

Controlling Asthma in American Cities Planning Phase Evaluation Plan

(April 2003)

The following evaluation plan is based on the CDC six-step evaluation model, including:

1. Engage stakeholders
2. Describe the Plan or Program
3. Focus the Evaluation
4. Gather Credible Evidence
5. Justify Conclusions
6. Ensure Use and Share Lessons Learned

Step 1: Engage stakeholders

Stakeholders in the Minneapolis and St. Paul project are defined as the “community of solutions”. This term was coined by the Kellogg Foundation as all those who can bring something to help address a local community problem, this includes those who have expertise, passion, influence, resources, and/or time. All stakeholders and partners contributed to the development of this evaluation plan through their involvement on the Grant Management Team, Leadership Team, workgroups, and/or focus groups.

Stakeholders include:

American Lung Association of Minnesota
Centers for Disease Control and Prevention
Children’s Hospitals and Clinics in Minneapolis and St. Paul
Gail Brottman, MD, co-principle investigator
Greater Minneapolis Day Care Association
Hennepin County Medical Center
Minneapolis Department of Health and Family Support
Minneapolis Public Schools
Minnesota Council of Health Plans, including Janny Brust, MPH, co-principle investigator
Minnesota Visiting Nurse Agency
Regions Family Physicians
Richard Svem, MD, principle investigator
Saint Paul Public Schools
Saint. Paul Ramsey Department of Public Health
Various community-based organizations

Step 2: Describe the Plan or Program

See the attached 5-year implementation logic model for additional information about the strategic plan.

The following recommendations/interventions are included in our strategic plan.

Health Care Issues

- Improve health care systems and processes by working with health plans, local hospitals/emergency department, and clinics to simplify their processes and remove barriers to quality asthma care.
- Increase health care professionals' knowledge of how to diagnose and treat children with asthma by developing a multi-faceted approach.
 - Continue the Asthma Educator Certificate Course, a prep course for the NAECB Certified Asthma Educator exam.
 - Offer ongoing primary care provider seminars about asthma diagnosis and care.
- Improve the communication and linkages among those organizations and individuals that provide care for children with asthma within a targeted geographic region by bringing them together quarterly for networking and continuing education. These individuals and organizations include: health plans, primary care providers, emergency department/urgent care staff, school health offices, home care workers, and welfare case managers.
- Create a system to provide "clinic alerts" to primary care providers when a child is over or under filling his/her asthma prescriptions.

Environment

- Assess the asthma triggers in a living and childcare environment through an environmental assessment/evaluation tool(s).
 - Identify and implement strategies to reduce triggers in the homes of children and childcare providers.

Patient and Family Education

- Continue, expand, and promote the Minnesota Asthma Information Center website, an online clearinghouse of accurate, clear, and immediate information about asthma.
- Provide culturally-appropriate community asthma educational forums to families of children with asthma by contracting with community-based organizations.
- Provide quality asthma education in the pharmacy setting.

Schools

- Sustain the Healthy Learners Asthma Initiative in Minneapolis schools (grade K-12) and expand the Saint Paul Public School pilot project to include all St. Paul Public Schools (grade K-12).

Early Childhood and Childcare

- Add asthma screening as a component to the Early Childhood Screening Program in Minneapolis and St. Paul public schools and the Minneapolis and St. Paul Head Start programs. If asthma is suspected or is in poor control, a referral to a primary care provider is made.
- Adopt/modify existing 45 to 60 minute asthma in-services for childcare providers and deliver at least eight in-services per year. Ensure the training is provided to the Minneapolis and St. Paul before and after school program staff.

Step 3: Focus the Evaluation

The evaluation design is based on four levels of evaluation:

1. Conducting an overall project process evaluation
2. Focusing intervention specific evaluations on short-term process and short-term outcomes measures
3. Utilizing symptom-free days as a proxy measure for a mid-term outcome and
4. Measuring long-term outcomes including hospitalization, emergency room, and school absenteeism data

See the attached 5-year implementation logic model for an overview of the evaluation plan.

The following table articulates the guiding process and outcome evaluation questions, target measures, and methods.

