Disease Control and Prevention. (2008). *Current asthma prevalence percents by age* [National health interview survey]. Retrieved from http://www.cdc.gov/asthma/nhis/07/table4-1.htm

Cretin, S., Shortell, S. M., & Keeler, E. B. (2004). An evaluation of collaborative interventions to improve chronic illness care. *Evaluation Review*, *28,* 28-51.

Institute for Healthcare Improvement, The National Coalition on Health Care (2002). *Accelerating change today for America's health: Curing the system, stories of change in chronic illness care.* Retrieved from http://www.improvingchroniccare.org/downloads/act_report_may_2002_curing_the_system.pdf

Georgia Department of Human Resources. (2008). *2008 Georgia Data Summary*. Retrieved from http://health.state.ga.us/pdfs/epi/cdiee/2008%20Asthma%20%20Data%20Summary.pdf

Institute for Healthcare Improvement: How to improve. (n.d.). Retrieved September 21, 2010, from http://www.ihi.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove/

Annie E. Casey Foundation. (2004). *Neighborhoods count: A look at NPU-V in 2004*. Retrieved from www.aecf.org/upload/publicationfiles/cc3622h759.pdf

Nicholas, S. W., Hutchinson, V. E., Ortiz, B., Klihr-Beall, S., Jean-Louis, B., Singleton, C., Credell, J., . . .Golembeski, C. (2005). Reducing childhood asthma through community-

based service delivery. *MMWR 54*, 11-14. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5401a5.htm

Spielman, S. E., Golembeski, C. A., Northridge, M. E., Vaughan, R. D., Swaner, R., Jean-Louis, B., Shoemaker, K., . . .Sclar, E. (2006). Interdisciplinary planning for healthier communities: findings from the Harlem children's zone asthma initiative. *Journal of the American Planning Association*, *72*, 100-108. doi:10.1080/01944360608976727

Wagner, E. (1997). Managed care and chronic illness: Health services research needs. *Health Services Research*, *32*, 702-14.

