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**Evaluation of the Child
Health Champion Pilot
Program: Final Report**

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I. INTRODUCTION AND BACKGROUND

The Child Health Champion Pilot Program (CHCPP), sponsored by the U.S. Environmental Protection Agency (EPA), sought to stimulate grassroots efforts to raise awareness about and address children's health concerns that are affected by environmental factors. The initiative operated in 11 communities across the United States beginning in early 1998 and concluding in most sites during spring and summer 2001. Each community received \$135,000 to support planning and implementation efforts. By the end of the pilot program, communities were expected to have (1) formed a community team, (2) identified and described high-priority environmental health hazards to children, (3) set community-specific goals with measurable outcomes and defined time frames, (4) established action plans to meet the goals, (5) implemented the action plans, and (6) evaluated their progress in meeting goals and objectives.¹ To maximize flexibility and to foster collaboration between EPA and local project staff, the funds were issued through cooperative agreements rather than a traditional grant mechanism. This report presents findings from the cross-site evaluation of the CHCPP initiative. It draws on information generated through local evaluations and through site visits and telephone discussions with representatives in each community.

A. EVALUATION FINDINGS IN BRIEF

The CHCPP initiative included both local and national evaluation components. By encouraging communities to document their accomplishments and lessons learned, EPA hoped to build evaluation capacity within CHCPP communities to sustain their efforts over time. Building

¹U.S. Environmental Protection Agency. "Child Health Champion Pilot Communities Guide." August 1998.

on the community-led local evaluations, the cross-site national evaluation explored the following questions:

- Did the CHCPP work as expected during the planning and implementation phases?
- What types of programs and activities took place, and how did they vary across sites?
- Which interventions were more successful, and why? Which were more difficult to implement, and why?
- How did CHCPP interventions influence children's health and other program outcomes?
- Were CHCPP interventions sustained beyond the timeframe of the pilot program?
- What kinds of evaluation activities are more feasible at the community level, and why?
- What are the key constraints governing local evaluations, and how do these vary across communities? What kinds of support do communities need in conducting evaluations?
- Would such an initiative be feasible on a voluntary basis (without outside funding)?
- What are the overall lessons from the pilot program that will help guide future efforts?

Highlights from the many lessons learned from this pilot program include:

- Community members and EPA representatives agreed that grassroots, collaborative approaches are effective in generating local support and ensuring that activities are tailored to community needs.
- Especially in areas where economic and social resources are limited, outside funding is important to establishing and implementing community-based efforts.
- It is important to set realistic expectations for the types of activities and outcomes that are feasible within funding and timing constraints. Requirements about allowable uses of funds must be outlined early, and expectations about child health outcomes should take into account the nature of the interventions and resource constraints.
- Addressing some child health problems, such as asthma and lead poisoning, may require a variety of interventions—for example, educational, remedial, environmental, and medical. Unless combined with other efforts, interventions that focus on one aspect of the problem are less likely to improve outcomes to a significant extent. Funding streams that support comprehensive and integrated interventions are more likely to lead to improvements in child health outcomes, especially in resource-strained communities.

- An emphasis on evaluation is valuable in focusing local efforts on the outcomes associated with their interventions and in ensuring that interventions are documented completely.
- Local outcome evaluations were constrained by limited funding and expertise. Funding and timing constraints also influenced the strength and intensity of the interventions, making it difficult to demonstrate changes in child health outcomes even in the few sites that were able to implement more rigorous outcome components.

B. ORIGIN AND STRUCTURE OF THE CHCPP INITIATIVE

In April 1997, President Clinton issued Executive Order 13045, in which he directed federal agencies to identify and address environmentally related child health risks. At that time, he also established the Task Force on Environmental Health Risks and Safety Risks to Children. The administrator of the U.S. Environmental Protection Agency (EPA) and the Secretary of the U.S. Department of Health and Human Services co-chair the task force, which involves representatives from numerous other federal agencies. Previously, in 1996, the EPA administrator had announced a seven-step National Agenda to Protect Children's Health from Environmental Threats (see box). To facilitate implementation of the President's Executive Order and the National Agenda, EPA established the Office of Children's Health Protection (OCHP) within the Office of the Administrator.

One of the Office of Children's Health Protection's early initiatives was to establish the Child Health Champion Pilot Program. Utilizing cooperative agreements between EPA and communities, the CHCPP aimed to empower local citizens and communities to take steps toward protecting children from environmental health threats. EPA developed the pilot program to test the program's feasibility and to learn how best to support these grassroots efforts before deciding on whether and how to implement the program on a larger scale. The pilot effort was launched officially when the communities were announced in May of 1998. Planning funds (up to \$35,000) were made available to support formation of the community teams and development of

the action plans. Once EPA accepted the action plans, communities were given implementation funds (\$100,000) to put their plans to work. EPA structured the CHCPP as a collaboration involving EPA headquarters and regional offices, and the local communities. The intent was for EPA to give sites the flexibility to design approaches tailored to local concerns and capabilities, while also giving sites the support they needed to meet their goals effectively.

EPA'S NATIONAL AGENDA TO PROTECT CHILDREN FROM ENVIRONMENTAL AND SAFETY RISKS

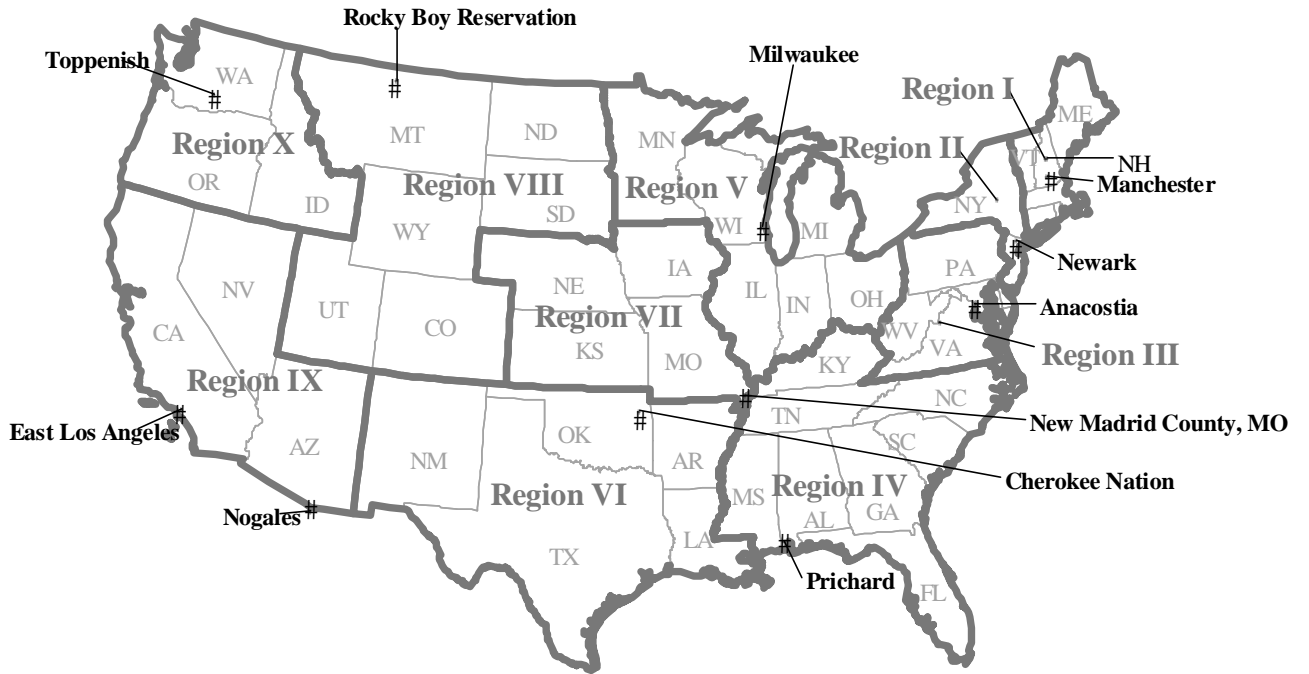
- C Ensure that all standards EPA sets are protective of the potentially heightened risks faced by children.
- C Identify and expand scientific research opportunities on child-specific susceptibility and exposure to environmental pollutants.
- C Develop new, comprehensive policies to address cumulative and simultaneous exposures faced by children.
- C Expand community right-to-know to allow families to make informed choices concerning environmental exposures to their children.
- C Provide parents with basic information so they can take individual responsibility for protecting their children from environmental health threats.
- C Expand educational efforts with health and environmental professionals to identify, prevent, and reduce environmental health threats to children.
- C Commit to provide the necessary funding to address children's environmental health issues as a top priority among relative health risks.

C. CHCPP COMMUNITIES AND INTERVENTIONS

In early 1998, the newly formed Office of Children's Health Protection asked EPA Regional Administrators to nominate communities that would be capable of and benefit from a Child Health Champion Pilot Program. Program leaders identified several criteria to guide the site selection process: (1) EPA would have a prior working relationship with the community; (2) the community would want to participate; and (3) nationally, the communities would represent at least one agricultural, one U.S. border, one tribal and one urban area. Location and population demographics were also considered in site selection. Figure I.1 shows the location of CHCPP

FIGURE I.1

CHCPP SITES BY EPA REGIONS



communities selected sites across the 10 EPA regions. Additional information about the CHCPP communities is provided in Table I.1. They include two rural/agricultural areas and two tribal areas with smaller populations, six urban areas with much larger populations, and one U.S. border community with a moderately sized population. Areas targeted by CHCPP sites have substantial percentages of racial and ethnic minorities, families with incomes below the federal poverty level, and adults lacking a high school diploma or its equivalent. In addition to geographic and urban/rural variation, the CHCPP communities differ considerably in the environmental concerns they face and the cultural and political forces in play.

Once the communities were selected, efforts began to form community teams that would guide local planning and implementation activities. In most communities, EPA staff—especially in the regional offices—played an important role in forming the community teams. In many cases, EPA staff identified one or two core team members during the site selection process and then worked closely with these individuals to identify additional team members. Throughout this process, an effort was made to ensure that the teams included stakeholders from a variety of sectors: health care, education, government, community residents and citizen groups, business or agriculture, and engineering and maintenance. In several communities, the team grew out of an existing coalition or working group that included members from some, but not all, of the sectors. Special emphasis was placed on getting members of grassroots organizations and community residents to participate.

Planning efforts culminated in an action plan that described the community, the environmental health concerns selected for attention, target areas and populations within the community, and the interventions to be implemented. Sites were also asked to discuss the composition of their community teams and the evaluation techniques they would use to assess their interventions. All but two of the sites selected asthma as a targeted environmental health

TABLE I.1
CHARACTERISTICS OF DEMONSTRATION SITES

Site	Type of Community/ Target Area	Population Characteristics			Targeted children's environmental health concerns	
		Population of Target Area	Ethnicity/ Language	Poverty		
Manchester, NH	Urban/ Center city area	17,828	Predominantly white, however, there is a significant influx of new immigrants due to a refugee resettlement program	75% in center city enterprise zone below the federal poverty level	44% of adults in center city enterprise zone lack high school diploma	Asthma/Air Quality Lead poisoning
Newark, NJ	Urban/ Ironbound community	45,000	Black: 6.2% White: 49.8% Hispanic: 36.3% Other: 7.7%	14.5% below the federal poverty level	63% of adults have less than a high school education	Asthma/Air Quality
Washington, DC	Urban/ Ward 8	72,221	Black: 91% White: 8% Other: 1%	26% of households below the federal poverty level Greatest concentration of public housing in the DC area	59% of adults have less than a high school education	Asthma/Air Quality
Prichard, AL	Urban/ Prichard City: Alabama Village, Snug Harbor and Harlem District neighborhoods	35,000	Black: 80% White: 20%	40% below federal poverty level	52.2% of adults have less than a high school education	Asthma/Air Quality Lead poisoning

TABLE I.1 (continued)

Site	Type of Community/ Target Area	Population Characteristics			Targeted children's environmental health concerns	
		Population of Target Area	Ethnicity/ Language	Poverty		Education
Milwaukee, WI	Urban/ Near-North and Near-South sides of central city	83,745	Black: 50% White: 12% Hispanic: 20.3% Asian: 3% Other: 14.7%	39.5% of all households below the federal poverty level, including, 64% of black children, 50% of Hispanic children, and 28% of white children	45.6% of adults have less than a high school education	Asthma/Air Quality
Cherokee Nation, OK	Tribal/ Cherokee Nation jurisdictional area/ Kenwood East community	7,096 (in Delaware County)	100% Cherokee Indian 16.2% speak only Cherokee at home	27.8% of Cherokee Indians in Delaware County below the federal poverty level	38.7% of adults have less than a high school education	Water Quality
New Madrid, MO	Rural/ Howardville, North Lilbourne, Lilbourne communities	2,811	Mix of Black and White residents; primarily English speaking	Percent below federal poverty level: N. Lilbourn--72% Howardville--58% Lilbourn--27%	Percent of adults with less than high school diploma: N. Lilbourn: 69% Howardville: 76% Lilbourn: 65%	Asthma/Air Quality Lead poisoning Water quality
Rocky Boy Reservation, MT	Tribal/ Rocky Boy Reservation and Box Elder community	4,970 tribal members total; 3,442 members reside on the reservation	100% Chippewa Cree Indian	39% of families and 44% of individuals below the federal poverty level 70% unemployment rate	44.7% of adults in Hill County have less than a high school education	Lead poisoning

TABLE I.1 (continued)

Site	Type of Community/ Target Area	Population Characteristics			Targeted children's environmental health concerns	
		Population of Target Area	Ethnicity/ Language	Poverty		Education
East Los Angeles, CA	Urban/ Wilson School Complex on east side of Los Angeles	50,334	Black: 0.7% White: 3% Hispanic: 86% Asian: 10% 40% non-English speakers at home	24% below the federal poverty level	49% of adults have less than a high school education	Asthma/Air Quality
Nogales, AZ	Border/ Nogales	20,000	White: 7% Hispanic: 92% Other: 1%	30% of the population is below the federal poverty level	66.7% have less than a high school education	Asthma/Air Quality
6 Toppenish, WA	Rural/ Agricultural Toppenish ZIP Code (area served by the Yakima Valley Farmworkers Clinic)	7,419	White: 29% Hispanic: 62% Native American: 9%	31.6% of the population is below the federal poverty level 90% of school children qualify for free or reduced school lunches	50.8% of adults have less than a high school education	Asthma/Air Quality

Source: Action Plans submitted by each CHCPP community team, supplemented in some cases with data from the 1990 U.S. Census.

issue. Some of the sites also selected childhood lead poisoning or health problems related to water contamination in addition to, or as an alternative to, asthma and air quality concerns. Figure I.2 provides a general schematic showing the environmental health concerns the CHCPP sites targeted, and the types of interventions employed and outcomes expected.

