



# North Carolina Success Stories

2012-2013





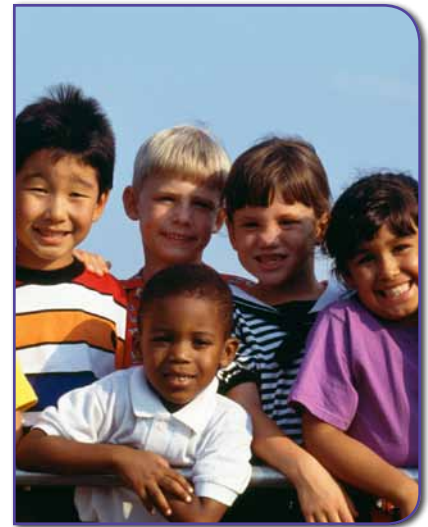
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# Introduction

The North Carolina Asthma Program strives to reduce the burden of asthma upon the citizens of our state by developing and maintaining a comprehensive statewide asthma surveillance system, developing and implementing a State Asthma Plan that effectively addresses asthma in all ages, ethnic groups, backgrounds, and in multiple settings. The NC Asthma Program also provides technical assistance and resources to the local asthma coalitions, communities, and healthcare providers.

The NC Asthma program works with several local counties and community groups to improve asthma awareness. The NC Asthma Program assists in supporting a number of organizations to develop asthma awareness programs, policies, and educational training curriculums. The stories in this booklet illustrate the innovative activities and policies supported by The Asthma Program.



*For more information  
about The NC Asthma  
Program please visit  
our website at  
[www.asthma.ncdhhs.  
gov/index.htm](http://www.asthma.ncdhhs.gov/index.htm).*



# HEALTHY ALAMANCE CHILD ASTHMA COALITION

## Takes It One Breath at a Time



### *Problem Overview*

In the 2007 Community Health Assessment (CHA), it was noted that Alamance County has high levels of fine particle pollution, which is formed when gases from fuel react with sunlight and water vapor. This pollution has important health consequences for asthmatic children and the community at large. The EPA's acceptable cancer level due to pollution is one case in a million. The risk in Alamance County is 226 times greater than the acceptable level. While our proximity to the interstate is surely one cause of this problem, our own actions, such as burning trash and idling can exacerbate the issue.

According to the Alamance Burlington School System, there were a total of 1539 students with parent-reported asthma for the 2008-2009 school year, and the school system's medication survey showed 464 students taking asthma medications. Alamance County has 109 child care centers and child care homes. Over 100 parents using those facilities have reported that their child has asthma.

Alamance County's hospitalization rate for childhood asthma was 5% higher than the state rate in 2005. According to Alamance Regional Medical Center, there were 238 children under the age of 18 that visited the hospital between October 2008 and September 2009 with asthma related symptoms, 173 of those had gone to the emergency department.

The Healthy Alamance Child Asthma Coalition knew we had to do more, but with no funding, we were limited with what we could do, enter ELAE grant funds....

### *Program Description*

Since 2008, The Healthy Alamance Child Asthma Coalition has Enhanced Local Asthma Efforts by collaborating with several key partners to help the citizens of Alamance County breathe easier. The Healthy Alamance Child Asthma Coalition has focused on:

- **Air Quality flags:** placed throughout Alamance County at all elementary, middle, and high schools to create awareness about air quality and flown below the American flag and the State flag on the same pole. The flags come in four colors and the color flown for each day is based on the Air Quality Index (AQI) from the North Carolina Division of Air Quality. Each day a flag

is flown by a designated staff member or student appointed by the Principal of each school. The flags indicate how clean or polluted the air is and serve as a reminder of what precautionary measures should be taken to avoid associated health effects that may be a concern for residents, especially children.

