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**Final Report to NJ DEP  
Asthma Outreach and Education Initiative  
Waterfront South, Camden, NJ  
Submitted by Camden AHEC**

**October 2, 2006**

**Prepared by: Linda BoClair M.Ed., MBA, Operations Manager, Camden AHEC  
Reviewed by: Linda Bonanno, Ph.D. NJDEP**

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**Project Summary**

The primary organizational unit overseeing this project was the Division of Science, Research and Technology (DSRT) in the Office of Policy, Planning and Science (OPPS) within New Jersey Department of Environmental Protection (NJDEP).

The project's concept was that a targeted application of combined resources from state agencies and local institutions could build a sustainable, community-based program for maintaining healthy environments for children. Our goal was to eliminate or reduce asthma exacerbations in children by addressing their exposure to indoor triggers through education and outreach. This is a pilot program that was responsible for designing and executing a program that can be implemented into other communities around the state.

The greatest beneficiaries of this project were the residents of Camden because they learned how to identify, eliminate, reduce and avoid indoor asthma triggers and thereby improve the health of their children. The public also benefits from this pilot project because the project developed tools that can be used in other communities around the state. The public may also benefit indirectly from the economic savings associated with a reduction in asthma as a medical problem in distressed urban settings. These benefits coincide with the NJDEP's mission statement of "assisting the residents of New Jersey in preserving, restoring, sustaining, protecting and enhancing the environment to insure the integration of high quality public health and economic vitality". The NJDEP will be able to incorporate the methods developed by this project to address the needs of Environmental Justice communities throughout the state. This project will help the NJDHSS learn how to better assist populations in need by identifying successful strategies to provide information on the reduction of asthma triggers and other environmental hazards to parents of low-income children at risk. Camden AHEC furthered their mission to "...improve the quality of life for the community..." while addressing a major strategic goal of partnering with the community and local and state agencies in assessing and eliminating environmental health hazards in Camden City. Rutgers furthered its "commitment to public service to meet the needs of society" as well as help in the positive transformation of the poorest city of its size in America.

**Project Description**

**Responsible Parties**

The primary department responsible for the overall management of the project was the DSRT of the NJDEP, Linda J. Bonanno, Ph.D. Partners include: the New Jersey Department of Health and Senior Services (NJDHSS), Lisa Jones; the Camden Area Health Education Center

(Camden -AHEC), Linda Bocclair; and Rutgers-Camden Center for Children and Childhood Studies (Rutgers-Camden CCCS), Angela Connor-Morris.

The NJDEP was responsible for managing the grant, providing technical and scientific support, quantifying/qualifying the project impact, cosponsoring meetings of the executive committee, overseeing the final report, and assessing the use of this project as a model for other communities in need.

The NJDHSS was responsible for providing staff for technical and scientific support, if needed, providing education and outreach materials and utilizing the results of this study in future work.

Camden AHEC assumed overall responsibility for the day-to-day management of the project and ensuring timely completion of program requirements. AHEC recruited and supervised a program coordinator (who also served as an EHE-Environmental Health Educator) and one additional EHE. The program coordinator and the EHE were both residents of Waterfront South. The project intended to establish a presence in an environmental wellness center in Waterfront South; however the center did not open due to funding issues related to the City of Camden.

Rutgers-Camden CCCS was responsible for educating child care staff on indoor environmental asthma triggers as part of the ongoing Child Development Associates training sessions being carried out by the Camden Campaign for Children's Literacy (Campaign). As previously mentioned, this did not occur due to unavoidable delays both on the part of USEPA and NJDEP, although Rutgers-Camden CCCS did offer two programs with the Camden County Department of Health and Human Services, Division for Children, for over 100 daycare workers. Rutgers-Camden CCCS did train the EHEs that were recruited by Camden AHEC. Rutgers-Camden CCCS and Camden AHEC prepared the program packets and materials that were used by the EHEs to instruct residents about eliminating, reducing and avoiding household triggers of asthma. The packets also contained materials that assisted in evaluating the efficacy of the project. While Rutgers was also responsible for obtaining the appropriate approvals from the Rutgers Internal Review Board (IRB), however, we found that we did not require IRB approval for this project.