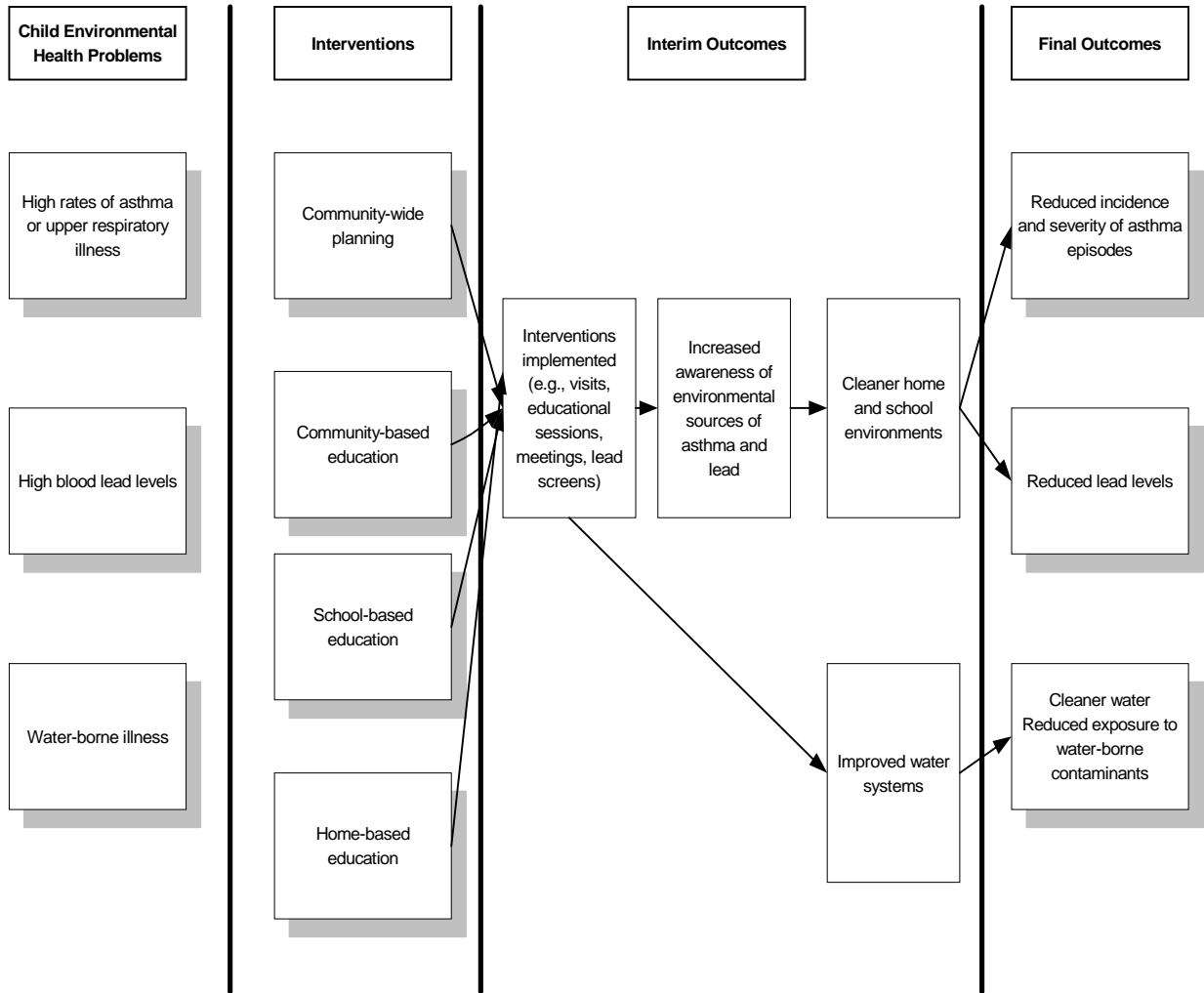
D. EVALUATION

In January 1999, EPA awarded a contract to Mathematica Policy Research (MPR) to design and conduct a national crosscutting evaluation of the pilot program and to assist each pilot site in designing a local evaluation. MPR conducted two rounds of site visits—one toward the end of the planning period and another roughly one year later. In addition to learning about the communities and gathering detailed information to assess planning and implementation experiences, the site visits provided an opportunity to work with local team members to develop and refine their local evaluation approach. In addition to the site visits, ongoing telephone contact with the sites and with EPA staff occurred throughout the evaluation. At the end of the pilot, CHCPP communities submitted forms documenting their interventions, applicable outcome data, and a narrative on lessons learned. This final report presents findings based on these various data sources. It builds on the findings presented in an interim report, prepared as communities were completing the planning phase of the pilot program (Howell et al. 2000).

E. ORGANIZATION OF THE REPORT

The following chapters describe the CHCPP interventions and implementation experiences (Chapter II) and the local outcome evaluations (Chapter III), including how both evolved over time.

FIGURE I.2
CHCPP INTERVENTIONS AND OUTCOMES



The report concludes with a chapter on overarching lessons learned from the pilot program, including insights about structuring similar efforts in the future (Chapter IV). Policy interest in the relationship between children's health and the environment remains high. Findings from the CHCPP evaluation provide valuable input for policymakers and program planners as they consider how best to address children's environmental health concerns in the coming years.

II. CHCPP INTERVENTIONS AND PLANNING AND IMPLEMENTATION EXPERIENCES

In structuring the pilot program, EPA employed cooperative agreements rather than traditional grant funding mechanisms in part because they expected the initiative would be a learning process for all parties. Throughout the pilot, local sites and their EPA partners met many of the goals they set for the pilot program while also gaining insights about more and less effective strategies. This chapter highlights these experiences and lessons learned. The focus is on the interventions employed and related planning and implementation experiences. We draw upon information obtained during two rounds of site visits, quarterly telephone interviews, and qualitative data from the local sites documenting their interventions and lessons learned during the pilot program. Local experiences developing and implementing evaluation plans and findings from local CHCPP outcome evaluations are described in Chapter III.

The chapter is organized to highlight key elements of the pilot program. It begins with a discussion of the CHCPP community teams, including how they were formed, the types of groups they included, and how the teams functioned during the pilot program. This is followed by a description of the planning phase of the pilot program, which culminated in action plans each team submitted that provided a blueprint for the implementation phase. We then describe the interventions employed and provide brief profiles of each site. The chapter concludes with a description of community experiences during the implementation phase, including lessons learned.

A. FORMING AND UTILIZING COMMUNITY TEAMS

By emphasizing a community team approach, EPA hoped to stimulate local groups that would not only guide the planning and implementation of CHCPP activities but that would also

continue to focus on children's environmental health concerns after the pilot program ended. Inspired by the success of the Groundwater Guardians program¹, which focuses on protecting groundwater, EPA thought that communities might also be willing to come together to work on children's health issues.

EPA strongly encouraged the communities to include representatives from each of six sectors on their community teams: (1) health care, (2) education, (3) government, (4) citizens, (5) business or agriculture, and (6) engineering/maintenance. While all of the sites eventually managed to ensure representation from most of the required sectors, in most communities the more active team members represented one of three sectors (health, government, and citizen/advocacy groups). (See Table II.1). During the planning period, and especially when the action plans were being developed, the teams met frequently in most communities—typically at least once a month.

Concern about children's health issues did motivate team members to come together at the start of the program, and over time this common interest in helping children frequently helped teams avoid or overcome conflicts that would otherwise have impeded the team's progress. Interviews with local team members and observations during site visits suggested that team members in most communities worked together quite well during the planning process. Local representatives noted that team members generally were willing to put aside turf issues because they cared about making a difference for children. In some communities, though, cohesion

¹A voluntary initiative sponsored by the Groundwater Foundation, where community members form teams and implement activities aimed at improving the quality of local groundwater supplies. More information about this program can be found at: <http://www.groundwater.org/Guardian/ggindex.htm> (accessed May 21, 2002).

TABLE II.1
THE CHCPP TEAMS

	Membership by Sector							Number of Meetings Held	
	Health Care	Education	Government	Citizen or Citizen Group	Business or Agriculture	Engineering/ Maintenance	Total Members	Planning Period	Implementation Period
Manchester, NH	10	6	6	9			31	8	3
Newark, NJ	10	4	3	12		1	30	11	2
Washington, DC	4	4	5	9	2	1	25	16	8
Prichard, AL	6	5	5	5	3	2	26	13	10
Milwaukee, WI	23	5	3	5			36	13	6
Cherokee Nation, OK	4	1	1	1	1	5	13	6	3
New Madrid, MO	6	1	4	10			21	30	18
Rocky Boy Reservation, MT	4	1	3	3	1		12	14	4
East Los Angeles, CA	8	6	5	8	9		36	7	8
Nogales, AZ	10	2			1		13	15	
Toppenish, WA	12	6	3	4	1		26	14	5
Total	97	41	38	66	18	9	269	135	
% of total CHCPP team members	36.1	15.2	14.1	24.5	6.7	3.3	100		

SOURCE: Action Plans and implementation data submitted by local CHCPP projects.

within the group came about only after more dissatisfied members stopped participating. Shared decision-making and grassroots involvement were most evident in communities that started out with fewer established programs, where the pilot program served as a catalyst for organizing community members. In these communities, very few formal organizations existed and therefore the pool of possible team members was small. And while being “the only game in town” may have helped reduce conflict among team members, teams in these communities also tended to be less diverse and lack some of the capabilities of teams in larger communities.

The community team approach in the two American Indian sites differed from the approach taken in the other sites. Rather than convening formal, structured meetings these sites found that less formal types of communication tended to work best. The Rocky Boy site built on existing close relationships among various entities in the community to spread the word about CHCPP efforts and gain assistance in implementing activities. In the Cherokee, Oklahoma site, there was very little involvement of community members other than CHCPP grantee staff.

After the planning period, the composition, focus, and functioning of the community teams changed in most of the communities. Team meetings typically became less frequent—quarterly or bi-monthly, rather than monthly or biweekly as they were during the planning period. In several communities few, if any, formal community team meetings were held during the implementation period. Sometimes the individuals closely involved with implementation would consult with other members of the team on an as-needed basis. Even without regular meetings, however, team members in several communities played a critical role in supporting the implementation of project activities--helping to facilitate access to schools, develop or refine promotional and educational materials, train home visit staff, and/or conduct educational workshops on selected topics. Milwaukee also found it useful to form smaller work groups that would assist with particular aspects of implementation.

The community team was vital to the project's success....Through this group, access to schools, health care providers, and other organizations was readily afforded. --Local CHCPP representative

The types of organizations participating in the team meetings also changed in many of the communities during the implementation period. In contrast to the fairly broad representation during the planning period, team meetings during the implementation phase tended to include individuals and organizations funded under the agreement and/or directly involved in implementing one or more activities. Many communities found it difficult to involve local residents in a meaningful way during the implementation period. Notably, however, in three communities (Prichard, New Madrid, and Nogales), most members of the original team continued to meet on a regular basis throughout the implementation period. In New Madrid, the team meetings served a dual purpose. Because most team members also served as the campaign's primary educators or community facilitators, the team meetings provided an opportunity to train the facilitators as well as to plan various implementation activities (and the facilitators received a small stipend for their time spent at these meetings). On the other hand, in Prichard and Nogales, few, if any, of the team members received funds under the cooperative agreement.

It is difficult to set up a "one-size-fits-all approach" in very different and diverse communities. --Local CHCPP representative

In small, lower-income communities where many grassroots programs are needed, individuals have little spare time to donate to worthy causes. While they feel the causes are worth the effort, they are spending much of their time caring for their families and working to provide for their needs....The expectation of having community members as part of a community team may not be feasible. --Local CHCPP representative

In some communities, one or more organizations dominated the community team, sometimes because they brought special skills or expertise to the table. When the dominant organizations were valued and respected by the other team members, the groups tended to be

more cohesive. In a few communities, tension existed between the organization designated as the “banker” with administrative/fiscal responsibility for funding under the cooperative agreements, and the other community team members. Because many smaller grassroots organizations lacked the financial capacity to serve as the banker, this responsibility often went to larger organizations. Difficulties stemmed mainly from concerns about the banker’s role in setting the agenda and in making related funding decisions.

In several communities, the teams were dominated by organizations that competed for funding and tended to focus more narrowly on their particular program agendas. In these communities, the teams were not as cohesive and team members involved during the planning phase were less likely to remain involved formally or informally during the implementation period. Team members in one community noted that funding issues created tension at times among team members and other residents. Because so many residents in this small community had limited incomes and poor economic prospects, some community residents competed for the modest stipends provided to local peer educators.

B. ESTABLISHING PRIORITIES AND DEVELOPING ACTION PLANS

During the planning phase, which began during the winter and spring of 1998, community teams worked closely with EPA to select one or more priority children’s environmental health problems and outline plans for addressing them. The resulting action plans were to describe the community, the environmental health concerns to be addressed, specific areas and/or populations that would be targeted, the interventions or activities that would be employed, and the types of outcomes expected. The action plans were also to include a description of the community team and some discussion of evaluation plans.

As communities began the planning process, it soon became clear that many needed clearer guidance about what types of activities EPA could fund and what would constitute an acceptable

action plan. Frequent communication between EPA staff and community team members occurred during the early months, and “The Child Health Champion Pilot Communities Guide” was issued in August of 1998. Throughout the planning period, EPA also provided additional guidance through memos and other forms of communication as questions and concerns arose during development of the action plans. In particular, additional guidance was provided to clarify the types of activities that could be supported through the cooperative agreements (this is discussed further below). Over time, EPA also learned more about how federal data collection rules would influence CHCPP evaluation efforts by limiting the types of data collection activities that could be undertaken. Throughout the planning period, communities worked with EPA staff to explore alternative approaches and rework their action plans to make sure they were complying with these restrictions.

Child Health Champion community teams identified their priorities in a variety of ways. In many cases, the process began with a brainstorming session among team members to develop a list of concerns. Team members then gathered data and, sometimes, anecdotal evidence to rank the problems. In setting priorities, communities focused on the importance of the child health problem, whether the interventions could be implemented within the CHCPP time frame, and whether interventions would produce measurable results relatively quickly. Several communities started the process already knowing the problem or the intervention(s) they would focus on. These communities, all in urban locations, saw CHCPP as an opportunity to solidify, expand, or coordinate existing programs. In Manchester, the community team used a matrix to rank various problem areas and interventions along several dimensions: feasibility, potential impact on child health, and cost. In Washington, DC, the team identified 14 potential topics of concern. Team members divided up the topics and conducted additional research, which was used to develop the final list of priorities. When they learned that EPA would not be able to fund

the types of interventions needed to address one priority concern, endocrine disruptors, the team pursued funding from other sources to address this issue. In Prichard, the EPA regional office helped the community find lead poisoning data. Based on these findings, the team included activities to reduce lead exposure in its action plan, along with asthma-related interventions.

Data constraints limited the extent to which community teams could document the nature of environmental health problems and influenced the problems sites chose to focus on. Several smaller, rural communities had little or no data available to characterize potential problems. The Rocky Boy Reservation community team found that lead poisoning data was not available locally, but it was able to locate a recent study on the Chippewa Cree Tribal Lead Program that proved useful. This team ultimately decided to focus efforts on getting all young children in the community screened for lead poisoning. Others, in larger, urban areas, found that existing data systems could not be used to document problems in their specific target neighborhoods. Many communities had only limited data on the magnitude of the child asthma problem because it is not a condition that must be reported to health authorities. Lead poisoning statistics are more readily available, but these data can be misleading because they reflect only the percentage of children actually tested, which was low in many of the communities. In several communities, concern about the lack of data motivated the

sites to include data system development efforts in the action plans.

EPA statutory requirements established by Congress and scientific limitations also influenced the types of problems and

interventions communities selected. Many communities were frustrated by restrictions on the types of interventions EPA can support. They learned that EPA has the authority to fund

Activities EPA Could Not Fund
C Lead poisoning screening and testing
C Asthma peak flow meters, spacers, and medication
C Medical management and treatment services
C Lead removal (abatement)
C Construction of water systems

educational activities to reduce environmental hazards, but that they do not have the authority to support such things as medical management of asthma, blood lead testing and abatement services, and water construction project; these types of activities are the responsibility of other federal agencies and programs. Some of the communities focusing on asthma wanted not only to reduce environmental triggers but also to ensure that children would have access to proper medication and care coordination. Similarly, communities focused on lead poisoning worried about the need for more intensive abatement services to remove lead from soil, water, and other sources. These concerns were heightened because families served by CHCCP sites typically lacked the resources to pay for these types of services themselves. While most of the sites succeeded in identifying other sources of support for at least some of these other interventions, many sites noted that the process of dividing interventions into EPA- and non-EPA-funded activities seemed artificial and somewhat counter to the spirit of the CHCCP campaign. When asked about how they would improve this type of initiative in the future, representatives in several sites expressed the hope that future efforts would bring together agencies with authority over different parts of the problems so that a community would have the ability to address asthma, lead poisoning and other children's health problems in a more comprehensive manner.

Many communities had difficulty making a clear distinction between environmental hazards and children's health, finding the focus on environmental hazards to be somewhat limiting. Community team members in general seemed very motivated by the opportunity to improve children's health, and, in most cases, they had little difficulty identifying pressing health problems. It was much harder to document the relationship between health problems and underlying environmental factors. Furthermore, the scientific basis for such relationships is not well established for some health problems. Consequently, most of the communities ultimately

decided to focus on problems such as asthma and lead poisoning because the evidence of an environmental link to these problems is stronger than it is for other problems.

To some extent, evaluation requirements also influenced the types of problems and interventions communities selected. EPA expected each pilot site to identify measurable outcomes and to demonstrate progress toward these outcomes within a relatively short time frame. This expectation led teams to select problems that could be documented with available data and to avoid problems requiring more intensive intervention or for which the outcomes would be difficult to measure. Several communities, for example, decided not to focus on pesticide use or industrial emissions because it would be too difficult to address these problems effectively within the one-year timeframe. Communities were also frustrated by the time and effort required to gather baseline data for measuring program impacts.

The vision of the program is much larger than what the legal and funding reality permits. When the program was first conceptualized, there was a broad vision of all the things that could be accomplished. While EPA is still operating out of this vision, the project teams have been caught up in navigating the legal and funding constraints. – Local CHCPP representative

In the end, all of the CHCPP sites overcame these challenges to develop a plan for addressing priority problems, and they were enthusiastic about moving forward with implementation. In general the communities identified important target concerns and for the most part the action plans outlined steps that seem feasible within the timeframe for the pilot program. Ultimately the planning phase extended beyond the three to four months originally expected. As shown in Table II.2, it generally took about a year before action plans were developed and accepted by EPA and implementation funds were awarded. Formally, the one-year implementation period began when communities received notification from EPA that their action plans had been approved and implementation funds would be released.