Guiding Evaluation Question	Target Measure	Method
Overall project process evaluation questions:		
To what extent were recommendations/ interventions implemented from the planning phase as planned?	All recommendations are implemented as planned.	Observations, records review, recommendation/intervention process evaluation summaries
What were the factors that helped or hindered the transition from planning phase to implementation phase?	NA	CAACP collaborative self-assessment survey
What unexpected opportunities were encountered during the implementation phase?	NA	Records review, key informant interviews
What obstacles were encountered during the implementation phase?	Few obstacles were encountered. Those that were, were effectively resolved.	Records review, key informant interviews
To what extent is the community involved in the implementation phase (i.e. the relationship between the project and the community)?	A minimum of 100 individuals and/or organizations are involved in the project through the Leadership Team and/or workgroups.	Key informant interviews; meeting attendance records; consistency of participation of members
How are decisions made at the leadership team, the management team, and the work group level (how is the project functioning)?	The decision-making process is followed.	CAACP collaborative self-assessment survey; key informant interviews
What was the change in organizational collaboration and communication around childhood asthma? OR How was service delivery coordination improved?	Self-reported improvement and coordination by partners and providers.	Provider survey (to be developed)
Intervention specific short-term process and outcomes evaluation questions (1-2 years):		
What was the increase in knowledge/training of	An increase in knowledge/training occurs and is maintained.	Pre/post instrument

professionals who serve children with asthma, such as school providers and childcare providers around childhood asthma?		
What was the increase in awareness among patients, family members, health care providers, school providers, and childcare providers about childhood asthma?	An increase in knowledge/training occurs and is maintained.	Pre/post instrument
Health care professional education recommendation evaluation questions: What was the increase in knowledge/training of health care professionals?	An increase in knowledge/training occurs and is maintained.	Asthma Educator Certificate Course pre and post-test results; PACE post-seminar participant survey
Asthma education recommendation evaluation questions: What was the change in asthma self-management skills, including knowledge, among patients (children and youth) and their families?	Symptom-free days are increased by 25%.	
Community forums recommendation evaluation questions: How does the asthma education presentation meet the standard of "high quality" as determined by the Asthma Education Material Evaluation Tool?	Determine the minimum score for this presentation.	Asthma Education Material Evaluation Tool is used.
What unexpected opportunities and challenges did community based organizations encounter related to community forums.	NA	Focus group with community based organizations and speakers contracted with to conduct the forums.
How closely do the demographic characteristics of the speakers and community based organizations approximate the demographics of the known cases of childhood asthma in Minneapolis-St. Paul?	Using current statistics on the number of childhood asthma cases in Minneapolis/St. Paul, the speakers and CMO should approximate these statistics for race/ethnicity, language, socioeconomic status, gender, and the people listed should represent a variety of professional and personal backgrounds (e.g. parents, children, health care providers, community organizations, school staff, etc.)	Collect demographic characteristics and other "vital statistics" from the speakers (e.g. areas expertise as a speaker, preferred audiences, etc.). Ensure that the list is current and annually compare the updated list with current statistics on the cases of childhood asthma in Minneapolis and St. Paul.
Are the numbers and demographic characteristics of families participating in community forums reflective of populations that experience high rates of childhood asthma?	Using current statistics on the number of childhood asthma cases in Minneapolis/St. Paul, families participating in the community forums should reflect race/ethnicity, language,	Use a general forum evaluation form (perhaps incorporated into one of the forum activities, such as small group discussion.)

	socioeconomic status, and gender of those asthma cases.	
Do participants in community forums gain increased knowledge and understanding of asthma?	An increase in knowledge/training occurs and is maintained.	Review presentation/forum objectives
Maintain and add to the Minnesota Asthma Information Center recommendation evaluation questions: How does the review process for the MAIC ensure that all education materials conform to a "high quality" standard as determined by the Asthma Education Material Evaluation Tool?	Rating/Score on the Asthma Education Material Evaluation Tool	Ensure that the review process used for the educational materials documents how the item conforms, or not, to the Asthma Education Material Evaluation Tool by reviewing the completed forms.
Are the educational materials culturally appropriate for the ethnic groups identified as priorities by MAIC administrators?	Feedback from providers and families/patients of particular ethnic groups.	Annual focus groups with users of the Minnesota Asthma Information Center.
Is the website managed and maintained in ways that maximize usability and access to educational materials?	Website user feedback, Program staff assessments	Annual focus groups with users of the Minnesota Asthma Information Center.
Who is using MAIC in the professional/provider area and patient/family area?	Minimum of 1000 hits per month.	Counters at different places within the website to detail where people are looking.
Which materials are being accessed and used the most?	Identification of materials frequently accessed.	Counters in the websites; annual focus groups with known website users.
Environmental modifications recommendation evaluation questions: To what extent is a reliable and valid assessment tool that measures the presence and intensity of environment triggers that can be remedied by strategies?	Tool is developed and validated.	Expert review and inter-rater reliability assessment.
To what extent are environmental reduction strategies identified, understandable, evidence-based, and feasible (can be implemented by home owners and child care providers either alone or with minimal assistance)?	Measure to be determined upon completed of instrument validation.	Pilot testing
In-services for childcare providers recommendation evaluation questions: What have childcare providers learned about caring for children with asthma from the asthma education that they received?	An increase in knowledge/training occurs and is maintained.	Pre-post test of providers receiving training. 3 to 6-month follow-up assessment
Does childcare provider asthma education training affect families'	Availability of childcare providers reporting asthma knowledge and	Tracking through Ramsey County Resources for Child Caring and Greater