The project was to hold regular meetings of an executive committee composed of representatives of NJDEP, New Jersey Department of Health and Senior Services (NJDHSS), Camden Area Health Education Centers, Inc (Camden-AHEC), Rutgers University, community groups, and local wellness-care, child-care, and education providers. The result was that Camden-AHEC, Rutgers and the NJDEP were the only groups that met regularly. The NJDHSS was kept informed through various other interagency meetings. The executive committee was to work to identify gaps in public policy to better address the needs of the community, develop remedies, and identify avenues that would lead to the implementation of this project in other communities. The result was that most of the committee's efforts were directed toward addressing operational issues described in this report with minimal time for the broader issues of public policy. Dr. Linda Bonanno spent a considerable amount of time, on a weekly basis, discussing issues with AHEC staff and implementing strategies to address the issues. She was very supportive throughout the project and was receptive to changing program activities in response to community needs, always focusing on program goals and required outcomes.

## **Need**

The residents of Camden Waterfront South were initially targeted as a community in need because they experience a greater rate of hospitalizations from asthma than most of the state, a poverty level that is more than four times the rest of the state and the population is almost entirely composed of racial and ethnic minorities, many living in low-income rental units. Additionally, the residents are disproportionately affected by environmental contamination from point, area and mobile sources. Due to the limited number of families in Waterfront South that qualified for the program (i.e. children with asthma in the household) and the probability that not all qualified families would enroll in the program, families from other areas in Camden City were recruited, as of March 1, 2006. In addition, a limited number of adults with asthma, who had previously expressed interest in the program, were enrolled in the program.

By providing a model for increasing their health literacy this project built the capacity of the residents to address their environmental needs in a sustainable fashion. This project was important because without education, residents cannot understand, identify and respond effectively to asthma triggers in their home. The importance of the project reaches beyond Camden because it can serve as a model to help state and local agencies address childhood asthma in other communities.

## **Goals, Objectives, Methods, Evaluation and Results**

**Goal #1:** To improve the quality of life for asthmatic children and their families by building capacity in the community to help residents identify and eliminate or reduce indoor asthma triggers, to develop mechanisms which promote healthy home environments and to increase awareness of the hazards of asthma for children.

**Objective #1-1:** To provide community outreach and asthma education to 40 families in the Waterfront South community

**Outcome Objectives:** 1. 90% of the families (36) reached through community outreach and education will gain knowledge regarding asthma, its triggers and good cleaning practices 2. 75% of the families (30) reached will complete the program 3. 75% of the families completing the program (20) will eliminate or reduce exposure to asthma triggers, resulting in a decrease in the onset and exacerbation of asthma symptoms when children are indoors.

**Method #1:** Education and outreach consisting of in-home assessments by Environmental Health Educators (EHE) targeting the five EPA designated asthma triggers, asthma education and demonstrations of good cleaning practices. Two community residents were trained to serve as paid EHE's. Although attempts were made to recruit additional EHE's, limited time and financial constraints resulted in one EHE resigning soon after starting work and other individuals simply not interested in the position(s). The EHEs taught families how to eliminate or reduce exposure to indoor asthma triggers to achieve healthy home objectives through education and the use of effective cleaning techniques. Training materials consisted of the EPA brochures on "Children and Secondhand Smoke" and "Clear Your Home of Asthma

Triggers”, the EPA Asthma Newsletter, and the USDA/HUD publication “Help Yourself to a Healthy Home” in addition to the asthma video. Funds were raised by Camden AHEC (above and beyond the grant award) to provide the following supplies to families: Zoey Personal Best Peak Flow Meters; Mattress Encasing-Allersoft; Pillow Encasing-Allersoft; Environmentally friendly cleaning supplies including all purpose cleaners, dusting spray, bleach alternative, lavender linen water, air freshener lavender blend and air freshener spice blend. Products referred to in this report are natural and non-toxic. Dusting spray and air fresheners had no effect on even the most severe asthma clients and were offered as an alternative to the highly toxic air fresheners used by the families. Air fresheners were requested by the families due to strong odors in that community from a sewage treatment plant, licorice processing plant, and other causes of odors. To reinforce home visit trainings the following were provided: “I’m stronger than asthma” mugs “Your smoke + my asthma = I can’t breathe” messages on magnets and mini buttons and dust mite magnets.

While participants were initially to be identified and recruited through extensive networks that had already been established by the NJDEP, NJDHSS, Camden AHEC and Rutgers-Camden CCCS, we found that the most effective means of recruitment was through one-on-one recruiting by the EHEs and through word-of-mouth by program participants. In addition, flyers were posted throughout the neighborhood and the NJDEP sent letters to all Waterfront South residents inviting them to participate in the home intervention module. Dr. Linda Bonanno attended community meetings where she distributed flyers with contact information and encouraged residents to participate in the program. We continued aggressive outreach and education campaign to recruit and retain families – postings in local businesses, presentations at community meetings, asthma education video shown to 250 students and teachers, solicited referrals, provided incentives, mailings to homes. This was a difficult population to work with because they have so many pressing issues affecting their daily lives (poverty, drugs, violence).

