We can do better

Improving Asthma Outcomes in America

A Report From Three Facilitated Regional Asthma Meetings Prepared by the Public Health Foundation

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Links embedded in reports are generally not updated. However, the links within this report were last updated in 2/2010.

PREFACE

About PHF

The Public Health Foundation (PHF) is dedicated to achieving healthy communities through research, training, and technical assistance. For more than 35 years, this national, non-profit organization has been creating new information and helping health agencies and other community health organizations connect to and more effectively use information to manage and improve performance, understand and use data, and strengthen the workforce.

PHF, in its commitment to help public health systems save lives, cut costs, and achieve their goals, provides a comprehensive set of quality and performance improvement services. Through training, technical assistance, and coaching and collaborations with partners in quality improvement and public health, PHF helps public health organizations harness proven quality improvement techniques to benefit the public's health, drawing on the best available research, resources, and expertise from the private, public, and academic sectors. PHF's team of public health and quality improvement professionals has decades of experience.

PHF is incorporated in the District of Columbia as a private non-profit 501(c)(3) organization. PHF is an independent, non-membership organization, governed by an eleven-member Board of Directors comprised of two state health officers, two local health officers, one local board of health member, and six individuals from academic, private sector, and other public health agency settings.

PHF Staff and Consultants

Jackie Carden, PHF's Associate Director for Performance Improvement, led the We Can Do Better asthma project oversaw project design, state engagement, meetings and facilitation, and report development. Jack Moran, Senior Quality Advisor to PHF and Certified Quality Manager, assisted in program design, developed program materials, and facilitated meetings with Grace Duffy, also a Certified Quality Manager and Consultant. Julia Gray, Program Administrator, conducted background research, assisted in program design, developed program materials, recorded notes from meetings, analyzed data from meetings, and assisted with report development. Jennifer Stanley, Director of Public Health Systems Research, led the background research, assisted with program design, developed questions, conducted qualitative analysis, and developed the draft report. Ron Bialek, President, contributed to program design, review of program materials, and report review.

Acknowledgements

We deeply appreciate the participation of everyone (participants listed in Appendix 1) who shared with us what is working well with asthma prevention and control in their respective communities and helped us to understand the complexities confronting communities in their endeavors to see better outcomes associated with asthma. It is our hope that what we learned from these meetings can be used by asthma advocates, educators, planners, caregivers, public health and health professionals as a foundation for plans, programs and interventions that can make a difference in communities.

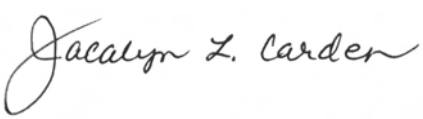
PHF also thanks pilot test participants for their insights on how to improve the meeting content and agenda: Dyan Alexander (AstraZeneca), Jeanette Jenkins (Maryland Department of Health and Mental Hygiene), Margaret (Peggy) Lange (Washington County Hospital, Hagerstown, Maryland), and Katherine Pruitt (American Lung Association). *We are also grateful to asthma experts and colleagues contacted for input:* Alisa Smith (U.S. Environmental Protection Agency (EPA)), Deidre Crocker and David Hopkins (Centers for Disease Control and Prevention (CDC)-*Guide to Community Prevention Services)*.

Without state and local leadership, support and enthusiasm this project would not have been possible: Conversations with health officials included Susan Cooper (Tennessee), Leah Devlin (North Carolina), Mel Kohn (Oregon), Janet Olszewski (Michigan), Mary Selecky (Washington); senior officials Patricia Adams (Minnesota), Jean Chabut (Michigan), Bill Coulombe and Jean Moore (Oregon), Chris Hoke and Steve Cline (North Carolina), Tom Sieger and Larry Gilbertson (Wisconsin), Cathy Taylor (Tennessee), Lisa Waddell and Joe Kyle (South Carolina); and other local and state leaders Lillian Shirley (Multnomah County, Oregon) and Tim Church (Washington) all who graciously provided in-kind support from their state and local asthma staff. Caroline Chappell (North Carolina), John Dowling (Michigan), Erica Fishman (Minnesota), Khosrow Heidari (South Carolina), Cathy Taylor (Tennessee), Mark Werner (Wisconsin), Reva Wittenberg (Washington), and Kati Moseley, Kylie Meiner, and Karen Girard (Oregon) were our contacts in each of the states who helped seek participation from their communities for each of the meetings.

PHF wishes to thank Drake Nakaishi, *of AstraZeneca who sought out PHF to conduct this work; and* Dyan Alexander, also of AstraZeneca who shared with us her goal of helping states coordinate and implement quality asthma plans.

This report was researched and written by the Public Health Foundation with a generous charitable contribution from AstraZeneca. The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the PHF Board of Directors or the collective views of the public health and health professionals devoted to the prevention and control of asthma.

Ron Bialek
President, PHF



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EXECUTIVE SUMMARY

Look beneath the surface, let not the quality nor its worth escape thee.

— Marcus Aurelius

In 1999, then United States Surgeon General David Satcher remarked *"One of the real issues is, why are we seeing this increase in asthma? And we don't know the answer to that. Until we understand why you have an increase, and you have documented it, it is very hard to say you have a strategy that is going to make a difference."* A decade later, despite numerous laudatory efforts from those who care the most about preventing and controlling asthma, not too much more is known about what is holding us back from seeing major improvements in asthma-related outcomes and the factors that contribute to success and where success is indeed being made.

The burden of asthma affects not only the person with asthma, but also the person's family, employer, social network, and others who benefit from his or her participation in the community. Reducing the burden of the disease by preventing asthma episodes is one important goal states and communities want to achieve. The complexity of asthma requires that public health and health care professionals look at problems and solutions in a holistic and systematic way.[1] One such systematic method well suited for use in the public health system—where limited time and resources are often the norm—is the application of proven quality improvement (QI) techniques. With the We Can Do Better asthma project, the Public Health Foundation (PHF) sought to identify strategies that worked to prevent and control asthma, strategies that failed to prevent and control asthma, characteristics contributing to and/or facilitating success, and characteristics confounding desired results from being achieved. QI techniques were selected to expose participant-reported effective and ineffective strategies as well as beneficial and detrimental contextual characteristics. Using these QI techniques, we could gain insight into the larger issue through a constant process of refinement.

PHF convened three regional meetings in November and December 2008 in the Southeast, Midwest, and Northwest. Seventy-two state and local health community leaders from eight states participated. In facilitated sessions, using QI techniques, participants generated an inventory of over 900 strategies and contextual characteristics that in their experience contribute to successful asthma prevention and control. Categories of the strategies and contextual characteristics were further distilled to seven strategies and ten contextual characteristics that participants consider important for the prevention and control of asthma episodes.

This inventory represents a first step toward understanding and developing a protocol or protocols that can be used in any setting to prevent and control asthma episodes. The following common themes emerged from over 900 reported strategies and characteristics that participants, from their experiences, thought were important contributions to the successful prevention and control of asthma episodes:

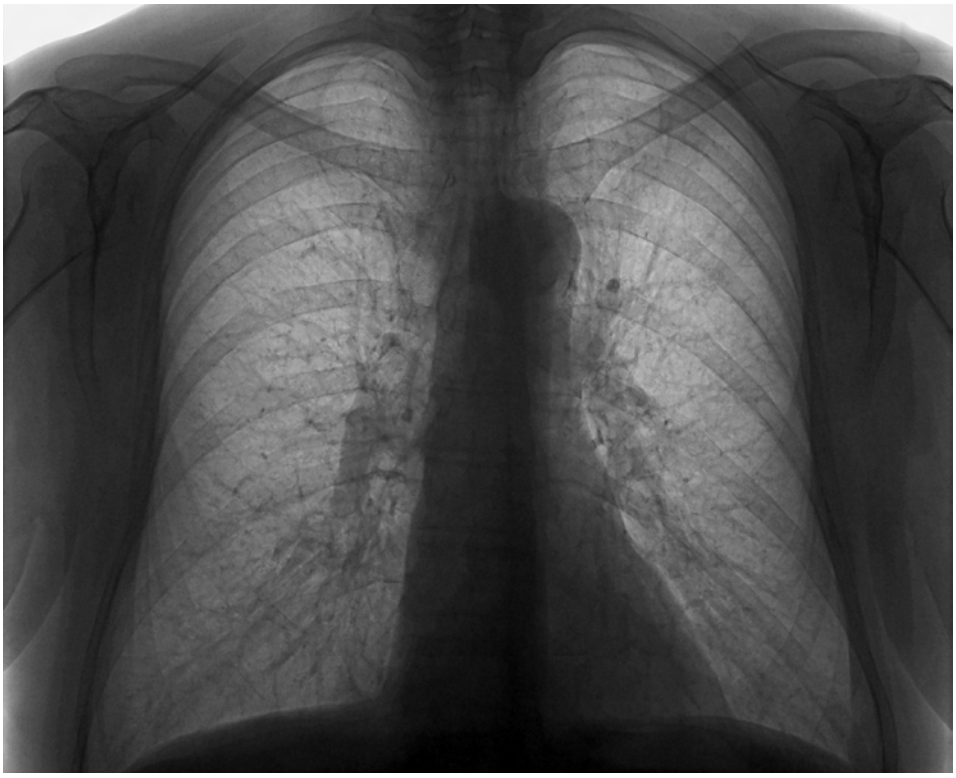
- Culturally appropriate and targeted education for providers, nurses, respiratory therapists, teachers and coaches, patients, family and other caregivers and professionals.
- Access to care including, but not limited to: appropriate case management, medical homes, medication management, and reimbursement/funding.
- Proactive policy— organizational (i.e., schools, hospitals, businesses), public health, health and medical, and environmental—executed, reinforced, and adhered to at all levels of government, within hospital systems, and with health professionals.
- Partnerships and collaborations that brought forward the best prevention and management knowledge; leveraged resources within the community of care; and resulted in transparency and action between and among payers, insurers, coalitions, health professionals, caregivers, schools, and the governmental public health system.

Clearly, asthma professionals are implementing many strategies to prevent and control asthma episodes. They also are keenly aware of the contextual characteristics that can have a positive or negative impact on strategy implementation. However, there are still unanswered questions: What strategies should be employed given a particular contextual setting? What combination of strategies and contextual characteristics work best together? How do they work together? Is it possible to implement certain strategies even in a hostile contextual environment? What countermeasures work best in overcoming barriers to success? Next steps could include developing one or more check lists to help asthma professionals track their progress at prescribed intervals. Future work also needs to examine the relationships among strategies and contextual characteristics.

Under a second phase of this asthma prevention and control initiative, PHF plans to build on what was learned from the three regional meetings and answer one or more of the above questions, using a mini-collaborative and/or team structure and QI methodology (e.g., training, consultation, and other forms of technical assistance) to help three to five communities achieve measurable improvement in asthma prevention and/or control. Measurable improvements in the prevention and/or control of asthma episodes can be achieved in a short period. If proven successful, these improvement initiatives can help develop and/or refine strategies and processes that can be expanded nationally, in communities and states trying to achieve better results in asthma prevention and control.