- **Anti-Idling signs:** at all public schools in Alamance County! These signs are placed at all schools in prominent pick-up and drop-off locations. Unnecessary vehicle idling is a leading cause of pollution and a major factor in the exponential rise of childhood asthma.
- **AQI Toolkit for Teachers:** are placed in all schools media centers. This toolkit helps students know when air quality in their area is unhealthy and how they, their families, and communities can protect their health.
- **Asthma Education for Childcare Providers:** A Cardiopulmonary Educator from Alamance Regional Pediatric Center has offered this class to over 75 childcare providers! The providers become so engaged in the curriculum, ask so many questions, they often do not realize class time is over with!
- **World Asthma Day Flag Display:** The Healthy Alamance Child Asthma Coalition observes World Asthma Day by displaying small flags in front of all the elementary and middle schools in Alamance County. Each Flag displayed outside of the school will represent the number of children at that school living with asthma. In all, approximately 1065 flags will be placed near the main entrance in front of each school by coalition members
- **Billboard Campaign:** This first one took place during peak flu season, encouraging those living with asthma to be protected by getting their flu vaccine. A second campaign was hosted during the month of May, which is Asthma Awareness month, educating those living with asthma on the importance of having an asthma action plan and knowing the code!

### ***Program Outcomes***

With the help of Enhancing Local Asthma Efforts grant funds, The Healthy Alamance Child Asthma Coalition has been successful in reaching all 33 schools in Alamance County (that's over 22,000 students!) by providing them with Air Quality Flags, Anti-Idling signs, World Asthma Day displays, Asthma Resource Guides, and AQI Toolkit for Teachers. We have been so successful in our efforts because of the partnerships we have with the school system, local pharmacies, hospital, and our health department, that in the fall of 2012 we are hoping to expand our passion into the homes of Alamance County residents by assessing their homes for indoor air quality issues!

We are continuing to provide parents, families, and the community with asthma information in hopes to decrease school absenteeism, emergency room visits, and increase work productivity.

## Additional Information

### Alamance County Health Department

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None of these projects would have been successful with the help and collaboration efforts of:

- **Lucy Kernodle,** Lead School Nurse with Alamance-Burlington School System
- **Tammy Bailey,** Cardiopulmonary Educator at Alamance Regional Medical Center Pediatric Asthma Unit
- **Kenneth Greene,** Registered Environmental Health Technician, Alamance County Environmental Health
- **April Durr,** Healthy Alamance Director
- **Jackie Harrell,** Pharmacist, Edgewood Pharmacy
- **Kelley Kimrey,** Health Educator II, Alamance County Health Department

# ALBEMARLE PEDIATRIC ASTHMA COALITION

## Coaching the Coaches

### *Problem Overview*

Nationally, asthma is one of the most common chronic diseases of kids. In North Carolina about 16.8% of children under the age eighteen have been diagnosed with asthma at some point in their lives. In the Albemarle region of northeast North Carolina, Pasquotank county emergency room visits are as high as 42%. The incidence of asthma related emergency department visits happen under all circumstances. One main area of focus was to educate the school district coaches, physical education teachers and first aid responders on the disease of asthma and how it affects an athlete's ability to compete in a sport and how coaches can assist the athlete in managing their symptoms, as well as emergency management of an asthma episode.

### *Problem Description*

In order to address this issue locally, five Coaches Clinics were completed through funding of the Enhancing Local Asthma Efforts, (ELAE) grant. The Albemarle Pediatric Asthma Coalition collaborated with five public school districts; Camden, Currituck, Gates, Elizabeth City/Pasquotank County, and Perquimans to specifically train their coaches, physical education teachers and first responders on the treatment of asthma. Additionally each school district incorporated expert professionals who presented on first aid emergent care.

The learning strategies of the coaches' asthma training included:

- what is asthma
- common symptoms
- asthma episodes
- how to handle an asthma episode
- exercise induced asthma
- medications and equipment
- asthma action plan





The Athletic Director for each school district worked closely with a committee of coalition members representing their respective school districts to design a coach's clinic tailored to the needs of each school district. The ELAE grant funding supported the purchase of coach's clipboards. The selection of clipboards included cost, durability and storage. The storage component was included so the coach would have easy access to a copy of a student's asthma action plan. The front design of the clipboards included the use of an acronym, SCORE, authored by the NC Cleveland County Asthma Coalition, listing five emergent asthma directives printed on the top of the clipboard for quick and easy reference.

