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Breathe Easy Mississippi

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Christian Rashad Campbell, Student

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Breathe Easy Mississippi

By:

Christian Rashad Campbell

Abstract

Asthma disproportionately affects rural minority children and is the leading reason for all school absences in our nation. *Breathe Easy Mississippi* is a multi-level intervention designed to improve long term control of asthma in youth. *Breathe Easy Mississippi* components include: 1) Home Visits by asthma counselors to identify asthma triggers and remediate the child's environment, and 2) School Based Curriculum (Asthma Education) to promote ideal asthma management knowledge and foster more effective relationships between children, parents, healthcare professionals and paraprofessionals. *Breathe Easy Mississippi* will be implemented in a total of six schools that make up the entire elementary school district in Sunflower County, Mississippi. More specifically, *BEM* aims to address individual and family factors through asthma education and provision of resources, environmental factors in the home through assessment and remediation, and social and institutional factors through school-based education, campaigns, and asthma action planning. Each of these intervention components are proven to address asthma risks. The scope of this program's impact will be measureable at the individual, family, institutional, and population level.

Target Population & Need:

"Breath is the finest gift of nature. Be grateful for this wonderful gift". – Amit Ray

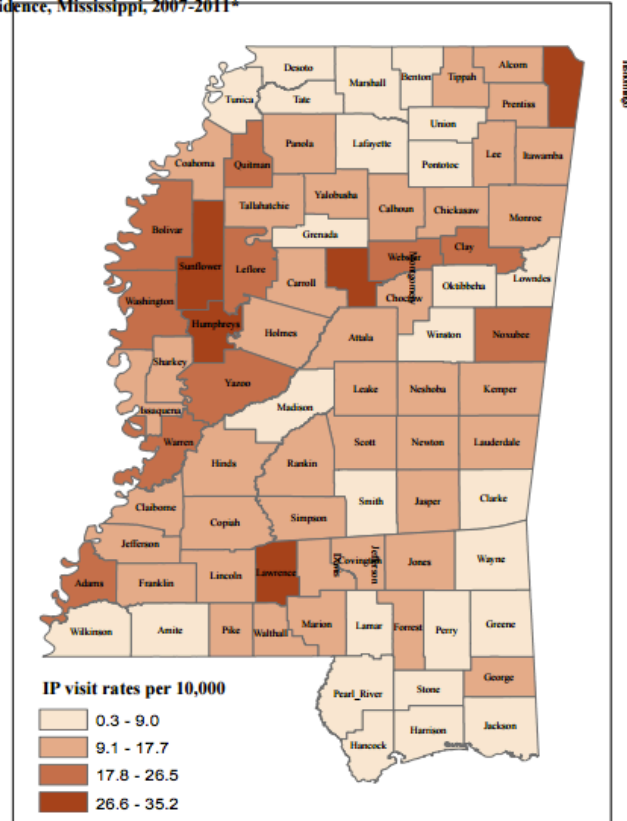
Asthma is among the leading chronic-lung diseases in America.^{1,2} This lung disorder inhibits normal breathing conditions in humans, via inflammation and constriction of the airways. Asthma is most commonly induced by one or a combination of components including: airborne substances causing respiratory irritability (cough-variant asthma, allergic asthma, nocturnal asthma) and physical activity (exercise-induced asthma).³ Because there is no cure, asthma is a disease many Americans must live with for their entire life. Depending on the frequency and severity of asthma symptoms, disease management can be difficult. Symptoms most commonly associated with asthma are shortness of breath/difficulty breathing, wheezing, coughing, and chest pain. When these symptoms persist in an individual, they experience an asthmatic attack/episode. Currently, asthma affects approximately 25 million people, including over 6 million children.¹ Consequently, it is the leading cause of *all* school absences in our nation and the third leading reason for youth-hospitalizations overall.²

Unfortunately, asthma is disproportionately seen at much higher rates among minority groups compared to their European-American counterparts.⁴ In fact, the prevalence of asthma in the African American community is at a critical state, with 10.3% of Blacks suffering from *current* asthma compared to 7.8% for Whites and 6.6% for Hispanic populations.⁵ One in 6 African American children have asthma and are four times more likely to die an asthma related death than their White counterparts.^{4,6} The rate at which African American children become diagnosed with asthma and the varying severity in the onset of their disease symptoms make disease management increasingly difficult.⁵ Adding insult to injury, 45% of asthmatic children are living in poverty – demonstrating the connection between wealth & health and the disproportionate burden of poorer health outcomes seen in under-privileged children.⁷

Shedding Light on Sunflower (county, in MS)

There are several factors driving the issue of respiratory health for rural and minority communities specifically, such as economic inequities, social inequities, and inadequate healthcare access.^{8,9} The social and environmental determinants that contribute to cough-variant, allergic, and nocturnal asthma -- exposure to dust, mold, and cigarette smoke – most commonly affect individuals of low socioeconomic status.⁴ With Mississippi (MS) being one of the poorest states in the nation, resources like education, housing, and

Map 4.8. Estimated asthma hospital discharge rate per 10,000 population by county of residence, Mississippi, 2007-2011*



*Data Source: Mississippi Asthma Hospital Discharge Database
Aggregate data used to increase reliability of estimates, rates are per 10,000 population

sanitation we expect in affluent areas of the state are largely compromised for rural minorities living here.^{10,11}

For rural minorities specifically, asthma in youth has in fact become a serious health crisis. So much so that Associate Dean and Professor of Public Health at Jackson State University, Dr. Leonard Jack, insists the public health and medical communities alike make rural Mississippi of supreme focus in their beginning efforts to tackle “poverty-related ill health”.¹⁹ In the U.S., 34% of rural Blacks are in poverty compared to 13% of rural whites.⁸ Likewise, when asked about their health on the NHIS survey, 13.9% of rural Blacks self-report as having “poor” health status compared to just 4.8% of rural whites.⁹ Collectively, findings from these reports support a widely perceived notion that barriers associated with low economic status predict higher current asthma prevalence among both Blacks and Whites respectively.¹⁴

In 2000 alone, 30.6% of children in rural MS were living below the poverty line. While this number has improved over the years, we currently have approximately 1 in 5 children living below the poverty line in MS. Furthermore, Sunflower County, MS, has one of the highest poverty rates by household income in the *country* – with a shocking 45% of its total population falling below the poverty line, compared to national averages of just 13%.⁷ This rural area of Sunflower County in MS, is 73% African American. Likewise, African Americans are by far the largest racial/ethnic group in poverty here (Sunflower County, MS), holding 88.4% of the poverty share. The economic burden experienced by African American households here make these individuals less likely to have resources and opportunities needed to control asthma symptoms, such as money for medications, access to healthcare, asthma education, and the basic resources to live in homes without dust and mold.¹⁰ Thus, we see higher rates of childhood

asthma-related hospital visits (acute care), missed school days, and *uncontrolled* childhood asthma symptoms among Blacks in poorer areas, particularly in Sunflower County.^{13,14}

In addition to poverty, Mississippi's Department of Environmental Quality under the EPA reports that their air quality index (AQI) sits near a moderate level of concern, with a score of 48 (moderate level at 50).¹⁸ An AQI describes the amount of pollutants in the air and the implications for poorer health outcomes by the residents of the area.¹⁸ With that being said, there's an abundance of evidence accumulating to support why Black youth are experiencing the bulk of respiratory burden in America. Poor air quality for children to breathe, limited family income, limited capacity in local healthcare facilities, asthma health illiteracy, and the local rate of uninsured families at 21 percent all contribute to asthma maintaining a chokehold on youth.⁷

Despite having an overall childhood asthma prevalence that is not much greater than the U.S. average (14.1% MS versus 13.3% US), Mississippi has the highest rate of uncontrolled asthma in the United States. A shocking 53% of MS asthmatic children are characterized as "*uncontrolled*" versus 38% of asthmatic children nationwide.¹³ Clinically, *uncontrolled* asthma is described as persons diagnosed with asthma, experiencing any of the following conditions despite medicinal therapy, including: poor symptom control, frequent and/or serious exacerbations, and airflow limitation.^{13,15} Black MS children have almost two times the estimated hospital discharge rate for asthma than Whites (108.5 vs 59.3 respectively, per 1,000 children).¹⁴ There are zero Pediatric MD's working in Sunflower County.