The program consisted of an initial assessment of the state of the house with respect to the five EPA designated asthma triggers and other suspected allergens, e.g., second-hand smoke, house dust mites, cockroaches, mold, animal dander. The EHE presented materials and information regarding asthma and its triggers, coupled with demonstrations of good cleaning practices. They followed-up with additional home assessments and continuing education at one, two, four and six months after the initial instruction. Due to time restrictions and difficulty keeping appointments, the last few families had three home visits and a trip to the Camden AHEC office to view the asthma video and review the information learned during the home visits. The EHEs received a \$150 stipend for each family that successfully completed the program. A portion of the stipend was paid upon completion of each phase of the program.

**Evaluation:** Each EHE had a program packet that included 1) a preliminary assessment of the household, 2) four follow-up assessments, 3) a checklist of materials given to residents during informational presentations, and 4) a checklist of demonstrations of cleaning practices. The number of completed packets provided a measure of the number of homes assessed and educated. Comparisons of the household checklists from the preliminary assessment and the follow-up assessments provided measures of whether the education led to reductions in allergy triggers in the targeted households. The Pediatric Asthma Symptom Scale was used to determine if there was a reduction in asthma symptoms in the participating families. The Home Visit Summary Forms were completed by each family and provided invaluable information in assessing the effectiveness of the interventions.

Secondarily, evaluation of the project's success in reducing asthma exacerbations was to be evaluated with data collected by NJDHSS from the hospitals serving the neighborhood. These data may have provided an independent measure of the effectiveness of the program; however, this was not accomplished since the medical component of asthma management was not a goal of this project. Please refer to lessons learned for discussion of the need for a systems approach to asthma management.

The outcome of the project was also evaluated to improve program services and outcomes. The project data was assessed quarterly to check for progress towards accomplishing the stated objectives, in addition to assuring the integrity and quality of the data. Based on results of the analysis, the program plan was revisited, and necessary adjustments and modifications were made to ensure timely progress toward meeting objectives. Dr. Linda Bonanno worked with program staff to modify plans as needed and to provide technical and scientific support on an ongoing basis.

**Results:** 1. 95% of the families (38) reached through community outreach and education gained knowledge regarding asthma, its triggers and good cleaning practices, 2. 95% (38) of the families reached completed the program, as evidenced by completion of all home visits 3. A minimum of 82% (31) of the families completing the program eliminated or reduced exposure to asthma triggers as evidenced by completion of Home Visit Summary Forms (attachment). While seven (7) families that completed the program did not complete the Forms, it is evident in reviewing the EHE's home visit notes that the families did benefit from the program in increasing their awareness of asthma triggers and, in some cases, eliminating asthma triggers.

**Objective #1-2:** To provide community asthma education to a total of 70 staff and 30 parents/caregivers at 4 child care centers and 2 elementary schools and a high school that offers pre-K programs in Waterfront South.

**Outcome Objectives:** 1. 95% of the participants (95) attending the workshops will gain knowledge regarding asthma, its triggers and good cleaning practices. 2. 50% of the participants (50) will serve as resources for families seeking additional environmental information.

**Method #2:** 10 Asthma Information Workshops (2.5 hours each) incorporating USEPA approved asthma education materials and presented to staff and caregivers in the Rutgers Camden Campaign for Children's Literacy (RCCCL).

**Results:** Due to unavoidable delays both on the part of USEPA and NJDEP (award and the contract execution between NJDEP and Camden AHEC), the RCCCL project was already completed so this part of the project never occurred. The intent, as proposed in the grant, was to provide asthma training (through Rutgers University) at two elementary schools, one high school and four childcare facilities in Waterfront South. The Creative Arts High School is the only high school in Waterfront South and Sacred Heart School is the only elementary school in Waterfront South. The Camden centers listed for the Asthma grant were the YMCA, Camden Day, Broadway Family, and BPUM. None of these centers are in Waterfront South proper, yet are close enough that they serve a higher percentage of children that live within that district.

As an alternative to fulfilling this grant requirement, Rutgers University and the Camden County Department of Health and Human Services, Division for Children, offered training to

daycare workers on April 28 and May 13 with over 100 daycare workers attending the sessions. In addition, Camden AHEC staff recruited over 250 teachers, parents and students at Sacred Heart School in Waterfront South to view an asthma training video as part of an initiative sponsored by Rutgers University Cooperative Extension.