Appendix C

Figure 1

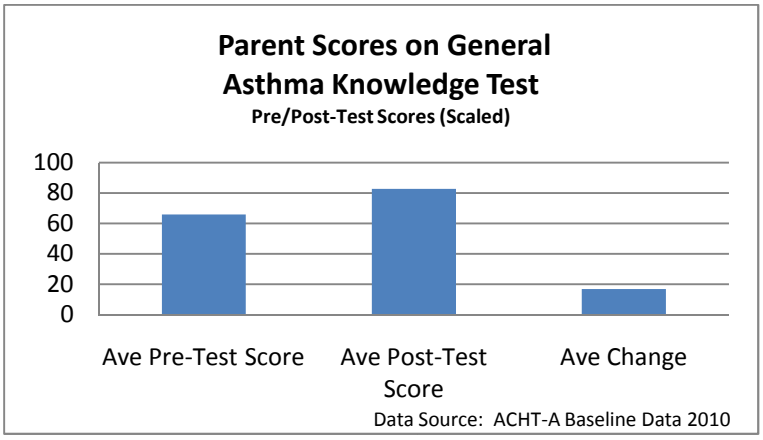


Figure 2

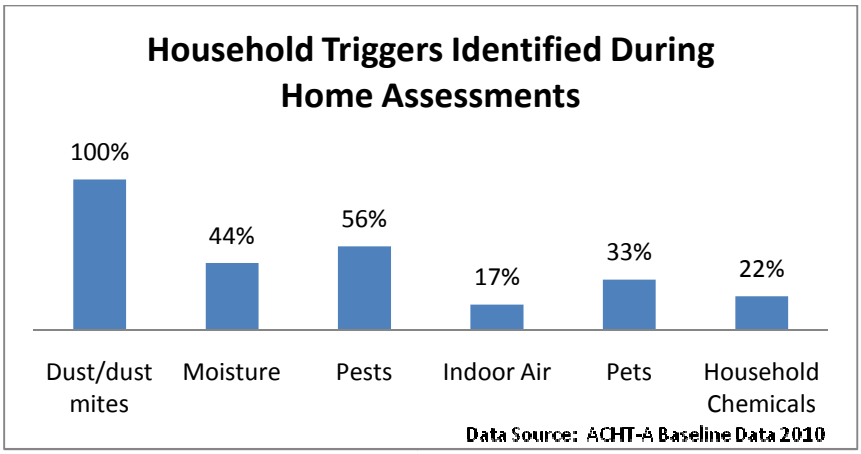


Figure 3

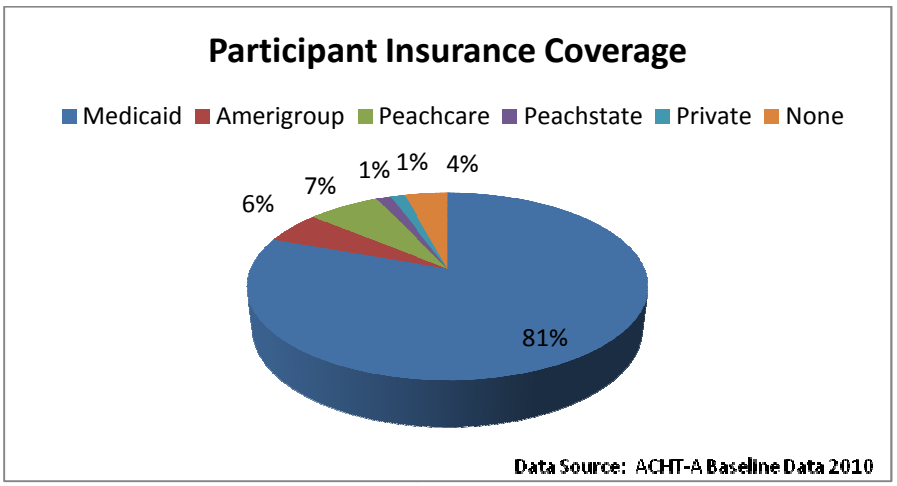


Figure 4

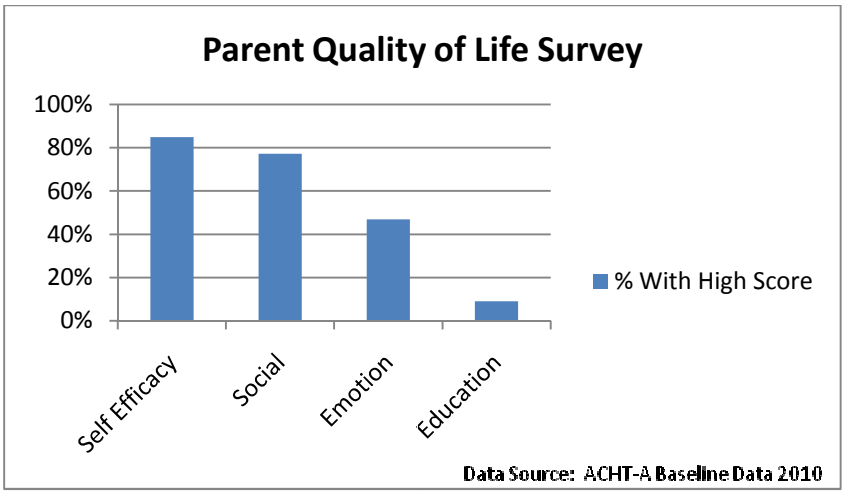