### ***Program Outcomes***

A total of 217 coaches, physical education teachers and first aid responders attended the Coaches Clinics in a two-year period. Evaluations were completed by the participants after the training and 100% of the respondents reported they liked the clipboard and were more confident assisting a student with asthma. Evaluation comments included the benefit of receiving door prizes as a bonus for attending the clinic. (The door prizes were funded by donations from local businesses and private organizations). Continuing education units were provided to school district employees.

### **Additional Information**

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# CLEVELAND COUNTY HEALTH DEPARTMENT

## Cleveland County Asthma Coalition

### Showcasing Asthma Management for Children and Families

#### *Problem Overview*

Health care providers and members of the Cleveland County Asthma Coalition struggle with the dilemma of educating children and families about management of asthma. Physicians have limited time in office visits and parents may be too harried to really listen to the most basic information about asthma management. Additionally, many parents are reluctant to involve their children in the disease management process.

#### *Program Description*

The Cleveland County Health Department in collaboration with the Cleveland County Asthma Coalition and the Dover Foundation YMCA worked together to sponsor a successful Asthma Expo 2012 as a part of the YMCA's Healthy Kids Day. This collaboration meant that a large number of children and their families would be in attendance at the Saturday event held on April 21<sup>st</sup> from 10:00 a.m. until 2:00 p.m. The Asthma Coalition sponsored the appearance of "Buster", the beloved rabbit with asthma who is featured in the Arthur children's books by Marc Brown. Volunteers wore the "Buster" costume provided on loan from UNC-TV on a rotating basis and visited with children and family members during the event. The appearance of "Buster" created a user-friendly environment for children to discuss living with asthma among friends and family members and offered great photo opportunities!

A second feature of the Expo was the "Bring Your Bear to the Doctor" station. Dr. Christopher Cerjan, the medical director for the Cleveland County Asthma Coalition, volunteered his time on that Saturday to examine stuffed animals brought in by participating children and use the exam time as a teachable moment to educate the children about asthma management.



This station was set up like a doctor's exam room complete with scales and measuring tapes, a medical record for the "patient" and an incentive if the "patient" was good during the exam. Dr. Cerjan worked with each individual child and offered advice on management of asthma as well as printed materials for further education. The Asthma Expo also featured information on asthma triggers as well as exhibits on devices used in the management of the disease. Each person who attended was provided handouts on triggers and a sample asthma action plan to encourage parents to ensure that such a plan was completed for their child.

### ***Program Outcomes***

Approximately 45 "patients" were examined during the event; each owner was also offered an opportunity to register for a free camper scholarship to the No-Wheeze Asthma Day Camp scheduled for August, 2012. Approximately 250 individuals attended all or part of the Asthma Expo which organizers considered to be a highly successful event. Sponsorship of this event meant that a critical mass of people open to education were available for instruction on asthma management.

### **Additional Information**

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# DAVIDSON COUNTY HEALTH DEPARTMENT

## Asthma Coalition Trains Football Coaches on Asthma

### *Problem Overview*

Asthma is a public health priority in the United States, as well as in North Carolina and in Davidson County. According to the 2005 BRFSS survey results for Davidson County, 7.6% of the respondents have been told by a healthcare professional that they have asthma and 4% indicate they still have asthma. 30% of respondents indicated they were age 19 or under when they were told by a healthcare professional they had asthma. According to the State Center for Health Statistics, from 1999-2005 Davidson County had an asthma mortality rate of 18.8. According to the 1998 North Carolina Medicaid Claims for Asthma in Children ages 0-14, 12.3% of Medicaid enrollees had asthma claims.