According to the Mississippi Asthma Surveillance Report, 12.4% of African American children ages 0-17 here are plagued by asthma, which is 89% higher than the average for white Mississippians in the same age group (6.4%).¹⁶ For children aged 5-11 in Mississippi with asthma, their estimated asthma emergency room visit rate is at a high of 75.9, compared to just

39.5 for youth in ages 12-17 (per 10,000).¹⁴ Also for ages 5-11, baseline data for the estimated hospital discharge rate is the highest of all school aged children, at 12.3 per 10,000 population.¹⁴

For adults, there are more asthmatics in Mississippi who do not have a high school diploma (12.7%) compared to college graduates with asthma (5.3%).^{8,14} Therefore, even via the “education gradient” a drastic difference is revealed in disease status by education (as well as economic earning potential) – indicating Mississippians most affected by asthma may lack the very basic resources essential for living with asthma.^{14,17} Moreover, minority Americans are seeking far more healthcare services for asthma related symptoms than Whites.⁵ In rural Mississippi, the highest rates of emergency room visits and hospital discharges for asthma (as the first listed diagnosis) are among African Americans.^{5,14} For ages 5-11, baseline data for the estimated hospital discharge rate is the highest of all MS school aged children, at 12.3 per 10,000 population.¹⁴ And only 56.3% of MS schools report all students (diagnosed with asthma) have an Asthma Action Plan (AAP) on file at school.¹⁴

“Fret Not My Friends, Breathe Easy”

There are numerous settings that may benefit from the introduction of asthma control strategies like those stated throughout this document. The focus here will be rural minority youth in Mississippi - a community plagued by asthma.^{5,14} Because the NHIS reports the overwhelming majority of children diagnosed with asthma live in families that bring in an annual household income of \$25,000 or lower, health promotion efforts will focus on low-income rural neighborhoods.²⁰ Sunflower County’s median annual income is barely above this rate, at \$27,384.¹⁰ This financial position may contribute to the harmful implications childhood asthma inflicts on children and their families in rural settings. With the cost of living relatively high and financial resources limited, asthma medications/devices, environmental remediation, and the

burden of hospitalizations due to asthma can be unbearable to the average economically-constrained family.

Therefore, more comprehensive approaches have been developed for residents in underserved communities to better manage asthma symptoms. For example, the CDC initiated the National Asthma Control Program (NACP), a public health response to promote evidence-based prevention strategies for asthma control across the nation.²⁶ The NACP focused their efforts on home-based, multi-trigger, multi-component environmental interventions.²⁷ These evidence-based practices include patient education, consistent and correct use of asthma medications, and control of environmental factors (environmental remediation).^{1,27}

The Centers for Disease Control and Prevention (CDC) and the Community Preventative Services Task Force have taken significant strides to collect, assess, and reproduce supporting information for effective asthma action plans for youth.²⁴ An asthma action plan usually consists of written documents developed together by doctor/paraprofessional and patient, outlining an advantageous course of actions in the event of an asthmatic episode.²⁵ Action plans were enacted after the 15% growth in the prevalence of asthma at the start of the 21st century.²⁵ However, although AAPs are mandated by state law to be on file and up to date for all asthmatic students enrolled in public schools – when surveyed, only 56.3% of Mississippi schools report that *all* their children have an AAP.^{14,25} Although there isn't much current data specific to this community, Mississippi State Health Department (MSDH) is aware of the historical inequities regarding healthcare for minority populations – reasonably supporting our assumption that AAP adherence is even lower for Sunflower County students.

In 2013, to improve asthma-inducing conditions the NACP partnered with the Community Asthma Prevention Program (CAPP). This program set out to offer the latest

evidence-based health information and financial assistance to families in need with hopes to enable them to better accomplish the aims of asthma prevention programs. This evidence-based intervention (EBI) incorporates education, home remediation, financial and social support for persons/families with asthma. With CDC reports indicating one in two children miss at least one full day of school because of their asthma and fewer than one in two children receive an individualized asthma action plan from their doctors, there is still room for mass improvements noticeable at the primary education level for many asthmatics.² Whether attributable to the lack of asthma control knowledge retained by patients once they leave the doctor's office or a lackluster focus by physicians and health paraprofessionals during patient consultation in these communities, *Breathe Easy Mississippi (BEM)* has integrated evidenced-based programs to rectify both issues.

To tackle such a complicated and multifaceted health problem like asthma in rural Mississippi, we'll require a multi-layered solution. Sunflower County, MS is a community that may benefit greatly from evidenced-based interventions to address youth asthma. By way of the MSDH, *BEM* will provide multi-component EBI's supported by the National Asthma Education Expert Panel (NAEPP) and the Task Force for Community Preventive Services. *BEM's* services consist of asthma centered education, school-based support for asthma management, and non-structural changes (environmental remediation) in the home and surrounding environment that have been proven to reduce asthma triggers. Although MSDH supports several state programs (MSDH Asthma Program) and national coalitions (Asthma Coalition) devoted to asthma, 85% of MS children with asthma have *never* taken a course on how to manage their asthma.²¹ Therefore, by bringing the mechanisms of child centered services available at the state level directly to MS

residents expressing the most need, allows *BEM* to address disparities seen in health for largely marginalized and underserved populations.

Sunflower County's total population is approximately 27,000 people, with 4,617 of those persons being school-aged children.¹⁰ For children aged 5-11 in all MS communities, 8.1% are living with asthma.¹⁴ This age group is the second group of children most effected by asthma in our state, with the first being ages 0-4. Currently, there is no information available on evidenced-based respiratory interventions for children under the age of 5. Also, there are several youth coalitions that address asthma for teenage children. Therefore, our intended target population will be approximately 8% of all Sunflower County School District children ages 5-11 years old (in 2nd to 5th grade).

Program Approach:

Overview of the program

The Physician Asthma Care Education (PACE) curriculum is a patient education curriculum initiated to directly improve asthma communication and set attainable goals for treatment between providers and patients.²² The *You Can Control Asthma* Curriculum developed by Georgetown University incorporates similar PACE asthma education into school curriculum to increase knowledge and skills for young asthmatics to better manage their health.²³ These classes provide basic asthma literacy including -- but not limited to -- understanding asthma, learning optimal asthma management techniques, and how to respond when experiencing or witnessing another person have an asthmatic attack.

After the introduction of these interventions, the Task Force reviewed 23 studies for evidence of effectiveness.^{1,24,27} Many of the studies evaluated youth productivity, use of

healthcare, economic considerations, and overall quality of life for children and adolescents with asthma control programs. Outcomes related to quality of life (asthma symptoms, activity limitation, etc.) for asthmatic children involved in these programs were measured using the validated *Juniper Quality of Life (QOL)* 7-point Likert scale.²⁷ Results from these studies showed a median decrease of 21 fewer asthma-related symptom days per-year, a median reduction of 12.3 school days missed due to asthma per year, and a decrease in the proportion of children with 1 or more days of activity limitation due to asthma symptoms.^{24,27}

Economic evaluations revealed considerable variability in the costs for remediation efforts. Minor and moderate remediation efforts consisted of trained home visitors who recommend environmental and household changes to support a child with asthma, like allergen-impermeable pillowcases and bed sheets. More intensive remediation efforts included structural changes to the interior of homes such as carpet removal, household integrity modifications, and the addition of ventilation systems.

Programs investing in the improvement of asthma management, specifically for urban youth, have achieved amazing lengths. However, with increasing income inequality nationwide perpetuating financial distress leading to poor living conditions and resulting in sustained asthma rates, there is much more to be done.⁸ Since existing state level programs have already made some progress in the childhood asthma issue, the cost-effective and timely route toward rural childhood asthma management may be adaption and dissemination of these existing evidenced-based interventions. Therefore, to tackle the problem of childhood asthma in Sunflower County, Mississippi, we will model our efforts on the direct aims of CAPP.²³

“I May Have Asthma, But Asthma Does Not Have Me”

Because of their diligent work in asthma control with minority groups specifically, CAPP has established respect and trust in the African American community. Our program will use very similar community-engaged mechanisms practiced in Philadelphia and translate them to the African American communities in a rural area of Mississippi, including efforts to extend partnerships by our program's ambassadors to similar, on-going community health-initiatives. There is evidence accumulating supporting the notion that *The Theory of Planned Behavior* and *The Health Belief Model* are mechanisms shown to improve attitudes, perception, knowledge, and hopefully thus, behavior for African Americans and other minority populations with similar cultural barriers. Utilizing the ecological model, *BEM* has been designed to pull the various components of these individual level theories and frameworks and apply them to better suit our target population. *We* hope these approaches used will create trust and secure stakeholder buy-in in this predominantly African American community.