Figure 5

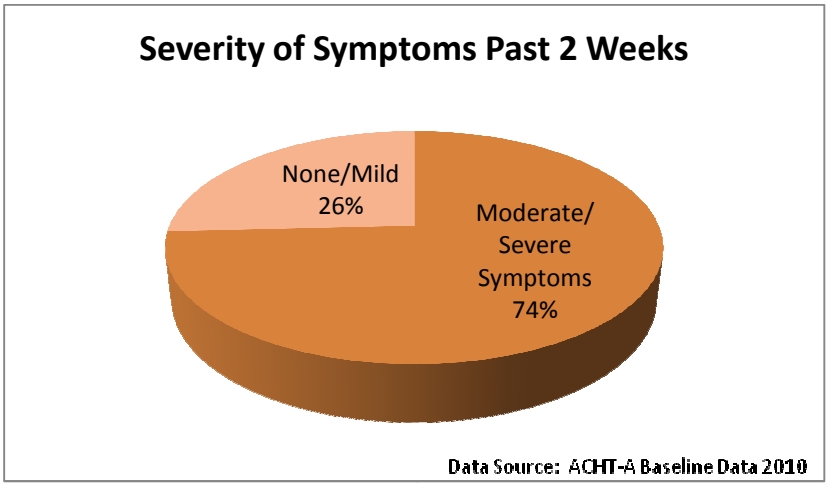


Figure 6

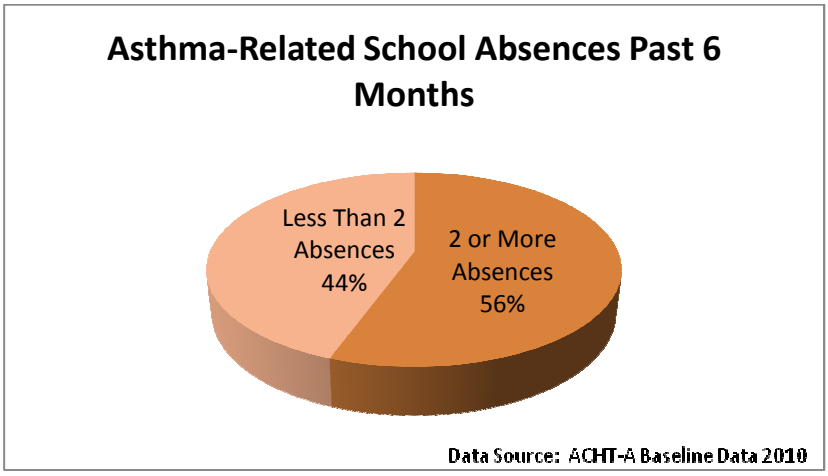


Figure 7

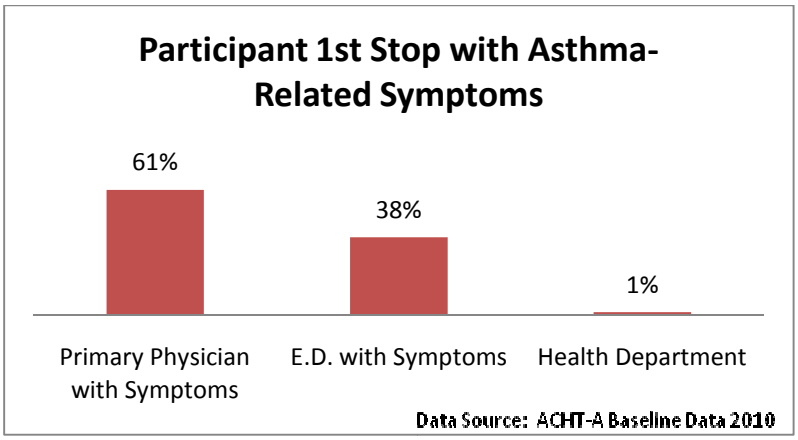


Figure 8

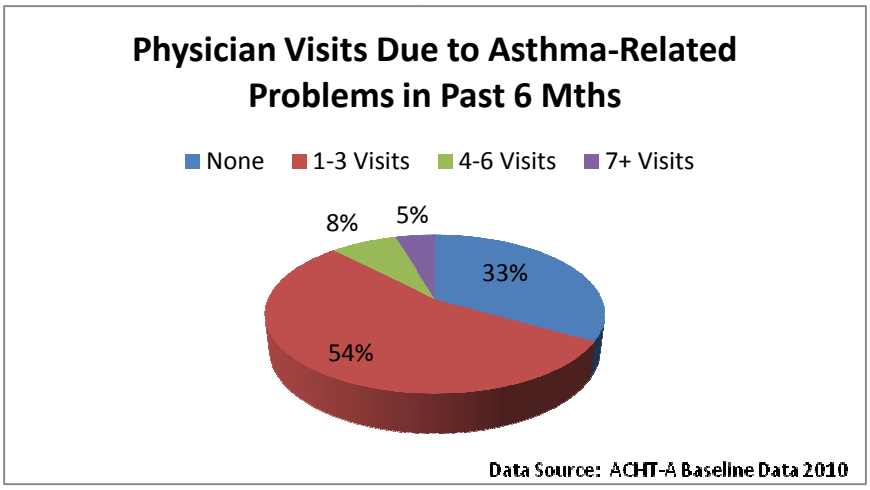