TABLE II.2

CHCPP PLANNING AND IMPLEMENTATION MILESTONES

Site	Planning Grant Awarded	Implementation Grant Awarded	Implementation Completed	Length of Implementation
Manchester, NH	8-98	6-99	9-00	21 months
Newark, NJ	8-98	8-99	4-01	20 months
Washington, DC	8-98	8-99	8-01	24 months
Prichard, AL	7-98	8-99	8-01	24 months
Milwaukee, WI	7-98	6-99	9-00	21 months
Cherokee Nation, OK	7-98	8-99	12-00	16 months
New Madrid, MO	8-98	11-99	9-01	22 months
Rocky Boy, MT	8-99	8-99	10-00	14 months
East Los Angeles, CA	7-98	3-99	6-01	27 months
Nogales, AZ	8-98	6-99	9-01	27 months
Toppenish, WA	8-98	8-99	8-01	24 months

C. TAKING ACTION

The implementation period began officially in most sites during summer 1999. A few communities started earlier in 1999 and some efforts did not really get under way until early 2000. Four communities completed activities roughly one year later (13 to 16 months following approval of their implementation funding). In the other sites, the implementation period lasted closer to two years (Table II.2).

Different factors influenced the implementation timeline across communities. In several communities it took longer than expected for the school and home visit interventions to get off the ground, and many communities struggled to reach their target participation levels for educational classes and home visits. A related issue in these communities was the time involved in getting training and educational information, home-visit checklists and related materials developed, reviewed and approved by team members and by EPA. By the time materials were ready for use, some communities found they had to wait for the start of another school year before initiating school-based activities. Where conducting home visits was tied to participation in school-based classes, the timeline for home visits was delayed as well. The recruiting process for home visit programs was also more time-consuming and more difficult than expected in several communities. Low productivity among home visit staff in one site led to a lengthier implementation period, as the community strived to meet its participation targets.

Another type of issue influenced the implementation timeline in communities that focused largely on less resource-intensive community-wide educational and awareness-building activities. In some ways it simply took more time to spend the funds in these communities, as very few staff positions were supported under the agreement, stipends paid to community educators were modest, and individual events and educational activities were not always that resource-intensive. In Prichard, for example, the only staff position funded under the agreement

turned over several times during the course of the pilot (four people occupied the CHCPP coordinator position by the time implementation was completed), delaying progress on various activities. In New Madrid, the primary funded positions were the 10 community facilitators who were paid a small stipend for their time in training and conducting educational workshops. The slower pace and low intensity of efforts in Washington, DC, along with difficulties getting materials developed and approved, contributed to the longer implementation timeline there.

D. OVERVIEW OF CHCPP INTERVENTIONS

CHCPP sites varied considerably in the particular types of activities employed and the way in which these activities were implemented. Nevertheless, all of the interventions are educational in nature, and they generally fall into one of three major categories:

1. Community-focused, awareness-building activities
2. School- or community-based classes, workshops, and other educational activities
3. Individualized home- or family-focused educational activities

The intensity of the activities varies across these three categories. Community-focused activities are the least intensive because they are targeted broadly to community residents and involve little personal interaction or direct communication. School-based and other classroom-style activities are more intensive because they typically involve smaller groups and provide opportunities for interaction and discussion. Home-based and other one-on-one types of activities are the most intensive, allowing for much interaction and for tailoring educational messages and related activities to the needs and circumstances of a particular child or family.

Table II.3 provides an overview of the types of interventions the communities employed. All of the sites implemented some type of community-level intervention, and many sites

TABLE II.3

CHCPP SITES, TARGETED ENVIRONMENTAL HEALTH CONCERNS, AND INTERVENTIONS

Site	Types of Interventions Implemented				
	Community-focused Information and Awareness Building	Group-oriented Educational Classes, Workshops, Presentations, Screenings		Home- and Family-focused Educational Activities (for example, home visits)	Other
		School-Based	Community-based		
Manchester, NH	T	T	T	T	
Newark, NJ	T	T	T		
Washington, DC	T				
Prichard, AL	T	T	T		
Milwaukee, WI	T	T	T	T	
Cherokee Nation, OK	T				Planning for new water System
New Madrid, MO	T	T	T		Tree/shrub planting
Rocky Boy Reservation, MT	T		T		Tribal managers' workshop
East Los Angeles, CA	T	T	T	T	
Nogales, AZ	T		T		
Toppenish, WA	T	T	T	T	Create links with state organizations

implemented activities in each of the three areas. Often, the activities in each area were designed to reinforce each other. Community-focused activities aimed to inform residents, providers, and other community members in a general way about the role of the environment in children's health, to promote the local CHCPP program and its activities, and let people know how to follow up for more information. In contrast, small group sessions at a school or community location and one-on-one encounters in the home typically targeted a subset of the general population—children and families believed to be more vulnerable to particular environmental health problems or providers, teachers and others who play a role in educating children and families. Often, class sessions and home visits were linked with education about environmental hazards and how they contribute to certain health problems provided in a group session, and more tailored education provided in the home, where specific hazards and prevention practices could be identified.

Table II.4 provides data on the number of individuals or families reached through the different types of CHCPP interventions.² As expected, the number of people reached through community-wide events and promotional efforts was considerably larger than the number of participants in classes and one-on-one activities. In several sites, however, the largest participation levels were in the moderate-intensity category of classes, workshops and other group sessions. All together, the CHCPP effort reached nearly 25,000 individuals across the 11 sites. More than 300 families participated in more intensive one-on-one interventions in the five sites that implemented these types of activities.

²These figures were derived from the reporting forms submitted by CHCPP sites as part of their local evaluations. As noted in Table III.4, the participation figures for the community-wide events and promotional activities likely include at least some individuals who attended more than one event and/or rough estimates for larger events such as community parades and the like.

TABLE II.4

PARTICIPATION LEVELS--CHCPP INTERVENTIONS

Site	Number of Individuals or Families Reached*		
	Low intensity (community-wide events, publicity and information)	Moderate intensity (classes, workshops, training sessions)**	High intensity (home visits and other one-on-one activities)
Manchester, NH	1,182	103	106
Newark, NJ	6,889	1,360	
Washington, DC			
Prichard, AL	1,223	2,128	
Milwaukee, WI	3,442	949	31
Cherokee Nation, OK	13		
New Madrid, MO	425	733	
Rocky Boy Reservation, MT	400	547	
Los Angeles, CA	2,639	932	15
Nogales, AZ	1,231	64	100
Toppenish, WA	511	11	76
Total	17,955	6,827	328

*Participation numbers in the first column are not unduplicated (the same individuals may have attended more than one event). Figures shown in the columns for moderate- and high-intensity activities are unduplicated.

**This includes individuals participating in lead and asthma screening activities, formal class sessions such as Open Airways, and educational workshops held in schools and other community locations.

1. Community-Focused Awareness-Building Activities

A variety of methods were used to promote local CHCPP events (such as health fairs or community meetings) and raise awareness about children's environmental health issues. (Table II.5) Nearly all the sites distributed fliers, brochures, posters, or other print materials to promote upcoming events or activities and provide contact numbers for more information. Most sites also utilized ads in local newspapers or newsletters for the same purposes. Promotional materials in many sites were produced in more than one language and used terminology appropriate for people with limited reading skills. A few sites used the radio or television to promote their efforts, though this occurred only to a limited extent, given the small size of the CHCPP funding. Typically, radio and television exposure would occur when a local news station covered an event or when a community team member was interviewed for a local television or cable broadcast. Several sites held press conferences when their projects were launched, and local television stations sometimes covered these press conferences and the kickoff events. In Prichard, preliminary data suggesting high percentages of lead poisoning among children (based on results for a very small number of tested children) was publicized widely on local radio and television stations, generating considerable concern among community residents and helping to galvanize support for this site's lead-poisoning prevention activities. Several sites (Manchester, Milwaukee, and East Los Angeles, California) developed educational videos that were broadcast on cable access channels and/or shown at community workshops and other forums.

One site (DC) focused all of its attention on developing different tools for communicating with school-age children and other community residents. One of their interventions involved developing public service announcements (PSAs) for broadcast on television and cable. The DC site also developed a web page and an educational workbook, both focusing on asthma and air

TABLE II.5

TYPES OF STRATEGIES EMPLOYED IN CHCPP COMMUNITY-LEVEL INFORMATION AND EDUCATION EFFORTS

Site	Type of Strategy Employed							
	Radio, Television, or Cable PSAs or interviews	Video	Newspaper	Press Conferences	Fliers, Brochures, Posters	Promotional Items (cups, t-shirts, etc.)	Health Fairs and other community events	Other
Manchester, NH	X	X						Youth drama production
Newark, NJ	X		X	X	X	X	X	
Washington, DC	X ^a							Workbook Webpage
Prichard, AL	X		X	X	X	X	X	Poster/Mascot contest
Milwaukee, WI		X	X	X	X		X	Poster contest
Cherokee Nation, OK			X		X			Community meeting
New Madrid, MO			X		X	X	X	
Rocky Boy Reservation, MT			X		X			Workbook Community meeting
East Los Angeles, CA	X	X			X	X	X	Expert panel meetings
Nogales, AZ	X		X		X	X	X	Youth Drama Production
Toppenish, WA		X		X	X	X	X	Provider meetings Parent meetings Poster Contest

^aImplementation of a television PSA was still pending when implementation ended in August 2001.

quality. The web page and workbook were designed to reach children in the third to sixth grades. CHCPP staff had planned to work with residents in a local housing development to help refine the educational materials, but they were unable to gain the cooperation of community leaders who were to facilitate access to families. They had planned to conduct pre- and post-tests with families of children with asthma, to determine if the educational materials were effective.

Another approach involved organizing and/or participating in health fairs and other community events. CHCPP staff set up booths, provided materials, and/or helped promote the event. Two sites (Prichard and New Madrid) also worked with local providers to organize asthma and lead screenings during these events. Although CHCPP funds could not be used to support the actual screening or testing activities, the projects helped organize the events and recruit participants. Seven sites distributed promotional items such as cups, pencils, and t-shirts with the project's logo and contact information at CHCPP events. Community meetings were the primary vehicle for disseminating information about CHCPP activities in these communities.

Two sites made special efforts to educate community teens in creative ways. Both the Manchester and Nogales sites supported productions by local youth theater groups about environment health concerns and things that teens could do to help. In Manchester, a local theater group made up of at-risk Hispanic and Haitian teens produced and conducted numerous performances of a play that incorporated environmental health messages. The play, which was performed in both indoor and outdoor venues, focused on the dangers of second-hand smoke and risks associated with lead paint and dust mites. In Nogales, CHCPP staff worked with the high school drama club to produce a play addressing asthma and air quality. Drama club members performed the play during a local health fair. Three sites (Milwaukee, Prichard and Toppenish) sponsored poster contests involving community children, with the winning posters used in

CHCPP promotional materials. The winning poster in Toppenish was placed on a prominent community billboard, paid for by the city, along with the names of the CHCPP sponsors.

2. Classes, Workshops and Other Educational Activities

All but two sites implemented some type of educational class or workshop in a school or a community setting. Several sites held workshops for teachers, school nurses, and/or parents to provide information about environmental contributors to asthma. Sessions held in New Madrid and Prichard also provided information about the environment's role in lead poisoning. Two sites (Prichard and Newark) conducted sessions for parents about Integrated Pest Management, practices that utilize non-toxic methods to eliminate pest problems. The Manchester site sponsored smoking cessation workshops conducted by American Lung Association (ALA) staff for family members of children with asthma. In Newark, trained community residents called Asthma Busters, conducted educational workshops in different locations throughout the community. In addition, individualized asthma education was provided to some children through a community-based health education center that the CHCPP initiative helped to establish.

Three types of educational interventions were implemented in schools: asthma education, general environmental health education, and a training program to help school maintenance and building staff identify and address environmental hazards that contribute to child health problems. Typically, ALA staff conducted the asthma educational components using ALA curricula and materials. ALA staff implemented a six-session curriculum known as "Open Airways" in two sites (Manchester and East Los Angeles) for elementary and middle school children with asthma. In New Madrid, CHCPP outreach staff were trained in the Open Airways curriculum and made several presentations to children with asthma in schools (the sessions focused primarily on managing asthma symptoms). Asthma education for school-age children in Milwaukee differed from the other sites. There, the site enhanced an existing asthma education

program operated by a special facility, the Health Education Center, supported by the Milwaukee school district. The program, known as “Awesome Asthma School Days,” is a highly interactive, multi-media one-day session for children with asthma. Toppenish, Washington, and Newark also conducted asthma education sessions with teachers and parents of preschool children, utilizing materials developed by the ALA (“A is for Asthma,” and “Little Lungs Breathing”).

Three sites implemented general environmental health education to a limited extent in the schools. In Prichard, outreach staff made presentations at local schools about environmental hazards and their influence on health. Newark and Nogales trained teachers in a curriculum known as “ToxRap,” an interactive approach designed to help students recognize hazards in their home and school environments. While the intent was to have trained teachers incorporate ToxRap into their coursework, in both communities, teachers found it difficult to fit the new curriculum into their existing lesson plans.

In general, school-based interventions proved to be difficult to implement in most of the larger urban communities, partly because of school policies regarding access to students and student information and also because of scheduling constraints and the high demands on teacher and staff time. Train-the-trainer approaches that rely on teachers to incorporate new material into their schedules and curricula did work well in the three communities that attempted to do this. Gaining cooperation from schools and securing access to students during the school day was somewhat easier in the smaller, rural communities

The third type of school-based intervention involved training school maintenance and building staff in how to recognize and address environmental hazards within school facilities. Utilizing an EPA-developed curriculum kit known as “Tools for Schools,” school staff were trained to follow guidelines in the toolkit to identify problems such as leaky pipes, old carpeting,

poor ventilation or air circulation, and dirty air filters that could compromise air quality and contribute to asthma and other health problems. Toppenish implemented the program in 2 schools, and Prichard implemented it in 13. Milwaukee schools were already using the Tools for Schools curriculum, so the CHCPP intervention involved using monitoring devices in several schools to measure carbon dioxide levels. Where high levels were detected (in one school), further assessments were made to identify and correct the problem (a malfunctioning compressor).

3. Individualized Home- Or Family-Focused Educational Activities

The most intensive CHCPP interventions involved working with individual families in the home. Five CHCPP sites implemented some type of home visit intervention (Manchester, Milwaukee, Nogales, East Los Angeles, and Toppenish). With one exception, all the home visit interventions focused on asthma-related education and prevention. Manchester implemented two home visit interventions—one focused on asthma and another focused on primary prevention of lead poisoning.

Each asthma-focused home visit intervention targeted children known to have asthma, and Toppenish and Milwaukee targeted children with more serious asthma conditions. Two sites (East LA and Milwaukee) intended from the start that their home visit interventions would be small, with target recruitment levels set at 15 and 20 families respectively. Although the home visit component in Newark was eventually dropped, it also set a goal of 20 families. The other three sites set their targets at closer to 100 families.

The content and intensity of the home visit interventions varied across sites. In general, the home visit interventions in Toppenish and in Milwaukee involved more frequent contacts and were more intensive than in the other three sites. This was in part because home visits in these sites often covered various educational topics in addition to assessing environmental triggers

within the home. Milwaukee originally intended to provide the educational sessions in a group setting but low participation rates led it to adjust and provide much of this education during home visits.

All the asthma home visit interventions utilized some type of checklist to guide home visit staff as they assessed the home environment for potential environmental hazards or triggers. While each site developed its own home visit materials, several sites modeled their checklists on tools developed by other home visit programs.³ The checklists were designed to document conditions within living spaces throughout the home at the time of the initial home visit and again during at least one other subsequent visit. The types of information the checklist documented included such things as the presence of pets, tobacco smoke, mold or must, carpeting, plumbing leaks or evidence of water damage, and cockroaches and other pests, and various other conditions related to the status of ventilation and general air quality within the home. As they assessed the home environment, home visit staff would talk with parents and other caregivers about the types of things they could do to reduce or eliminate potential environment triggers. Parents might be advised, for example, about how to reduce a child's exposure to dust mites by using a vacuum cleaner with a special HEPA filter, removing pets and stuffed animals from the child's bedroom, using special impermeable casings for mattresses and pillows, and washing bedding weekly in hot water. To prevent mold and mildew and other air quality problems related to moisture, families might be advised to have plumbing leaks fixed and to ensure that kitchens and bathrooms have adequate ventilation.

³Two programs in particular, the Master Home Environmentalist Program of the American Lung Association of Washington and ZAP Asthma in Atlanta, proved especially useful as CHCPP home visit programs developed their home observation checklists and other home visit materials.

Staff providing home visits varied from community residents hired and trained as peer educators (Manchester, Nogales, and East Los Angeles), to professional staff of community organizations (nonmedical staff in Milwaukee and a nurse from the community in Toppenish). Among the advantages of using community residents is that peers are often able to gain the trust of families, something that is especially important for immigrant and non-English-speaking populations. It can be challenging, however, to ensure consistency and accuracy in the education provided during home visits. Some sites, therefore, opted to adopt more of a professional staffing approach for their home visit intervention. But the skills of particular staff varied considerably within and across the peer and professional models.

4. Recruitment Experiences

Various methods were used to recruit participants for CHCPP classes, workshops, and home visit programs. For more intensive interventions, sites relied primarily on referrals by providers, schools and/or community organizations to identify children with asthma and/or those at risk for lead poisoning. The Rocky Boy lead-screening intervention targeted all children under the age of 7, and worked with local Head Start programs, schools, and WIC to identify children and gain cooperation from their families to participate in the screening. In Manchester, The Way Home lead poisoning prevention program referred families to the asthma home visit component (also operated by The Way Home). For the primary lead poisoning prevention effort, the Manchester Health Department identified areas with older and more degraded housing stock, and then identified homes with young children.