According to the State Center for Health Statistics, Davidson County had an asthma hospitalization rate of 116.9 from 2002-2004. At Lexington Memorial Hospital from July 2008-June 2009, there were 52 inpatient and 241 emergency department cases with the principle code being asthma. Of these 5 of the inpatient and 49 of the emergency department cases were children ages 5-18. There is a need to do follow up with these patients to reduce the occurrence of subsequent hospital visits.

### *Program Description*

The Davidson County Health Department partnered with Davidson County Recreation to provide the Coaches Clipboard program “Winning With Asthma” to the football coaches in the fall of 2011 and softball and baseball coaches in the spring of 2012. Approximately 125 football coaches/assistant coaches and 32 softball/baseball coaches received education/training on signs and symptoms of asthma, the biology of the disease, medications, exercise-induced asthma, action plans, and what to do in case of an emergency. Participants received a clipboard with emergency asthma directives on one side and the air quality codes on the other side.



## ***Program Outcomes***

The training was offered to football, softball, and baseball coaches with Davidson County Recreation. There were over 150 coaches in attendance. The coaches expressed gratitude after the training as they were seeing an increase in the number of student athletes with asthma but they themselves had limited knowledge on how to deal with situations that might arise.

### **Additional Information**

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# MISSION CHILDREN'S HOSPITAL REGIONAL ASTHMA DISEASE MANAGEMENT PROGRAM

## *Program Overview*

The Regional Asthma Disease Management Program's ultimate goal is to subjectively improve a patient's quality of life, decrease school absenteeism, decrease ED utilization and/or inpatient visits—resulting in cost avoidance. The Regional Asthma Disease Management Program embraces the holistic approach to patient care through compassion and patient advocacy.

The Regional Asthma Disease Management Program addresses the problem of health disparities in minority children in rural Western North Carolina who suffer from asthma. Poverty is present in many of these rural areas. Addressing social determinants of health cannot be overlooked as our children are at risk for lower school performance, decreased attendance, fragile nutritional status, and inadequate housing. Co morbid conditions may include hypertension, diabetes, and obesity/overweight. For some of these families, English is a second language and there are language barriers for them in the traditional medical setting. Although no child is refused participation based on ethnicity, the predominant focus of this program is outreach to Native American, African American, and Hispanic children who may not have received intervention on a regular basis.

## *Program Description*

Children in enrolled in the program are typically from diverse ethnicities with poor socioeconomic status, uninsured or underinsured, and often from a single parent home. Asthma disparities are assessed through various components of the program including:

- Clinical assessments including lung spirometry, exhaled nitric oxide (eNO), peak flow meter monitoring, and symptom diary usage.
- Patient education (culturally appropriate and literacy-sensitive materials): pathophysiology of asthma; identification of triggers and avoidance measures; identification of early and/or late warning signs of an asthma exacerbation; and empowering the patient to self-manage.



- Medication assessments, review, and appropriate recommendations based on the NHLBI guidelines.
- Development and implementation of an Asthma Action Plan, based on a patient’s personal best and/or symptom history, promoting patient self-management.
- Environmental assessments of the patient’s home and school/childcare setting, promoting an “asthma friendly environment” and reporting potential housing code violations that may worsen asthma symptoms. Home remediation—linkage of services with community organizations; integrated pest management.
- Communication of pertinent information to physicians, families, school nurses, teachers and others, as deemed appropriate.
- Education programs and activities for community-based organizations, schools and provider groups.