Figure 9

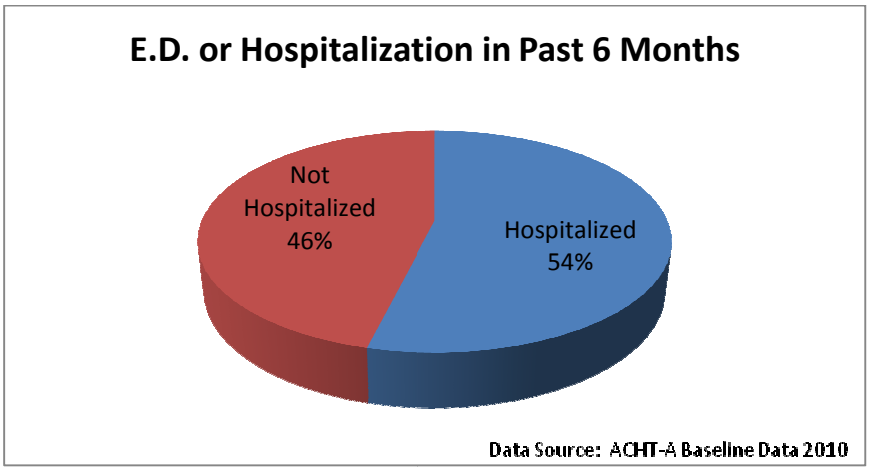


Figure 10

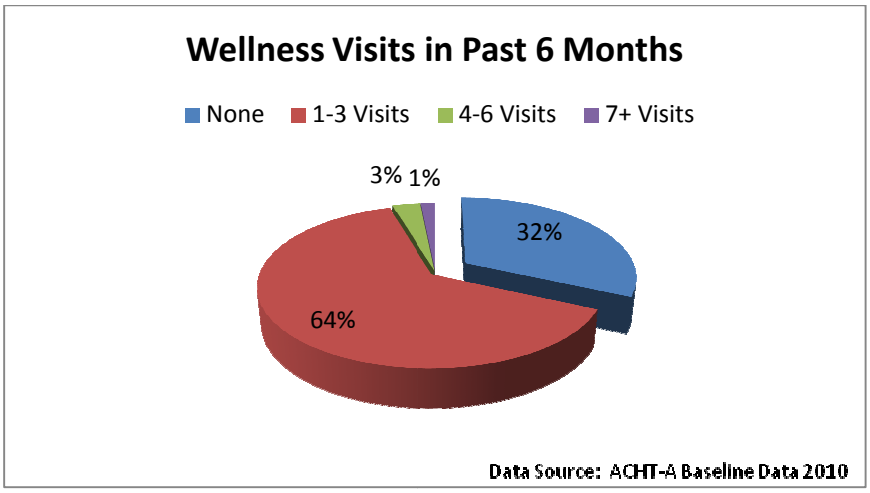


Figure 11

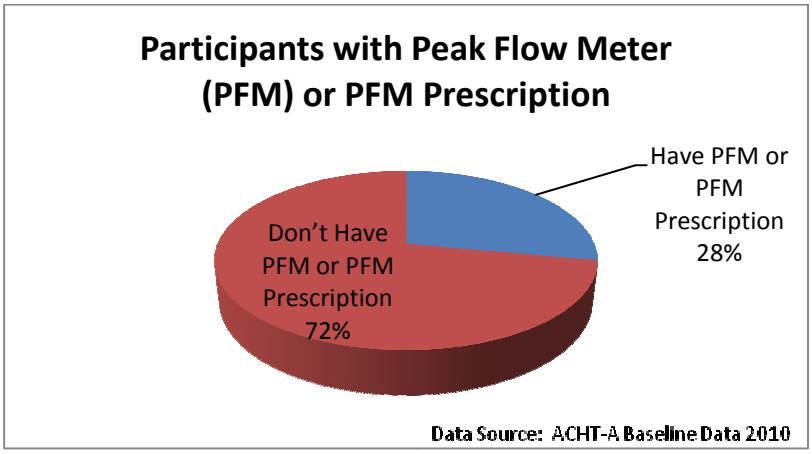


Figure 12

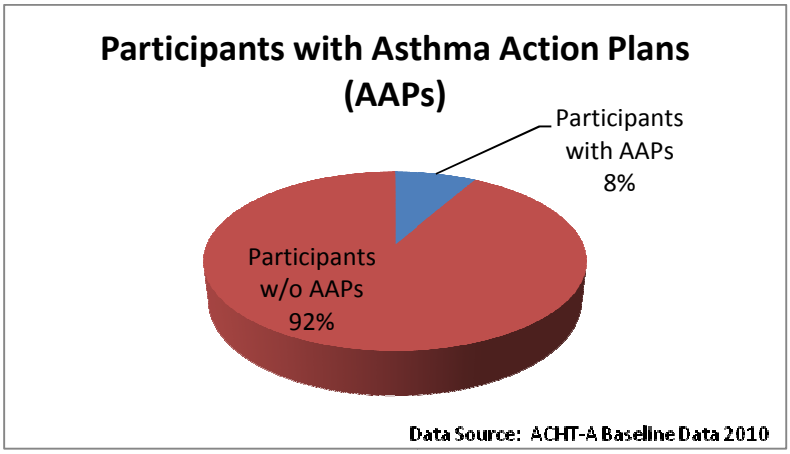