Several sites had difficulty recruiting families for asthma home visiting interventions. In some cases, home visit staff lacked a good connection with health care providers who could help to identify children with asthma (or children with more serious conditions) and endorse the

intervention. Sometimes home visit staff would succeed in identifying and scheduling an initial contact with a family but then the family would not be receptive to further intervention. Home visit staff in one community reported that some families reacted negatively to the lengthy home visit process, finding it somewhat intrusive. For this reason, staff in that community recommend focusing home visit interventions on families with children who have more serious conditions, as their families seemed to be more willing to participate. In three of the five communities with asthma-focused home visit interventions, recruitment of home visit participants was facilitated greatly by a close working relationship with a local medical provider. In Milwaukee and Toppenish, a local community health center served as the CHCPP grantee as well as a primary referral source for the home visits.⁴ In addition to identifying children with asthma who might benefit from the home visit intervention, close involvement of the community health centers also gave the home visit intervention greater credibility with families. A community health center also played a pivotal role in referring families to the home visit provider in Nogales. In Manchester and Los Angeles, the home visit programs were operated by community-based organizations lacking strong connections with a medical clinic or provider. A community-based asthma program was another key referral source for children in one of the target neighborhoods in Milwaukee. In several communities, sites organized asthma screening events to identify children with asthma. In these cases, CHCPP staff helped organize and promote the events and the actual screening service were conducted by health care providers and supported with other funding sources. The Manchester site had initially hoped to establish a citywide referral network

⁴CHCPP staff in Toppenish initially hoped to use a list culled from the health center's data system to identify children with asthma for their home visit intervention. Implementation delays, however, resulted in the list being outdated by the time the home visits were being scheduled. Consequently, home visit staff in this community also relied heavily on other referrals from local health care providers and community organizations.

for children with asthma. While relationships were established with several school nurses, for the most part, referrals under the CHCPP initiative were from the organizations directly involved in implementing the interventions.

E. SITE PROFILES

This section summarizes key elements of the intervention in each of the CHCPP sites. It describes the environmental health concerns the community set out to address, the strategies it employed, and its implementation experience. In many sites the nature of the interventions evolved over time, and in several sites interventions outlined in the action plan were not implemented.

1. Manchester, NH

The Manchester Child Health Champion Initiative brought together a variety of organizations with an interest in improving children's health outcomes. The team went through a fairly structured process for selecting priority problems and interventions, and decided to focus most of their attention on populations in Manchester's older and more impoverished center city area. Two of their interventions targeted teens. One of them was an innovative theatre program involving at-risk youth that developed and presented plays on the hazards of secondhand tobacco smoke and lead poisoning. The other involved developing innovative educational materials for teen parents served by a Salvation Army teen parenting program. The materials, formatted as laminated refrigerator cards, covered a variety of children's environmental health topics, including information on asthma triggers and lead poisoning prevention. Another set of interventions enhanced an existing home visit program (operated by a grassroots organization known as The Way Home) to incorporate a primary lead poisoning prevention component and introduce a new home visit component for children with asthma. The final intervention

expanded the availability of several ALA educational programs for children with asthma and their caregivers (including the Open Airways curriculum for elementary school children with asthma and Freedom from Smoking and Blowing Away Asthma for their parents and other caregivers).⁵ The Manchester site successfully implemented each of its interventions, though it learned many lessons about more and less successful strategies by the end of the implementation period. The lead poisoning prevention program exceeded its targets and successfully conducted lead dust screenings and delivered related education in 87 at-risk homes. The two more intensive asthma-focused interventions—the home visit program and the Open Airways curriculum—had greater difficulties and did not meet the target numbers. One obstacle for the home visit program (where 19 families were visited once and 8 were visited at least twice) was that it did not have a close working relationship with a health care provider—which might have helped with recruiting families who would benefit most from the intervention as well as improving the content and credibility of the home visit intervention. With the Open Airways intervention, there were problems getting the schools to agree on a time that could be set-aside for the sessions. While the site had hoped initially to reach children in the 14 Manchester elementary schools, sessions were conducted in only 4 schools and reached a total of 20 children. At the end, team members involved in implementing the Manchester CHCPP effort concluded that their efforts would have been more successful had they set their sights on fewer interventions, collaborated more closely with each other and with area health care providers, and built on each partner’s key strengths.

⁵One other intervention, a general environmental health education curriculum for school-age children, was dropped when the person with the vision and skills to implement the program left to take a new job.

2. Newark, NJ

CHCPP efforts in Newark focused on asthma and air quality concerns among children in the Ironbound community. Ironbound, a densely populated area that has for many years been home to recent immigrant populations, was named for its unique location surrounded by major highways, railroad systems, an airport, and several large industrial sites. An established grassroots organization, the Ironbound Community Corporation (ICC), led the community team's efforts. ICC and other community team members had worked with EPA on related environmental programs before initiating the Ironbound Children's Asthma Campaign. While there was little debate about the focus on asthma, community members originally wanted to focus on hazards associated with poor outdoor air quality, citing concerns about high levels of diesel and other emissions from the numerous transportation and industrial sources surrounding the community. Given the political and technical challenges involved in addressing outdoor air quality concerns within the timeframe of the initiative, EPA encouraged the community team to focus on indoor air quality and this became the focus of the team's efforts. A small intervention involving high school students who would monitor diesel emissions was also included in the plan but staff ended up not having enough time to focus on this intervention and as a result it never got fully off the ground.

In addition to developing multilingual educational materials and holding numerous workshops throughout the community to educate community residents and promote the campaign, the Ironbound project recruited and trained 10 community residents to serve as peer Asthma Busters. These peer educators were trained in the basics of asthma, environmental triggers, assessing home environments, leading workshops for families, and making referrals. Once trained, Asthma Busters conducted workshops throughout the community for parents and caregivers of children with asthma, educating them about asthma and the role of environmental

triggers. ICC staff also conducted several training workshops for kindergarten and preschool teachers to educate them about asthma and how to identify and reduce potential environmental triggers. Included in the education provided by the Asthma Busters and ICC staff was information on reducing environmental hazards through the use of Integrated Pest Management practices. Originally the site had also hoped to include a more intensive intervention for a small group of 20 children with asthma, but staff members could only identify a few families willing to participate in this component and the plan was eventually dropped. That intervention would have included a series of home visits and contacts with a nurse in addition to education provided in a group setting. In the end, staff indicated they would have been more successful had they focused on fewer interventions and developed a stronger relationship with providers who could have served as partners and referral sources for the more intensive interventions.

3. Washington, DC

The Ward 8 Child Health Champion Collaborative was formed to address children's environmental health issues in the Ward 8 community. Ward 8 is a primarily African-American section of Washington, with a history of community activism around both environmental and children's health issues.

After a lengthy planning process, the team, which consisted of several individuals who had previously been involved in community-based efforts to promote children's health, chose indoor air pollution as its targeted environmental issue. The team set out to use a truly grassroots approach to educating community residents about the hazards of indoor air pollution by developing media designed by community residents and appealing to African-American children and their families. To do this, the team developed a web site (www.ABreathAway.org), a children's workbook, and an educational video around the theme of indoor air pollution. In addition to the general population of Ward 8, third- and sixth-grade students at three local

elementary schools, and parents and children living in a local public housing community, were targeted for participation in developing materials and for education.

Lydia's House, a nonprofit organization that provides after-school programs for children as well as other community outreach, served a coordinating and fiscal role in the project. A small group of community residents, including representatives from Lydia's House and Women Like Us (another community-based nonprofit organization), met regularly throughout late 1999, 2000, and 2001 to develop the materials in a collaborative fashion. Certain individuals took primary responsibility for drafting materials and others reviewed them. EPA also provided guidance on the content and reviewed all materials before finalization. The result was an appealing set of materials that are culturally appropriate, age-appropriate, and accurate in content.

The group process of developing these materials was slow, and, at times, frustrating for the team, although ultimately rewarding. Some of the frustration came from the site's relationship with EPA, which had periods of tension associated with EPA's desire to carefully review the content of materials. Also, the site's desire to focus on certain schools and get involvement from students there and certain neighborhoods was not as easy as expected. The team found that the individuals who served as their initial contacts in those places were often too busy to devote time to the project and to bring students, teachers, and community residents together. Ultimately, team members relied primarily on their own knowledge of the community in developing materials.

It was not easy to develop a solid evaluation approach for the Ward 8 project, for several reasons, the most important being the general difficulty of evaluating the effect of media campaigns. Also, because the entire pilot period was used to develop the materials, they could not be disseminated or tested in the community during the time frame.

4. Prichard, AL

The Child Health Champion Campaign in Prichard, Alabama, operated out of the city's Office of Community Development. From the start, the mayor had a strong interest in the initiative and played an active, visible role in promoting the campaign and its community events. Annual Christmas parades held each year in Prichard were a key event for distributing promotional items about the campaign. Press conferences and numerous other events helped increase awareness among community residents about children's environmental health issues. The community team, a fairly diverse group that included several active local residents, decided to focus campaign efforts more intensively in three vulnerable city neighborhoods faced with very high rates of poverty and older, run-down housing stock. Local parks and a school in these areas were cleaned up and designated as "satellite learning centers" for holding health fairs, workshops, and screening events for local residents.

While some educational and promotional events focused broadly on environmental health concerns for children, efforts in the satellite learning centers focused heavily on problems related to lead poisoning and asthma/air quality. Preliminary data showing high rates of lead poisoning among children in Prichard helped motivate the community to work closely with the Mobile County health department to get more children screened and tested for lead. Staff also succeeded in getting local landlords to enforce federal and local rules regarding the upkeep of older housing units with lead-based paint. Asthma-focused efforts were slower to get started but the site eventually established a good working relationship with area health care providers and was able to organize several asthma screenings in the satellite learning centers.

Two other interventions focused on the schools. The site successfully introduced the Tools for Schools intervention in 13 area elementary and middle schools, training school custodial and building staff to identify problems that could influence air quality and health outcomes for

children with asthma. Also, a local expert in Integrated Pest Management practices conducted several training sessions for school staff and community residents toward the end of the project period. Area schools were beginning to adopt some of these practices and staff hoped community residents would also begin to apply this knowledge in their homes.

Implementation in Prichard was slowed somewhat because of significant turnover in the CHCPP coordinator position. Each time the position turned over (four times total during the 36-month pilot period), the new coordinator had to come up to speed and build relationships with other team members. Some of the turnover stemmed from controversies that developed within the mayor's office. The mayor was replaced half way through the pilot program, and negative press regarding financial mismanagement within the mayor's office also slowed the project somewhat.

Although the intervention in Prichard focused largely on educating the community at large, and so would not be expected to influence health outcomes measurably in the short term, the team succeeded in laying the groundwork for tracking and evaluating lead and asthma-related health outcomes. Protocols and data systems were developed to track lead testing rates and elevated lead levels, and asthma-related school absences. Armed with better lead poisoning data, the city was able to strengthen its application for federal funding of a lead- and asthma-focused home visit program. If the community is able to implement more intensive interventions such as home visits and other one-on-one forms of education in the future, the evaluation infrastructure developed through the CHCPP should prove to be valuable in documenting the outcomes of those efforts.

5. Milwaukee, WI

The CHCPP effort in Milwaukee was unique in building on a more established infrastructure for addressing asthma and other environmental health concerns. The entity with fiscal and

administrative oversight responsibility, the Sixteenth Street Community Health Center, had for many years operated an environmental health department and had worked closely with EPA on several other environmental and child health initiatives. Like other urban and industrialized areas, Milwaukee faces serious problems stemming from poor air quality and had experienced increased rates of asthma and asthma morbidity during the years before the CHCPP. Milwaukee had a special program, known as “Awesome Asthma School Days,” already in place to educate school-age children about asthma and how to recognize and address its symptoms and reduce its effects. Through the CHCPP initiative, the community team in Milwaukee wanted to strengthen existing programs by adding a stronger focus on the role of air quality and other environmental factors in triggering or exacerbating asthma events. It also wanted to develop and test an asthma care plan that could be shared among families, providers, and schools. The care plan would communicate information about how to manage the child’s asthma, including reducing or avoiding exposure to environmental triggers.

To enhance the Awesome Asthma School Days program, the site produced an award-winning video on asthma and air quality that was shown to participating students. The video, set in Milwaukee with local children conveying the messages, was also shared with various community groups to expand the reach of the educational effort. The asthma care plans developed under the initiative were printed in English and Spanish and distributed to numerous health care providers, schools, and community groups. A more intensive intervention was also implemented for the families of children in two target neighborhoods. A total of 20 families received education through a series of classes and home visits, and home visit staff communicated with the child’s provider to facilitate use of the asthma care plan. Home visit staff tracked changes in conditions within the home and family circumstances over the course of roughly a six-month time period. The final intervention enhanced the Tools for Schools

program already in place in area schools. Special monitors were installed in selected schools to monitor carbon dioxide levels and determine if they exceeded safe thresholds. Of the three schools tested, one showed excessive levels and action was taken to identify and fix the source of the problem.

The Milwaukee site successfully implemented all of its interventions and learned valuable lessons about effective strategies. Most important, the team learned that it is not enough to develop and make available an asthma action plan. Distributing plans directly to students or through community organizations does not ensure they will be used. Instead, it learned that if the plans are to function as intended, physicians and other health care providers must be actively involved in distributing them and encouraging their use. Staff also learned that they should target home visits and related services to families of children with more serious asthma conditions, as these families seemed more willing to participate in this fairly intensive intervention.

6. Cherokee Nation, OK

The Cherokee Nation--whose tribal offices are in Tahlequah, Oklahoma--used its funds to improve the quality of drinking water to tribal members in the Kenwood East community of Delaware County. They felt that the way to be most responsive to community needs was to develop a specific service (clean water) that would remain with the community for years and consequently improve the health of tribal children over a long period. About 40 households (with more than 100 children) did not have access to clean drinking water before the project, instead using untreated, potentially contaminated well water. A team of water quality specialists at the Cherokee Environmental Health Services Office used project funds to pay for the planning of a new water line to this community. Staff also met with community representatives to discuss the water project and solicit community interest.

At the end of the pilot program, the water line was still not complete, due to a delay in obtaining the construction funds from EPA and the Indian Health Service. (The CHCPP funds did not cover construction.) Also, community interest in the water line remained low. Because families were going to be assessed a fee to use the new source of water, few had signed up for it. Still, the planners hoped that community interest would rise once families saw that access to a new water source was a reality.

7. New Madrid, MO

The New Madrid County Tri-Community Child Health Champion Campaign truly embraced the concept of a grassroots community team in its comprehensive approach to involving and educating residents in three neighboring communities in southeastern Missouri. The communities—Howardville, North Lilbourn, and Lilbourn—differ in their economic and population characteristics but share common concerns about a variety of environmental and child health issues. Because the region relies heavily on agriculture and water supplies are limited, tensions between the communities have existed for many years over the management of local water supplies and the protection of water quality. A St. Louis-based organization that had worked with the community and with EPA on water and agricultural issues (the Great River Alliance of Natural Resource Districts, or GRAND) was given administrative and fiscal responsibility for the campaign, and a local coordinator residing in New Madrid was appointed to oversee the day-to-day activities of the campaign. The community team was comprised of residents from each community, and remained active and committed throughout the life of the project.

With few programs or educational infrastructure to build on, the New Madrid team decided to focus broadly on educating local residents about the role of the environment in contributing to child health problems related to asthma, lead poisoning and poor water quality. Their core

approach involved training local residents to serve as “community facilitators,” who would win the trust of other residents and educate them about environmental health concerns. Although initially the team envisioned recruiting facilitators from within the larger community, they eventually decided that team members themselves—residents already committed to the initiative—would be able to fulfill these roles. In all, 10 community team members were trained and served as the campaign’s primary educators over the course of roughly an 18-month implementation period. Educational sessions were held in group and one-on-one settings during health fairs, in classrooms, and in workshops set in various community locations. During health fairs and selected workshops, the team distributed kits on lead poisoning and asthma to families, and also worked with the local health department to facilitate lead screening and testing activities for young children. Two sessions were held for students with asthma that incorporated some material from the ALA Open Airways curriculum.

The New Madrid campaign implemented several other interesting interventions, some of which were partially supported with funds from other sources. It organized community residents to participate in a series of cleanups to remove debris from area storm drainage systems and facilitated the planting of more than 100 trees to provide a windbreak that would reduce airborne particulate matter from winds sweeping across dry, flat agricultural fields (funding for the trees came from other sources). Finally, the project facilitated efforts to improve the timeliness and accuracy of water testing practices at the New Madrid water treatment facility.

Although team members received some training from EPA and from a local health department professional, they were mostly self-taught, using materials provided by EPA or gathered through the Internet and other sources. While other communities were able to draw upon local experts to a larger extent for training and expertise, the team in New Madrid developed most of its educational materials themselves. In this and similar communities, it

would be helpful to make available actual educational curricula and to perhaps provide more outside professional training. This would reduce the burden on local residents while also ensuring that the content of the educational sessions are accurate and comprehensive.