Program effectiveness is assessed by collecting health data such as:

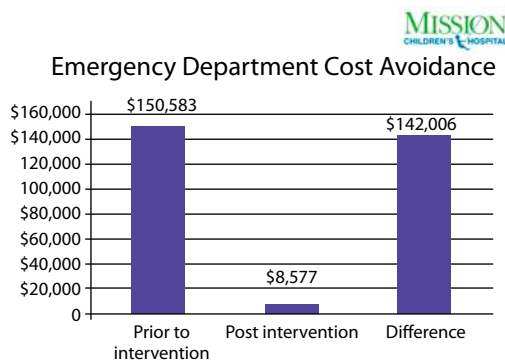
- Severity level, environmental trigger exposure
- Encourage patients to pledge to create an asthma friendly environment
- Examine patient charts to assess program effectiveness:
- ED visits
- Hospitalizations
- Missed school days
- Lung spirometry and exhaled nitric oxide

The NC Asthma Program has contributed to the success of this project through educational materials such as the North Carolina Child Care Provider Curriculum as well as epidemiology reports for better understanding of childhood asthma.

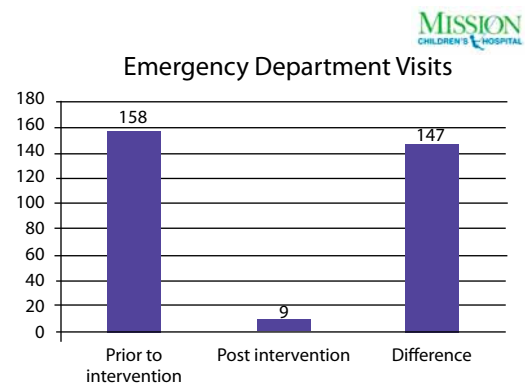
## Program Outcomes

This program has demonstrated the following outcomes:

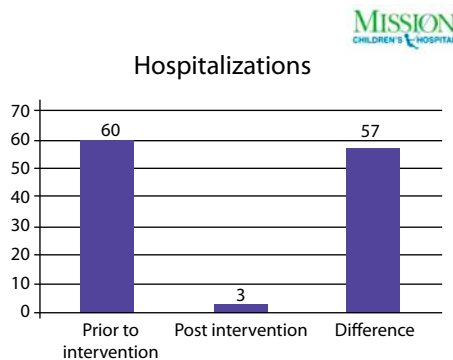
### Decreased ED costs



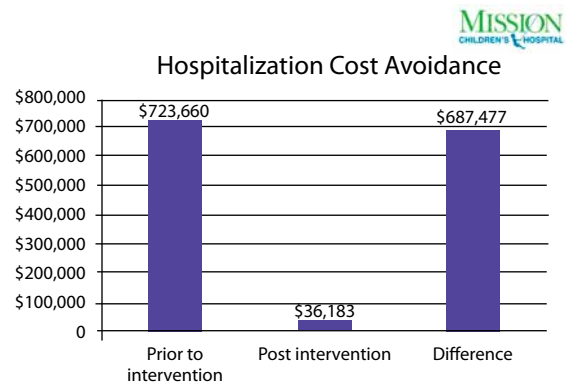
### Decreased ED visits



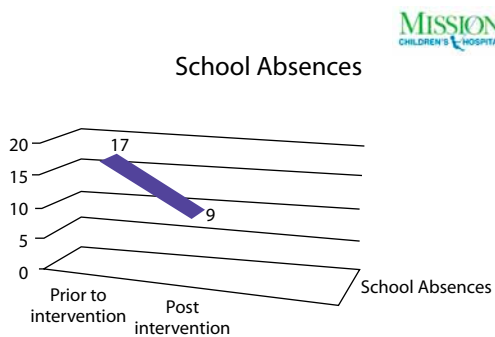
### Decreased Hospitalizations



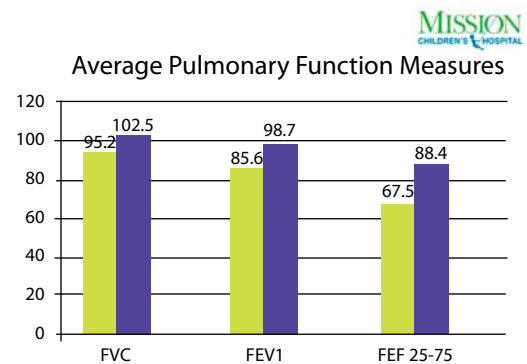
### Decreased Hospital Costs



### Decreased School Absences

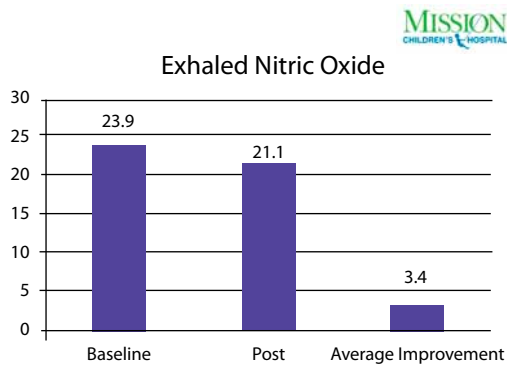


### Improved Lung Function Measures





## Decreased Eosinophilic Inflammation



Through collaboration with NC programs (North Carolina Asthma Program, Asthma Alliance of North Carolina, Western North Carolina School Systems and Child Care Centers, North Carolina Department of Health and Human Services, North Carolina Department of Environmental and Natural Resources), the Regional Asthma Disease Management Program has been able to provide services to asthmatic children in Western North Carolina by directly impacting their quality of life. Quality of life has improved by decreasing school absences, hospitalizations, ED visits, and improving pulmonary health.

## Additional Information

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Key collaborators include the North Carolina Asthma Program, Asthma Alliance of North Carolina, Western North Carolina School Systems and Child Care Centers, North Carolina Department of Health and Human Services, North Carolina Department of Environmental and Natural Resources, National Center for Healthy Housing, National Asthma Control Initiative (NACI) of the National Heart, Lung and Blood Institute of the National Institutes of Health, National Asthma and Allergy Foundation of America, WNC Primary Care Providers, Cherokee Indian Hospital Authority, Satellite Clinics, Sub-specialists, school nurses, social workers, and case managers. The Regional Asthma Disease Management Program has a strong presence outside it is clinical settings, having built long-term relationships (partnerships) with schools, child care centers, faith based organizations, environmental agencies, health departments and community organizations.

# New Hanover County

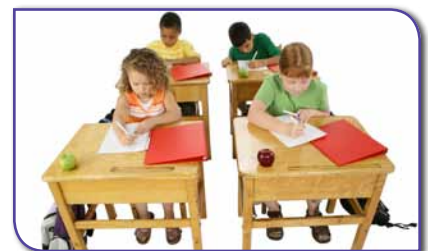
## Raises the Flag and Protects the Health of Our Kids

### *Program Overview*

In alignment the NC Annual School Health Services Report 2009-2010, highlighting asthma accounting for about 35% of all health conditions among students in NC schools and children with asthma below the age of 5, had the highest asthma hospitalization rate of any other age group, New Hanover County illustrates similar asthma trends. According to the school health nurse reports, there has been an increase in asthma conditions, with totaling 1136 one-on-one asthma health counseling sessions provided by school nurses and an estimated 790 students affected with asthma.

### *Program Description*

The Air Quality Flag program is designed to help children, parents, schools and childcare providers, and the community become aware of air quality conditions and the health effects. Schools and childcare providers interested in the program initially participate in an educational session on the program and are provided with all the materials, signs, posters, and educational items needed to successfully implement the program. Every day a colored flag that correlates with the daily air quality forecast is raised to signal the level of air pollution. This flag program promotes awareness of the local air quality and allows providers and children in elementary schools and childcare centers to become educated on how a poor air quality day may impact their health, especially if they have been diagnosed with asthma. Also, prior to the end of school year, educational efforts and materials were distributed to schools and summer camp programs to provide children with information on effective asthma management and safety outdoors during the summertime. In addition, a promotional awareness campaign with billboards placed geographically across the county was implemented to emphasize the important steps to prevent an asthma attack: *know your asthma plan, see your doctor, take your medicine and get your flu shot*. Evaluation is conducted annually to assess the program, obtain program participant feedback and suggestions and to ensure program sustainability and success.