Using a mini-collaborative and/or team approach, the reported strategies and contextual characteristics can be investigated to determine if they are indeed effective and under what circumstances. Participants reported that using the QI techniques helped them think about their strategies differently and thought use of QI techniques would be helpful to them in planning and evaluating what could make a difference in the prevention and control of asthma.

INTRODUCTION



Asthma is a chronic condition known to deteriorate the health status of those who are affected, is crisis-laden, progresses over time, and significantly increases health care costs. In both health care and public health there is a deep appreciation for scientific data and an acknowledgment that systems improvement that results in better health status outcomes requires well respected performance data. In 1999, then United States Surgeon General David Satcher remarked *"One of the real issues is, why are we seeing this increase in asthma? And we don't know the answer to that. Until we understand why you have an increase, and you have documented it, it is very hard to say you have a strategy that is going to make a difference."* A decade later, not too much more is known about what is holding us back from seeing major improvements in asthma-related outcomes and the factors that contribute to success and where success is indeed being made. There is much effort going into mitigating asthma in the U.S. and yet asthma has increased over the past two decades.[2] Some state health departments are designing and implementing asthma plans with varying success, while others have yet to begin the process.[3] In some states, hospitalizations, emergency department visits, and deaths from asthma have been dropping in recent years, sometimes dramatically.[4] Many participants shared strategies that worked to prevent and control asthma episodes pointing out little is known about how or what are effective strategies to prevent the onset of asthma in the first place.

Asthma is a public health challenge because it is difficult to prevent and control—how can a community control so many factors that trigger onset and subsequent asthma attacks?

The *We Can Do Better* asthma project used proven quality improvement (QI) techniques in a group setting at three regional meetings (Southeast, Midwest, and Northwest) held in November and December 2008. The goal of the project was to obtain information about ways to prevent and control asthma episodes. Participants included public health and health care professionals who worked with programs to prevent and control asthma episodes. This project sought to examine why better asthma outcomes were not being obtained, or at least not apparent, by identifying (1) strategies that worked to prevent and control asthma; (2) strategies that have failed to achieve desired results; (3) contextual characteristics (e.g. social, political, and community contexts) contributing to and/or facilitating success, and (4) contextual characteristics confounding desired results and/or success.

The project generated an inventory of strategies that participants reported as being effective in their experience (e.g. "strategies that worked"), along with relevant contextual characteristics that facilitated or impeded implementation. The goal was to look for similarities and differences that may broaden our understanding of the prevention and control of asthma episodes in the U.S. While the focus of this project did not seek to develop recommendations, best practices or policies, future work may focus on such efforts as they relate to performance improvement strategies, tools, efficiencies, and outcomes.

In his book *Health Care Reform Now!,* George Halvorson indicated *"It is entirely possible that in the future entire communities could take on asthma as a community health agenda, targeting significant reductions in the asthma burden placed on identified populations, neighborhoods, and age groups. Those kinds of campaigns would be facilitated by access to communitywide data about asthma care and by a history of success in using good treatment tools that prevent crisis and improve care*[5]*."*

This paper will describe the burden of asthma, the QI methods applied in this project, the findings from the regional meetings and conclude with some suggestions that may assist communities in jumpstarting asthma improvement initiatives.

STATEMENT OF THE PROBLEM

Asthma is one of the fastest growing chronic conditions in United States for children and adults. It accounted for over 200,000[6] emergency room visits, 6.3 million hospital outpatient department visits[7], and over 3,800 deaths in recent years.[8] The burden of asthma undermines a person's health and personal functionality, creating a suboptimal quality of life for 6-8% of the U.S. population living with asthma.[9] With a sensible treatment regimen, medications, and optimal intervention when needed, asthma attacks can be averted. Asthma prevalence is unequal around the U.S.[10] Low income children and adults are more likely to be affected by asthma.[11] The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance Survey (BRFSS) shows that some states have a higher asthma prevalence than other states.[12]

The etiology of asthma attacks is not well understood. However, we know from research data that many asthma attacks—the inflammation and constriction of airways—have specific external triggers (e.g. allergens, infections, exercise, gastroesophageal reflux, aspirin-like drugs,[13] dust mites, cigarette smoke, mold, cockroach dander, and indoor/outdoor air pollutants[14]).

Asthma is a public health challenge because it is difficult to prevent and control—how can a community control so many factors that trigger onset and subsequent asthma attacks? An additional complication is that not all triggers affect asthma sufferers, nor do triggers affect sufferers with the same intensity.[15] Appendix 2 includes the data sources consulted to determine the current state of the asthma prevention and control, and state specific resources that participants provided to PHF.

Because of the multifactoral nature of asthma triggers that lead to the onset of asthma, and a possible lifetime of chronic episodes, public health and health care professionals are aware of the need to develop a comprehensive approach to preventing and controlling asthma episodes. The challenge for asthma professionals is to implement the right strategies, to the right populations, at the right time, for the right cost.

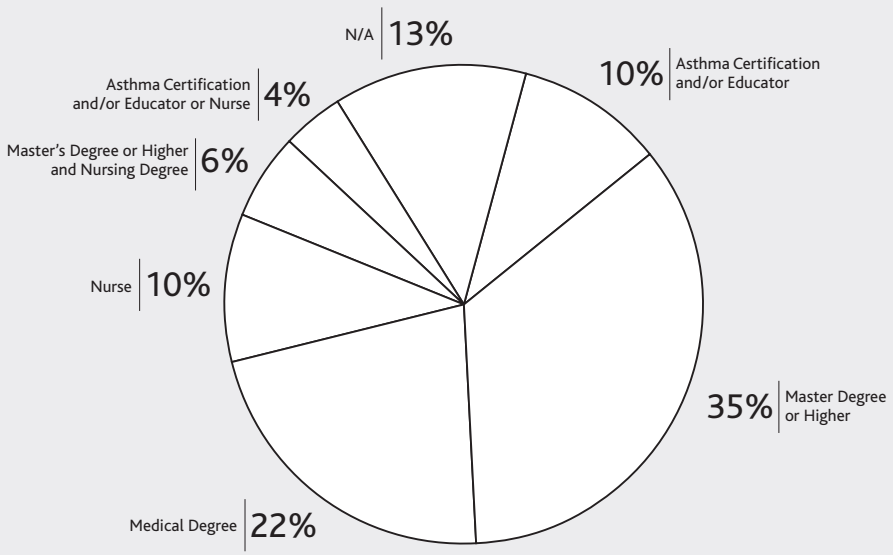
RATIONALE FOR USING QUALITY IMPROVEMENT METHODS

The burden of asthma affects not only the person with asthma, but also the person's family, employer, social network, and others who benefit from his or her participation in the community.[16] For these as well as economic reasons, reducing the burden of the disease by preventing asthma episodes is one goal states want to achieve. The complexity of asthma requires that public health and health care professionals look at problems and solutions in a holistic and systematic way.[17] One method that is well suited to the public health environment—where staff has limited time and resources—is the application of quality improvement (QI) techniques. QI techniques were selected to help expose effective/ineffective strategies and beneficial/detrimental contextual characteristics as reported by participants. Participants used the QI techniques in a defined sequence to continually refine the issue and narrow the scope to provide further insight into the solutions that have or will contribute to the prevention and control of asthma episodes.

Both nationally and at the state level, ambitious health improvement goals have been set. Achieving such ambitious goals requires new ways for asthma professionals to connect their daily work to results. Yet, even with existing public health data systems, it can be a challenge to measure whether daily activities are making a difference. Too often, asthma professionals continue doing what they are doing, too busy with routine demands to take time out to check if it is working or if there is an easier way. Developing adequate evaluation methods is still a difficult task. Complicating matters, public health problems are driven by complex systems and social factors that can seem outside of our immediate control. Fortunately, people in many other fields have faced similar challenges and found ways to help solve them with quality and innovation methods. The QI tools[18] used in the regional meetings were designed to narrow and refine the scope of the issue so as to provide further insight into possible improvement solutions that have or will contribute to the prevention and control of asthma episodes.

METHODOLOGY

Figure 1. Percent of participants by degrees earned.



Site and Participant Selection

PHF, working with state and local health community leaders from three states in the Southeast, Midwest, and two states in the Northwest invited delegations from surrounding states to a regional, one and a half day facilitated meeting to systematically look at how asthma episodes could be prevented and controlled. Regional meetings were held between November and December 2008. PHF staff coordinated with state health departments and invited appropriate delegates, established meeting dates, and finalized logistics and meeting agendas.

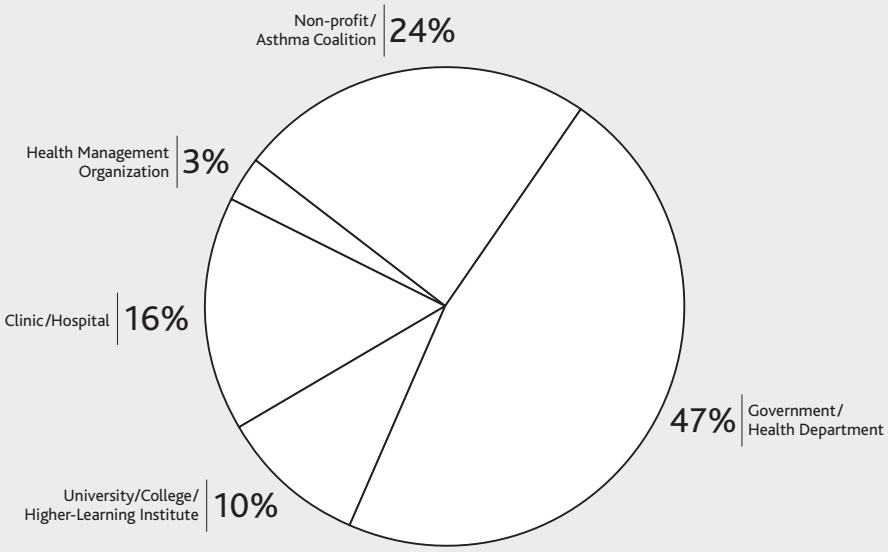
The original intent was to gather different perspectives from asthma professionals from three states in three regions where asthma prevalence is high. For instance, Tennessee and North Carolina have two cities each that are on the worst cities list compiled by Asthma and Allergy Foundation of America (AAFA) *Asthma Capitals Rankings*. Wisconsin has one city on the list. PHF staff, after conducting a literature review of asthma prevalence and morbidity, coupled with leveraging relationships in state health departments, targeted the following states for regional meetings: the Southeast region included North Carolina, South Carolina, and Tennessee; the Midwest region included Wisconsin, Michigan, and Minnesota; the Northwest region included Oregon and Washington.