8. Rocky Boy Reservation, MT

The Rocky Boy Reservation is home to members of the Chippewa Cree Tribe and is located near Box Elder, Montana. Before the CHCPP program, certain tribal members were concerned with environmental pollution and how it might be affecting children living on the reservation. In particular, they were concerned that children were not being screened for lead regularly, and that there was scant information about whether elevated lead levels might explain some children's health and developmental problems.

Consequently, the main thrust of the Rocky Boy CHCPP project--housed in the tribal water resources office--was to identify and coordinate the screening of as many young children (under age 6) as possible, and provide coordination to assure services for those with relatively high lead levels. The protocol for this process involved contacting families of children receiving WIC and Head Start services and, once permission was granted, referring them to screening by WIC clinic nurses using capillary blood draws. Children with lead levels over 4 Fg/dL, were to have a venous blood draw to confirm results, as well as a physical exam and parental education. Children were to be referred for medical follow-up at the public health department when blood lead levels were 10 Fg/dL or higher.

The site was very effective at contacting and assuring that children were screened. Close to 100 percent of children under 5 on the reservation were screened, and a substantial percentage of children in the early grades were also screened. The findings from the screening process were somewhat surprising to staff. Despite poorly maintained housing and schools built prior to 1978,

no children had lead levels high enough to require medical intervention. These findings perhaps reflect the relatively low lead levels in their rural environment.

In addition to the lead-screening component, there was also a substantial community education component to the project. These educational interventions focused on educating the community about the physiological characteristics that make children more vulnerable than adults to adverse affects of environmental toxins. Staff members produced four widely distributed newsletters (600 copies) that highlighted a range of environmental issues on the reservation. The project also provided some in-school environmental health education and held a workshop on environmental problems for tribal government staff. Finally, the staff twice had an environmental education booth at the annual tribal powwow. Despite sustained effort to engage the community, project staff faced substantial apathy from other tribal staff and some community residents, who did not perceive environmental issues to be prominent in relationship to other more pressing issues such as economic development.

9. Nogales, AZ

Nogales, Arizona, is a U.S. border community that is adjacent to Nogales, Mexico. Many Mexican-American families who live in Nogales have strong family ties to Mexico. Not only are environmental problems shared across the border, but families often use health care providers on both sides.

The Nogales effort built on an existing network of *promotoras*, lay health outreach workers based in a local clinic who are from the community and who know many of the families. Children and Family Resources, Inc., which had fiscal and oversight responsibility for the funds, is a nonprofit agency with experience in promoting the quality of life for children and their families. Using data from the clinic that identified families of children with asthma, *promotoras* visited 114 families and provided education on how to assess the home for environmental asthma

triggers and to improve the home environment. They were able to recontact and revisit 77 families.

An additional important aspect of the Nogales CHCPP project was broad-based community education, along with some school-based education. For community education, the project held parent training for more than 50 families and also trained day care providers in how to improve the home environment for children with asthma. Families were identified at community sites, such as WIC clinics. Project staff also participated in a large community health fair and held a family fun night that 175 people attended.

While the site initially hoped to make school-based education a major focus--using the curriculum ToxRap--this effort was not successful. Teachers were reluctant to take classroom time for this or invest the time in learning the curriculum. (They would have preferred to have an outside educator come in.) In the end, a single teacher used the curriculum, and CHCPP staff provided some modified educational sessions on environmental issues at other schools. The site had also hoped to have a poster contest and to send a teenager to an environmental health conference, but they were not successful raising the funds to do so.

10. East Los Angeles, CA

East Los Angeles is an urban area with numerous sources of environmental pollution, including heavy traffic and its associated air pollution. Several organizations formed a partnership to address the child health problems that are associated with this environment, resulting in the Kick Asthma/LA initiative. The three primary organizations involved in the effort were the Mothers of East L.A. (a community-based group that has advocated for community improvements for many years), the Los Angeles branch of the American Lung Association (which received and distributed CHCPP funds), and the University of Southern

California (which is a neighbor of the East L.A. community and operates many environmental health and community involvement programs).

The site focused on community-wide and school-based health education about environmental causes of and ways to prevent asthma. Mothers of East L.A. undertook community-wide outreach and educational programs that included a toll-free help line, health fairs, and a resource center. For example, it sponsored an Asthma Awareness Day, which more than 100 people attended, many of them families with children with asthma.

The ALA hired a community resident to provide Open Airways for Schools. About 100 children with asthma received the classes in eight schools in the Wilson School Complex of East Los Angeles, and one school in an adjacent school district. The project's goal was to visit as many of the homes of the children who attended classes as possible, in order to assess whether there were environmental asthma triggers that could be prevented, and provide environmental education. Fifteen families were visited twice. In addition to the project coordinator who attended visits, staff trained students from a local high school magnet program to accompany them on the home visits.

The project team was an unusual combination of a local grassroots, minority community organization working with two large organizations that had been traditionally separate from the East Los Angeles community. Consequently the team faced continual challenges as members attempted to understand each other's communication and work styles and appreciate the benefits that each member of the team brought. In the end, it appeared that the bonds forged between Mothers of East L.A. and USC would continue through new and related projects, though it was not apparent that the ALA would remain in the team.

11. Toppenish, WA

Toppenish, in the Yakima Valley, is located in a rural part of Washington State, and is home to many Mexican-American families. Many initially came as migrant farm workers and have settled with their families; others continue to migrate. The Yakima Valley Farm Workers Clinic serves this population in multiple sites both within and outside the valley.

The Tackling Childhood Asthma project, operating out of the clinic, provided education about asthma and how to prevent it using multiple strategies. Target populations within the community include children with asthma through 5 years old and their parents, teachers, and other school staff. About 75 families of children with asthma received home visits. Most families were visited multiple times, and different topics were covered in each visit, including a home environmental assessment and environmental education. Because nurses on the existing staff of the clinic conducted the home visits, they were able to also provide health education related to asthma prevention and treatment, such as proper nebulizer use. The costs of health-care-related visits were covered by other (non-EPA) clinic funds.

Project staff also provided education to all the day care providers in the service area. These providers were very receptive to being trained to care appropriately for children with asthma and providing a proper day care environment for them. The project hoped to provide support groups for parents of children with asthma. They did have a few groups, but they were poorly attended. Parents were reluctant to come out in the evening after a hard day of work in the fields, and project staff felt that home visits were a more appropriate way to reach parents. Similarly, an attempt to provide education to workers in some of the businesses in Toppenish and the surrounding area met with resistance from business owners, so the plan was dropped.

F. SUSTAINING PILOT PROGRAM ACTIVITIES

CHCPP sites were not required to secure other funding sources during the pilot or to sustain activities after the pilot funding ended. Still, as the implementation period neared its conclusion, many sites had succeeded in sustaining one or more of their CHCPP interventions. The home visit interventions in Manchester and Toppenish (expanded to an additional 4 sites) will be sustained with other local funds, and Prichard was trying to secure funding from the federal Housing and Urban Development's Healthy Homes Initiative program to introduce a home visit intervention. In Manchester and Los Angeles, the ALA will continue working to provide Open Airways and related educational sessions in local schools and other community settings. The Newark site had secured funding for continuing and improving on environmental health programs in the local public schools, and to continue providing asthma screening services to children and other local residents. It was still unclear whether Newark would be able to secure funding to continue the Asthma Buster peer educator program. In New Madrid, the expectation was that the peer community facilitators would continue to hold workshops about environmental health concerns in the community under the leadership of the community team chairperson. Efforts to establish the new water line in the Cherokee site were expected to continue with support from sources, and the Rocky Boy site was applying for grants to continue its lead screening activities.

People who say that money doesn't matter are usually people with money. A voluntary program would be much more difficult to get off the ground and sustain in communities like ours. We happen to believe that people in our neighborhoods do not have their priorities messed up. They are concerned about things like getting their children home from school safely and making a living. Who are we to tell them they need to put all this energy into solving the community's asthma problems? --Local CHCPP representative

Most CHCPP communities found it difficult to sustain the community teams beyond the pilot period. As the implementation period reached its conclusion, none of the CHCPP community teams were expected to continue. Part of the Manchester team will continue to

participate in a larger coalition group charged with guiding a variety of health and environmental initiatives in Manchester (The Healthy Manchester Coordinating Council). In addition, several of the partners involved in Manchester's CHCPP effort participated in a larger asthma coalition formed to apply for funding from RWJF Allies Against Asthma initiative. While not successful in securing those funds, the body continues to meet and address issues related to childhood asthma. Two sites (Milwaukee and DC) participated in larger local collaborations that were awarded funding from Allies Against Asthma, a Robert Wood Johnson Foundation program supporting comprehensive strategies for improving systems of care and outcomes for children with asthma. Some CHCPP activities will, therefore, be sustained through these larger asthma initiatives.

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III. THE CHCPP LOCAL EVALUATIONS

One of the unique aspects of the CHCPP initiative was its strong emphasis on evaluation. EPA guidance explicitly required community teams to include a local evaluation plan in their action plans:

“The evaluation plan must describe how the Community Team intends to monitor and track its progress toward achieving the Team goals/outcomes. It must describe the Team’s plan to track and evaluate the steps taken to achieve the intermediate and final outcomes, the team-building and management process, and the cost of its actions to the best of its ability.”

These instructions stressed not only the “qualitative” nature of the evaluation (that is, tracking program implementation and lessons learned from it) but also a more outcome-oriented evaluation that would measure what the sites achieved. The qualitative components would help community teams and EPA document the nature of the intervention, measure progress during implementation, and reveal lessons for other communities interested in adopting such an approach. The outcome evaluations would provide solid information about how different types of interventions actually affect important child health outcomes, which would help local sites secure funding to continue their activities and help EPA and other funders decide whether and how to expand the CHCPP approach.

This chapter reviews the general evaluation design issues all the sites faced, describes the design of each local evaluation in particular, and provides some data from outcome evaluations for the seven sites that were able to provide comparison data for one or more outcomes. An earlier document provides more detail about the outcome evaluations as they were originally

designed.¹ The pilot program generated many insights about the benefits and challenges of evaluating small, community-based initiatives.

A. DEVELOPMENT OF LOCAL EVALUATION PLANS

When the local teams submitted their action plans, they were still somewhat uncertain about the details of their evaluations. Recognizing that the sites were limited in their technical evaluation resources, EPA asked MPR to help each site refine its evaluation plan. EPA strongly encouraged each site to incorporate an outcomes component that would measure the changes associated with CHCPP interventions. MPR evaluators helped each site by presenting different evaluation options and describing their pros and cons, but ultimately the community had the final say about whether and how to employ an outcomes component. Sites varied considerably in their experience with evaluation and in the types of data and expertise they had to draw upon locally. Most of the community teams welcomed the assistance in structuring their evaluations and at least attempted to incorporate a solid outcome component. While many communities saw the value of solid evaluation data in securing support for their interventions, most resisted more complex evaluation approaches because they were worried about diverting limited resources away from program interventions. They also wanted to be sure that the evaluation approach was realistic and that it did not set the site up to fail by making expectations too high.

Before conducting initial site visits to the communities in 1999, MPR reviewed the action plans and developed draft evaluation materials to discuss with community leaders during the visit. After the visit, MPR shared materials with each community in the form of an evaluation memorandum. Each memo contained a flow chart laying out the interventions and expected

¹Howell, Embry, Mary Harrington, Elizabeth Langer, Sara Roschwalb, and Rebecca Kliman. "Interim Report and Evaluation Plan: Child Health Champion Pilot Program National Evaluation." Washington DC: Mathematica Policy Research, Inc., August 2000.

intermediate and final outcomes, similar to the flow chart presented as Figure I.1 in Chapter I of this report. The flow charts developed for each site are more detailed but contain essentially the same type of material (see Appendix A).

The evaluation memos also included draft data collection forms for the qualitative component of each local evaluation. These forms were designed to measure the intervention by tracking the number of meetings, training and educational sessions held, the number of community and other promotional events, and the number of attendees at each. Forms were also developed to help sites track the date of each home visit and basic characteristics of the people visited. Appendix B contains a set of “generic” forms that illustrate the type of data collected. The descriptions of the interventions, data on participation levels, and the discussion of implementation experiences and lessons learned contained in this report draw upon information from this qualitative component of the evaluations.

The evaluation memos also outlined the data sources, comparison groups (as applicable), and interim and final outcome measures for the local outcome evaluations. An overview of the local outcome evaluations as they were at the start of the implementation period is contained in Appendix C. Many of the sites planned to focus their outcome evaluations on their more intensive interventions—typically a home-visit program. Several communities planned to evaluate the outcomes of community-wide and/or school-based educational efforts. The outcomes specified included changes in health care utilization (hospitalizations, emergency room visits), school absences, blood lead levels, lead screening rates, and home environments. Several communities (Prichard, Nogales, and Toppenish) set out to obtain data for a comparison group.

While the local evaluations had many strengths, they were also limited in ways perhaps not anticipated when CHCPP was designed. EPA had hoped the pilot program would incorporate scientifically based interventions and that the evaluations would provide empirical evidence on

how to improve children's health, or, in other words, the outcomes of individual CHCPP efforts. While EPA recognized the importance of qualitative information in augmenting the outcome findings, the agency also felt strongly that a decision to continue and expand the program should be based on hard data on which types of community-based interventions are likely to work.

Because the size and intensity of the interventions was relatively small in most sites, and implementation was expected to last for only a year in most cases, it was clear from the beginning that it would be difficult to develop credible and meaningful outcome evaluations. In addition, the precision of the outcome evaluations varied considerably from community to community. Both as they were originally designed and as they evolved over the course of the grant period, it was clear that the CHCPP local evaluations might not yield solid outcome findings for the following reasons:

- In many cases, the intensity of the interventions was not strong enough to produce measurable health outcomes in the pilot period's time period. CHCPP interventions were educational in nature and limited in scope because of funding constraints and the short implementation timeframe. Many of the interventions were of relatively low intensity, such as health fairs or a small number of home visits (one or two). A single home educational session, for example, might have led to improvements in a home environment but might not have yielded detectable changes in a final outcome, such as a decline in the rate of emergency room visits, which is a relatively rare event.
- The time frame for the interventions (which were not fully implemented until early 2000) did not allow for a long follow-up period for measuring impacts, because the pilot programs ended in late 2000 or mid-2001.
- The size of the groups studied in the outcome components was small. Thus, the statistical "power" was weak to detect the potentially small changes in outcomes that might be expected from the interventions. As a result, the evaluation might not have detected statistically significant results even if the programs actually produced changes in the outcomes of interest.
- Resource and timing constraints also limited the type of outcome data communities could collect; most primary data collection approaches (such as client surveys) were not feasible within the scope of their projects.

Despite these caveats, the sites and EPA continued to be committed throughout the grant period to developing both qualitative and outcome evaluations of their efforts. This commitment to evaluation had an important side benefit: It kept sites focused on their primary goals. Throughout the implementation phase, MPR staff kept in contact with project staff to provide guidance on their local evaluations.

B. DESIGN OF FINAL OUTCOME EVALUATIONS

The local evaluations evolved over time to reflect changes in the interventions and to accommodate local data constraints. Table III.1 summarizes the designs used for the final outcome evaluations that were completed for the CHCPP. As shown, 7 of the 11 sites completed some type of outcome evaluation, meaning that they collected data—in accordance with their original evaluation plan—that allowed them to measure in a quantitative fashion one or more of their interim or final outcomes.

Due to the limited time and resources that the CHCPP sites could devote to evaluation activities and the fact that their interventions took longer than anticipated to implement, their final outcome evaluations were considerably more modest than originally planned. Some sites were unable to complete an outcome evaluation, and only two were able to put into place the evaluations they had originally designed. Sites found that data collection was much more difficult than anticipated and that many of the sources of data that they thought would be available were not. Also, none of the sites were able to serve as many people as anticipated, so the sample sizes for the outcome evaluations were smaller than originally planned. Finally, because sites often changed their intervention approaches (including scaling down the scope), some of the planned evaluation components were no longer appropriate.