We believe we will be of better service to rural populations by increasing efforts that address geographical barriers and more closely evaluate those specific students in these communities diagnosed with asthma. By delivering school-based curriculum, home-based asthma education for families, and environmental remediation for asthma triggers – *BEM* focuses on asthma awareness, prevention strategies, and daily maintenance techniques for asthmatic children and their respective families. For our purposes related to asthma, “remediation” is comprised of structural and/or nonstructural changes in the home. Structural changes may include amenities like carpet removal or changing ventilations filters. Nonstructural changes are the provision of low-cost items like allergen-impermeable bedding, supplies for pest-management, and asthma medication devices.²⁷

Mississippi State Department of Health’s new multi-level program, *Breathe Easy Mississippi*, will be implemented in Sunflower County, MS, for public school students in 2nd through 5th grade diagnosed with asthma. The goal of *BEM* is to directly improve asthma-related morbidity of children educated in the Sunflower County School District. We plan to accomplish this achievable health goal by empowering families, schools, and community centers to reduce the burden of youth asthma. *BEM* will actively utilize analytics provided by our surveys along with, records from local healthcare facilities on the incidence of children admitted to the hospital for asthma related incidents. Furthermore, public school attendance rates - records of children’s absences due to asthma and self-reported symptoms experienced will provide a statistical representation of any progress achieved within a 3-year period.

Breathe Easy Mississippi school-based curriculum and home-based education are composed into booklets, based on information provided by the *You Can Control Asthma* curriculum.²⁸ These books teach “asthma management through pictures and activities” for children up to the fifth-grade reading level.²⁸ Our asthma curriculum requires active participation to engage students in sharing their experiences with asthma, knowledge gained, and assist parents to manage their child’s asthma.²⁸ Asthma Education improves a person’s ability to maintain long-term control of their asthma.²⁷ Each session typically lasts 1-2 hours. Parents will take an amended version of *BEM* surveys to collect data on performance measures (missed school days, missed work days, etc.) throughout implementation. During instruction time, participants (students/families) learn about the pathophysiology of asthma, environmental triggers, avoidance techniques, asthma medications, asthma devices, and psychosocial issues related to asthma.²⁹

Based on participant feasibility, asthma curriculum instruction will be provided by *Breathe Easy* Asthma Counselors (ACs) and/or designated School District Nurses (SDNs). ACs travel between participant homes to provide asthma education and conduct home assessments in preparation for remediation and asthma device giveaways. Two SDNs will travel between the six schools to proctor any of the intermittent courses based on convenience, in coordination with participant schedules. The summer before program implementation, participating SDNs (two) go through School-Based (Asthma) Education training, to equip school personnel with the latest evidenced-based practices for effectively managing students' physician-diagnosed with asthma. Using CAPP's guideline for *Recognizing Increasing Asthma Symptoms*, nurses will be expected to develop expert understanding of asthma and its impact on attendance, learning capacity, and school performance of the child.³² *BEM* will reward school nurses in the participating school district with a Continuing Professional Education ACT 48 credit.³³

Asthma Education courses take place over the course of four to six total home visits (following the initial home assessment), based on participant asthma severity. Information collected on surveys given to the parents of participants at the beginning of the program have questions that assess frequency of symptoms experienced, based on self-report. With symptom frequency data, asthma severity can be identified and confirmed by our ACs and SDNs using Pulmonary Function Tests to assess participant lung capacity. During testing, Peak Expiratory Flow (PEF) measures are used by qualified personnel (Nurse or AC) based on NAEPP guidelines (eg, Appendices B, C) to demonstrate lung capacity.¹⁵ Although symptoms may vary between participants, every participant will receive all three of the intervention components. During the first implementation year, participants will begin receiving our asthma education in the convenience of their homes, via coordination with *BEM* Asthma Counselors (ACs).

As previously discussed, in addition to Asthma Education, environmental-remediation efforts will also occur during Home Visits implemented by *Breathe Easy Mississippi*. These Home Visits assess, consult, and implement beneficial home remediation efforts to improve comorbid factors known to increase asthma related incidents in children (eg, Appendix F).⁶ There are varying levels in the frequency and intensity of Home Visits participants may receive based on their severity of asthma (eg, Appendix A).³⁰ Unless participants are deemed to have severe persistent asthma, nonstructural changes will be utilized. As outlined in the chart, initial home assessments are conducted during visits one and two, followed by asthma management courses/consultation using the *You Can Control Asthma* curriculum (beginning in visit two). On the second or third visit participants begin receiving asthma environmental management supplies (hypoallergenic pillow cases, bedding, shades, cleaner, etc.) shown to reduce environmental triggers.²⁷

Process Evaluation

Before implementation year, AC's and School Nurses must successfully demonstrate biometric testing pertinent to asthma-related data collection and ability to proctor *You Can Control Asthma* education (in the form of a mock lesson given to project director), demonstrating they've mastered the skillset required for *BEM* objectives. More Specifically, *BEM* duties will be overseen by the Project Director; Dr. Campbell. Dr. Campbell will accompany ACs/School Nurses at his discretion on multiple visits throughout the year to ensure our "lay health educators" are meeting standards identified by NAEPP and CAPP guidelines, for the best practices in youth asthma management. These types of quality assurance checks where our Project Director is present during specific phases of program implementation will confirm that the intent of our objectives are being translated correctly to participants. Information regarding

how our multi-level intervention components are being implemented will be made available and discussed during quarterly *BEM* staff and CAG meetings.

Also, as already noted, Leflore County Public School District has agreed to serve as a comparison school district for *BEM* data evaluation. The *Public School Review* reports 98% of students enrolled here belong to minority populations. Leflore School District is also in a rural community close in proximity to Sunflower County, MS. *County Health Rankings* data confirm African Americans make up 72% (73% in Sunflower County) of the population and have comparable levels of economic hardships in Leflore County, MS, supporting our assumption for similar child asthma rates in minorities here as well.⁷

“There’s No I in Asthma”
Community Advisory Group

BEM requires a team of passionate individuals willing to devote their intellectual insight and a portion of their time for our community advisory group (CAG). Key incumbents who possess a beneficial tie to the community are essential for the proper development, implementation, and sustainability of an intervention. The first member selected for the CAG is Dr. Leslie Zhang, PhD, MSc, MBA, the current director of The Mississippi State Asthma Plan. Dr. Zhang has devoted majority of his professional efforts to asthma health promotion for disadvantaged populations.

The next CAG member selected is The Chief of Academic Support in The School District of SC, Mississippi, Ms. Cheryl Logan. Ms. Logan previously served as a principal for a large urban high school and received The Washington Post’s 2012 Distinguished Educational Leader Award. Ms. Logan will contribute her experience in the education system and strong

relationships to under-privileged urban communities to the CAG to help *BEM* effectively impact youth.

Colleen McCauley is the Health Policy Director of Public Citizens for Children and Youth, a local activist group in Jackson, Mississippi. Their aim is to relieve childhood health disparities by ensuring every child, irrespective of citizenship, receives adequate access to health and healthcare services. Colleen's devotion to this cause demonstrates an understanding of the importance of equal opportunity for all children.

BEM's CAG will also include Sunflower County's School District Superintendent, School District Nurse, one to two parent representatives from each participating school, two participating students selected from the school district to serve as representatives, a health policy analyst, and a pediatrician serving as our asthma specialist. These key participants, along with other notable members of the community from organizations like the Asthma Coalition of Mississippi and the Mississippi Asthma and Allergy Clinic make-up a fully invested community advisory group. The wealth of disciplines expressed throughout *BEM's* CAG better enable us to address the multiple factors that lead to poorer respiratory health in rural minority children.

With the support of the Sunflower County School District Superintendent, we will utilize an opt-out approach for participation in our program, providing students the benefit of receiving the intervention services as quickly as possible. The summer leading into implementation year, school health records from previous years will be analyzed to identify students diagnosed with asthma. On the first day of school, academic faculty will provide *BEM* surveys at the beginning of the school year to all students, for them to bring home and be completed by their parents/caregivers. *BEM* surveys confirm identified children with asthma and include any new undocumented (asthma status) students. These forms will also be available during school

enrollment/registration periods, PTA meetings, and in school offices throughout the scholastic year. *BEM* along with the Sunflower County School District will hold an ice cream social for those students who identify with asthma and agree to participate in the program. Information about the ice cream social will be available on the survey. The peer-to-peer involvement of students/respective families during and following scheduled instruction time on school sites and at different *BEM* events will promote unity and a deeper sense of trust among asthmatic students. The bond established by the program will encourage sustainability through the natural transference of asthma-related information by participants.

Dissemination efforts will be on-going and adaptable. Taking advantage of existing resources remains vital. As noted earlier, the *Asthma Coalition of Mississippi* and the MSDH Asthma Program have similar objectives as *BEM* for improving asthma management, as well as a similar target audience.³¹ *BEM* and Sunflower County School District have agreed to designate two PTA meetings in the year that have planned on the agenda time to bring the ideals of these asthma programs and resources now available to residents by *BEM* to the forefront. This focus on youth asthma during PTA meetings will further raise awareness to various school faculty and staff the importance in taking preventative steps to secure asthma management for their students.