Working with the state health departments, additional participants were recruited and selected to participate in state delegations for each of the regional meetings. The selection process was not prescriptive. Potential participants were informed that the meetings were working meetings, and the format would require participants to be open minded, thoughtful, and engaged in discussions regarding asthma prevention and control.

Overall, the majority of meeting participants had either a Master's degree or higher or a medical degree (57% total) **(See Figure 1)**.

About half of the participants work in health department or other government settings, followed by non-profit organizations and clinics or hospitals **(Figure 2)**. Out of the 72 meeting participants, 26 people came from state health departments and five came from local health departments. In addition, five participants were from the American Lung Association. The least represented group was from universities or higher learning institutes and health management organizations.

Figure 2. Percent of participants by professional affiliation.



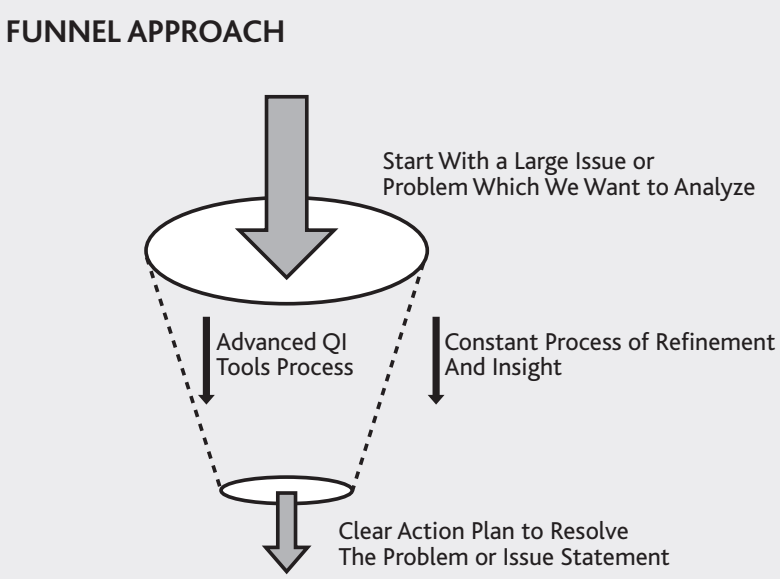
Pilot Test

In final preparation for the three meetings, PHF invited a small group of asthma experts and colleagues to participate in a half-day mock QI session. Advice was sought on the agenda, QI techniques and meeting questions to assure a successful outcome for all regional meetings. The group included three people from the asthma/public health community, a representative from AstraZeneca, and four PHF staff, including a QI expert/facilitator.

Meeting Format and QI Exercises

Meetings were one and a half days long. Each meeting included three QI exercises[20]:

Figure 3. Funnel Approach



Affinity Diagram, Process Decision Program Chart (PDPC), and a Start-Stop-Continue matrix. Using these techniques, in what is sometimes called a "funnel approach" **(See Figure 3 for slide describing the approach)**, helped participants analyze a large issue or problem—in this case asthma prevention and control—and continually refine it until they have a clear action plan to resolve the problem or issue. PHF's Senior Quality Advisor, Jack Moran, and QI Consultant Grace Duffy facilitated the Southeastern and Midwestern meetings and Jack Moran facilitated the Northwestern meeting.

For the Affinity Diagram technique, facilitators asked participants to generate strategies that in their experience were effective, writing the strategies on post-it notes. There was no apriori definition of what constituted success shared with participants. Participants shared their strategies based on their own frame of reference for effectiveness.

The PDPC method asked participants to list what could go wrong (barriers) during implementation. They were also asked to indicate the likelihood that each barrier would occur, and develop countermeasures to mitigate the barriers.

The Start-Stop-Continue matrix asked participants to list the things they would start doing, stop doing, and continue doing when they returned to work as a result of participating in the meeting.

The QI process, like traditional qualitative research protocols and focus groups, is frequently adjusted as needed to meet QI objectives. At the completion of each meeting comments were gathered from participant evaluations and slight adjustments were made to the meeting agenda to improve facilitation, timing, and materials for the subsequent regional meetings. The agenda and instructions were adjusted for meetings two and three because participants in meeting one were providing "characteristics" or contextual characteristics during the strategy-gathering phase. In addition, the meeting time was condensed for the second and third meetings because of improvements in techniques to manage group dynamics and explain the exercises more clearly and efficiently.

Question Development and Definition of Terms

Questions were developed to elicit the strategies that participants used and found effective, as well as those strategies that failed to achieve results. In addition, participants were asked to describe the contextual characteristics (immediate relevant aspects as well as the relevant aspects of the social/political system),[21] that helped strategies succeed or fail.

Strategies were defined for the participants as the methods employed to prevent and manage/control asthma. For example, a hospital implements a policy that requires all pregnant women to be given a home environment asthma trigger check list prior to birth (Category: non-governmental policy).

Contextual characteristics were defined as the contextual environment(s)—political, social/relational, economic, etc.—in which the strategies were developed (e.g., the state health official championed legislation that led to enactment of a bill resulting in appropriated, sustainable funding for an asthma prevention program). For example, a state passes a new indoor smoking ban in all public places (Category: favorable legislative environment).

Primary prevention was defined as strategies that prevent the first onset of a condition or disease. Success of primary prevention strategies can be measured by lower incidence in a population.[22] Secondary prevention was defined as strategies that aim to detect the presence of a condition or disease, through screening, before symptoms occur. Success can be measured by regular and/or increased well visits.[23] Tertiary prevention was defined as strategies that aim to reduce the negative effects of a condition or disease through appropriate treatment. Success can be measured by reduction in emergency room visits.[24] Through the process of the meetings, PHF learned of more appropriate definitions included in the Expert Panel Report (EPR) Guidelines for the Diagnosis and Management of Asthma.[25]

ANALYSES

Data reduction (a categorization method)[26] was used on the more than 900 strategies and contextual characteristics that were generated during the Affinity Diagram process. A total of 634 strategies were generated on post-it notes for the three meetings. The strategies were categorized by participants resulting in a total of 73 categories for strategies. Participants also generated a total of 343 contextual characteristics that contribute to the success of strategies. The characteristics were categorized resulting in a total of 47 categories for the contextual characteristics.

Table 1. Number and Categories of Strategies and Characteristics

Region	Strategy Categories	Characteristic Categories
Southwest	23	16
Midwest	31	17
Northwest	19	14
Total	**73**	**47**
After date reduction	**14**	**10**

Each participant idea was validated to determine if it fit in the original category assigned by the participants. If the idea was valid for the category, the idea was left in that category. If the idea did not match, it was reassigned to another category. In some cases, multiple ideas were cited on one post-it note. In those cases, the most prominent idea was assigned to a corresponding category, and the note was coded accordingly.

Some categories were similar across meetings and were combined to reduce the total number of strategy categories to 14, and the total number of characteristic categories was reduced to 10 **(Table 1)**.

Data obtained from the PDPC exercise, and the Stop-Start-Continue matrix, were analyzed by reading summary notes and organizing the information into categories.

RESULTS

Even though PHF staff used the AAFA asthma capitols to target participant states, ultimately the states selected represented a variety of funded and unfunded states and this diversity contributed to the strength of the findings summarized in this report.

This section describes the strategies that participants found effective in their own experience and how they ensured that their strategies produced the results they wanted. Also discussed are the importance of contextual characteristics and how they contributed to success, as well as potential barriers to success and opportunities for improvement.

Table 2. Number and percent of strategies that work for preventing and/or controlling asthma episodes.

Strategies Categories	#	%
Education	191	30.1
Policy	125	19.9
Access to care/case management/funding	119	18.8
Environmental issues	83	13.1
Partnership	46	7.3
Surveillance/research/epidemiology/evaluation	45	7.1
Using the media/marketing/ dissemination/hotlines	25	3.9
Total	**634**	**100**

Participant Reported Effective Strategies for Asthma Prevention and Control

Participants organized their effective strategies into categories, which were then collapsed into a smaller subset **(Table 2)**. A detailed description and a brief summary of findings for each category follow Table 2. Educational strategies accounted for the largest proportion of strategies across all three meetings. Policy strategies were the next most frequently cited. For example, smoking policies and patient asthma action plans were categorized separately from other types of policies

because participants, through discussions with other participants, stressed their unique role in preventing and controlling asthma episodes. Access to care was the third most often cited category. Environmentally-based strategy issues were categorized separately because participants thought these issues were uniquely important at multiple levels. Partnerships across communities, programs, and agencies were also cited as an important successful strategy. Participants also emphasized the importance of surveillance and epidemiology, research, and evaluation to their progress on asthma initiatives. The final category, using the media/dissemination, was cited as an important strategy because it had the potential to promote each of the preceding categories.

- *Education*. Participants believed that patients (5.8%), providers (13.7%), families/caregivers (3.5%), and community members and school personnel (6.0%) should be educated, using culturally sensitive materials (1.1%), about all facets of asthma **(Table 2)**. Participants at all three meetings mentioned non-traditional education strategies—asthma camps for children and a Coaches' Asthma Clipboard Program that teaches coaches, physical education teachers and referees on what they need to know to assist athletes with asthma in managing their disease. Participants also reported the absolute necessity of culturally appropriate education materials and methods in languages other than English. Asthma education was cited at all three meetings as an important strategy for mitigating the effects of asthma once diagnosed. Strategies that participants reported as effective included educating physicians about best practices, and beginning provider asthma education in medical and nursing schools. At least one participant noted the release of the EPR Guidelines from NIH as a key "happening" in the asthma world. It was noted that providers are experiencing a huge learning curve since these guidelines are more complex than previous guidelines. The asthma community is wrestling with the challenge of appropriately educating providers—whether physicians, school nurses, or respiratory therapists—on the details of the Guidelines published in 2007.
- *Policy*. Policies—organizational and non-governmental—can be the largest potential repository of strategies to prevent asthma (e.g., schools, hospitals, businesses—6.2%; smoking and tobacco related policies—6.2%; policies requiring asthma action plans—3.2%; and governmental policy, excluding smoking—4.3%). **(Refer to Table 2)**. Participants cited public smoking prohibitions, indoor/outdoor air quality standards, and pollution control, as strategies that can reduce the severity/number of asthma attacks in those who currently have asthma (secondary and tertiary prevention). Participants noted that they work with transportation planners and city planners to develop plans that encourage public transportation and situate homes near workplaces. Participants also mentioned discussions about policies to reduce and/or eliminate emissions from idling cars and buses at schools.
- *Access to Care*. Participants viewed access to care multidimensionally. Some examples that they reported as effective included: coordinated care/case management, affordable medications, appropriate medication management, affordable health insurance, appropriate funding and reimbursement at all levels of health care (e.g., patients, doctors, hospitals, payers, insurers) and medical homes.
- *Environmental issues*. Participants reported many strategies that had an environmental focus. Participants across the three meetings created a special environmental category due to their belief in the importance of these strategies and the needed coherence in implementing them. Participants placed a strong emphasis on environmental-based strategies and grouped many environmental strategies together even when they could have placed them in other categories, such as policy or education, for example. Indeed for participants, environmental strategies encompassed multiple strategic activities—developing pollution control strategies, implementing indoor/outdoor air quality standards, eliminating tobacco smoke in public places, eliminating idling buses and cars at schools, assessing homes for potential asthma triggers, developing mold remediation policies, educating community members, and developing media campaigns that inform people about environmental triggers.
- *Partnership*. Partnerships may not have been mentioned as frequently as other strategies because participants thought of the collaboration that results from these partnerships as the foundation from which they conduct all their activities. Participants were clear that they would not be willing to start any strategy without building a partnership with stakeholders. Participants noted that they developed partnerships with many private for-profit and not-for-profit, governmental, and membership organizations. Examples included working with payers, insurers, asthma coalitions, local and state public health agencies, and schools.
- *Surveillance/epidemiology/research/evaluation*. Asthma activities and strategies may grind to a halt—or at least wander, directionless—without accurate and current surveillance, epidemiological work, research, and evaluation. Participants cited the need for surveillance, epidemiology, research, and evaluation in order to plan strategies and track results. Participants also noted that data and research helped them define the scope of the problems within their communities that are related to asthma, such as prevalence and socio-economic information.
- *Using the Media/Dissemination*. Participants noted that using the media and disseminating programmatic information was useful for creating momentum for the programs as well as identifying the potential people who can benefit from asthma screening. Hotlines