## ***Program Outcomes***

New Hanover County continues throughout the year to add new childcare centers and schools participating in the Air Quality program, with an outcome of a total of 15 childcare centers and 6 schools participating with the Air Quality flag program in New Hanover County. The promotional educational campaign of asthma prevention messages informed through educational sessions, marketing and media messages with an estimated targeted impact to an estimated 80,000 residents.

### **Additional Information**

**New Hanover County Health Department**

**Web Site:**

[www.nhcgov.com/Health/health-promotion/Pages/tobacco-prevention.aspx](http://www.nhcgov.com/Health/health-promotion/Pages/tobacco-prevention.aspx)

# Vidant Medical Center Making Changes – 17 Years of Helping Children & Their Family with Asthma Care Greenville, NC

## *Problem Overview*

In the fall of 1995, Pitt County Memorial Hospital (PCMH), now called Vidant Medical Center (VMC), convened a committee to evaluate asthma management and morbidity in Pitt County and the impact on the health care system. Data confirmed that pediatric asthma was the number one reason for emergency department use, the number two reason for admissions to Children’s Hospital of Eastern North Carolina, and the number one reason for reported school absences.

## *Program Description*

PCMH partnered with private, hospital, and ECU physicians as well as Pitt County Schools, the American Lung Association, other health care providers, and various community representatives to form the Pediatric Asthma Steering Committee. This committee agreed that a formal program needed to be developed with processes in place to address this community health issue.

After a successful twelve week pilot program in a local elementary school and funding support from The Duke Endowment, a comprehensive pediatric asthma program was developed in September, 1996. This program provides services that range from basic asthma education to intensive case management in an effort to maximize children’s asthma management and assist with their continuity of care. Three case managers provide services for children with asthma throughout the continuum of care to include home, school, hospital, childcare provider and primary care provider visits. These services are now fully funded by VMC and are provided as a community benefit free of charge.



## ***Program Outcomes***

Due to the support of the medical community, patients, families, school staff, and other community agencies, much advancement have been made in pediatric asthma management in Pitt County. These include:

- A 59% reduction in inpatient admissions since 1994/95
- An average hospital length of stay less than 2 days for Pitt County admissions
- A reduction in 12 month inpatient recidivism rates from 11% to 3% since 1994/95
- A 40% reduction in inpatient cost since 1994/95

An external evaluation conducted by the Centers for Disease Control and Prevention concluded that the Pediatric Asthma Program had a statistically significant reduction in inpatient admissions and costs. This evaluation also determined that the cost savings were more than covering the costs of administering the program.

The successes realized by this collaborative effort precipitated frequent requests to replicate these services throughout eastern North Carolina. Based on the interest of five neighboring communities, The Duke Endowment granted support to develop and expand the model successfully utilized in Pitt County. These efforts have enabled Pediatric Asthma Services to help fulfill Vidant Health's mission to improve the health status of the citizens of North Carolina through service, education, and research.

In summary, it is essential that the medical community, the school system, community agencies, and children and their families partner to build bridges that join appropriate asthma resources with the children most in need. By providing the necessary resources and knowledge to control this chronic disease, most children with asthma can expect to lead active, productive lives. The most valuable accomplishment of the Pediatric Asthma Program has been the empowerment of children with asthma, their families, the school/childcare system, and the medical community to manage this disease effectively and adopt and maintain a healthy lifestyle. While demonstrating positive outcomes for the health care and school systems is essential, Vidant Health hopes to see beneficial effects in this population throughout their lifetime by encouraging a healthy lifestyle in childhood.

## **Additional Information**

The program has been recognized with several awards over the years including two-time recipient of the Foster McGaw Prize, Award of Excellence through UNC-TV – Remaking America Medicine, VHA Leadership Award, EPA Environmental Improvement award and the Coordinator of the Asthma Program has received two awards: Asthma Alliance of North Carolina Asthma Champion Award and GlaxoSmithKline Child Health Recognition award.

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