BEM health promotion program is an intervention designed to have the greatest impact on youth asthma. Therefore, dissemination efforts that capture and stimulate young audiences are important. The two student representatives from the School District will also play a role on our promotion team. Small stipends will be provided to key youth advisors for motivation to create attractive and informative promotion materials and record community response (likes, retweets, etc.). The stakeholders for a successful youth health promotion are, in fact, the youth. Thus, the traditional use of posters, community newsletters, and similar publication methods largely

accessed by students will begin in the formative year. Creating unique memes and ads on major social media platforms frequently accessed by youth (Twitter, Facebook, Instagram, SnapChat) will support acceptance and retention. The students with asthma brought onto our promotion team will receive compensation as outlined in our budget for their specific population-expertise and creativity regarding implementing *BEM* efforts.

Performance Measures and Evaluation:

Performance Measures

Based on the CDC's National Asthma Control Program (NACP), the Mississippi State Asthma Plan (MSAP), Head-off Environmental Asthma in Louisiana (HEAL), and the National Cooperative Inner-City Asthma Study (NCICAS), *BEM* incorporates health behavior theories (noted earlier in the document) in an evidenced-based effort to directly reduce the burden of asthma in rural minority children and their respective families. Furthermore, The Social Ecological Model reveals the best techniques to attack asthma are not *just* at the individual level, but at varying levels of influence based on the child's risk exposures in the home, surrounding community, and school.⁶ To ensure the appropriate performance measures are captured from our intended audience, *BEM* surveys will continuously collect data on race and income on participants throughout the program. Furthermore, *BEM* ACs will be reaching out using any data available from school records, our health department, surrounding county level health departments and hospitals that may have recorded information on children diagnosed with asthma living in Sunflower County, MS. Once this information is retrieved, it will be reviewed by an epidemiologist at MSDH. If there are participants who qualify for *BEM* but have yet to agree to participate, more extensive contact measures can then be taken – by informing Social

Workers from the school district to reach out to families to offer support for our program and any other pertinent issues the family may be experiencing.

In 2003, the MSAP enacted Asthma laws under the Mississippi Code of 1972, which require all Mississippi public schools to maintain current school records on children with asthma.⁶ Under these specific asthma laws, schools and parents are expected to provide relevant information to ensure each asthmatic child has an Asthma Action Plan on file that is readily accessible on school grounds.⁶ All participants will be required to complete/update Asthma Action Plans with a physician or school nurse in accordance with state law.²⁵ Working under the opt-out approach, participating students in *BEM* will begin receiving contact from our Asthma Counselors at the beginning of the scholastic year. To refute any accidental negligence and/or underreporting of children with asthma to the schools, *BEM* administers surveys on a quarterly-basis throughout the program to monitor participation rates.

BEM utilizes questions from the 2015 Child Questionnaire of *The National Health Interview Survey* during the process evaluation phase of the program. The insertion of this tool will support accurate assessment of parent and participant asthma-related knowledge at baseline and compare the change in parent and participant asthma-competency and asthma preparedness as the program concludes.¹ NHIS Child Survey contains specific questions on pages 12 and 13 pertaining to health status of the child including, but not limited to, whether or not the child is diagnosed with asthma, the amount of asthmatic episodes (asthma attacks) within the last 12 months, and the amount of times you sought emergency care for your child's asthma related incidents.

The Child Asthma Risk Assessment Tool (CARAT) also assesses days experiencing asthma-related symptoms. CARAT is a survey designed to measure participants' exposure to allergens, allergen sensitivity, smoking, access to care, adherence to medications, and measures of child mental health.² Furthermore, CARAT provides asthma counselors with information on each child's potential risk for increased asthma burden. Both CARAT and the NHIS surveys will be amended into one inclusive *BEM* survey. *BEM* surveys will be administered to participant families and families in the comparison group of students identified with asthma. Following the 3-year period, *BEM* will reach out to both school districts annually to ensure expected asthma management levels are sustaining.

Breathe Easy Mississippi' asthma remediation objectives intrinsically provide support for families with financial need. Remediation efforts consist of various nonstructural changes; making available hypoallergenic pillow cases, hypoallergenic bed sheets, air purifiers/humidifiers, roach spray, and structural (home) revisions. Cost-benefit ratios for our multi-trigger, multi-component intervention range from \$5.3-\$14 per participant.²⁷ For cost-effectiveness, reported cost savings ranged from \$12-\$57 per each additional "symptom-free day." This opportunity allows for children born into families of lower socioeconomic status to take a proactive step in securing their health as a priority. *BEM* will host a community information session in the form of a summer fair for all asthmatic individuals of Sunflower County. All Sunflower County residents are welcome to the summer fair, irrespective of disease status. Informational sessions will occur near the beginning of fall, when asthmatic flare-ups in allergic and cough-variant asthmatics are most common. To prevent overlapping of intervention-effects between intervention and comparison groups, individuals/families will be asked to

provide any type of documentation on their person to confirm their proof of residence (in Sunflower County, MS).

Finally, since tobacco smoke is an essential asthma trigger and largely utilized by families with low SES and other stresses, *BEM* will serve as a referral resource for any local cessation programs available for participants can take advantage of. We hope that families and primary caregivers of all our students agree to make their homes “smoke-free”. To ensure such, *BEM* will incorporate a pledge, all participants/households must take to keep second and third-hand smoke away from the children in our program.

Outcome Measures

Breathe Easy Mississippi aims to decrease childhood emergency room visits, hospitalizations, reported *uncontrolled* asthma symptoms, and the proportion of school absences directly due to asthma related incidents in Sunflower County, MS. By incorporating minor to moderate remediation and asthma supplies/devices, we hope to address rural and ethnic inequities seen in home and school environments for Sunflower County residents. Over a 3-year period, *BEM* intends to:

- Ensure 100% of Sunflower County School District students diagnosed with asthma have current AAPs on file at school and in the home
- Decrease the number of asthma symptom days (experiencing an asthma related/induced symptom) per child, per year by 21 days
- Reduce reported *uncontrolled* asthma symptoms in participants by 50% (from baseline records collected in pre-implementation surveys)
- Minimize the rate of child emergency department visits/acute care (with asthma listed as the first diagnosis) in participants by 35%

- Reduce school days missed by students due to asthma from baseline data by 35% (40.1% to 26%)
- Decrease work days missed by participant family members for asthma-related encumbrances
- Establish “smoke-free” households

BEM Data Sources:

- *BEM* surveys (amended)– measures AAPs, symptom days, school days missed, and work days missed, smoking (in or around the house)
- South Sunflower County Hospital records – measures emergency department visits and acute care for asthma related incidents
- School records- measures school days missed
- ACs/School Nurses – gage lung capacity, asthma competency, and program effectiveness

State level baseline records may be found through the MSDH website tools and earlier in this document. For AAPs, only 56.3% of schools report all students diagnosed with asthma have an AAP on file at school.¹⁴ For ages 5-11, baseline data for the estimated hospital discharge rate is the highest of all school aged children, at 12.3 per 10,000 population.¹⁴ *BEM* will obtain student data on the number of asthma-related school days missed from the previous year from Sunflower County School District records made available to our program by MSDH request. If the information is available, participating schools will also provide *BEM* with information from previous years on student AAP’s. If a student does not have an AAP on file, *BEM* will immediately assist participants/families in AAP development.

Data on asthma symptoms experienced by students in the past 3 months will be collected during Asthma Counseling/Education, proctored by AC’s and or School Nurses. South Sunflower County Hospital will provide data on recent child hospital visits/acute care and

hospitalizations due to asthma. Quarterly program surveys (administered based on the scholastic calendar year) will be given to participant/families to verify data from measures including Juniper *QOL* and the number of missed work days due to their child identified with asthma. Individuals who report a work day(s) missed will be also asked to report an estimate in average compensation missed that day because of their child's asthma-related imposed inconvenience.

Additionally, from parent self-report we will ascertain a monetary value of asthma-related expenditures saved per year. A record of monetary savings on asthma-related events can demonstrate to participating families the impact of the intervention on their lives, as well as support the importance of their retention in the program. Money saved and the burden avoided by families of children will be calculated using data from participant family members, collected quarterly, measuring the reduction in workdays missed, fewer emergency room visits, fewer insurance copays for hospitalizations, and other savings.

Finally, incentives are only given to participant-households based on their completion of Home Visits and proper compliance with newly taught asthma management techniques (described in program chart) and our "smoke free" pledge. Incentive-based compensation based on program progression is expected to motivate and reward those individuals willing to welcome our health promotion efforts into their lives in search of better health. After each two visits (bi-visit basis), participant-households will be given visa debit cards loaded with \$40, \$60, and \$80 to further support their intervention adherence.