TABLE III.1

FINAL DESIGN OF CHCPP LOCAL OUTCOME EVALUATIONS

Site	Type of Intervention Evaluated	Study Design	Study Group and Comparison Group	Data Sources	Outcome Measures
Manchester, NH	In-home lead education	Pre-post	50 families receiving lead education during home visits	Pre-post lead swipe data from floors, window sills, and window wells	Percent of households exceeding the HUD limit
Newark, NJ	None	--	--	--	--
Washington, DC	None	--	--	--	--
Prichard, AL	Community-wide education around lead screening and lead abatement	Comparison group	Children screened in Prichard (1,242 in year 2000) compared with children screened in Maysville (400 in year 2000)	Public health department lead screening data	1. Percent screened 2. Percent with lead levels exceeding 10 micrograms per deciliter
Milwaukee, WI	School-based education and home visiting to provide asthma education	Pre-post	22 families receiving education during home visits	Pre/-post data collected in two home visits	Multiple measures of home environment
Cherokee, OK	None	--	--	--	--
New Madrid, MO	None	--	--	--	--

TABLE III.1 (continued)

Site	Type of Intervention Evaluated	Study Design	Study Group and Comparison Group	Data Sources	Outcome Measures
Rocky Boy, MT	Lead screening	Study group only	All children under age 7 on the Rocky Boy reservation	Screening results	Number of children screened and lead levels
East Los Angeles, CA	Home visiting to provide asthma education	Pre-post	15 families receiving education during home visits	Pre-post data collected in two home visits	Multiple measures of home environment
Nogales, AZ	Home visiting to provide asthma education	Pre-post	100 families receiving education during home visits	Pre-post data collected in two home visits	Multiple measures of home environment
Toppenish, WA	Home visiting to provide asthma education	Comparison group	<ol style="list-style-type: none"> 1. 76 families receiving education during at least two home visits 2. 27 children who had one full year of home visits and 54 matched comparison children outside the Toppenish ZIP code who did not have home visits. 	<ol style="list-style-type: none"> 1. Pre-post data collected in two home visits 2. Clinic records 	<ol style="list-style-type: none"> 1. Multiple measures of home environment 2. ER visits

While the original evaluation plans for most sites identified both interim outcomes and final—child health—outcomes that would be measured, in the end, most sites that did outcome evaluations examined interim outcomes. The short-term nature of the intervention meant that it was more feasible to examine interim outcomes and to detect changes in such measures. Table III.2 describes how the outcome evaluations in many sites changed from their original designs.

Although each site developed its own evaluation design, a common theme emerged. Five of the seven projects with outcome evaluations focused on documenting changes in the home environment following lead or asthma home visits. One of these sites also examined changes in emergency room visit rates as a final outcome for their asthma interventions. Two sites measured lead levels for children in their project areas.

While these small outcome evaluations do not provide rigorous effect estimates, they do illustrate the types of data that are potentially feasible to collect to examine interventions to improve children’s environmental health. They also provide good case studies of the types of challenges that community-based groups confront when attempting to examine the outcomes of their efforts. The following sections provide a brief overview of the results from each CHCPP outcome evaluation.²

C. OUTCOME EVALUATION RESULTS

1. Lead Education and Screening

a. Prichard, Alabama

The Prichard CHCPP campaign implemented a diverse set of interventions to improve the community environment and to educate community residents, and these were designed to

²Some individual sites conducted additional analyses with their data that are presented in their final grant reports.

TABLE III.2

CHANGES FROM ORIGINAL LOCAL CHCPP OUTCOME EVALUATION PLANS

Site	Change from Original Evaluation Plan And Reasons for Changes
Manchester, New Hampshire	For the asthma home visit intervention, the project hoped to measure changes in hospitalizations, ER visits and missed school days, but follow-up data was obtained for only a small number of children and the time period for the follow-up data (typically the one or two month time period between the first and second visit) was too short to observe changes in relatively rare outcomes.
Newark, New Jersey	The original plan was to obtain medical outcome and school absence data for a small number of children enrolled in a home visit intervention. The home visit component was never implemented, and the outcome component was therefore dropped.
Washington, DC	At the end of the evaluation period the project had just completed the development of educational media, so the outcomes from dissemination those media to the community could not be evaluated.
Prichard, Alabama	The outcome evaluation related to lead-focused interventions was completed as planned. For asthma interventions, the project hoped to examine changes in school absences for a group of children with asthma, comparing this with school absence data for children with asthma in a neighboring community. The asthma interventions were delayed and not very intensive, and the project obtained school absence data only for children in the intervention schools, and only for the baseline period.
Milwaukee, Wisconsin	The outcome component was completed as planned. Because outcome data were obtained for only the short implementation time period (3 to 8 months), it was difficult to observe changes in outcomes.
Cherokee, Oklahoma	It was not possible to have an outcome evaluation, since the intervention (developing a water line to new homes) was not complete at the end of the grant period.
New Madrid, Missouri	The project initially considered examining changes in the home environment and school absences, but a home visit intervention was never implemented and data on school absences were not available for the pre- and post-periods.
Rocky Boy, Montana	The project completed the outcome evaluation as planned.

TABLE III.2 (continued)

Site	Change from Original Evaluation Plan And Reasons for Changes
East Los Angeles, California	The project hoped to have a larger sample size (30), but implementation delays prevented visiting more families. Also, school absence data were abstracted for students, but many were lost to follow up and the data could not be analyzed.
Nogales, Arizona	The project hoped to measure changes in emergency room use, but it was not possible to obtain access to clinic records. Also, the project hoped to compare changes in school absences between Nogales and a comparison community, Douglas, but it was not able to abstract all the data for Douglas.
Toppenish, Washington	The project completed the evaluation as planned, although the sample size was somewhat smaller than anticipated.

address both asthma and lead prevention issues. The site identified 11 interventions that it chose to implement and 20 interim outcomes that it would attempt to measure. Two outcomes were related to lead poisoning. The site hoped to increase the number and proportion of children receiving lead screening and to reduce the incidence of elevated blood lead levels among children.

The site used existing data from the public health department to measure both screening rates and blood lead level outcomes. Data for both Prichard (ZIP code areas of 36610, 36612, and 36613) and its comparison community, Maysville (ZIP code areas 36604 and 35505), were obtained. As shown in Table III.3, the number of children screened in both Prichard and Maysville declined from 1995 to 2000. The number and percentage of children screened during this time period was consistently greater in Prichard than in Maysville. In both communities, the number and percentage of children screened fell in 1998, then increased during the following two years but remained below the levels experienced during 1995-1997. The rate of high childhood blood lead levels (exceeding 10 micrograms per deciliter) declined steadily in both communities over this five-year period. The rate of decline was similar in both communities and was statistically significant.

It is not clear why the screening numbers and percentages dropped in 1998 in both communities. It is possible, however, that the increased publicity about lead poisoning concerns that occurred during the CHCPP planning phase (in 1999) contributed to the increase in screening in 1999. During the planning phase, the community team obtained statistics suggesting that a high percentage of children in Prichard had elevated lead levels. Local television and radio stations picked up this information, and it was also mentioned in community meetings and in fliers the site produced. Subsequent CHCPP interventions focusing on lead

TABLE III.3

TRENDS IN LEAD SCREENING AND LEAD LEVELS
PRICHARD, AL AND MAYSVILLE, AL
1995-2000

	Prichard				Maysville			
	Number Screened	Percent screened; 1990 pop.	Percent screened; 2000 pop.	Percent Over 10 ug/ml	Number Screened	Percent screened; 1990 pop.	Percent screened; 2000 pop.	Percent Over 10 : g/ml
1995	276	1.6	2.2	23	189	1.4	1.3	25
1996	257		2.0	24	208		1.4	24
1997	223		1.7	17	175		1.2	25
1998	130		1.0	9	85		0.6	14
1999	200		1.6	11	117		0.8	9
2000	176	1.0	1.4	8	110	0.8	0.7	7

SOURCE: Screening numbers and associated elevated lead level percentages were provided by the Prichard CHCPP project. Numbers used to compute the percentages of children screened were taken from the U.S. Census. The first percentage screened figure was computed using 1990 population figures for children under the age of 20, and the second figure was computed using Census 2000 population figures, also for children under the age of 20.

issues (screening events and education related to lead poisoning) were implemented in 2000, and we might have expected that the rate of screening would climb again in that year in Prichard, in contrast to Maysville. However, using 2000 census data on the number of children under age 20 in these ZIP code areas as a proxy for the children who would be targeted by the screening efforts, we find that screening rates declined in both communities from 1999 to 2000. The number and percentage of children screened in Prichard remained higher than in Maysville that year, with the percentage of children under age 20 screened in Prichard (1.4) double the percentage of children screened in Maysville (0.7). Still, these outcome results do not suggest that the Prichard intervention was effective in increasing screening rates.

In addition to lead-focused activities, the Prichard site also focused heavily on raising awareness levels in the community about general environmental health concerns and asthma prevention. Although the site had at one time hoped to measure the outcome of these efforts by examining changes in school absences, it was able to obtain only a portion of the data needed for such an assessment. Also, because most of the project's interventions were low-intensity, awareness-building activities that focused on the community at large, it is unlikely that these activities alone would have led to significant improvements in child health.

b. Manchester, New Hampshire

The Manchester CHCPP effort included a primary lead prevention component that provided lead education in the home, and its outcome evaluation examined lead levels in the homes before and after the intervention. To do this, staff collected data from lead swipes of three locations: floors, windowsills, and window wells. They collected the data at the first home visit, before education was offered, and at a second or third home visit after there had been one or two educational sessions. The lead swipe data were analyzed to determine whether or not the sample contained lead exceeding the safety limit set by the U.S. Department of Housing and Urban

Development.³ Usable data were not available for all households because some of the earlier home visits were initiated prior to completion of the data collection protocol, but the site obtained pre-post -data for approximately 50 households.

Table III.4 shows the results of this lead data analysis. The lead levels declined in two locations--floors and windowsills, but not in the window wells (the area where the window rests when it is closed). The decline for floor dust lead levels was statistically significant. While the results are based on a small sample size, it does appear that the Manchester home-visit intervention to provide lead education to at-risk families shows promise as a way to improve child health.

c. Rocky Boy, Montana

The Chippewa Cree CHCPP efforts were aimed at screening all young children on the Rocky Boy reservation for lead, as well as doing community-wide education on environmental hazards for children (including lead). Little information was available before the CHCPP on the lead levels of tribal children, and little information was available anywhere in the country about the lead levels of Native American children. The main outcome measure for the project was the proportion of children tested, with a goal of testing at least 70 percent of children under age 7.

The site's efforts to facilitate screening of young children were very effective. Table III. 5 shows the number and percentage of children tested by age, as well as the average lead level detected by age. As shown, the initiative succeeded in screening almost all children at selected ages (1, 3, and 4) and substantial proportions of young children at other ages (more than 90 percent of children under age 5). In all, more than 70 percent of children age 8 and younger were screened, which exceeded the community's goal.

³The HUD safety levels are provided at www.epa.gov/lead/leadhaz.htm.

TABLE III.4
LEAD LEVELS IN DUST SAMPLES OF FAMILIES RECEIVING
EDUCATION IN LEAD PREVENTION
MANCHESTER, NH

	Number of Families with Lead in Dust Samples		Total	% Above HUD Limit
	≤ HUD Limit	> HUD Limit		
Floors				
Previsit	43	6	49	12.2*
Postvisit	48	1	49	2.0
Window Sills				
Previsit	40	10	50	20.0
Postvisit	45	5	50	10.0
Window Wells				
Previsit	16	28	44	63.6
Postvisit	17	27	44	61.4

Source: Data provided by the Manchester CHCPP project.

*Proportion was significantly higher at the preintervention visit than at the postintervention visit, at the .05 level.

When this effort was launched it was not known how many children might require medical intervention for high lead levels, and actually no children at these ages were identified with elevated levels (above 10 micrograms per deciliter). The lead levels for children of all ages were relatively low, although levels at the older ages were somewhat higher than for the youngest children. It is possible that the higher lead levels for the older children are due to the older age of the schools these children attend, as lead exposure may be greater in these older buildings. Overall, the average blood lead level of 2.4 micrograms per deciliter on the Rocky Boy reservation was not significantly different from that of all U.S. children as reported from the Third National Health and Nutrition Examination Survey of 1999 when the average was 2.0 micrograms per deciliter (95 percent confidence interval equal to 1.7-2.3) for children ages 1 to 5 (Centers for Disease Control and Prevention 2000). While national data are not available for a more recent period, levels are known to have declined in many areas. Consequently, it appears that the lead levels on the Rocky Boy reservation are on a par with children elsewhere in the U.S. and indeed may be somewhat lower. Because the community did not collect data after the screening period, it is not possible to know whether lead levels declined even more after CHCPP educational interventions were implemented.

The success of the Chippewa Cree tribal program in identifying young children and having them screened for high lead levels was attributed to the close ties that local CHCPP staff established with the important places where young children living on the reservation come regularly: the WIC program, Head Start program, and school. It appears that WIC and Head Start programs are particularly successful locations, as they already have health care screenings as a routine part of their activities.

TABLE III.5
 PERCENT OF CHILDREN TESTED AND LEAD LEVELS
 ROCKY BOY, MONTANA
 1999-2000

Age	Number Tested (March 1999 – September 2000)	Population (April 1, 2000)	Percent of Population Tested	Average Lead Level : g/ml
< 1	47	76	61.8	1.6
1	80	67	119.4*	1.8
2	46	62	74.2	1.7
3	69	67	100.3*	2.0
4	60	63	95.2	3.0
5	32	67	47.8	3.0
6	37	79	46.8	4.2
7	26	61	42.6	3.0
8	5	85	5.9	2.0
Unknown	51	--	--	--
Total	453	627	72.2	2.4

*These percentages exceed 100 because 2000 U.S. Census population figures were used for the denominators, while the numerator data (the actual numbers of children tested) were provided by local project staff. The census figures may have underestimated the actual number of children in this community.

SOURCES: Rocky Boy tribal program data on lead testing, and U.S. Census data on population size (http://factfinder.census.gov/servlet/DTable?_ts=38333211620), accessed on May 1, 2002.

2. Asthma Education through Home Visiting

Four sites—Los Angeles, Milwaukee, Nogales, and Toppenish--used similar interventions to educate families about the home environment and how it can affect a child's asthma. The home educator--a paraprofessional in three of the sites and a nurse in Toppenish—observed conditions within the home environment and educated family members about things they could do to reduce or eliminate asthma triggers. In Toppenish and in some cases Milwaukee, there were numerous visits to each family, and in the other sites each family was visited once or twice.

For families that had at least two visits, home-visit staff measured the home environment at the time of the first visit, before education was provided, and at a subsequent visit. While the sites all used somewhat different checklists, which the home visitor completed to document the home environment, the measures used were similar. There were measures in at least two sites for: evidence of smoking in the home (sometimes assessed by asking whether there was smoking inside the home), pets, cockroach stains, plumbing leaks (that could lead to moisture-related problems such as mold), surface clutter and carpeting (both of which are associated with potential dust/dust mite buildup). Each of these have been shown to be a trigger (or associated with a trigger) for asthma symptoms in children. Home educators provided information to the families about these potential triggers and how to prevent them.

Table III.6 shows 12 different measures of the home environment, each falling under one of the following broad categories: (1) smoking in the home; (2) cockroach stains; (3) plumbing leaks; (4) surface/floor clutter; or (5) carpeting. Multiple measures are provided when they were available on a checklist, and also because sites used somewhat different measures for these at times. Following the home-visit intervention there were significant declines in smoking in the home (Toppenish and Nogales); pets in the home (Nogales) or in the child's room (Milwaukee); cockroach stains in the kitchen (L.A. only); plumbing leaks in the house (Toppenish) and in the

TABLE III.6

CHANGES IN HOME ENVIRONMENTS FOLLOWING
CHCPP HOME VISIT INTERVENTIONS

Variable	Percentage of Homes With Condition							
	Los Angeles		Milwaukee		Nogales		Toppenish	
	Initial Visit N=15	Follow-Up N=15	Initial Visit N=22	Follow-Up N=22	Initial Visit N=100	Follow-Up N=100	Initial Visit N=66	Follow-Up N=66
Smoking inside home	N.A	N.A	36	32	36	8	20	2
Pets								
Home overall	27	20	N.A	N.A	37	8	N.A	N.A
Child's bedroom	N.A	N.A	27	5	N.A	N.A	7	3
Cockroach stains								
Kitchen	13	7	55	58	N.A	N.A	N.A	N.A
Child's bedroom	N.A	N.A	70	70	N.A	N.A	N.A	N.A
Plumbing leaks (moisture)								
Home overall	N.A	N.A	N.A	N.A	N.A	N.A	36	3
Kitchen	20	7	59	63	N.A	N.A	N.A	N.A
Child's bedroom	7	7	70	70	N.A	N.A	N.A	N.A
Surface clutter (dust)								
Kitchen	53	47	27	16	N.A	N.A	N.A	N.A
Child's bedroom	53	27	20	20	N.A	N.A	N.A	N.A
Carpeting								
Living room	82	74	82	74	N.A	N.A	N.A	N.A
Child's bedroom	64	71	64	71	N.A	N.A	68	47

SOURCE: CHCPP local evaluation databases, based on home visit records

kitchen (Los Angeles); surface/floor clutter in the child's room (Los Angeles); and carpeting in the child's room (Toppenish). Consequently, for each of the asthma triggers, there was significant change after the home education in at least one site, although there were also many areas where no change was observed in one or more sites.

In Toppenish, it was also possible to examine a final child health outcome from the home-visit intervention, as measured by the rate of emergency room visits before home visiting began and in the year during which home visits were provided. Data were abstracted from medical records for two sets of children: (1) 27 children who received a full year of home visits and (2) a matched comparison set of children outside the Toppenish ZIP code (but attending the same clinic for health care) who did not have any home visits.