ability to find care for their children with asthma?	skills is increased by 25%.	Minneapolis Day Care Association OR through pre and post-survey of childcare providers in Minneapolis and St. Paul.
Early Childhood Asthma Screening recommendation: To what extent are early childhood asthma screenings and Head Start effectively identifying children with asthma?	Number of children identified as having asthma through the early childhood screening process is increased by 10 children per week.	Secondary data analysis of: <ul style="list-style-type: none"> • Early Childhood Screening records • Head Start records
Are those identified as having (or suspected to having) asthma referred for medical follow-up?	Number of children referred to primary care for an asthma follow-up after the early childhood screening is increased.	Log/tracking form of referrals made
Do the children identified as having asthma have an Asthma Action Plan in place when they begin Kindergarten?	Number of entering Kindergarteners with Asthma Action Plans is increased.	Review of school health office records to confirm availability of Asthma Action Plan.
School recommendation process evaluation questions: Of the asthma initiative components, what procedures, forms, materials, etc. are school health services able to implement? Which are they able to sustain?	Completed forms and documentation of asthma care on file in the school health offices <ul style="list-style-type: none"> • Number and type of forms used • Appropriateness of use • Consistency and quality levels to be determined 	Nurses self-report of their use of forms and materials using a Monthly Asthma Activity Report Form. Systematic observations by Asthma Resource Nurses and/or evaluator.
How many and which students are reached through asthma initiative? Are they the “right” ones (i.e., targeted by severity or level of control)? Are students with asthma needs missed?	<ul style="list-style-type: none"> • Students with asthma reached • Students with asthma not reached • New cases identified 	Number and “severity” of students identified and given care compared to list of students known with asthma.
In what ways does asthma care at school change as a result of the asthma initiative?	Number of: <ul style="list-style-type: none"> • health office (HO) visits • student asthma education/self-management training sessions • referrals to health care provider and other services 	Comparisons between Control and Interventions schools in SPPS and from September to May and from year to year. Log of school health office visits, medication records. Nurses self-reports, Asthma Resource Nurses observation
What barriers, solutions, and unexpected opportunities are encountered when implementing the asthma initiative and its components?	Few obstacles were encountered. Those that were, were effectively resolved.	Qualitative comments and discussion at site visits, nurse meetings, and nurse self-reports
School recommendation short-term outcome evaluation questions:		
To what degree does the asthma initiative increase nurse communications with providers and parents?	Documented provider and parent communication (asthma medical request forms, parent notification forms)	Comparisons between control and intervention schools in SPPS and with benchmarks set in previous years in MPS.
Are there changes in students’ asthma knowledge, attitudes and self-management behaviors as a	<ul style="list-style-type: none"> • Increase in knowledge and attitudes about asthma and its management 	Pre and post Student Breathing Questionnaires for sample of students who use the health office or participant in

result of participating in the Asthma Initiative?	<ul style="list-style-type: none"> Asthma management behaviors: (taking controller and quick-relief meds, proper inhaler technique, use of spacer, use of peak flow) 	the asthma education classes.
Are any mid-term outcomes associated with students' knowledge, attitude and behavior changes?	Symptom-free days will be used as a proxy measure of mid-term outcomes.	
Is receiving care as a part of the Asthma Initiative associated with improvements in school absenteeism?	Percent of days absent / number of days enrolled	<p>SPPS - Comparisons between control and intervention school students and trends over years.</p> <p>MPS – Trends tracked for a random sample of students with and without asthma.</p>
Intermediate outcome evaluation questions (3-4 years):		
What was the change in symptom-free days among children with asthma?	Symptom-free days	
Long-term outcome evaluation questions (5+ years):		
What is the change in emergency department visits for children with asthma (asthma being the primary diagnosis)?	There is a 10% decrease in 1999, 2000, 2001 ED claims data for asthma. Compare Mpls/St. Paul to statewide data.	Utilize ED claims data collected by MHHP.
What is the change in asthma-related hospitalizations for children with asthma (asthma being the primary diagnosis)?	There is a 10% decrease in 1999, 2000, 2001 hospital claims data. Compare Mpls/St. Paul to statewide data.	Utilize hospitalization claims data collected by MHHP.
What is the change in school absenteeism among students with asthma? What is the school absenteeism among students with asthma as compared to their peers?	Historical data or control schools in each district will be used. To be determined in collaboration with school staff.	<p>Utilize the campus system in SPPS to determine absenteeism and students with asthma.</p> <p>Utilize a sample in MPS to determine absenteeism and students with asthma.</p>

Step 4: Gather credible evidence

Symptom-free Days:

Hospitalization and Emergency Department Data:

In Minnesota, all hospitals voluntarily submit their claims data to the Minnesota Hospital and Healthcare Partnership (MHHP) (the hospital's trade association). These data are available to the public for research and public health planning. It is estimated that 90 percent of all hospital claims are submitted to MHHP.