Capacity & Experience

Breathe Easy Mississippi is a program that will be enacted by the Mississippi State Department of Health. MSDH, originally the State Board of Health, "was established in 1887 to

protect and advance health throughout Mississippi.”³⁴ Since then, as an equal opportunity employer, the MSDH has maintained an earnest and dedicated presence for serving Mississippians. Working under a centralized governance system, MSDH’s program may benefit from a top-down approach, addressing local issues under bigger-picture state health problems. In this context, the majority of the public health units are led by employees of the state, enabling proper program alignment with similar health efforts (eg, Appendix D).¹

In collaboration with MSDH, there are several programs targeting the asthma epidemic in Mississippi: The North-West Asthma Coalition of Mississippi (ACM), Mississippi Asthma and Allergy Clinic (MAAC), American Lung Association (ALA), and the Mississippi State Asthma Program (MSAP).³⁵ The largest entity of the previous programs listed is MSAP. In 2010, MSAP began a ten-year *Healthy People 2020* program funded by the CDC’s branch of Air Pollution and Respiratory Health.³⁵ Similar to *BEM*, *Healthy People 2020*’s goals are to increase the proportion of individuals with asthma who receive formal patient education and care, reduce children asthma related deaths from baseline (3.4%), asthma-related hospitalizations from baseline (11.1%), emergency-department visits, etc. With the help of broader initiatives also focusing on improving the quality of life for Mississippians with asthma, goal alignment, data and surveillance, and resource allocation is achievable across asthma efforts in Sunflower County.

ACM and MSAP share a goal of publishing at least two manuscripts on asthma in Mississippi by 2015.³⁵ To accomplish this goal, the ACM Coordinator required ACM members in 2011 to begin data collection and analysis of Mississippi asthma data.³⁵ In August 2015, a statewide asthma symposium was held allowing ACM members along with state and local partners to share key findings and current efforts in respiratory health.³⁵ *BEM* will advocate to

make the asthma symposium a reoccurring event every 3 years, where information from our program's success and the accomplishments of other programs across the state can not only be highlighted but as a direct result, further supported. Cooperation from all stakeholders within the state of the Mississippi addressing asthma will ensure *BEM's* efforts are sustainable. Due to the success of previous interventions, we are reasonably confident in MSDH's ability to secure similar effectiveness during implementation of *BEM*.³⁵

Partnerships & Collaboration

“A King is Only as Wise as His Counsel”

Fortunately, under the Mississippi Board of Health and American Lung Association, our program may advantageously reference and utilize members from a long list of organizations dedicated to improving the state of respiratory health in Mississippi. *BEM* will benefit tremendously from diligent community advisory group members and other programs focusing on youth health, like Tobacco Free Kids and March of Dimes. As described by The Diffusion of Innovation Theory, key opinion leaders who possess a beneficial tie to the community will help support our programs' objectives. These population opinion leaders and key stake holders will meet on a quarterly basis to discuss and ensure agenda adherence and relay updates on the progress of intervention efforts throughout Sunflower County.

Director and Principal Investigator from the Mississippi State Asthma Plan, Dr. Leslie Zhang, PhD, MSc, MBA, will serve as a member of the CAG. Furthermore, Sunflower County's School District 3 superintendent Jessie Latimore, two parent representatives of children with asthma from School District 3, District 3 school nurse, and representatives from the four coalition groups (ACM, MAAC, ALA, MSAP) stated in the capacity & experience section will

also be called to be a part of our CAG. These individuals all hold relevant positions in the spaces *BEM* requires to achieve our goals.

For partnership purposes, the current director and founder of the Community Asthma Prevention Program in Philadelphia, Dr. Kyra-Bryant will serve as our primary resource of program referral. Dr. Bryant has demonstrated a relentless commitment toward the childhood asthma epidemic. Dr. Bryant worked as a professor at the University of Pennsylvania School of Medicine. In 2012, Dr. Bryant along with her team of researchers composed an manuscript exposing an eye-opening link between poverty-stricken communities and the highest childhood asthma rates in the nation.³⁶ In a discussion on health disparities Dr. Bryant once stated, “Parents are making hard choices. If they must pay the light bill, they may not have enough money to pay for tokens to get to the doctor’s office.”³⁶ Dr. Bryant expresses a true passion and comprehension of the multi-faceted problem related to child respiratory health, especially in largely minority-populated communities.

Colleen Whitfield is the Health Policy Director of a local activist group in Jackson, Mississippi called Public Citizens for Children and Youth (PCCY). PCCY’s aim is to relieve childhood health disparities by ensuring every child receives adequate access to health and healthcare services. Colleen’s countless hours to this cause proves she understands the importance of equal opportunity for all children, who will one day be responsible for this nation’s future.

MSDH is fortunate to have an epidemiologist, health policy analyst and, asthma surveillance specialist available at the department home office. Our epidemiologist and asthma specialist will aid *BEM AC*’s in proper monitoring and assessments of any changes noticed in

participants from baseline. Once data is collected and compiled, AC's will send information to MSDH for a brief review by our health policy analyst – who will create/approve an analytic summary report which further demonstrates our value and need in Sunflower County, MS. These key collaborators all will support program objectives in the battle to reduce the existing asthma disparity seen in rural Mississippi.

Other notable partners will include inhaler vendors like GlaxoSmithKline and Boehringer-Ingelheim. *BEM* will contact asthma product suppliers' Qingdo Hiprove Medical Technologies and Ningbo Finer Medical Instruments, and the Sunflower County Housing Authority. These partners will serve as immediate resource outlets for the logistics of program implementation concerning this asthma disparity. What does this all mean? Will these folks donate supplies? Provide them at a discounted rate? Be specific. You can say they've already agreed to do this. We often get letters of support from partners when submitting a grant that say specifically what that partner has committed to, verbally.

Year One:

Training & Recruitment

In the first 3 months of the funding period, three Community Health Workers will be hired directly by MSDH. For our purposes, we refer to these community health workers as Asthma Counselors (ACs), who will be trained by Dr. Glenda Morris, the University of Mississippi Medical Center's pediatric asthma specialist. The next 6 months will consist of an accelerated pediatric asthma training, in which the newly hired ACs will be given the *BEM* Project description in full detail and will go through intense 4-hour trainings with our local asthma specialist and Chief Medical Advisor, Dr. Morris, 3 days a week, for 6 months.

Within these 6 months, ACs will have acquired the necessary skills that certify them under the NAEPP standards for the preservation of asthma management education and reduction in environmental triggers for asthma related incidents.⁴ Our AC's will be required to go through quality insurance checks with our Asthma Specialist in accordance with NAEPP guidelines. Since ACs are employed part-time, yet expected to devote themselves sizably to our public health initiative over the course of a 3-year period; *BEM* agrees to pay our ACs a 50% hourly wage increase of the average home-visitor in Mississippi, for their work on *BEM*. At an average of approximately \$25,000/year, the asthma counselor hourly-wage will be set at \$24/hour, based on analysis from the Salary Expert website tool.⁶

Breathe Easy Mississippi requires two School District Nurses for the purpose of their specific student expertise and school-related access. Pertinent information regarding our program will be provided to School Nurses in the 3 months leading up to the start of the new school year. School Nurses are instructed to review and educate themselves one hour/day or an average of 5 hours a week on the most current youth-asthma related health information provided by the CDC and NAEPP guidelines, using the *You Can Control Asthma* and *Increasing Recognition of Asthma Symptoms* programs. *BEM* Project Coordinator will ensure nurses have successfully completed requirements for CE certification before the implementation phase of the new scholastic year begins.

Likewise, program recruitment will begin in the six Sunflower County participating schools following the Asthma Summer Fair (community informational), in the first year of the CDC's grant allocation. As the new school year approaches, *BEM* -- in coordination with the Sunflower County School District and South Sunflower Health Department -- will identify all

public-school children with asthma currently enrolled in 2nd-5th grades. Baseline data on participants diagnosed with asthma and their families is recorded by *BEM* modified surveys.

Program promotion is also set to begin in the following two months before implementation, to induce community buy-in our target population. There will be a free Asthma Community Counseling Sessions for parents of children with asthma held at the Asthma Summer Fair/Back to School Fair for all children in the neighboring communities of the six participating schools. *BEM* fairs will be held on public park grounds each summer and ideally assist with asthma awareness and adherence to better asthma management practices. Theoretically, self-reported asthma competency and awareness of asthma initiatives by members of Sunflower County, MS, should increase after each subsequent Asthma Summer Fair.