Partnerships may not have been mentioned as frequently as other strategies because participants thought of the collaboration that results from these partnerships as the foundation from which they conduct all their activities.

were often used as a method to convey information to the public.

Strategy Effectiveness

After numerous strategies were generated from the Affinity Diagram process, the next step was to find out how participants ensured that their strategies were effective (i.e., how they checked their progress toward their outcomes). Using flip charts, participants were asked to walk around the room and write down how they determined, evaluated, tracked, or assessed strategy effectiveness (See Appendix 3 for the questions). Four categories emerged that illustrate how participants ensure strategy effectiveness:

- *Strategy Formulation*. Participants believed that their strategy formulation process helped to validate their chosen strategies. For example, prior to forming a strategy, participants noted that they identified target populations/audiences, conducted gap analyses on policies, community needs, and their program's alignment with CDC requirements. They also engaged in extensive planning processes, oftentimes with partners. They also used evidence, such as research data, assessments, quality of life surveys, literature reviews, and clinical best practices to formulate strategies. They also used focus groups, collected stories/case studies, networked with partners and enlisted leaders' support. Participants also cited checking the availability of resources and cost effectiveness of strategies. Perhaps most importantly, some participants noted that they conduct a "reality check" of their experience and that of their partners' before developing strategies.
- *Strategy Implementation*. Participants reported adapting proven best practices for implementation, and translating research into practice rather than inventing an intervention themselves. They reported using pilot programs to test a strategy on a small scale, prior to full implementation. They also reported obtaining and/or distributing funding (created requests for proposals (RFPs) and mini grants) as a method of to incentivize implementation. Participants noted that they added a small fee (five dollars) to some previously free programs (e.g., visits with an asthma educator) to reduce no-shows. Some participants used the Internet to make public health forms easily accessible for patients.
- *Tracking Outcomes/Progress*. Participants cited traditional ways of tracking their progress through surveillance data; national asthma data; and other types of data such a hospital (e.g., hospital length of stay, repeat visits to the emergency room), public health clinic, employer, school, health care costs, urgent care visits, asthma well visits, behavior change (e.g., patient, caregiver, coaches), continuing education hours, evidence in medical record of patient compliance, home audits, all types of evaluations (e.g., program evaluation and policy evaluation), and accountability measures for contractors, project managers, and clinicians.
- *Changing Approach as Necessary*. If a strategy was not producing optimal results, participants reported adapting their strategies, when indicated. For example, if they were not reaching their target audience, respondents reported that they changed how they reached out to them. In some cases, participants decided to reach a smaller audience—but with more focused and intensive interactions. Participants recognized their limits and stopped assuming "that everyone wants help." Another example of how they changed their strategy was to integrate all chronic diseases so they addressed all underlying risk factors for chronic disease including asthma. Participants cited developing new collaborations to strengthen their partnerships and to reach more people in their communities.

Table 3. Number and percent of contextual characteristics that influence strategy implementation in descending order.

Strategies Categories	#	%
Collaborative atmosphere	119	34.7
Supportive leadership	65	19.0
Effective planning, setting goals and objectives	41	12.0
Favorable funding environment	35	10.2
Favorable surveillance/research/evaluation environment	31	9.0
Favorable legislative/policy environment	29	8.5
Effective communication/message to the media	11	3.2
Supportive payer involvement	6	1.7
Equity	5	1.5
Community need/readiness	1	0.3
Total	**634**	**100**

Importance of Contextual Characteristics

Having effective or proven strategies will not ensure their implementation or success. Setting the stage (context), or responding to the prevailing context, is as important as the strategy itself. Participants thought it was critical to the success of strategy implementation to understand the context in which the strategy was to be implemented. Participants were asked to describe the optimal contextual characteristics that helped their strategies succeed. **Table 3** lists the 10 contextual characteristics that participants cited across the three meetings.

- A *collaborative atmosphere* among partners and stakeholders was cited most frequently as a characteristic that contributes to successful implementation of asthma strategies—trust, cooperation, and having the right people involved can make a strategic difference.
- *Supportive leadership* was the second most often cited characteristic. The type of supportive leadership will vary depending on

the context. Dynamic leaders and champions can bring a host of skills including new knowledge, vision, resources, and enthusiasm to strategy implementation.

- *Effective planning, setting goals and objectives* were also cited as important to success. Participants reported that planning, goals and objectives helped them on many levels, from recruiting additional stakeholders to attracting funding.
- A *favorable funding environment* along with all types of resources *(staff, in-kind contributions)* and a goal of sustainability were noted to be important. Funding while important, was not absolutely essential in all cases, as one participant noted that "… sometimes the funding comes once we get going."
- Participants agreed that an environment *favorable to surveillance, research, and evaluation* was important. For example they emphasized their reliance on surveillance data to help them gauge the asthma problem in their communities as well as the progress they are making after implementing programs. They also said the willingness of community institutions (e.g., hospitals releasing data, schools releasing student morbidity data) and community groups (e.g., patient advocate groups, parent groups) to participate in research and evaluation was essential to innovation development and program monitoring.
- A *favorable legislative/policy environment* was considered important regardless of whether or not the policies were governmental or institution-based (e.g., hospital policy that requires an asthma action plan upon discharge, or requires a medical home, and school policies that allow children to carry inhalers and other medication). Participants noted that developing and maintaining relationships with policymakers was an important component of a favorable policy environment.
- *Effective communication* was deemed important no matter what the environment or strategy, developing and disseminating a clear message was essential to success, as was knowing how to work with the media.
- *Supportive Payer Involvement* was seen as facilitating successful strategies. Though this option was noted less frequently, it may be worth exploring how this can help implementation of asthma strategies in the future. Large payer organizations may be willing to work with asthma professionals to develop innovative solutions for their insured members.
- *Community Need/Readiness and Equity* were two categories that came up in the last meeting. Though they were not mentioned often, they stood out as unique categories that have a potentially large impact on the success of asthma prevention and control strategies. Participants stressed the importance of communities being ready to accept strategies that they are trying to implement. Participants also believed that equity issues (e.g., social equity, economic equity) within a community need to be addressed in order to make sustainable progress toward preventing and controlling asthma episodes.

How Contextual Characteristics Contribute to Success

It is important to know how contextual characteristics contribute to successful strategy implementation. Otherwise, it is like driving cross country without a map. After numerous contextual characteristics were generated from the Affinity Diagram process, the next step was to find out from participants which contextual characteristics contribute to successful strategy implementation. Participants were asked to reflect on, and then share ideas about how they try to influence contextual characteristics in their favor, through their own actions. Participants were asked to write their methods on flip charts, placed around the room. They were asked about their methods for communicating both good and bad news, the catalysts for their initiatives, how they framed or defined asthma, and the asthma situation in their communities (See Appendix 3 for the questions). Four categories of contextual characteristics emerged:

- *Communication*. Participants cited many typical methods for communicating good and bad news: face-to-face meetings, electronic communication, sharing stories, reports, testifying, resource banks, informal networks, conferences, discussions with local chapters of national organizations, and publishing in peer journals. They also cited less common methods of communicating information: grand rounds in hospitals, clinical/provider report cards, discussing study results with study subject/asthma population directly, and open forums.
- *Catalysts*. Participants cited many types of catalysts for asthma prevention and control: data (mortality, morbidity, burden of asthma, air quality, quality of life, absenteeism from work and school), healthcare costs, leaders/champions, policy drivers (guidelines/official recommendations), a tragedy—usually a death, insurers, requests from asthma patients themselves, among others.
- *Definition/scope of asthma problem*. Most common methods for defining the scope of the problem included: focus groups with stakeholders, health status data, environmental data, identified service gaps, and hospital-specific data.
- *Approval*. Participants developed or sought contexts that helped them gain approval for their activities. For example, they used coalition consensus, listening sessions, gained approval from funders, letters of support, gained legislative approval, received endorsement from key leaders/stakeholders, and received media attention.

Potential Barriers to Success

The facilitators used a PDPC to help participants identify the most likely factors that contribute to the failure to achieve results. Participants also ranked the strength (high, medium, low) of the causes of failure and identified countermeasures. Participants noted that some situations were beyond their control (e.g., a leader moves away), but in all instances they were able to identify countermeasures that can be implemented to improve the outcome. For a full list of countermeasures see Appendix 4.

- *Factors that contribute to Strategy Failure*. Nine categories emerged from the PDPC matrix that were considered to have a high

It is important to know how contextual characteristics contribute to successful strategy implementation. Otherwise, it is like driving cross country without a map.

probability of contributing to strategy failure: differing perceptions/conceptualizations (e.g., asthma not seen as a problem); educational gaps in understanding asthma; patient issues (e.g., compliance, understanding); problems with partnerships/coalitions (e.g., lack of provider approval); lack of funding/resources (e.g., lack of incentives for providers and others, workforce shortages); lack of providers (e.g., motivation, urgency); lack of time and problems with time management (e.g., too many projects); inadequate surveillance data; and an unfavorable policy environment.

- *Contextual characteristics that contribute to failures in strategy implementation*. Five categories emerged from the PDPC matrix: (1) lack of, or misdirected leadership and vision; (2) negative political influence or hostile climate, (3) collaboration problems (e.g., difficulty reaching compromises, some stakeholders may not choose to join, competition among stakeholders); (4) problems associated with planning and goal setting; and (5) information overload.