**Statistics (please refer to pages 10-17 of this report for details)**

Families were asked to complete a final evaluation form. Of the thirty eight (38) families completing the program, thirty one (31) families completed the form. Although the remaining families did not complete the forms, EHE notes indicate that the families made changes. A summary of the final evaluation form follows, with the details included in a chart at the end of this report. Please note that multiple answers to each question (i.e. more than one change made or more than one trigger eliminated) resulted in greater than 31 responses to each question.

**1. Has your family made any changes since starting the program? If yes, please explain.**

30 of the families responded with “yes”, with the specifics listed below. One family responded with “no”, except to stop smoking indoor more often. The one family completed the questionnaire by saying that the literature and cleaning supplies were most helpful, that they are only using certain (i.e. non-toxic) cleaning supplies around their child and smoking outside more often.

18 families clean more often and use the natural cleaning products supplied by the program  
 10 families either stopped smoking altogether or stopped smoking indoors.  
 6 families cleaned up water spills and are more aware of ways to eliminate mold and mildew  
 3 families wash linens in hot water and more often  
 1 family reported using vinegar to eliminate roaches  
 1 family reported using the bed and pillow covers

**2. List all asthma triggers that have been reduced, controlled or eliminated from your home environment.**

21 families – dust/dust mites  
 10 families – mold and mildew  
 7 families - smoke  
 4 families – roaches/ants/mice/bugs  
 2 families-animals

**3. What has been most helpful to you in the reduction of asthma triggers?**

17 families – Natural cleaning supplies  
 13 families-home visits, books, literature, video  
 6 families – mattress and pillow covers  
 3 families – peak flow meters

**4. What are some prevention methods you have learned in the program that you can apply to your everyday life?**

20 families-keep the house clean, will not use strong cleaning supplies, smart shopping for cleaning supplies/natural products  
 8 families – stopped smoking or at least stopped in the house  
 7 families-use vinegar to eliminate roaches  
 5 families-eliminate mold and mildew  
 3 families – wash linens in hot water  
 2 families-keep pets outside

5 families-use peak flow meters  
 4 families- use mattress and pillow covers  
 1 family – remove stuffed animals from child’s room

5. What triggers have been the most difficult to change in your home environment since starting the program?

9 families-roaches/ants/mice/bugs  
 5 families-smoking  
 5 families-dust  
 5 families-nothing  
 4 families-mold and mildew  
 1 family-dog hair  
 1 family-removing carpet (rental)  
 1 family- washing stuffed animals  
 1 family-removing smells from outside

**Challenges**

1. Michelle Lamar, Program Coordinator, comments, “One of the greatest challenges throughout the program was the lack of commitment from the families to keeping appointments. The missed appointments and no phone calls to warn us of these change in plans (even after appointments are confirmed) were disappointing, discouraging and frustrating. We were fully dedicated to making sure the clients’ failure to keep their appointments would not stop the progress of the program. As we began to give more incentives the clients were, of course, more receptive to the idea of the programs repeated home visits. As the client enrollment list grew, difficulties with clients keeping appointments became a frustrating, but normal occurrence. This will explain the gaps between initial visits and the follow-up visits.”

Due to the difficulties in scheduling and keeping appointments as previously described by Michelle Lamar, incentives were offered as a means of encouraging families to keep scheduled appointments. Gift certificates were awarded upon completion of the second, fourth and fifth visits. In addition we hosted an educational gathering for the families that completed the first two visits. We had hoped to motivate the families to complete the first two visits by telling them that if they did, they could attend a party where we would have door prizes, food, activities to educate about asthma triggers and a short interactive lecture to further reinforce what the families have learned. Families were recognized for their participation in the program while completing their third home visits by attending the event on April 6 from 6-8pm at the Hynes Center in Waterfront South. Pictures were taken and parents requested more frequent group meetings to share experiences and success stories. This gathering took a great deal of time to organize and

was costly. The ten families who attended were very appreciative and enjoyed themselves; however they represented only a third of the invited families.

2. Limited resources to recruit and retain families; part-time program coordinator, no grant funds for incentives, limited funds for supplies (cleaning materials, bed/pillow covers, peak flow meters) that would assist the families with eliminating asthma triggers.
3. Training by Rutgers University not as proposed due to delays in awarding of contract. Needed to develop alternative methods to fulfill grant requirements. Also, training was to serve as a means of recruiting families. Without training, AHEC staff assumed the time consuming responsibility of recruiting families.
4. Perception among some community leaders; such leaders would not promote the program for fear that residents would move out of area if environmental issues were identified as triggers of asthma.
5. Program initially limited to children in Waterfront South – limited number of families in that area with asthmatic children resulted in difficulty in meeting recruitment timeline.