Program Tasks and Timeline.		May, 2017-2020											
Year		Year 1				Year 2				Year 3			
Quarter		1	2	3	4	1	2	3	4	1	2	3	4
<i>BEM</i> tasks													
Hire ACs		■											
ACs train with Dr. Morris			■	■									
Train school district nurses				■	■								
Asthma summer fair					■								
ACs build relationships with schools					■	■							
Identification of children with asthma						■	■						
Youth promotion involvement						■	■	■	■				
Program implementation/dissemination						■	■	■	■	■	■	■	
Ice Cream Social/Incentives										■	■	■	
Performance Measures						■	■	■	■				
Outcome Measures							■	■	■	■	■	■	
Evaluation								■	■	■	■	■	■

Year Two:

Full implementation effort begin year two of funding. After data collected is assessed from the *BEM* surveys and students identified with asthma are enrolled in *BEM*, asthma counselors will begin to build relationships with school nurses and the families of participants to coordinate schedules for Home Visiting no later than September (month two of implementation year).³⁷ During Home Visits, ACs spend approximately 2 hours in the home of participants, working eagerly to translate our multi-component EBI to practice. Participants and their respective family members ever inconvenienced by asthma are expected to improve their self-efficacy in asthma management and actual ability to reduce environmental triggers for asthma.

Youth Promotion team will be established and begin meetings with ACs to work on *BEM* promotion materials. As noted earlier, the youth team consists of students identified with asthma who are also participating in the program. After re-coordinating schedules to include our Youth Promotion team, CAG meetings will resume on a quarterly basis.

Year Three:

To our advantage, *Breathe Easy Mississippi* will benefit from a new induction class of participants and summative results from the exiting class as we lead into the final year for the program. However, all participants will participate in post *BEM* surveys that record any reduction in symptom days, acute hospitalizations, and or school absences due to an asthma related incident/asthmatic episode. Evaluation measures in the form of follow-up participant reviews on home remediation efforts and overall program experience will further legitimize project aims in the need for a specific childhood-respiratory intervention in Sunflower, MS. *BEM* AC's will utilize the survey to gain improvement in areas like perception of susceptibility,

asthma stigma, quality of life, asthma triggers, and consequences noticed by all individuals involved. So, the annual Asthma Summer Fair/Back to School Fair will then be open to our comparison group, Greenwood County residents. To sustain youth asthma ideals after program funding ends, MSDH will continue to provide asthma related remediation materials to families that express need and or interest in the materials. Lay health educators and state level coalitions will be empowered to make sure residents understand what remediation efforts constitute for reimbursement under insurance coverages.

Equipment/Supplies:

Finn HEPA Air Purifiers were chosen for their affordability and air-particulate removal effectiveness. According to Air Purifiers Rating, Finn Air Purifiers have an 8.7 overall rating out of 10 (tied for 2nd place, highest being 9.3) and are one of the lowest-cost options of all fifteen major air purifiers surveyed.⁷ In addition, it scores well in Ease of Use (1.8 out of 2), Filter Efficiency (2.7 out of 3), and Consumer Feedback (2.6 out of 3).⁸ Allergen protective bed linens and pillowcases feature a triple encasement protection against asthma related environmental triggers such as dust, pollen, hazardous chemicals, insect remnants, and smoke particles. We will purchase these linens from Overstock Distribution Company.⁵

Breathe Easy Mississippi health promotion efforts will require funds for basic program materials relevant for asthma education like the *You Can Control Asthma* booklets, educational pamphlets, office supplies, etc. The estimate for the general office supplies was based off pricing provided by the NewTek business distribution company, which services over 100,000 business accounts within the United States.⁹

Consumer Top's, Product Buying Guide and Reviews rates the Samsung Galaxy Note Pro 12.2 as the most highly accommodated tablet engineered to meet the needs of individuals involved in academia, therefore this tablet will be used for *BEM* for on-site data collection during Home Visits.² *BEM* also benefits from the large screen interface and stylus function, making time-efficient navigation through the device a breeze. Amazon price listing was used for the Samsung Galaxy tablets.

And finally, one of CDC's and WHO's most trusted science based health promotion resources, ETR, was utilized to purchase informative posters to be placed on and near school grounds about health, attributable diseases, and the declining health status from the effect tobacco can have on youth.³

Considerations/Potential Challenges:

There are potential challenges to implementing the *Breathe Easy Mississippi* program. Due to the irregularity of health initiatives and health promotion efforts encountered by members of underserved populations, participant recruitment and retention may prove to be difficult. Beyond program incentives, we must proactively minimize challenges in community level buy-in, to improve participant acceptance of the basic invasive nature of interventions, and support continued adherence by individuals we know are disproportionately affected by various social and cultural barriers outside of *BEM's* reach. To accomplish this, *BEM* intends to hire and train local/in-state community members for program positions with public health experience who are actively involved and invested in their communities. Further, every quarter we will evaluate performance measures to ensure that we are recruiting and retaining the most vulnerable of our

community members. If we are not, we will reach out to local churches and social support groups local to the area to further expand our scope.

The importance of community acceptance must be reiterated. Soliciting youth involvement in the development and implementation of our team's social media distribution efforts will be essential for program sustainability. As social media trends change quickly, so must the social media campaign of *BEM*. Therefore, MSDH will hold bi-yearly focus groups with youth to better tailor promotion efforts toward (minority) youth. Furthermore, an Asthma Action Club may be possible to initiate for students during our time in Sunflower County, which can be upheld by the school district following *BEM* funding years. There may be some issues that arise with ensuring retention in the club and there are other things to consider with after school programs such as the extended time a student is on school grounds if they usually use the school bus to return home after school. If applicable, to account for such difficulties at any point the Asthma Club may be renamed and its objectives modified to become more broadly concerned with youth health in general – and therefore, should be open to all students, regardless of health status (asthma diagnosis).

Additionally, to ensure program efforts remain cost-effective, we will implement rigorous evaluation. Since each participant's asthma severity is uniquely different, as are their homes and knowledge of healthcare services, there may be more variability in cost per participant.

Therefore, *BEM* will tailor efforts to account for asthma severities that impose the highest burden on children (Severe Moderate & Severe Persistent). As discussed earlier, child asthma severity will be collected by self-report on *BEM* surveys during initial Home Visits.

Furthermore, for participants diagnosed with asthma who are unaware of their specific level of asthma severity, School Nurses will confirm and record asthma severity for asthmatic students at

the start of the scholastic year (Implementation Year One) by administering Peak Expiratory Flow assessments (PEF).

Budget

Salaries & Wages

Position Title and Name	Annual Salary	Time	Months	Amount Requested	2nd Implementation Year	3rd Implementation Year
Project Director Christian Campbell	\$88,000	60%	12	\$1,008 x 52 = \$52,416	\$53,989	\$55,609
Health Promotions Coordinator Eugene King	\$58,000	50%	12	\$558 x 52 = \$29,016	\$29,886	\$30,782
Chief Medical Advisor Dr. Glenda Morris	\$115,000	15%	12	\$332 x 52 = \$17,264	\$17,782	\$18,315
Asthma Counselor(s)- Jesse, Lisa, Will	\$25,000	60%	12	\$15,000 x 3 = \$45,000	\$46,350	\$47,741
School Nurse(s)-	\$42,000	13%	3	\$2,100 x 3 = \$6,300	\$6,489	\$6,684
Youth Promotion Team- Kyle, Brittney	\$7,540	50%	3	\$2,030 x 2 = 4,060	\$4,182	\$4,307

Total Personnel				\$146,531	\$150,927	\$155,455
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*There will be a 3% annual increase on all compensation given to *Breathe Easy Mississippi* staff positions.

*Staff compensation is based off a calculation of effort contributed and average position salaries specific to Mississippi.

Fringe Benefits

Project Director Salary - \$52,426, Health Promotions Coordinator Salary - \$29,016,

AC's Salary - \$45,000

Fringe Benefits	Percentage of Salary	Amount Requested	2nd Implementation Year	3rd Implementation Year
Retirement	5%	\$6,322	\$6,512	\$6,707
FICA	7.65%	\$9,673	\$9,963	\$10,262
Insurance				
Workers Compensation				
Total Fringe		\$15,995	\$16,475	\$16,969

Equipment Supplies

Item Requested	Type	Number Needed	Unit Cost	Amount Requested
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General Office Supplies	(educational pamphlets, surveys, flyers, etc.)	12 months	19\$/month per person for 12 people	\$2,736
Word Processing Supplies (for tablets)	Microsoft Word, Excel, PowerPoint, etc.	3	\$109	\$327
Bed Linens	Overstock's All-In-One Protection with Bed Bug Blocker Mattress Protector	150	\$20.69	\$3,104
Pillow Cases	Overstock's Hypoallergenic Protector Pillow Cases	150	\$16.99	\$2,549
Bug/Cockroach Repellant	Overstock's Sprayway Good Night bed bug and dust mite repellant	150	\$26.49	\$3,974
Humidifiers	Fin Air Purifiers	90	\$300	\$27,000
Tablets	Samsung Galaxy Pro Note 12.2	3	\$420	\$1,260
Posters	E-Cigarettes & Your Kids Smoke Too Posters (Laminated)	24	\$20	\$480
Total Supplies				\$41,431