Participants reported countermeasures for these barriers that were consistent with the successful strategies that they reported using the Affinity Diagram (Tables 2 and 3). For example, participants noted that communicating clearly with partners and stakeholders can help bring about compromises, as well as help to induce stakeholders to join a group. They also noted that adding contingencies to plans, diversifying funding, and building in sustainability helps to prevent negative outcomes.

Opportunities for Improvement

In the final exercise for each meeting, facilitators lead a group discussion. Participants were asked to reflect on the meeting and the QI sessions, and indicate what they would start doing, what they would continue doing, and what they would stop doing as a result of their participation in the meeting. Participants generated a matrix around the categories of policy development, funding/resources, collaboration/partnership,planning/goals/innovation/perception/assumptions, time/resource management, communication/dissemination/media, surveillance/data/research/evaluation, and education. For a complete list of Stop-Start-Continue insights, see the matrix in Appendix 5. Two major categories emerged from the discussions:

- *Communication/dissemination/media*. As with any profession, it is important to clarify terms. Using a common lexicon to help everyone understand the difference between preventing the onset of asthma and preventing and controlling asthma episodes is important. Although "preventing asthma" seemed to be a precise term, it held different meaning for different people. For some preventing asthma meant that asthma attacks are prevented through medicine (secondary or tertiary prevention). While others viewed preventing asthma as primary prevention which includes a wide array of activities, such as passing clean indoor/outdoor air legislation and counseling pregnant women about measures they can take to eliminate asthma triggers from the home prior to the birth.
- *Time/resource management*. Participants listed many opportunities for improvement. They noted ways to save time by reusing materials/guides developed by other states. They also thought the PDPC tool would help them quickly identify barriers to success. Competing with others in their state was also identified as a time waster. Being realistic about what can be delivered and setting realistic priorities would help boost success.

DISCUSSION

Limitations

Given that participants and states were selected using a convenience sample, the findings cannot be generalized to all asthma, public health, or health care professionals; programs in the U.S.; nor can regional conclusions be drawn. However, other reports support many of the findings (e.g., asthma education, policy development, air quality, leadership and adequate funding as important assets to asthma programs).[27, 28] Moreover, this process was subjective and therefore causal inferences cannot be made about the relationships between strategies, contextual characteristics, and other findings and their effectiveness or ineffectiveness.

Mini-Collaboratives and/or Teams

Clearly, asthma professionals are implementing many strategies to prevent and control asthma episodes. They also are keenly aware of the contextual characteristics that can have a positive or negative impact on strategy implementation. However, there are still unanswered questions: What strategies should be employed given a particular contextual setting? What combination of strategies and contextual characteristics work best together? How do they work together? Is it possible to implement certain strategies even in a hostile contextual environment? What countermeasures work best in overcoming barriers to success? Many participants would have liked more time to explore further creative strategies and solutions.

In a second phase of this asthma prevention and control initiative, PHF plans to build on what was learned during the three meetings, employ a mini-collaborative and/or team structure, and use QI methods (e.g., rapid cycle improvement) to help three to five communities achieve measurable improvement in asthma control. Measurable improvements in asthma control can be achieved in a short period. If proven successful, these improvement initiatives can lead to refined strategies and processes that can be expanded nationally in communities and states trying to achieve better outcomes in asthma control.

Using a mini-collaborative and/or team approach, the reported strategies and contextual characteristics can be investigated to determine if they are indeed effective and under what circumstances. In all three meetings participants were eager to learn from each other. For example, some of the participating states had state asthma plans and policies. Their peers at the meetings wanted to learn how they had developed and implemented those plans and policies. Such exchanges support the idea of mini-collaboratives and/or teams.

The three meetings of asthma professionals resulted in an inventory of participant reported effective strategies and contextual characteristics they deemed important to their work on asthma prevention and control. This inventory represents a first step toward understanding and developing a protocol or protocols that can be used in any asthma prevention and control setting.

Next steps for testing in mini-collaboratives could include exploring the usefulness of readiness checklists being used in some states and developing a check list of widely used strategies. Such checklist(s) could help asthma professionals plan which strategies to use given their contextual situation. It may also be helpful to asthma professionals, if they had an equity checklist to determine the level of socioeconomic equity within their communities or state. Community readiness checklists may benefit asthma professionals prior to implementing a community-wide strategy. Likewise, agency readiness checklists may help professionals determine if they are ready to implement certain strategies. Use of checklists could help asthma professionals track their progress over time, and could give them the opportunity to reflect on what is occurring at specified intervals (e.g., daily, weekly, quarterly).

While the categories generated in the meetings are wide-ranging and useful, there are likely additional categories that are important in the prevention and control of asthma episodes. Future work should both test the validity of the categories gathered in this project, as well as, look for additional categories that contribute to the prevention and control of asthma episodes, and test their effectiveness.

Benefits of QI

Participants reported that using the QI methods helped them think about their strategies differently. The QI tools used were administered in a sequence to guide the participants thinking through a constant process of refinement and insight into what is and is not working in their asthma prevention and control programs. Using the PDPC matrix helped participants speak about the difficult subject of program failure. Releasing this fear enabled them to generate many countermeasures to mitigate potential program failure points. The PDPC matrix also gave them permission to stop spreading themselves too thin and promising more than they can deliver. The Start-Stop-Continue matrix gave participants the ability to share their insights about how they could implement change (albeit untested) immediately in their current asthma programs. Participants reported that they were going to look for additional stakeholders, partners, and people to lobby for them. It also gave them confidence to continue the current networking and communication strategies.

The Start-Stop-Continue matrix gave participants the ability to share their insights about how they could implement change (albeit untested) immediately in their current asthma programs.

Supplemental or indirect benefits of QI exercises brought about by participation in the meetings included newfound collaboration and networking among participants. One participant stated, "I got to know people working in my state in a different setting and made connections." Participants also noted that they want to use QI processes as they plan their future work.

Conclusion

At a time when people and programs are strapped economically, when results matter and it seems like there are too many priorities for some to rise above equally important ones we are all challenged with what to do next so

we can really make a difference. While not an exhaustive list, we noted from these meetings a few tools, techniques, and strategies when implemented incrementally could be helpful in jumpstarting improvement initiatives for asthma programs. While not an exhaustive list, these are:

- Develop an Affinity Diagram, a PDPC, and a Stop-Start-Continue matrix to assess your community assets and barriers regarding asthma.
- Determine community readiness and the equity level within a community.
- Embrace a culture of transparency and approach asthma problems at multiple levels (e.g., national, state, local). Develop asthma plans with coordinated strategies across program areas, when possible. In particular, collaborate/partner across disease-specific and program lines (e.g., tobacco, WIC, Maternal and Child Health).
- Assess the feasibility of implementing policy changes that are favorable to asthma prevention and control (e.g., tobacco/smoking bans, environmental, asthma action plans, non-governmental—hospitals, businesses, schools—legislative and/or executive policies at the national, state or local level).
- Assess the environmental issues in the community.
- Continue education programs and also expand to appropriate populations (e.g., patient, provider, family/caregivers, and community members). Make sure to develop culturally relevant materials in languages that match community demographics.
- Work closely with payers and others to increase access to care for asthma patients.
- Continue to use surveillance data to define asthma within communities and monitor progress.
- Remember to communicate successes to the community.

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APPENDIX 1

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APPENDIX 2

State-Specific Resources Contributed by Meeting Participants (organized by "State")				
State	**Resource Title**	**Source**	**Year**	**Description or Asthma Outcomes Measured**
Michigan	Asthma Health Outcomes Project: Asthma Programs with an Environmental Component: A Review of the Field and Lessons for Success	http://www.chs.ubc.ca/archives/files/Asthma-Programs-Environmental-Component.pdf	2007	Report aims to answer: (a) what strategies have been implemented to help improve life for individuals with asthma; (b) what challenges do program providers face in implementing their interventions; (c) what are the factors that help make programs successful; and (d) to what extent are programs implementing the factors that have been associated with success?
	Healthy School Assessment Tool (HSAT)	Brochure not available online. Contact John Dowling at dowlingjoh@michigan.gov	2007	The HSAT are a set of online tools designed to help Michigan schools create healthier environments through partnerships, assessment, and policy
	Asthma in Michigan 2010: A Blueprint for Action	http://www.getasthmahelp.org/AIM_Strategic_Plan6%2706.pdf	2006	Michigan's asthma strategic plan
	Emergency Discharge Instructions - FLARE	http://www.getasthmahelp.org/FLARE.asp	2006	Standardized emergency department discharge instructions according to national guidelines
	Annual Report on Asthma Deaths in Michigan	http://oem.msu.edu//annualreports.asp	2005	Reviews asthma deaths in Michigan to determine the factors contributing to the death
	Asthma in Michigan 2010: A Blueprint for Action	http://www.getasthmahelp.org/AIM_Strategic_Plan6%2706.pdf	2006	Michigan's asthma strategic plan
	Emergency Discharge Instructions - FLARE	http://www.getasthmahelp.org/FLARE.asp	2006	Standardized emergency department discharge instructions according to national guidelines
	Annual Report on Asthma Deaths in Michigan	http://oem.msu.edu//annualreports.asp	2005	Reviews asthma deaths in Michigan to determine the factors contributing to the death
	Asthma and Indoor Air Quality	http://www.getasthmahelp.org/tool.html	2002–2006	Multi-media presentation on air quality and asthma
	Asthma Prevention and Control Resources	http://www.michigan.gov/documents/Asthma_Resources_6686_7.pdf	Updated 2002	Michigan Department of Community Health resource list
	Asthma Initiative of Michigan Website	www.getasthmahelp.org	Active since 2002	A comprehensive site containing asthma information for patients and providers, as well as Michigan-specific reports and event calendar
	Michigan MATCH Program (Managing Asthma Through Case-management in Homes)	Document not available online. Conatct John Dowling at dowlingjoh@michigan.gov	1996	Intensively case-managed low-income children and adults with moderate to severe asthma