### **Lessons learned and recommendations**

1. The project was not designed as a system to address childhood asthma and, as a result, the medical component of asthma education and management was not included in program goals. AHEC staff did meet with a physician in Waterfront South who provides medical care for asthmatic children. While he was willing to work with us on this project he suggested that the best source of information would be the local emergency rooms since he is often not aware of emergency situations with children in his care. We also contacted Horizon Mercy's Medical Director to learn of the HMO's experience in working with asthmatic children in Waterfront South. Additional contacts with CAMCONNECT, a data collection service in Camden and with the Camden Coalition of Healthcare Providers (Camden AHEC is a founding member and Board member) only served to confirm the need to develop a systems approach in future projects to address the needs of families with asthmatic children.
2. One of the most important lessons learned from this program was the need to provide incentives to families to participate in the program. This is a difficult service to "sell" – entering ones home to assess the home for asthma triggers (mold, dust, smoke, rodents) and returning monthly to record progress in eliminating triggers requires trust and tolerance on the part of the families and sensitivity and perseverance on the part of the EHEs. While we are fortunate to have a good team, lead by Michelle Lamar, we have found awarding incentives to be necessary in ensuring that appointments are kept as scheduled. As of March 1 Camden AHEC started donating incentives to the program; these were PATHMARK gifts cards that were awarded when families commit to addressing at least one asthma trigger in their homes and show progress in eliminating the trigger. Funds (\$8,200) to purchase the incentives and program supplies have been raised by AHEC and were not included in the program budget. It is unlikely that AHEC or any other nonprofit can provide this kind of support on an ongoing basis; grant funds need to be allocated for incentives and supplies in planning for future programs.

3. There is a need to establish a realistic budget for future projects. While Camden AHEC recognized the need to work with the medical arena (as described above) in addressing issues, our need for additional funds required us to turn our attention to raising funds for program incentives and materials, both paramount to the success of the program. Additional proposals for funding for continuation of this project were submitted to the Johnson & Johnson Foundation and the Environmental Protection Agency (EPA). Neither proposals were funded although the Johnson & Johnson Foundation notified AHEC that the proposal received a good score yet seemed ambitious for the amount of funding available. AHEC requested \$70,000 to provide services to fewer families than the current grant of \$50,000, an indication of the need to set realistic expectations when seeking additional funding. In addition, the Johnson & Johnson grant was very competitive with 160 applications submitted and 6 funded. AHEC will continue to seek funding for the continuation of the program.

Camden AHEC was successful in raising \$8,200 to support the purchase of incentives to recruit and retain families and home supplies (environmentally safe cleaning supplies, mattress and pillow covers) to reduce the triggers of asthma in the homes. Without the following supplies it is unlikely that the program would have accomplished its goals: Zoey Personal Best Peak Flow Meters; Mattress Encasing-Allersoft; Pillow Encasing-Allersoft; Environmentally friendly cleaning supplies including all purpose cleaners, dusting spray, bleach alternative, lavender linen water, air freshener lavender blend and air freshener spice blend. Products referred to in this report are natural and non-toxic. Product contents were consistent with ingredients recommended by the US EPA. Dusting spray and air fresheners had no effect on even the most severe asthma clients. To reinforce home visit trainings the following were provided: “I’m stronger than asthma” mugs “Your smoke + my asthma = I can’t breathe” messages on magnets and mini buttons and dust mite magnets.

4. There is a need to establish a database to record and manage the extensive data collected by projects of this type. Although this was not a requirement for the current project, Camden AHEC is developing a database and hopes to have all data entered within the next two months.

## **Conclusions**

The program will be sustained past the life of the grant in various ways, reflecting the long-term commitments of the partnering institutions, NJDEP, NJDHSS, Camden AHEC and Rutgers-Camden CCCS, to the enhancement of the health and well being of urban residents. The educational materials will be available to parents and residents after the project termination and will remain as resources at the childcare centers and at the environmental wellness center (when it opens). Two of the project partners (Camden AHEC and Rutgers-Camden CCCS) are seeking funding for long-term support of the project.