Table III. 7 shows the average number of emergency room visits during a "base year" (the one year before the home-visit intervention) and the "study year" (the one year during which home visits were provided). As shown, the average number of emergency room visits did not decline significantly for either the study group or the comparison group. Had the home-visit intervention had a significant impact on child health, we might have expected the rate of emergency room visits to decline in the study group, but not in the comparison group, but this was not the case. It is certainly possible that the changes made in the home environment could have affected child health in other (more moderate) ways that did not affect the rate of emergency room visits. It is also possible, because emergency room visit rates also climbed some in the comparison group, that factors external to the intervention (such as increased outdoor air pollution) could have affected children's health adversely, offsetting the gains from the intervention. Another constraint has to do with the sample size for this analysis and the associated power or capacity of the design to detect a change in outcomes. Emergency room visits are relatively rare events, even for children with asthma, and so the change associated with the intervention has to be large

enough to be detectable with such a small sample of children. Still, the Toppenish home-visit intervention was the most intensive of all the 11 CHCPP sites, yet these data do not provide evidence that the intervention led to major improvements in this child health outcome during the time period of the project.

TABLE III.7

MEDICAL OUTCOMES TOPPENISH CHCPP HOME VISIT INTERVENTION

Variable	Intervention Group		Control Group	
	Base Year N=27	Study Year N=27	Base Year N=54	Study Year N=54
Average Number of Home Visits	N.A	2.8	N.A	N.A
Average Number of ER Visits	0.41	0.52	0.31	0.39

SOURCE: Toppenish CHCPP local evaluation database

D. CONCLUSIONS

The evaluation experiences of the CHCPP sites reinforce the value of certain evaluation activities and the challenges of others. For the most part, sites found that it was feasible and useful to document the nature of their interventions using various qualitative tools, such as the forms shown in Appendix B. Several sites noted that the documentation step helped team members monitor their progress, and as one community member noted “keep us on task.” CHCPP sites also found it useful to identify and map out the outcomes associated with their interventions. Especially when a community planned many different activities, the flow charts helped local staff think through the expected outcomes for each intervention and, in some cases, to narrow their focus, given time and resource constraints.

The evaluation kept [local staff] focused without being threatening. ... The evaluation component functioned as a silent observer that presented the same kind of question that a funding agency, project participant, or the community would raise: To what extent did the project do what it proposed it would do? -- Local CHCPP representative

The forms were not only useful for EPA reporting purposes, but they were also useful as a self-monitoring mechanism for our own progress. -- Local CHCPP representative

Producing solid outcome findings proved very challenging for most of the sites, and the findings from available outcome evaluations were quite limited. Several outcome evaluations provided little, if any, data that could be used to measure changes or impacts. Typically, this was because the community was only able to obtain baseline data and/or because comparison data was lacking or very weak.⁴ To some extent, however, team members in these communities still thought that the focus on outcomes had strengthened local capacity to conduct a more rigorous evaluation in the future.

Demonstrating meaningful changes in child health outcomes requires both an intervention capable of bringing about the change and an evaluation design that is adequate to detect whether the change occurred. While a few of the CHCPP interventions appear to have been adequate to bring about a change, many of the interventions were either too small or too diffuse to influence child health outcomes in a measurable way. Several sites had doubts from the start about the value of conducting an outcome evaluation for such a small program. And while some of these sites ultimately incorporated a limited outcome component, they expressed concern that conclusions based on these limited data be interpreted appropriately--given the likelihood that significant changes in health outcomes would not be observed.

⁴Only two sites (Toppenish and Prichard) were able to obtain comparison data on a group of children who were not exposed to the intervention. Comparisons in other sites, where available, were pre- and post-intervention outcomes for an intervention group.

Small sample sizes, limited data, and limited expertise and resources for evaluation made it very difficult for CHCPP sites to implement outcome evaluations capable of detecting changes that may have occurred. Although specific problems varied across sites, common obstacles to implementing planned local outcome components included:

- An inability to obtain outcome data for a sufficient time period following the intervention, primarily because implementation was initially delayed and took longer than anticipated in many sites
- Difficulties getting school systems to release information about school absences for children with asthma
- Difficulties getting medical providers to release information about health care use (such as hospitalizations and emergency room visits)
- Reductions in the scale or intensity of the interventions, such that it no longer seemed worthwhile to invest as heavily in an outcome evaluation component

In general, CHCPP sites found that the most feasible types of outcome information to collect and analyze were data that their own staff could obtain before and after home visits. Using external data sources (such as blood lead levels, school absences, or emergency room visits) to measure outcomes was more difficult and less promising for two reasons: (1) the effort required to obtain and use such information is excessive, given limited project resources, and (2) changes in child health outcomes are difficult to detect when the intervention is relatively small and time period for the intervention is short. Future efforts should set realistic expectations for evaluation efforts of similar community-based programs, particularly efforts that are small in scale and that focus on educational types of interventions.

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IV. FINAL THOUGHTS

The CHCPP initiative provided many valuable lessons about what works in reaching families in different rural and urban communities facing high levels of poverty and other socioeconomic barriers. Important lessons were also gained about conducting evaluations of small community-based programs. These and other insights from the CHCPP effort are summarized below.

- The community team approach was innovative for EPA and was appreciated by many of the CHCPP communities. Often for the first time, local residents and other community representatives were given an opportunity to shape the direction of program efforts. This meant the communities typically embraced the resulting action plans and interventions to an extent that might not have happened had the EPA rigidly defined and imposed a program on the community.
- Involving local residents and sustaining broad-based community teams throughout the implementation period seems to be more feasible in smaller, rural communities. This is true in part because the pool of potential team members was smaller and also because team members typically lived in or identified strongly with the target areas. In the larger, urban sites an initiative like this competes with many other programs, and local officials may not be as familiar with or committed to the target neighborhoods. The community team approach was also more difficult to implement and less effective in the two American Indian communities, where it seemed best to utilize a core project staff who would work with existing tribal groups and utilize existing forums and events to engage and educate community residents.
- In addition to involving health care providers in the planning efforts, CHCPP communities found that it was important for health care providers to remain active during the implementation phase. Several projects cited the lack of this involvement as a primary factor limiting the success of one or more of their interventions. Although statutory constraints limited the use of CHCPP funds to support medical interventions per se, health care providers could still play an important role. Whether helping to refine educational materials and associated trainings, referring families, and/or simply endorsing CHCPP activities, providers can help strengthen the quality and overall success of certain types of interventions.
- Most communities made use of existing educational materials and other resources available from EPA, the American Lung Association, established home visiting programs and other sources. Given the short timeframe for the pilot program, it was helpful to be able to draw upon existing resources. But in several communities, the CHCPP initiative provided an opportunity to develop new materials that would

address more appropriately the needs of the target populations. This included the development of educational materials in multiple languages, in accessible formats, and/or using terminology and images that would resonate with local populations. In these communities, EPA and local experts helped to ensure that the content of the materials was current and accurate.

- Findings from the several sites with more solid outcome data suggest that some of the more intensive interventions (home visit programs) employed under CHCPP contributed to improvements in child health, but the narrow scope, small sample sizes and short timeframes limited the type and magnitude of change detectable through these outcome evaluations.
- It is unlikely that the CHCPP community teams will be sustained beyond the pilot period, though in several communities a different community group was likely to continue some of the functions of the CHCPP community team. Most CHCPP sites had a strong sense that a strictly voluntary community team effort would not be feasible, given the limited resources and many pressing demands on individuals and organizations in CHCPP sites.
- While many CHCPP activities were expected to end at the close of the pilot program, some communities had already succeeded in or were in the process of securing funding or support to continue one or more of their interventions. In some cases providers, schools, and/or community organizations planned to utilize educational materials developed under the program, and that type of effort did not typically require additional funding. Some sites found new funding to support staff and supplies for home visit programs, educational classes, and/or community-wide educational and promotional activities. This significant accomplishment reflects an endorsement in these communities of the positive value of CHCPP activities.

Based on lessons learned during the pilot program, there are several program improvements that EPA may want to consider for future efforts. First, clear guidance about EPA's statutory authority and the types of activities that it can support will help streamline the planning process and reduce the need for time-consuming revisions. In a related vein, because the CHCPP communities faced high levels of poverty and limited infrastructure, the narrow focus on environmental factors and on educational interventions proved to be frustrating for team members in some communities. Securing other funding sources to support a more comprehensive approach proved difficult in communities with few existing programs and limited grant-writing capabilities. Several CHCPP sites suggested that future efforts attempt to secure a

broader base of support through collaborations among several funding agencies. An initiative sponsored jointly, for example, by federal or state departments of public health, housing and environmental protection would enable communities to implement a more comprehensive approach to addressing problems related to childhood asthma, lead poisoning, and contaminated water supplies.

Another lesson is that the expectations EPA and the local projects set for this initiative were ambitious and in nearly all cases proved to be too high, given the pilot program's timing and resource constraints. In the end, every project recommended that future efforts set more realistic goals, both for the types of interventions employed and the kinds of outcomes that could be expected. This was particularly the case in projects that set out to implement numerous community-wide and small group educational interventions in addition to providing some families with more intensive one-on-one services. By focusing more intensively on fewer interventions, future efforts would be more likely to achieve their recruitment goals and to ensure that educational activities are high quality and sufficiently intense.

Finally, the emphasis on evaluation was beneficial in some respects, but some of the goals and approaches employed proved too ambitious or otherwise inappropriate. Most projects valued the process of mapping out interventions and outcomes in a flow chart and appreciated the forms developed to help document their interventions. The effort expended on more formal outcome evaluations was beneficial in a few sites but inappropriate in many others. Solid qualitative evaluations that aim to document what happens and gather insights about more and less successful strategies and other lessons are more suitable for programs of this type.

Initiatives like the Child Health Champion Pilot Program are important components of comprehensive strategies to better understand and address child health problems that are influenced by the environment. As we learn more about effective strategies for preventing and

addressing environment-related child health problems, such as asthma and lead poisoning, we need also to understand how best to apply this knowledge in a variety of community settings. Lessons from the CHCPP initiative suggest that communities can and should play an active role in addressing local environmental health concerns. With the right supports, grassroots efforts can be very effective in making scientific and clinical findings available and accessible to local residents, an important step in helping communities to protect their children's health from preventable environmental threats.