A variety of variables are available with this data, including diagnosis, age, gender, zip code of residence, and payer. The Minneapolis and St. Paul Controlling Asthma in American Cities Project has requested and received asthma-related data for 1999, 2000, and 2001. 2002 data will be made available late May 2003.

School Absenteeism Data:

What we know: School attendance is influenced by a number of factors including district and school efforts to improve attendance of students and student level factors including race/ethnicity, poverty, sex, English language status, and attending multiple schools. In the evaluation of the HLAI, after adjusting for all other factors, having asthma was not a predictor of school attendance; however receiving asthma care from the school health office was associated with higher attendance.

Outcome questions: Do students with and without asthma have different patterns of school attendance? Is exposure to the Asthma Initiative associated with decreased school absenteeism/increased attendance? Is there a latency period before an impact is seen? Are effects attributed to the Asthma Initiative sustained over time? Do findings differ between MPS, with an on going Asthma Initiative compared to SPPS, with a newly introduced Asthma Initiative?

Design/comparisons: Attendance data using a cross-section of students with and without asthma in selected schools will be collected each year. Attendance trends will be tracked over years, beginning with 2002-2003 and 2003-2004 (with plans to continue through 2007-2008). Comparisons will be made between students with and without asthma.

Variables: The Minnesota Department of Education's standard measure of attendance (days attending divided by days enrolled) will be the dependent variable (outcome indicator). Level of exposure to the Asthma Initiative (none—Control School, minimum—Intervention School but no contact with health office, and high—enhanced asthma care through Intervention School health office) will be the independent variable.

Other school and student factors known to impact attendance will also be tracked.

Sample: Sample size will be calculated using data from the HLAI evaluation and sampling procedures will ensure an unbiased selection of schools and students.

Procedure: Attendance, school enrollment, and student demographics data will be abstracted from the districts' management information systems (MIS). In SPPS, asthma status and health office exposure will be abstracted from the Health Conditions file of the MIS. In MPS, yearly hand search of health office records will be done to update lists of students with asthma and to identify those with exposure to asthma care in the health office.

Analysis: Appropriate statistical techniques, including multi-level analysis using SAS PROC Mix, will be applied to determine exposure and year effects, controlling for other factors.

Evaluation team:

We will utilize a team approach to our evaluation. Several evaluation experts have been identified who will lead and contribute to various parts of this evaluation. Every other month, the Evaluation Team will gather to share their experiences, obstacles, opportunities, and to coordinate the evaluations. The following evaluation consultants will provide the following roles:

- To make the best use of financial resources and skills, staff (Jill Heins Nesvold, MS) will be responsible for conducting many intervention specific process evaluations and collect most of the intervention specific short-term outcome measures.

- Tom Griffin, PhD, MSW with the Minnesota Institute of Public Health will continue to serve as the overall project process evaluator and coordinate the short-term outcome measures among all interventions.
- Angie Carlson, PhD with Data Intelligence will lead and continue to analyze the hospitalization and emergency department data and lead the symptom-free day mid-term outcome measure methods. Angie will also serve as oversight evaluator.
- Pat Splett, PhD will continue to serve as the process and outcome evaluator for the Healthy Learners Asthma Initiative and Saint Paul Public Schools asthma program. Dr. Splett's will also continue to collect and analyze the school absenteeism data for both school districts.
- Jane Maland Cady, PhD and Gale Mason Chigil, PhD will be utilized to conduct community/parent focus groups and interviews as needed.
- Additional evaluation and research professionals will be welcomed to provide input and direction to this evaluation.

Step 5: Justify conclusions

All data will be analyzed using appropriate analytic software and techniques. Data analysis will be a team responsibility and conclusions about findings will reflect input from evaluators, project staff, stakeholders, and partners. An emphasis on practical and useful findings will guide data analysis and reporting.

Step 6: Ensure Use and Share Lessons Learned

All project wide and intervention/recommendation specific process evaluation measures will be used to monitor the project on an ongoing basis. Process evaluation findings will be used as a continuous quality improvement process and modifications to leadership style, meeting agendas, program delivery, etc. will be made immediately.