## Asthma Outreach & Education Initiative

### Home Visit Summary Form

September 28, 2006

| Client # | Changes made?                                                                  | Triggers reduced/eliminated?                                                                                                    | Most helpful?                                                                                                        | What will you do?                                                                                             | Most difficult triggers to reduce?                                                                           |
|----------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1        | Stopped smoking around child                                                   | Smoke<br>Dust Mites-<br>wash bedding often                                                                                      | Cleaning supplies<br>Books                                                                                           | No smoking around child.<br>Dust/clean more often.                                                            | Stop smoking                                                                                                 |
| 2        | Clean up water spills, use natural bleach, stopped smoking, rid of mold/mildew | Dust-using a solution, cleaning more, sweeping carpet less, changing linens often, washing in hot water                         | Using the natural bleach solution-an inexpensive way to clean and get rid of mold/mildew and the house smells fresh. | Cleaning up sitting water, use of a vacuum cleaner, no smoking in the house.                                  | Easy to change the environment in my home. Difficult to remove the carpet because I do not own the home.     |
| 3        | Dusting everyday                                                               | Dust by dusting and cleaning                                                                                                    | Dusting and cleaning really helps because it really doesn't trigger his asthma that much                             | By keeping the house clean and dusting everyday.                                                              | Nothing really because I stay cleaning the house up every night so I don't have that much dust in the house. |
| 4        | Yes, my son's asthma doesn't act up like it used to                            | All of the asthma triggers with cleaning supplies, fixing leak in my roof. It has been very helpful –taught me a lot of things. | Peak flow meter because it helps me to determine if my son's airways are fine.                                       | Keep my dogs in the backyard and not in the house; try not to use strong cleaning supplies and fix all leaks. | Dog hair in the winter                                                                                       |

|    |                                                                |                                                                                             |                                                                                     |                                                                                                                            |                                                                 |
|----|----------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
|    |                                                                |                                                                                             |                                                                                     |                                                                                                                            |                                                                 |
| 5  | Vacuum and dust everyday                                       | Dust and dirt out of air makes it easier to breath                                          | Cleaning and dusting more often with products in gift bag and more vacuuming        | No smoking in home and no pets                                                                                             | Dust and dirt hard to keep up with                              |
| 6  | Clean with natural cleaning products, wash linens in hot water | Wash linens in hot water-dust mites                                                         | Keep house clean all the time                                                       | Wash linens in hot water                                                                                                   | Dusting everyday because when I vacuum I get dust on the tables |
| 7  | New paint holes in the wall fixed                              | Dust, ants, roaches. Helped me to control the minor things in the house that trigger asthma | To find out how to get rid of the bugs-now we can be more comfortable in the house. | Learned more about cleaning supplies and how to use the different supplies and what to look for when shopping for supplies | Bugs-they were in places I could get to but never looked        |
| 8  | More cleaning                                                  | Dust, mouse pee – cleaning supplies used, has helped my daughter a lot                      | My daughter does not get that much trouble-cleaning supplies have been most helpful | Change of cleaning habits and cleaning supplies                                                                            | Roaches and having people smoke in my house                     |
| 9  | Cleaning more, less smoke in house                             | Dust, roaches                                                                               | Dusting-the air is cleaner                                                          | Dusting and staying away from smoke                                                                                        | Rodents                                                         |
| 10 | Stopped smoking in house                                       | Smoke                                                                                       | The Visits and video                                                                | Keeping the house clean and no smoking                                                                                     | Smoking-hard to go outside in the middle of the night to smoke  |

|           |                                                                      |                                                                                                                                                 |                                                                                                         |                                                                                       |                                                                                                                                                                        |
|-----------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                                                                      |                                                                                                                                                 |                                                                                                         |                                                                                       |                                                                                                                                                                        |
| <b>11</b> | No smoking in house, cleaning/dusting more, wash sheets in hot water | Dust, cockroaches, smoking. Daughter no more wheezing and coughing since grandfather stopped smoking indoors. Mold was eliminated from bathroom | Went out and bought the boric acid and continuing using it. Washing the sheets.                         | Wash the sheets in hot water with bleach. Keep using vinegar to clean and boric acid. | Cockroaches. We put boric acid around the house and roach motels. The house is old-difficult to get rid of these pests.                                                |
| <b>12</b> | Cleaned all areas that I thought had mold/milder or dust mites       | Dust-worked very well                                                                                                                           | Information and video very helpful-now I know where and what to look for that triggers my son's asthma. | Using vinegar and boric acid and using the mattress covers                            | The carpet and some roaches I find are the hardest to eliminate but with some advice from Michelle hopefully I'll get rid of it sooner. Thank you Michelle             |
| <b>13</b> | Used the detergents provided by the program and stopped smoking      | Smoke                                                                                                                                           | Detergents and home assessments                                                                         | Use of vinegar to get rid of roaches                                                  | The mold-haven't had time to clean it off. Smoking was most difficult because of the rituals I had associated with it. Since I stopped smoking my sinuses are clearer. |