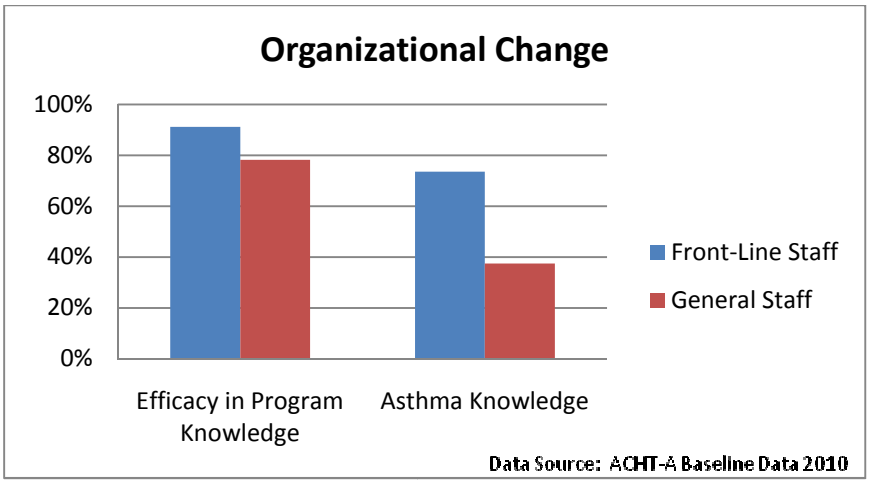


Figure 13


Organizational Change
100%
80%
60%
40%
20%
0%
Efficacy in Program Knowledge
Asthma Knowledge
Front-Line Staff
General Staff
Data Source: ACHT-A Baseline Data 2010