State-Specific Resources Contributed by Meeting Participants (organized by "State")				
State	**Resource Title**	**Source**	**Year**	**Description or Asthma Outcomes Measured**
Minnesota	Asthma in Minnesota	http://www.health.state.mn.us/divs/hpcd/cdee/asthma/documents/asthmaepireport08.pdf	December 2008	2008 Epidemiology Repor
	Asthma Hospitalizations Peak in September	http://www.health.state.mn.us/asthma/documents/08asthmahosppeaksept.pdf	July 2008	Minnesota Department of Health fact sheet
	Strategic Plan for Addressing Asthma in Minnesota	http://www.health.state.mn.us/asthma/StatePlan.html	2007	Minnesota State Asthma Plan
	Reducing Environmental Triggers of Asthma Home Intervention Project	http://www.health.state.mn.us/asthma/documents/07retafactsheet.pdf	September 2007	Minnesota Department of Health fact sheet
	Asthma in Minnesota	http://www.health.state.mn.us/asthma/documents/factasthmaspring07.pdf	April 2007	Minnesota Department of Health fact sheet
North Carolina	North Carolina Asthma Plan	http://www.asthma.ncdhhs.gov/asthmaPlanDocs/NC_Asthma_Plan.pdf	2007-2010	North Carolina Asthma Plan
	Asthma Coalition Update	http://www.asthma.ncdhhs.gov/docs/asthma_coalition_fall_2007.pdf	2007	North Carolina Asthma Coalition Update
	Asthma Epidemiology Update	http://www.asthma.ncdhhs.gov/docs/Asthma_Epi_Update_Spring-Summer_2008.pdf	2008	North Carolina Asthma Coalition Update
	The Asheville Project: Long-Term Clinical, Humanistic, and Economic Outcomes of a Community-Based Medication Therapy Management Program for Asthma	http://www.thehealthiestnation.com/downloads/JAPhAArticle.pdf	Publication date: 2006	Assessed clinical, humanistic, and economic outcomes of a community-based medication therapy management (MTM) program in Asheville, North Carolina, for 207 adult patients with asthma over five years
Oregon	Oregon Asthma Leadership Plan: Statewide Call to Action	http://www.oregon.gov/DHS/ph/asthma/plan/alplan.pdf	2006-2011	The Leadership Plan identifies a goal for each of the priority areas, measurable objectives and strategies to improve the lives of all Oregonians with asthma
	Geographic Disparities in Pediatric Asthma Control Among Oregon Children on Medicaid	http://www.oregon.gov/DHS/ph/asthma/docs/AsthmaGeoDisparities_Pediatric2008.pdf	Published: January 2008	The Oregon Asthma Program convened a state-level Leadership Team that represents several organizations and agencies committed to reducing pediatric asthma disparities in Oregon
	Oregon Asthma Surveillance Report	http://www.oregon.gov/DHS/ph/asthma/docs/report.pdf	2007	This report provides a compilation of data on asthma in Oregon (includes asthma prevalence, hospitalizations, deaths, management of asthma, pediatric asthma)

State-Specific Resources Contributed by Meeting Participants (organized by "State")				
State	**Resource Title**	**Source**	**Year**	**Description or Asthma Outcomes Measured**
Oregon	Focus Group Report: People w/Asthma and Caregivers of Children w/Asthma	http://oregon.gov/DHS/ph/asthma/docs/asthmafocusgroupreport.pdf	2007	The Oregon Asthma Program conducted four focus groups in Fall 2007 (two with people with asthma and two with caregivers of children with asthma)
	Guide to Improving Asthma Care in Oregon	http://www.oregon.gov/DHS/ph/asthma/guideor.shtml	2005	This guide was developed to steer efforts to improve the medical management of asthma and to define appropriate indicators for monitoring the quality of medical care provided to Oregonians with asthma
South Carolina	Asthma in South Carolina	http://www.scdhec.net/hs/epidata/asthma/state2008.pdf	April 2008	Bureau of Community Health and Chronic Disease Prevention (SC DHEC) fact sheet
Tennessee	Tennessee Asthma Management Program	http://health.state.tn.us/MCH/asthma.htm		Based out of Tennessee Department of Health—Maternal and Child Health Department
Washington	Washington State Collaborative: A proven model for health-care improvement	http://www.doh.wa.gov/cfh/WSC/default.htm	Active forum	Offers proven tools for pediatric and family medical practices to improve outcomes for their patients with chronic diseases
	Washington Environmental Public Health Tracking Network (WTN)	http://www.doh.wa.gov/ehp/WTN/WTN_homepage.htm	2007	The WTN is a project funded by CDC to improve the state of information concerning environmental contaminants, human exposure to hazards, and potentially related health outcomes in Washington State
	The Health of Washington State	http://www.doh.wa.gov/HWS/EH2007.shtm	2007	Assesses health status and related topics that are important to the WA Department of Health's mission of protecting and improving health in Washington. Three of its chapters include discussion on outdoor air quality, indoor air quality and asthma
	Washington State Asthma Plan	http://wai.alaw.org/washington-state-asthma-plan/WA-St-Asthma-Plan-Second-Draft-7-8-05-FINAL.pdf	2005	The Washington Asthma Initiative mobilizes individuals, communities, and organizations throughout WA State to improve the prevention, diagnosis, and management of asthma in order to decrease its individual and societal burdens
	Burden of Asthma in Washington State	http://www.alaw.org/pdfs/wai/BurdenofAsthmaWASt-2005FINAL.pdf	2005	Describes the burden of asthma in Washington state. 2008 update recently released
Wisconsin	Wisconsin State Asthma Coalition	http://dhs.wisconsin.gov/eh/Asthma/WAC.htm	2008	OWAC Vision: Individuals with asthma in Wisconsin will attain optimal health and quality of life and asthma will be prevented to the extent possible
	Wisconsin State Asthma Plan	http://dhs.wisconsin.gov/eh/Asthma/WAP.htm	2003	The plan addresses all persons with asthma, regardless of gender, age, race/ethnicity or geographic area, and priorities for key environments in which persons with asthma spend significant amounts of time, such as homes, schools and workplaces, are included

National Asthma Resources (Organized in alphabetical order by "Organization or Resource Title")				
Organization or Resource Title	**Source**	**Scope**	**Year**	**Description or Asthma Outcomes Measured**
Academy Health / State Quality Improvement Institute	http://www.academyhealth.org/state-qi-institute/ Contributing Organizations: AcademyHealth The Commonwealth Fund	Nine state teams (Colorado, Kansas, Massachusetts, Minnesota, New Mexico, Ohio, Oregon, Vermont, and Washington)	2008	States were elected to participate in the State Quality Improvement Institute—an intensive, competitively selected effort to help states plan and implement concrete action plans to improve performance across targeted quality indicators
Agency for Healthcare Research and Quality (AHRQ) / Asthma Care Quality Improvement: A Resource Guide for State Action	http://www.ahrq.gov/qual/asthqguide.pdf	National	Publication date: April 2006	Guide for helping States access the quality of care in their State and select appropriate quality improvement strategies or build on existing programs
American Association of School Administrators	http://www.aasa.org/content. cfm?ItemNumber=6715 http://www.aasa.org/focus/content.cfm?ItemNumber=1951 Funded by the Centers for Disease Control and Prevention/Division of Adolescent and School Health	National	1999-2003 2006-2011	The Asthma Wellness: Keeping Children With Asthma in School and Learning project aimed to reduce the burden of asthma among children and youth by working with school leaders The Asthma Leadership Project strives to build capacity among school district leaders to address childhood asthma
American Council on Science and Health / Asthma: Causes, Diagnosis and Treatment	http://www.acsh.org/publications/pubID.1741/pub_detail.asp	National	Publication date: November 2008	Asthma epidemiology, risk factors, triggers and treatment
American Lung Association (ALA)	http://www.lungusa.org/ http://www.stateoftheair.org/	National	Asthma mortality, 1979-1998, 1999-2004; Asthma prevalence, 1982-1996 and 1997-2006; Asthma ambulatory care visits, 1989-2005	Trends in Asthma Morbidity and Mortality 2007: Asthma mortality, prevalence, asthma ambulatory care visits The State of the Air 2008 website ranks U.S. cities and counties for best and worst ozone and particle pollution and enumerates groups at risk for every U.S. zip code

National Asthma Resources (Organized in alphabetical order by "Organization or Resource Title")				
Organization or Resource Title	**Source**	**Scope**	**Year**	**Description or Asthma Outcomes Measured**
Asthma and Allergy Foundation of America (AAFA)—Asthma Capitals	http://www.asthmacapitals.com/ Funded by AstraZeneca	100 most populated U.S. Metropolitan Statistical Areas	2004-2008	Prevalence factors (estimated asthma prevalence, self-reported prevalence, crude death rate from asthma), risk factors (annual pollen scores, annual air quality, public smoking laws, poverty rate, school inhaler access laws) and medical factors (rescue medication use, controller medication use, number of asthma specialists)
Behavioral Risk Factor Surveillance System(BRFSS)—Core Survey, Optional Asthma Module, Call-back Survey	http://www.cdc.gov/brfss/	National BRFSS is a state-based, random-digit-dialed telephone survey of the noninstitutional-ized civilian population 18 years of age and older	1999-2008 Call-back survey 2005-2008	Asthma prevalence (current, lifetime-ever told)
The Burden of Asthma in the United States—Level and Distribution Are Dependent on Interpretation of the National Asthma Education and Prevention Program Guidelines	Fuhlbrigge, Adams, Guilbert, et al. Burden of Asthma. AL el al. Am J Respir Crit Care Med. Vol 166. pp 1044-1049, 2002.	National. Telephone interview of 42,022 households	May 21-July 19, 1998	Asthma burden: short-term, long-term and global symptom burden. Also, asthma symptoms, medications, health service usage, health insurance and personal healthcare costs, types of provider and frequency of visits
Catching Your Breath: Strategies to Reduce Environmental Factors that Contribute to Asthma in Children.	http://ehtracking.berkeley.edu/docs/pubs/03_catchingbreath.pdf Contributing organizations: Association of State and Territorial Health Officials (ASTHO), Environmental Council of the States (ECOS), Environmental Protection Agency (EPA) Offices of Children's Health Protection and Air and Radiation, Centers for Disease Control and Prevention National Center for Environmental Health (CDCD-NCEH)	250 representative-s of state health and environmental agencies participated. / ECOS sponsored five state pilots on childhood asthma in Wyoming, Wisconsin, and California (with funding from EPA Headquarters), as well as in Idaho and Oregon (with funding from EPA Region 10)	Publication date: May 2003	Report identifies six areas of opportunity for state action. Also a vision statement and action agenda developed by representatives from environmental and health agencies, which identifies steps states can take to address childhood asthma in homes, schools, childcare centers and outdoor environments