Other

Incentive Items Requested	Type	Amount Needed	Unit Cost	Amount Requested
American Express Serve	Prepaid Visa Debit Cards	100	\$12	\$1,200
Asthma Summer Fair	Back to School Fair (refreshments, flyers, pens, tables tents, pencils, book-bags, food, drinks, games)	one (annual) event held in the summer	N/A	\$8,300
Ice Cream Social	Several popular flavors	2	\$400	\$800
Total				\$10,300

Budget Narrative

Project Team:

The Project Director of *Breathe Easy Mississippi* acquired a DrPH from the College of Public Health at the University of Kentucky. Dr. Campbell’s 10 years of experience in Epidemiology and Health Behavior equip him to address multigenerational effects of poor public health infrastructure. As Project Director, he will oversee all components of BEM, serve as the main contact for *BEM*, hire and train staff, administer program materials and other resources, and oversee process and outcome evaluations. Dr. Campbell has established the Community Advisory Group (CAG) and will work seamlessly with the Project Coordinator through evaluative aims and publication efforts for the program’s study results. Project Directors are

estimated to make roughly \$88,000 in MS.³⁸ He will contribute 60% effort during the first and second years of the intervention and receive a 50% increase on his hourly wage payment, based on his annual income. In the final year of the program Dr. Campbell will be reduced to 30% effort in evaluative methods.

Dr. Glenda Morris, M.D. is a licensed and practicing physician at the University of Mississippi School of Medicine with expertise in the prevention and treatment of asthma. Completing her pediatric residency in Georgia, gave Dr. Morris valuable insight into the disproportionate impact of conditions like asthma on low-socioeconomic and minority populations. Through in-person instruction and intermittent telecommunication, Dr. Morris will oversee the effective implementation of the intervention conditions. More specifically, she will administer asthma preparedness training to lower ranking *BEM* members. Finally, as *BEM*'s Chief Medical Advisor, Dr. Morris will assist Dr. Campbell to oversee all project proceedings and implementation efforts. Dr. Morris will devote 15% of her effort to this project for all 3 intervention years.

Eugene King, MPH will serve as *Breathe Easy Mississippi*'s Project Coordinator. Eugene grew up in Jackson, MS and studied Health Services Administration and Biostatistics at The University of Southern Mississippi's Department of Public Health. Eugene, along with his appointed research staff will be responsible for compiling *BEM* data and health promotion efforts in Sunflower County. Eugene will contribute 50% of his time toward *Breathe Easy Mississippi* initiatives for the entire 3-year period.

Lily Stephens, the Health Policy director of local activist group Public Citizens for Children and Youth (PCCY) will serve as a *Breathe Easy Mississippi* team consultant. Lily has

previously worked with similar youth health promotion programs like Tobacco Free Kids. Lily’s primary objectives during the formative year will be to connect us to local youth networks, to better recruit youth advocates to be a part of the *BEM* team. We are looking for youth advocates who can demonstrate passion and potential for health awareness. Youth will be hired part-time to extend the scope of effective asthma self-management awareness in the target community.

Appendices

A. *Breathe Easy Mississippi’s Home-Based, Multi-Trigger, Multi-Component Intervention*

	Initial Home Visit	First Follow-Up Visit	Second Follow-Up Visit	Subsequent-remaining visits		
Asthma Severity	Mild Intermittent	Mild Intermittent	Mild Intermittent			
	Severe Intermittent	Severe Intermittent	Severe Intermittent	Severe Intermittent		
	Moderate Persistent	Moderate Persistent	Moderate Persistent	Moderate Persistent	Moderate Persistent	
	Severe Persistent	Severe Persistent	Severe Persistent	Severe Persistent	Severe Persistent	Severe Persistent
	Home environments assessed by AC’s. Review asthma medications prescribed to participants. Participants begin Asthma Education courses (basic asthma principles). AC’s & participants develop	Asthma Education continued (identify avoidance strategies). Nonstructural remediation efforts recommended to participants. Participants begin receiving asthma management devices (spacers, peak flow meter,	Asthma Education continued Self-evaluations of progress on asthma control Ensure AAPs are readily accessible at home and school grounds. AC’s begin minor to moderate “asthma remediation”	Asthma counseling provided by School Nurse. AC’s evaluate <i>BEM</i> home-remediation efforts for effectiveness AC’s evaluate outside environment for possible remediation efforts. Review avoidance strategies	Asthma Education continued. Review asthma triggers & avoidance techniques. AC’s evaluate <i>BEM</i> remediation efforts for effectiveness Refer to primary healthcare provider with	Asthma Education continued. (if applicable). Review AAP’s. Review asthma triggers & avoidance techniques. Confirm participant knowledge on what to do for exacerbation.

	AAPs. Take participant peak flow measurement.	etc.)	in home. Retake participant peak flow measurement.		expertise in Asthma.	
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Source: CAPP & The Guide to Community Preventative Services^{23,24,27}

B.

Asthma Severity	Minimum Recommended Frequency for Follow Up Visits
Mild Intermittent	Every six months (twice a year)
Mild Persistent	Every 4 months (3 times a year)
Moderate Persistent	Every 3 months (4 times a year)
Severe Persistent	Every 1- 2 months (six times a year)

Source: CAPP, Home Visit Program Guidelines³⁰

C.

Table 1. Asthma Severity Classifications According to the Expert Panel Report 2 National Asthma Guidelines

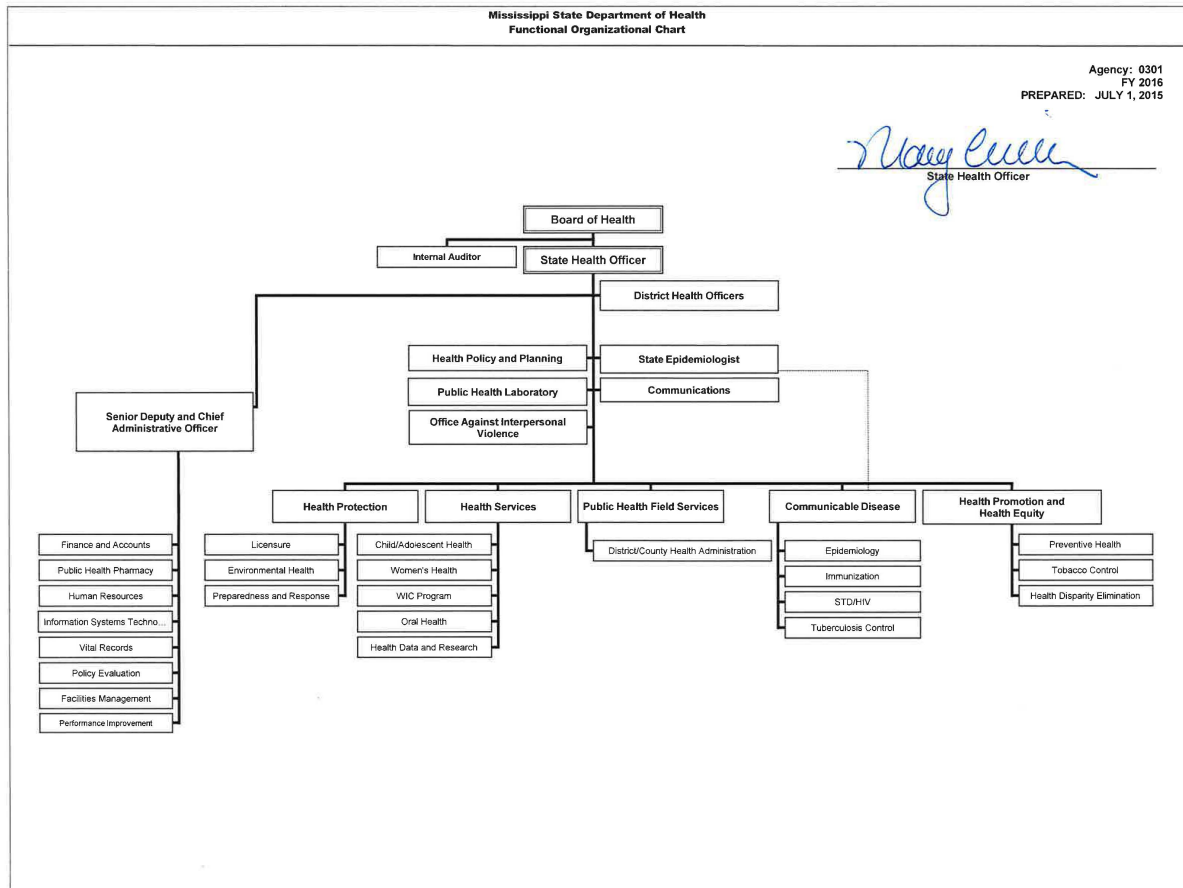
Asthma Classification	Days With Symptoms	Nights With Symptoms	Children >5 y Who Can Use a Spirometer or Peak Flowmeter, %	
			FEV ₁ or PEF (Predicted Normal)	PEF Variability
Severe persistent	Continual	Frequent	≤60	>30
Moderate persistent	Daily	≥5/mo	>60 to <80	>30
Mild persistent	>2/wk	3-4/mo	≥80	20-30
Mild intermittent	≤2/wk	≤2/mo	≥80	<20

Abbreviations: FEV₁, forced expiratory volume in 1 second; PEF, peak expiratory flow.