|           |                                                                                        |                                                                                               |                                                                                                                                                                          |                                                                                                                                               |                                                                                                                                   |
|-----------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|           |                                                                                        |                                                                                               |                                                                                                                                                                          |                                                                                                                                               |                                                                                                                                   |
| <b>14</b> | Cleaning more often and now know how to avoid dust flare ups and roaches and mice      | Mold and mildew in the ceilings and in the bathroom were eliminated-leaks fixed.              | Cleaning supplies-able to clean without coughing or going outside for air. It was a new way for me to clean without stopping to air out the house before I could finish. | Using the peak flow meter esp. during the heat wave I was able to know my asthma breathing level to avoid any attacks.                        | Roaches and mice-old house and dirty neighborhood but we are seeing less since we are in the program.                             |
| <b>15</b> | Used the vinegar and roaches eliminated                                                | Daughters asthma went down a lot since we started to clean with all of the household products | Knowing all of the things in my house that was hurting my child.                                                                                                         | Wipe down things in my house, keep dust and roaches away. I passed on what I learned to my family even if they don't have asthma.             | How to keep the roaches away, I was doing all the wrong things.                                                                   |
| <b>16</b> | Clean with less hazardless materials to our lungs, clean more frequently, laundry more | Dust, molds-I am aware of the freshness and clean air, less dust flying around on fans        | The introduction of the chemical free supplies-I use to cough and choke with chemical cleaning supplies                                                                  | Use the natural products, peak flow meter, open bathroom windows to prevent mold, damp polish to prevent dust flying around, vacuum regularly | The mold because my basement is damp and I am trying to seal the walls-this summer-ventilate laundry room and put in dehumidifier |

|    |                                                                                                                     |                                                                                                                                        |                                                                                                                                                                                                  |                                                                                                                                                      |                                                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|    |                                                                                                                     |                                                                                                                                        |                                                                                                                                                                                                  |                                                                                                                                                      |                                                                                                             |
| 17 | Fixed roof, fixed leak in kitchen, using pillow cases and bed covers provided, carpets cleaned, no smoking in house | Less frequent use of inhaler, reduced coughing                                                                                         | Mattress covers (not sneezing so often), cleaning aids (using natural products to clean areas where kids play), education (more aware of things that trigger asthma at home, increased awareness | Vinegar on floor and counter to deter mice, be mindful of leaks and mold spores, smoking reduction                                                   | Smoking-the reasons are obvious; it happens to be a bad habit I enjoy. I don't like going outside to smoke. |
| 18 | Yes, good resolve                                                                                                   | Dust, heat, activities, weather at times                                                                                               | Keeping my child from some triggers objects and activities. A household free of triggers-thank you                                                                                               | While cleaning must use chemical free products, ways to keep bed sheet allergy free, how to dust household, check for symptoms with breathing tools. | Stuffed animal washing                                                                                      |
| 19 | Yes we dust more and vacuum 6X a week and use the cleaning products.                                                | Dust mites, dust, mold                                                                                                                 | The mold issue, I really didn't know that much about it.                                                                                                                                         | Use the mattress cover, the roach baits, mice baits, cleaning products                                                                               | The smells that come in from the outside, I can't control them.                                             |
| 20 | Yes, we clean with the natural products                                                                             | Dust, mold & mildew-pet dander-I learned to keep the dust under control. I removed all molded things from my basement. We wash the pet | The mold and dust elimination                                                                                                                                                                    | To use better cleaning solution with natural ingredients.                                                                                            | None, because I learned to control and get rid of them.                                                     |

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|    |                                                                                                                                                     | more often.                                                                                                                                                         |                                                                                                                                                                                                                             |                                                                                                                                          |                                                                                                                                                                                                                                                            |
| 21 | Yes, using the cleaning supplies and the mattress covers.                                                                                           | Reduced dust, controlled dust mites, control mold in bathroom, mattress covers has been helpful to my child by him sleeping easier and not having symptoms at night | The mattress covers and the cleaning supplies because it helps with the dust.                                                                                                                                               | Using the peak flow meter                                                                                                                | Mold because it cost too much money to remove it from the basement but it has been reduced somewhat from the time we started the program.                                                                                                                  |
| 22 | Yes, we stopped smoking indoors- we dust more often                                                                                                 | Yes, less sneezing, less coughing-less asthma attacks or symptoms                                                                                                   | The readings<br>The mattress cover and the vinegar for the roaches                                                                                                                                                          | Use vinegar to clean, use mattress covers                                                                                                | NA                                                                                                                                                                                                                                                         |
| 23 | Yes, I stopped smoking we dust everyday, we check for leaks and mold very often.                                                                    | Dusting, stop smoking, the air is more clean for him to breath                                                                                                      | Its been helpful because I know what can trigger his asthma                                                                                                                                                                 | Watch when, what and how I use the household cleaners, dust when he's not home because the dust is in the air                            | Mold because its in the bathroom even when I scrub and clean the area it still comes back.                                                                                                                                                                 |
| 24 | I changed the way I clean, using the products given to me by the program. I have no more mice since starting cleaning with the products and roaches | My home is less dusty and I no longer have mold around my tub. It helps because I saw or see a reduction of asthma attacks and sneezing with the kids and myself    | The mattress encasements have helped a lot, it seems that the kids are sleeping with less interruptions from symptoms of asthma. They are even sleeping in their beds more often. I see less runny noses and less sneezing. | I learned not to clean when the children are present. I also removed all stuffed animals from the children's bedroom to avoid dust mites | Roaches and mice have been hard to change, because of the neighbors living condition, but with the advice I've been giving by the program I hardly see any more roaches or mice. The cleaning supplies helped with that. Once there done I'll be suing the |