National Asthma Resources (Organized in alphabetical order by "Organization or Resource Title")				
Organization or Resource Title	**Source**	**Scope**	**Year**	**Description or Asthma Outcomes Measured**
Centers for Disease Control and Prevention (CDC)	http://www.cdc.gov/nchs/data/nhsr/nhsr007.pdf	National and State	Published: August 2008	National Hospital Ambulatory Medical Care Survey: 2006 Emergency Department Summary
	http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_10.pdf		Published: April 2008	Deaths: Final Data for 2005. National Vital Statistics Reports.
	http://www.cdc.gov/asthma/pdfs/aag07.pdf		July 2007	National Asthma Control Program: America Breathing Easier 2007
	http://www.cdc.gov/asthma/contacts/		January 2006	CDC national asthma control program grantees and nonfunded asthma contacts
	http://www.cdc.gov/nchs/data/ad/ad373.pdf		June 2006	Hospital Ambulatory Medical Care Survey: 2006 Outpatient Department Summary
	http://www.cdc.gov/asthma/pdfs/asthma_guide.pdf		December 2003	Guide for State Asthma Agencies in the Development of Asthma Programs
	http://www.cdc.gov/asthma/pdfs/aag03.pdf		2003	National Asthma Control Program: Improving Quality of Life and Reducing Costs.
	ASTHMATALK@listserv.cdc.gov			Asthmatalk listserv
	http://www.cdc.gov/asthma/links.htm			Listing of useful documents and FAQs about asthma and indoor/outdoor air pollution from federal and state agency resources
	http://www.thecommunityguide.org/			CDC Guide to Community Preventive Services
	http://www.cdc.gov/pcd/issues/2008/apr/07_0210.htm			Tools for Developing, Implementing, and Evaluating State Policy
Children & Asthma in America/The State of Asthma in America: Two Landmark Surveys	http://www.asthmainamerica.com/ Funded by GlaxoSmith-Kline	National telephone survey of 801 respondents regarding children (4 –18 years old) with current asthma	February to May 2004	Knowledge and attitudes, and behavior toward asthma in children in the United States
The Coaches Clipboard Program: Winning With Asthma	http://www.winningwithasthma.org/ Funded by CDC Contributing organizations: Minnesota Department of Health Asthma Program (MDH) and the Utah Department of Health Asthma Program (UDOH)	National	Launched 2006	Thirty minute online educational program that teaches management of asthma to coaches, referees, and physical education teachers. Information can be applied to other groups

National Asthma Resources (Organized in alphabetical order by "Organization or Resource Title")				
Organization or Resource Title	**Source**	**Scope**	**Year**	**Description or Asthma Outcomes Measured**
Colorado Asthma Plan: Putting the Pieces Together	http://www.cdphe.state.co.us/ps/asthma/documents/CO_state_asthma_plan.pdf Funded by CDC Contributing organizations: Colorado Asthma Coalition Colorado Department of Public Health and the Environment	Colorado	Publication date: October 2003	Colorado's state asthma plan
Communities in Action for Asthma—Friendly Environments National Forum	http://www.epaasthmaforum.com/	National	Active forum	National venue for leaders of innovative and successful community-based asthma programs to tell their stories, describe their outcomes and evaluation methods, and present key elements of their programs
Environmental Protection Agency	http://www.epa.gov/asthma/programs.html http://www.epa.gov/asthma/publications.html http://www.epa.gov/iaq/schools/	National	Updated May 2008 Released in 1995, updated in 2007	Describes EPA's Asthma Program and provides many publications and resources geared towards reducing environmental exposures that trigger asthma EPA Asthma publications Indoor Air Quality Tools for Schools Program: Program to reduce exposures to indoor environmental contaminants in schools through the voluntary adoption of sound indoor air quality management practices
GlaxoSmithKline / Asthma in America: The State of Asthma in America: Two Landmark Surveys	http://www.asthmainamerica.com/	National telephone survey of 2,509 asthma suffers, 512 doctors and 1,000 members of the general public	May 21-July 7, 1998	Patient and professional knowledge, attitudes and behavior towards asthma in the United States. Also addressed asthma prevalence, frequency and severity of symptoms, utilization of emergency care, quality of life, and quality of care issues
Health Resources and Service Organization (HRSA) / Health Disparities Collaboratives (HDC) Asthma Collaborative	http://www.healthdisparities.net/hdc/html/collaboratives.topics.asthma.aspx	National	April 2006	Asthma Measures Phase 2 2006 The Asthma Collaborative is designed to help healthcare providers improve the care they provide to people with asthma. Focusing on specific measures that are based on clinical guidelines, practices concentrate on changes that truly make a difference
Morbidity and Mortality Weekly Report (MMWR)-National Surveillance for Asthma—United States 1980-2004	Moorman JE, Rudd RA, Johnson CA, et al. National Surveillance for Asthma—United States, 1980-2004. MMWR Surveillance Summaries. 2007;56(SS08); 1-14;18-54.	National	1980-2004	Self-reported prevalence, self-reported attacks, visits to physicians' offices, hospital outpatient departments, emergency departments, hospitalizations and deaths

National Asthma Resources (Organized in alphabetical order by "Organization or Resource Title")				
Organization or Resource Title	**Source**	**Scope**	**Year**	**Description or Asthma Outcomes Measured**
National Center for Health Statistics—National Asthma Survey	http://www.cdc.gov/nchs/about/major/slaits/nas.htm	National	February 2003-February 2004 (National Sample); March 2003-March 2004 (Four State Sample)	Examines the health, socioeconomic, behavioral, and environmental predictors that relate to better control of asthma
National Council of State Legislators (NCSL) / Asthma: A Growing Epidemic / Legislative Actions Related to Asthma	http://www.ncsl.org/programs/environ/envhealth/ehasthma.htm http://www.ncsl.org/programs/environ/envhealth/asthma2.htm#bills	National	1990-2000 Updated January 2003	Description of U.S. asthma problem, federal and state activity. Recommendations to federal government. Asthma-Related Legislative Activities
National Health Interview Study (NHIS)	http://www.cdc.gov/asthma/nhis/default.htm CDC National Center for Health Statistics	National	1997-current	Lifetime asthma and asthma attacks or episodes (since 1997); Current asthma status (since 2001)
National Heart, Lung and Blood Institute (U.S. Department of Human and Health Services National Institutes of Health)	http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf	National	2007	National Asthma Education and Prevention Program: Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma
National Lieutenant Governments Association (NLGA)—Helping Americans Breath Easier / Winning with Asthma	http://www.nlga.us/webcontent/Projects/Asthma/Asthma_Main.htm Expansion funded partially by AstraZeneca	Illinois, Iowa, Kentucky, Virginia, Wisconsin and the Territory of Guam. (Phase I). Arkansas Maryland, Missouri, Nevada, New York, Oklahoma, Tennessee (Additional states added)		NLGA is engaged in phase two of a multi-state public health education campaign bringing awareness to asthma. In the first phase, each state, the lieutenant governor distributed asthma action plans, bookmarks and wallet cards to help educate individuals about the effects and treatment of asthma. The second phase of the program will expand the existing "Winning With Asthma" Coaches Clipboard Program to seven states
Pew Environmental Health Commission—Attack Asthma: Why America Needs a Public Health Defense System to Battle Environmental Threats	http://healthyamericans.org/reports/files/asthma.pdf	National	Publication date: May 2000	States limitations of the U.S. public health system in preventing chronic disease and disability that are linked to the environment. Recommendations to the federal government

National Asthma Resources (Organized in alphabetical order by "Organization or Resource Title")				
Organization or Resource Title	**Source**	**Scope**	**Year**	**Description or Asthma Outcomes Measured**
PolicyLink	http://www.policylink.org/documents/WhyPlaceMattersreport_web.pdf. Contributing organization: California Endowment	National	Publication date: 2007	Why Place Matters: Building a Movement for Healthy Communities
	http://www.policylink.org/Research/JC-Asthma/ Contributing organization: Joint Center for Political and Economic Studies		Publication date: 2004	Breathing Easier: Community-Based Strategies to Prevent Asthma
	http://www.policylink.org/Research/ChildhoodAsthma/		Publication date: 2002	Fighting Childhood Asthma: How Communities Can Win
Preventing Asthma and Promoting Respiratory Health	Legislator policy brief from Health Policy Forum on Asthma & Respiratory Health held May 3-5, 2007, in San Diego, California Council of State Governments AstraZeneca	National	Publication date: 2007	Actions for State Legislators

APPENDIX 3

FLIP CHART QUESTIONS

DAY 1: How do you know the strategies you identified are working?
1. How did you implement your chosen strategies?
2. How did you track the implementation of your strategies?
3. Have your strategies changed since you began implementing them?
4. What information did you use to substantiate the scope of your strategy?
5. How did you formulate your strategies for prevention and control?

DAY 2: "How did these characteristics contribute to your success?"
1. How do you communicate information about how the strategies are working/not working?
2. What were the catalysts for developing your initiatives to prevent and control asthma?
3. What process was used to define, and, how did you define, the asthma problem?
4. How were your strategies approved (or sanctioned)?

APPENDIX 4

Midwest Meeting Causes and Countermeasures	
Causes	**Countermeasures**
1. Running out of money	• Search for other sources • Establish sustainability with other partners • Advocacy-asking for foundation, industry, government funding • Seek unique funding partnerships • Knowing what partners are willing to pay for/their capacity • Advocacy around funding source • More reporting and sharing of and diligent budget management • Get health plans/Medicaid to reimburse • Divert the way you use your resources (this could be a drastic change) • This could allow you to take on other projects. -Prioritization of funding • Knowing what partners are willing to pay for/their capacity
2. Not getting buy-in from everyone/limiting good use of partnerships	• Get buy-in from the beginning and involve them in the decision making process and sustain communication • Make sure you have the right partners • Understanding all partner goals (Called alignment in the business world) • Reporting to partners on results and outcomes • Knowing what partners are willing to pay for/their capacity • Expectations being outlined in the forefront and setting them in the beginning
3. Incorrect assumptions among planners (e.g., not knowing your target audience, too narrow of an approach)	• Challenge assumptions when you're planning • Conduct research • Acquire feedback • Have a broad base of information to guide your decision making process
4. Ground/Environmental shifts/ dynamic forces out of our control (e.g., staff turnover, Chief moves, people leaving because of pregnancy, natural/manmade disaster, etc.)	• Contingency planning. (F.M.E.A--Failure mode effect analysis--Dr. Bob Burney-ASQ) • Having friends in high places and low places (e.g., people working on the ground) • Succession planning and leadership development
5. No buy-in from audience (Target audience does not want what we are giving to them. We might not know audience or research says the audience doesn't want it)	• Legally mandated • Involve persons/target community • Reframe your goal in perspective of target audience • Find out barriers • Use the right message/messenger • Go upstream to change the conditions
5b. No buy-in from audience (Target audience does not want what we are giving to them. We might not know audience or research says the audience doesn't want it)	• Use the right message/messenger • Go upstream to change the conditions • Understand why they don't want it • Reframe your goal in perspective of target audience
6a. Ineffective or absent health profession education	• Don't assume logic on part of other party • Getting the buy in of people on the ground • Incentivize it/Make it available (more CME credits) • Evaluate it to show value • Build in performance and accountability/ Must have outcome expectancy • Build into curriculum • Reframing the message in context of client • Learning has to be useful and important • Build sustainability into ANG program • Mortality reviews with feedback loop to see your successes • Quality measures in place