Source: NAEP Asthma Guidelines


D.

Mississippi State Department of Health Organizational Chart




Source: MSDH Website³⁴

E.



Asthma Action Plan

(To be completed by Doctor/Nurse)



Name _____

Birth Date _____

Effective Date _____

School _____

Parent/Guardian _____

Parent's Phone _____

Doctor/Nurse's Name _____

Doctor/Nurse's Office Phone _____

Emergency Contact After Parent _____

Contact Phone _____


Asthma Severity: Mild Intermittent Mild Persistent Moderate Persistent Severe Persistent

Asthma Triggers: Colds Exercise Animals Dust Smoke Food Weather Other: _____

TAKE THESE MEDICINES EVERYDAY

Child feels good:

- Breathing is good
- No cough or wheeze
- Can work/play
- Sleeps all night



MEDICINE:	HOW MUCH:	WHEN TO TAKE IT:

Peak flow in this area:
 _____ to _____


20 MINUTES BEFORE EXERCISE USE THIS MEDICINE:

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IF NOT FEELING WELL TAKE EVERYDAY MEDICINES AND (ADD) THESE RESCUE MEDICINES

Child has any of these:

- Cough
- Wheeze
- Tight Chest



MEDICINE:	HOW MUCH:	WHEN TO TAKE IT:


Peak flow in this area:
 _____ to _____

Call your doctor/nurse's office if the symptoms don't improve in 2 days OR if the flare lasts for longer than ____ days. After ____ days go back to GREEN ZONE and take everyday medications as instructed.

IF FEELING VERY SICK CALL THE DOCTOR OR NURSE NOW! TAKE THESE MEDICINES

Child has any of these:

- Medicine not helping
- Breathing is hard and fast
- Lips and fingernails are blue
- Can't walk or talk well



MEDICINE:	HOW MUCH:	WHEN TO TAKE IT:

Peak flow below:

IF UNABLE TO CONTACT YOUR DOCTOR OR NURSE:
 Call 911 or go to the nearest emergency room and bring this form with you!

I give permission to the doctor, nurse, health plan, and other health care providers to share information about my child's asthma to help improve the health of my child.

Parent/Guardian Signature _____ Date _____

Health Care Provider Signature _____

Adapted from the NYC
 Childhood Asthma Initiative
 Adapted from
 the NHLBI
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Source: CAPP's Asthma Action Plan (Child)²⁵

F. BEM Home Visit Assessment Forms



CAP Collaborative
Community Asthma Prevention Program
Programa de Prevencion para Asma en la
Comunidad

HOUSING (Parent Report)

Initial Home Assessment

Date ___/___/___
 Group ID: _____
 D.O.B. ___/___/___
 HV: _____

1. Type of housing: 1 _____ single family-detached home
 2 _____ row house
 3 _____ apartment
 4 _____ other

Rent or Own

2. In a typical month, how many nights does the child sleep at another residence? ___ nights
3. Is gas the source of home heating? Y or N
4. Is method of heating forced hot air (vents)? Y or N
5. Do you ever use a kerosene heater? Y or N
6. Do you ever use a gas stove to heat the house? Y or N
7. Do you ever use an electric space heater to heat your home? Y or N
8. Number of people in home who smoke cigarettes, cigars, or pipes (indoors or outside) _____
9. Does the family have pets with fur or feathers? Y or N
- Species _____ Quantity _____
- Species _____ Quantity _____
10. Do you have an air conditioner in the TV/living room (window unit or central air)? Y or N
11. Does the family own a vacuum cleaner? Y or N

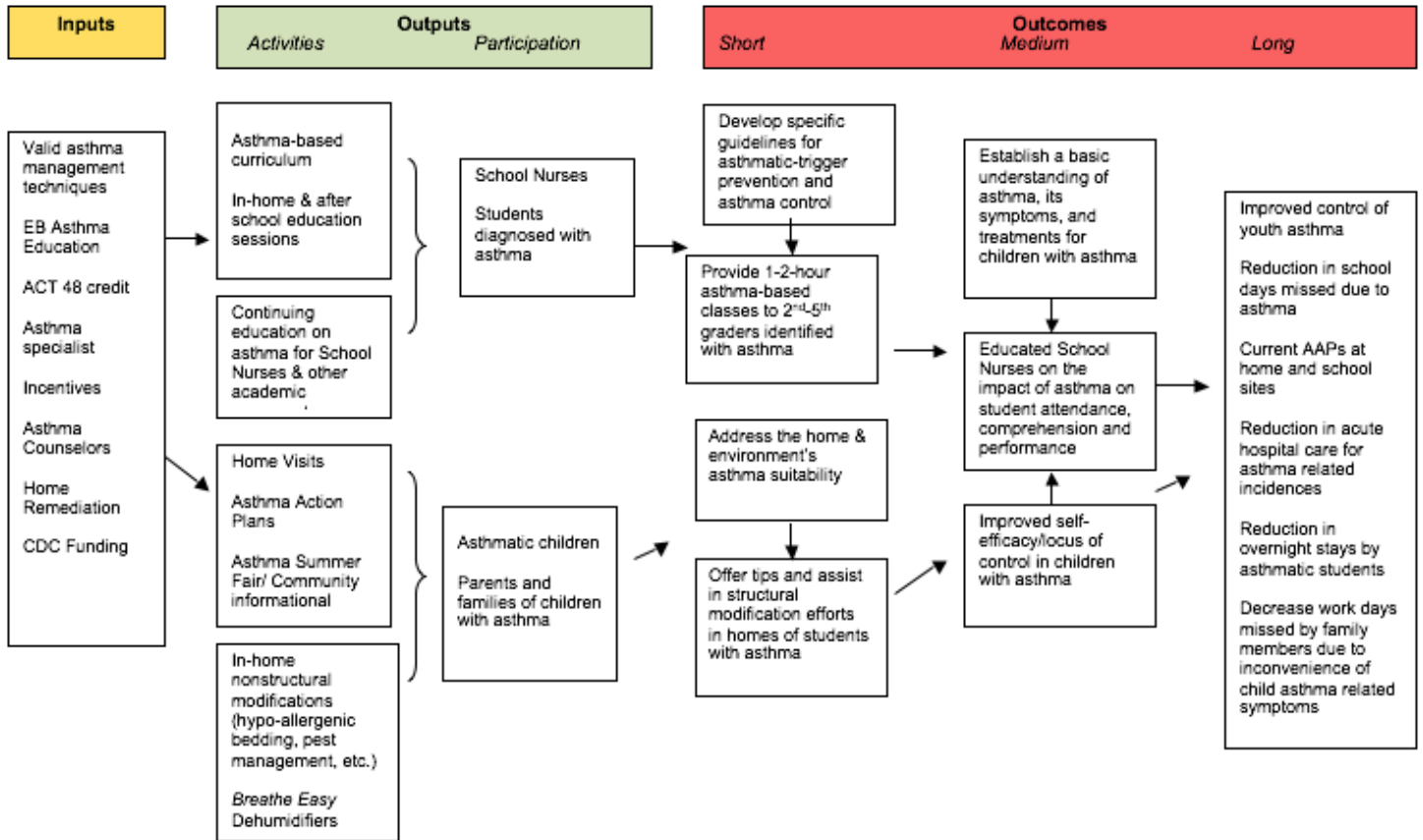
HOME ASSESSMENT/OBSERVATION (By Home Visitor)

12. Evidence or report of roaches Y or N
13. Evidence or report of rodents Y or N
14. Upholstered furniture in TV/Living Room Y or N
15. Wall to wall carpet in TV/Living Room Y or N
16. Evidence or report of mold, water in basement Y or N
17. General assessment of home's condition

- 1 _____ POOR (3 of 5)
 2 _____ FAIR (2 or less of 5)
 3 _____ GOOD (none)

- Clutter in all rooms
 Food left out
 Evidence of roaches/rodents
 Water damage
 Structural damage

Program: *Breathe Easy Mississippi* Christian Campbell Logic Model
Situation: Home-Based, Multi-Trigger, Multi-Component Asthma Interventions



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