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|    |                                                                                                                                                          |                                                                                                                          |                                                                                                                                  |                                                                                                                                       | vinegar solution, which have helped me a lot.                                                                                                                                  |
| 25 | Yes, I moved furniture around to make more space to not build upon clutter                                                                               | No because my asthma is very severe-anything triggers it but I see a reduction in my symptoms-less wheezing and coughing | Education, peak flow meter, cleaning aids                                                                                        | NA                                                                                                                                    | NA                                                                                                                                                                             |
| 26 | Yes I used the advice that Michelle gave me about opening windows right after using the shower and washing dishes to decrease the amount of mold buildup | The amount of mold was eliminated from my bathroom and kitchen areas. The advice was extremely helpful                   | The most helpful was the use of the asthma peak flow meter. It actually made me relax more than usual                            | Wash comforters frequently, keep windows cracked for full air circulation in your home, dust your home and most importantly the vents | The frequent dust is most difficult because I have a lot of vents in my apartment. I clean with the all-natural products that were issued by Ms. Lamar which work really well. |
| 27 | No except to stop smoking indoors more often                                                                                                             | Changed smoking habits                                                                                                   | The literature and the cleaning supplies because I learned more about what asthma is thru reading the stuff they gave me to read | Stop using certain cleaning agents around the child. I also started to smoke outside more.                                            | Smoking because I'm a long time smoker                                                                                                                                         |
| 28 | Trying to calm her down more                                                                                                                             | Smoking and animals                                                                                                      | Covers on bed and pillow                                                                                                         | Peak flow helps see how her breathing is and mold and dust etc.                                                                       | Dust                                                                                                                                                                           |
| 29 | Yes, no more pets                                                                                                                                        | No more pets-my son doesn't                                                                                              | The cleaning products-they                                                                                                       | The cleaning product and to                                                                                                           | Pest –there going away too                                                                                                                                                     |

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|    |                                                                                                                                                                                            | have that much of a problem when the dog is gone                                                                                                                                                                                                          | work so well and I don't have to use bleach now                                                                                                                         | smoke outside                                                                                                                                                                                                                                                                     | slow the vinegar works                                                                                                                                                                                                                                                                                |
| 30 | Yes I am more aware of the household triggers. I use more natural bleach to clean around the house.                                                                                        | I vacuum and clean more often. I wipe down the mattresses more often.                                                                                                                                                                                     | The visits, the discussions and identifying the triggers                                                                                                                | The use of the natural bleach solution, the allergy bed cover (I didn't know about them) and the using of the peak flow meter.                                                                                                                                                    | None, my two sons really hadn't had a problem lately with their asthma and the facts and methods that I learned about from this program helped keep it that way.                                                                                                                                      |
| 31 | Yes! Starting making some small repairs to improve on the conditions of my home, thus improving on the environment to make the air better to breathe at home. Such as removing the carpet. | Since starting the program we have been able to reduce the amount of pest in the home by simply getting rid of clutter and using vinegar to clean with. Also by lessening the amount of moisture around the sink and tub areas to avoid mice and roaches. | The mattress encasement control allergy covers has been the most helpful. I've seen a change in my sleeping, much better breathing and not sneezing or coughing as much | I have been able to see the importance of mopping my floors more often to avoid dust and dirt. Also I've been able to use the vinegar in my everyday daily chores to decrease the amount of pests in the home. The vinegar really works along with the natural cleaning products. | Dust is always around even when I clean often, very difficult to get rid of. Since starting I've been able to control the amount of dust in my home. My home is less dusty but still it's hard to get rid of. By getting rid of some clutter I've been able to decrease the level of dust in my home. |