Midwest Meeting Causes and Countermeasures	
Causes	**Countermeasures**
6b. Ineffective or absent health profession education	• See previous involvement and communication (#3/4) • Don't assume logic on part of other party • Provide train the trainer • Put quality measures in place • Build in performance and accountability • Build into curriculum • Educate professional staff (e.g., MA) • Learning has to be useful and important • Must have outcome expectancy • Build sustainability into ANG program • Mortality reviews with feedback loop to see your successes • Quality measures in place • Evaluate programs to show value
7. Lack of time to accomplish your plan	• Having more money so we don't have to depend on grants • Having sufficient staff to accomplish your goals • SMART objectives (Specific Measurable Attainable Realistic and Time-dependent) • Finding a way to have competitive partners play nice • Indentured assistance/low cost help from people who want to learn (e.g., grad students) • Employee/utilize community resources • Continual ongoing assessment of goals/objectives-reality check • Continuous evaluation • Stop doing what's not working • Keeping funders informed • Don't reinvent the wheel • Re-alignment of partners
8. Policy/Politics	• Getting to know your partners (inviting them to observe you-day at your clinic or schools) • Looking outside of your area/identify other bills in your field/geographic regions • Keeping your issue on everyone's radar • Educating policy makers • Understanding political will and their motivation • Empowering community • Showing how the powerful can share and still win • What is the value-what's in it for you/partners/stakeholders
9. Strategies are culturally/socially-economically/linguistically (literacy) incompetent (similar to knowing your audience above)	• Education-cultural sensitivity/competencies • Choosing the right messenger • Staff represents population • Accountability
10. Health Literacy	• Don't make assumptions/involve your target population with creation of tools and intervention strategies • Partner across departments (e.g., asthma and m/c meet weekly) • Train providers to education level of clients • Knowing the laws and regulations is required for receiving federal funding (accountability) • Using mixed media or multimedia (not everything has to be written out) • Staff attitudinal changes/target population who are closed off to health information • Improve public/private/other educations • More school nurses
11. Getting beyond grant restrictions	• Diversify the funding sources • Utilize partners • Consider becoming a non-profit • Communicate with funder

Northwest Meeting Causes and Countermeasures	
Causes	**Countermeasures**
1a. Not having all the partners at the table	• Persistence • Relationship building • Forethought • Keep process open so other people can join • Meaningful and transparent (in order to retain and engage partners) • Choose a strategy through a participatory process (group makes decision) • Let people own it • Can't start with an agenda and make people go through it
1b. Not having all the partners at the table (you can invite but people might not show up or might not know the right people)	• Same as above
2. Concession/compromises	• Money talks • Identify the values and criteria to make decision and hold to them • Have a leader/someone with leadership skills that helps build consensus • Meeting facilitators help by adding a neutral third party • Have a dialogue with meeting participates to get needs and values before putting forth an agenda to see if groups carry the same mission. This is how a program is supported • Community and purpose • Facilitator draws out what works/doesn't work
3. Group development of a strategy	• Work toward consensus
4. Strategy is conceptually flawed from beginning	• Everything might fail. Important to acknowledge you might fail • Make sure this is a process to which you come back to your outcomes • Go to literature and find evidence based • Create a logic model of your project • Evaluation plan
5. Lack of resources	• Build in sustainability when possible • Put a high value on non-financial resources • Find a champion • Strong partnerships • Brag to beg (publicize your successes so community leaders can see your successes) • Scale your services to match your resources • Keep asking and insert program and idea so funder is reminded every chance you get (persistence) • Have a plan that's ready to go so program might be funded when money is available • Select things that are cost-effective • Integrate projects together to save money • Seek out systems you can impact so systems adopt the changes you want to see
6. Following money (e.g., mission drift or State wants to develop State Asthma Plan, but it might not lead to any changes and takes time)	• Don't buy into it. Pass on money since it might be detrimental long-term • Have a clearly defined strategic plan. Helps you make a case to executive Director to why it isn't appropriate to that agency • Bragging what you're doing so the funders will see what you're doing
7. Grant money is not used as designed (e.g., State agency or federal agency decides where money goes but not always night)	• Have to be creative with dollars to make grants work. Manipulate system • Build relationships with funder • Align project manager goals and continue to talk about evaluation. Ongoing communications. Be transparent and negotiate what you want
8. Governmental and political influence	• Align project manager goals and continue to talk about evaluation. Ongoing communications. Be transparent and negotiate what you want

Northwest Meeting Causes and Countermeasures	
Causes	**Countermeasures**
9. Changes in relationships or partners or loss of a champion/or, no champion initially/ New person to team and project might not be their agenda	• Champion your program in a period of transition • Involve stakeholders through the process to identify new champions • Teambuilding and information sharing if a loss • Use the change game to your benefit • Recognize and celebrate your champions • Ask partners for who they think might have an interest to become a champion • Professionalize the champion (e.g., tobacco). Hire professionals whose job is to get rid of problem. Cannot be part-time
10. Failure to adhere to fidelity (educational intervention—must do A, B, C to solve problem X) / Not tailoring an intervention to make it culturally competent (e.g., academic researchers makes protocol and gives to program person who changes it because it won't work with population)	• Training, monitoring, evaluation • Relationship building leads to understanding • Public humiliation
11. Too rigid and inability to see project as dominos (influence one another). Also funders being too rigid.	• Have a diverse group design in the potential for mid-course corrections and adaptations • Organizational cultural/management style that allows for expressing doubts • Problem solving. Allows doubts to surface and corrections to be made
12. Failure to account to ground level barriers (e.g., community might be focused on one thing but you might want them to change another)	• Involve the community • Apply research to identify barriers (evaluation or formal scientific research) • Coordinate with other communities who are serving the same community • Focus groups if funding is available • Have basic resources available (food, shelter) so we can focus on problem • Have sufficient resources available

Southeast Meeting Causes and Countermeasures	
Causes	**Countermeasures**
1. Funding	• Seek diverse sources of money. Look for big pots – not piecemeal. Reality-too hard to find big pots (more small potentials) • Earmarks in legislative bills • More grant writers • More funding sources • More money available for FTE
2. Asthma is not seen as a problem	• Agenda setting • Good media campaigns—public awareness • Use worse case to strike and keep it local-sensitive (worst case examples work best in media)
3. Insufficient data (specifically at the community level)	• Have to capture data by working on relationships with those who collect data • Need data on school absences/not doing homework because of symptoms (asthma could be number one cause-make a good case) • Need to set baseline and collect program post data
4. Environmental not seen as a problem	• Identify lobbyist – tobacco and other 'dirty' industries. Community leaders to influence culture. Informal and formal leaders
5. Divisions among agencies (silos)	• CDC needs to change from categorical funding and integrate into plans. Better communication to get to know each other because physical location causes problems
6. Mortality data not exciting	• Focus on other sources (i.e., morbidity data and costs)

Southeast Meeting Causes and Countermeasures	
Causes	**Countermeasures**
7. ER admission make money for hospital (incentive to treat ER admitted asthmatics)	• Incentives for hospitals to reduce admissions results in positive outcomes • Case managers follow-up with ER admissions • More "open access" at primary care offices (i.e., longer hours, weekend hours, getting an appointment in two weeks or less)
8. Shortage of medical providers	• Reimbursement for education costs (evaluate primary care provider vs. surgeon earnings)
9. Natural disasters	• Hurricane Katrina mold remediation offered a good educational tool/opportunity
10. Accuracy of outcomes generated	• Standardize accounting process to capture money.
11. Patient compliance	• Some patient investment in their treatment, reminders, relationships with patients/med home. • More education • Address barriers to patient care cultural competency issues. Psycho/social issues
12. Lack of provider buy-in	• Educational scientifically-based • Adherence to guidelines • Work within time constraints of a busy practice (ancillary state) • Link between patient compliance and education support
13. Failure to use medication at home appropriately	• Education for patient – don't wait • Evening hours/weekends for clinics and doctor to provide medication management education
14. Lack of time	• Focus on asthma as a high priority
15. Lack of school support	• Family/community advocacy • Keep them well to keep them in school • Agreed upon policies
16. Lack of school nurses	• School-based health clinics

APPENDIX 5

Stop-Start-Continue Matrix Combined for All Regional Meetings			
	Start	**Continue**	**Stop**
Policy	• Renew our search for a legislative advocate	• Work with legislators to enact policy change	• Stop working in silos; stop funding programs that do not have results
Funding/Resources	• Seek grant funding from difference sources • Better demonstrate cost-effectiveness and outcomes of programs	• Keep writing grants • Diversify funding & explore new funding • Better demonstrate cost-effectiveness and outcomes of programs	• Stop funding ineffective programs or ineffective parts of programs • Spreading funds too thin
Collaboration/ Partnership	• Seek advice of other states • Look for new partners (e.g. non-traditional, outside of state, within region, primary care) • Work with Asthma Alliance to add asthma to surveys • Find evidence-based practices for community workers, including disparities collaborative model • Partner and leverage with health-care providers and insurance companies • Work more with health plans than doctors	• Recognize contribution of teaching hospitals/medical • Mobilize communities • Inspire staff to help families in the change from child to adult asthma needs • Value the input from patients and clients	• Stopped offering and providing asthma programs to schools that refuse to provide reporting on outcomes
Planning/Goals/ Innovation/ Perception/ Assumptions	• Think big picture and do QI exercise to develop vision • Look into interventions/research on smart growth, the built environment and programs that promote physical activity to see how they impact the improvement of asthma, heart disease, and respiratory illness • Develop plans fully	• *Nothing listed*	• Stop assuming people want to get help & that we know what they need • Stop working in silos • Stop negative thinking
Time/ Resource-management	• Determine new ways to deliver the requests • Learn from other states' work, (i.e., look at interactive asthma plans from other states). Look more closely at mortality data to gauge the scope of the problem, as well as impact of programs • Use the PDPC tools we learned today in our retreat in the next few weeks and in program planning	• QI initiatives. Participants noted that they would continue using quality improvement methods as way to use time and resources effectively • Find ways to weave asthma work into existing programs. The themes of collaborating with other programs and also doubling up on messaging also was noted • Participants agreed that developing countermeasures early in the planning process, as well as continuing to assess those measures for any needed adjustments, was essential to creating the right environment for success	• Stop competing with one another • Reset priorities/not making everything a priority • Stop trying to do everything/ spreading too thin • Stop promising more than you can deliver

Stop-Start-Continue Matrix Combined for All Regional Meetings			
	Start	**Continue**	**Stop**
Communication/ Dissemination/ Media	• Do a better job communicating Spread urban physician model. Have physicians advocate for more school nurses • Talk to CDC about registries (state-level and clinical) and health information exchanges systems CDC doesn't want to support software but supports the concept • Publicize successes to highlight program value. Will also make the community aware of services	• Create asthma guidelines that patients can easily understand • Make guidelines easer to understand "strip down to basics" • Communication among partners • Public awareness campaign • Focus on ten key messages in asthma guidelines	• *Nothing listed*
Education	• *Nothing listed*	• Provider outreach and education • Inter-professional care. Expand medical model • Have conversations with partners to raise awareness • Focus on cultural competency and literacy	• *Nothing listed*

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