APPENDIX A

PROJECT FLOW CHARTS

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FIGURE 1

FLOW CHART: MANCHESTER ASTHMA INTERVENTIONS
CHILD HEALTH CHAMPION PILOT PROGRAM

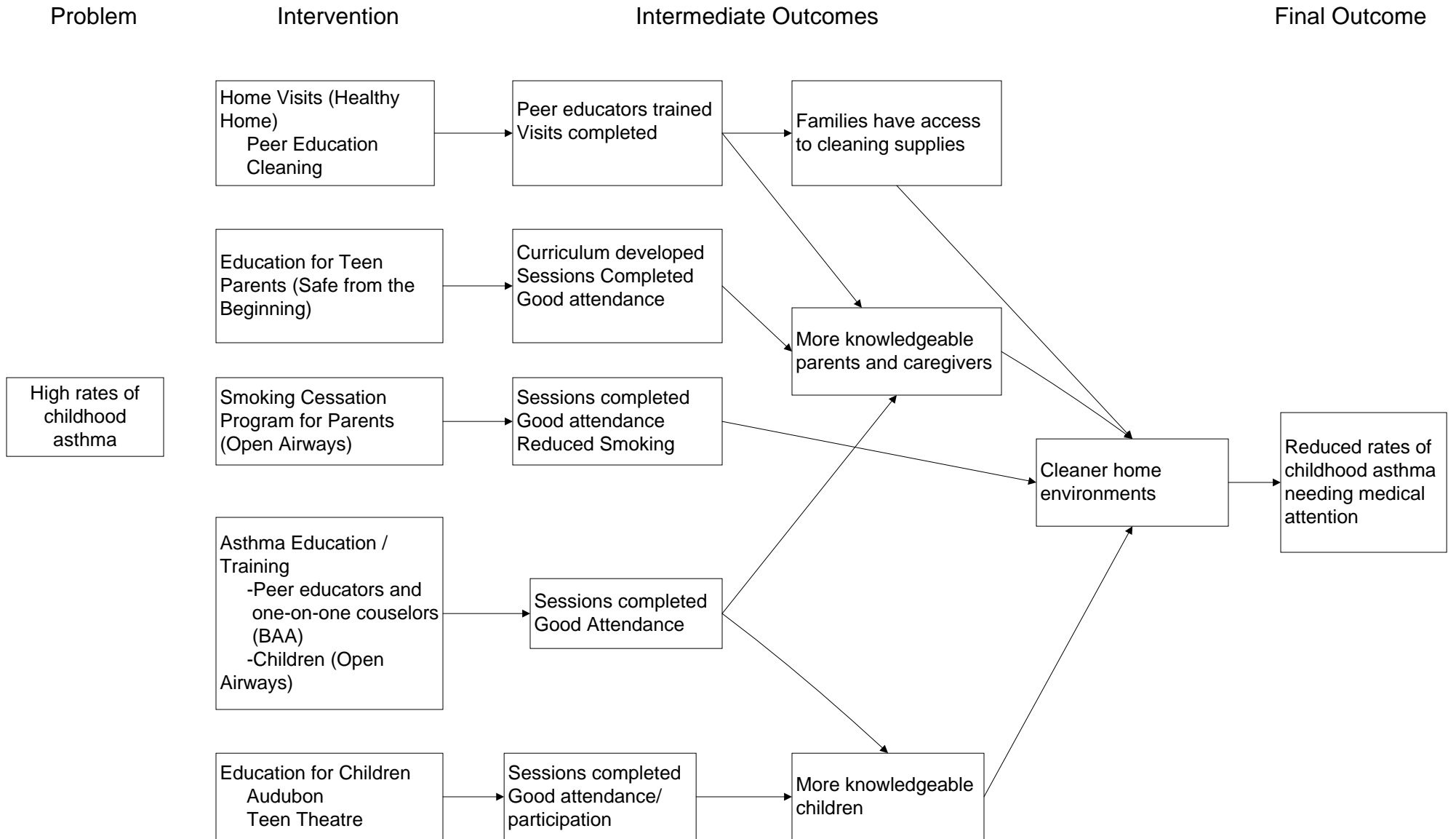


FIGURE 2

FLOW CHART: MANCHESTER LEAD INTERVENTIONS
CHILD HEALTH CHAMPION PILOT PROGRAM

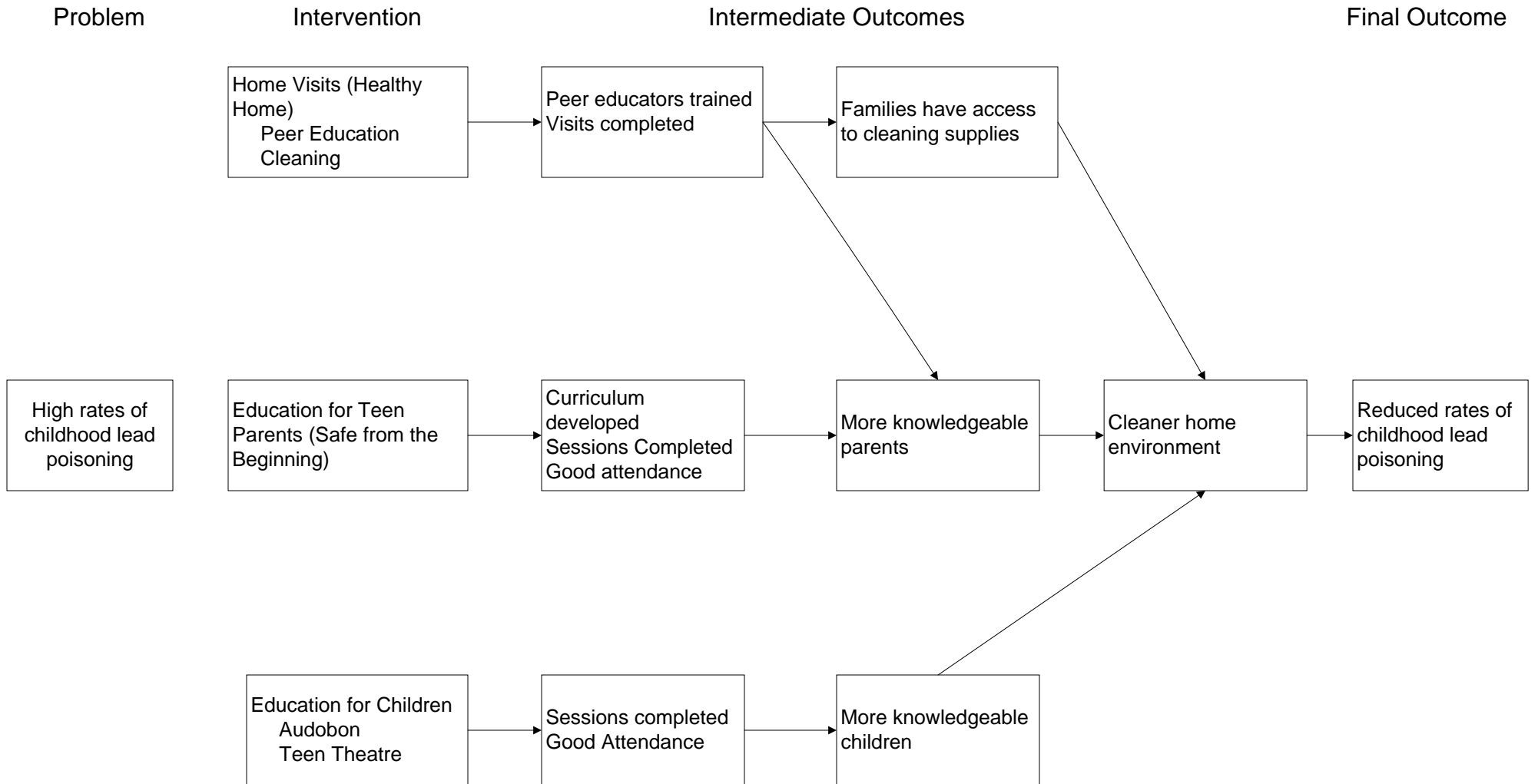


FIGURE 1
PROJECT FLOW CHART: ASTHMA INTERVENTIONS;
CHILD HEALTH CHAMPION PILOT PROGRAM, NEWARK

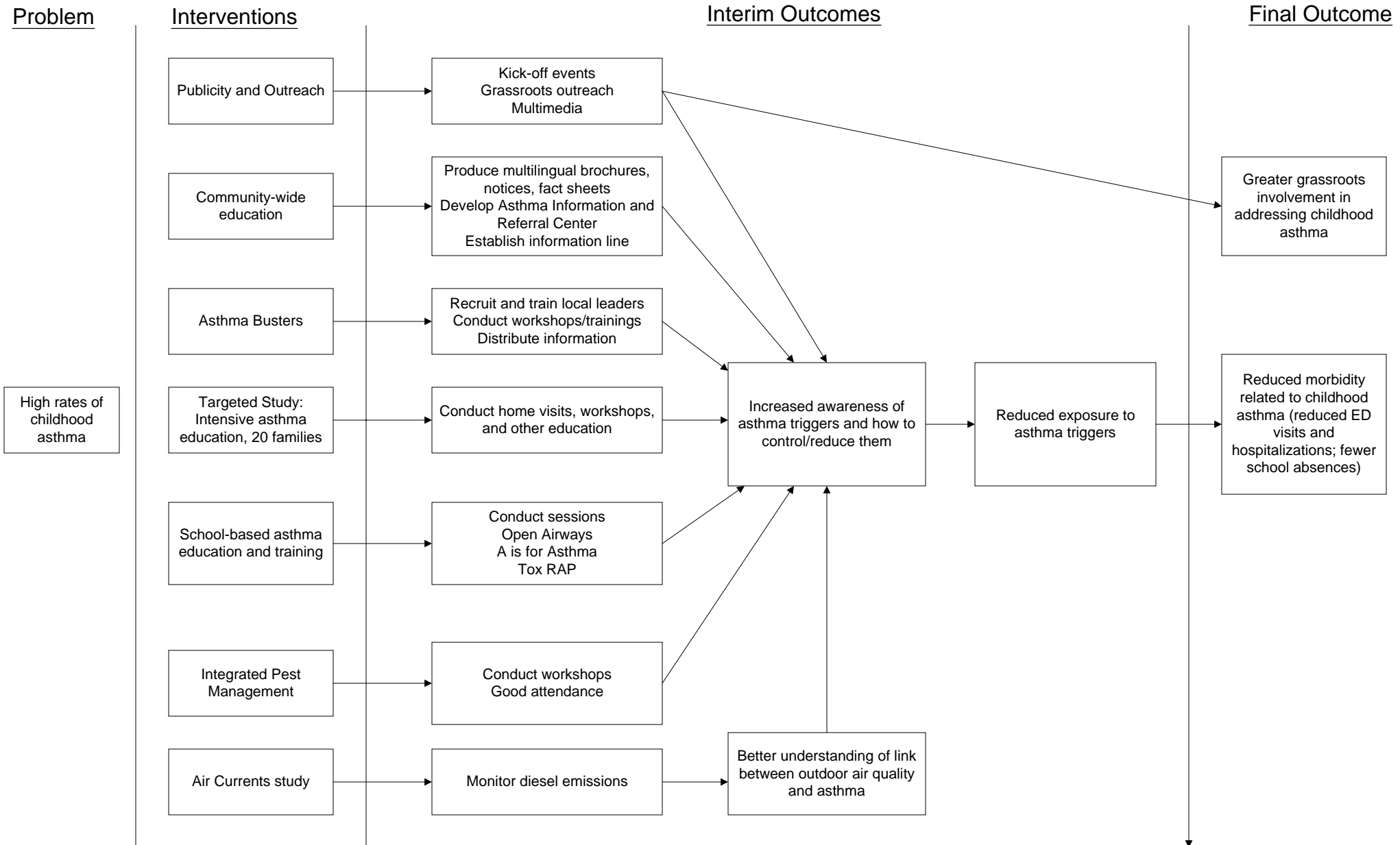


FIGURE I

PROJECT FLOWCHART: WARD 8 CHILD HEALTH CHAMPION COLLABORATIVE

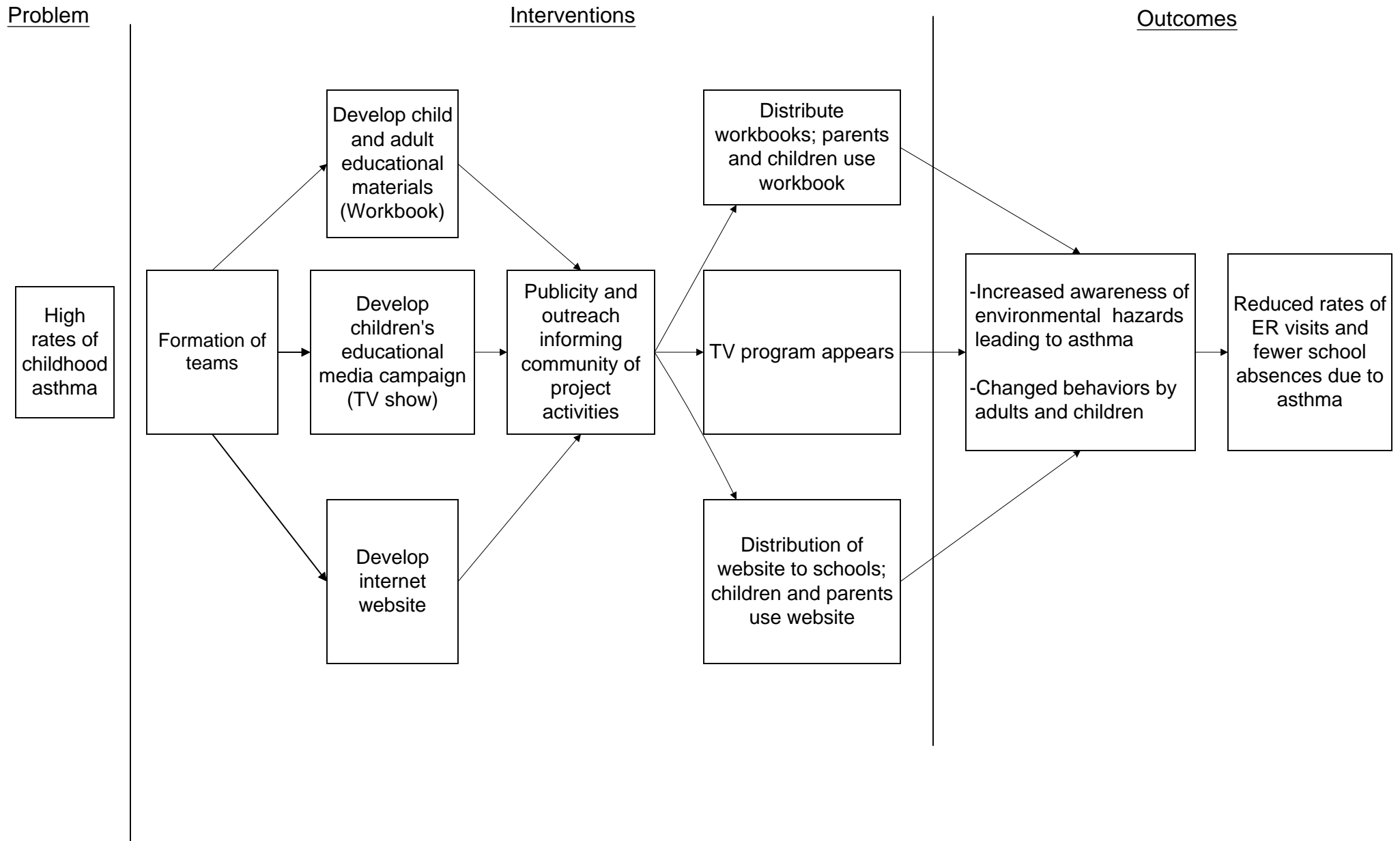


FIGURE 1

PROJECT FLOW CHART: ASTHMA INTERVENTIONS;
CHILD HEALTH CHAMPION PILOT PROGRAM, PRICHARD

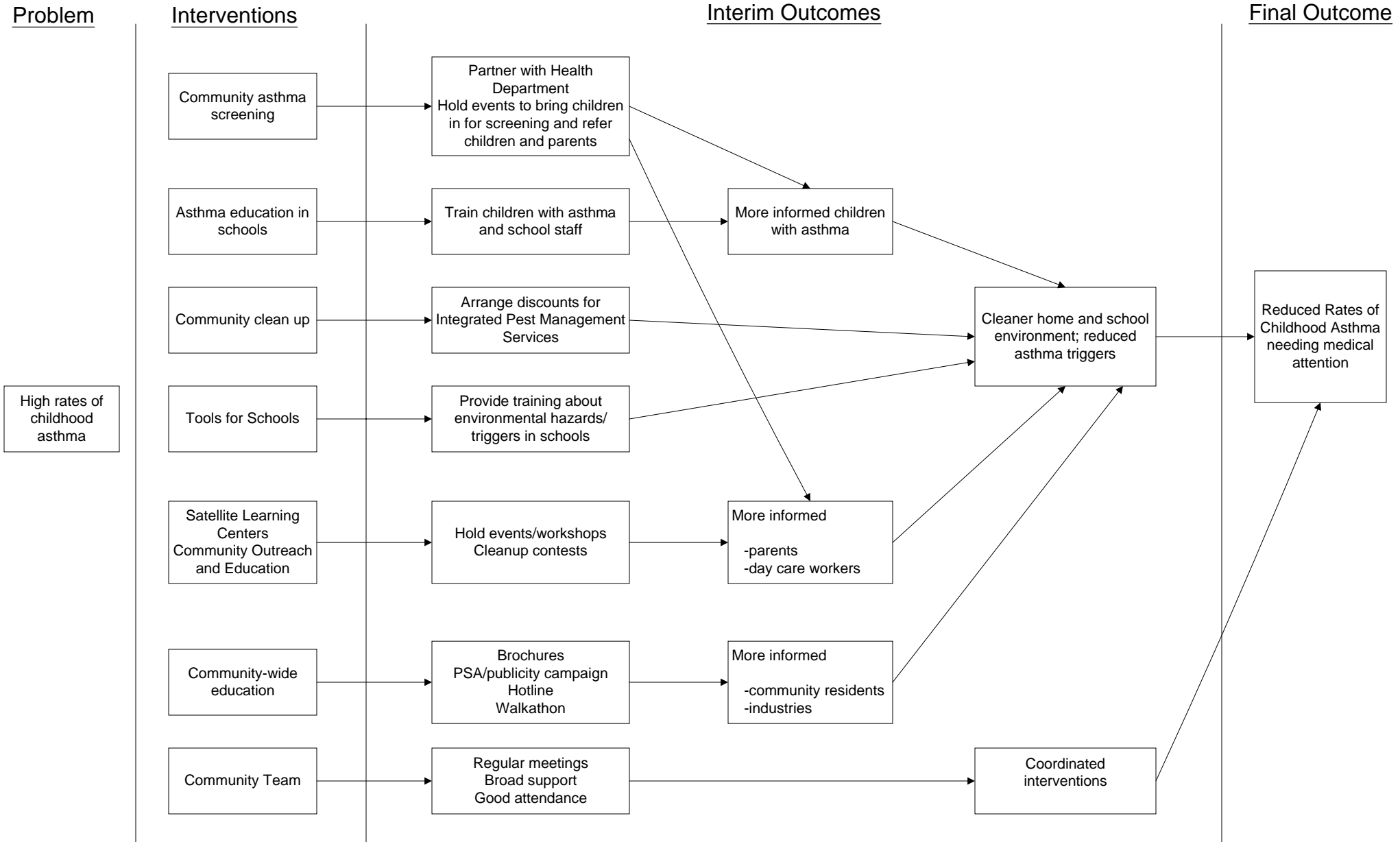


FIGURE 2
 PROJECT FLOW CHART: LEAD INTERVENTIONS;
 CHILD HEALTH CHAMPION PILOT PROGRAM, PRICHARD

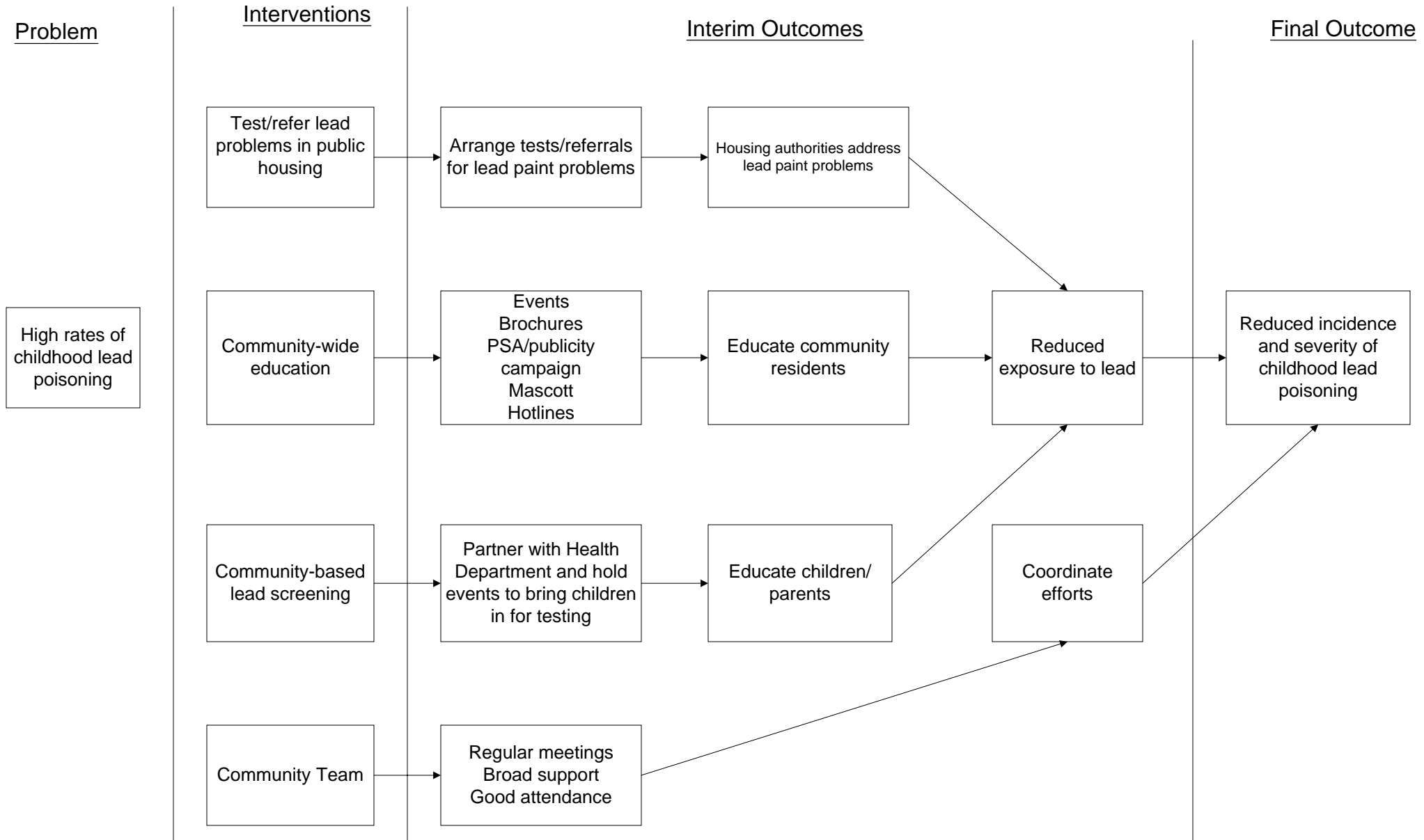


FIGURE 1

PROJECT FLOW CHART: ASTHMA INTERVENTIONS;
CHILD HEALTH CHAMPION PILOT PROGRAM, MILWAUKEE

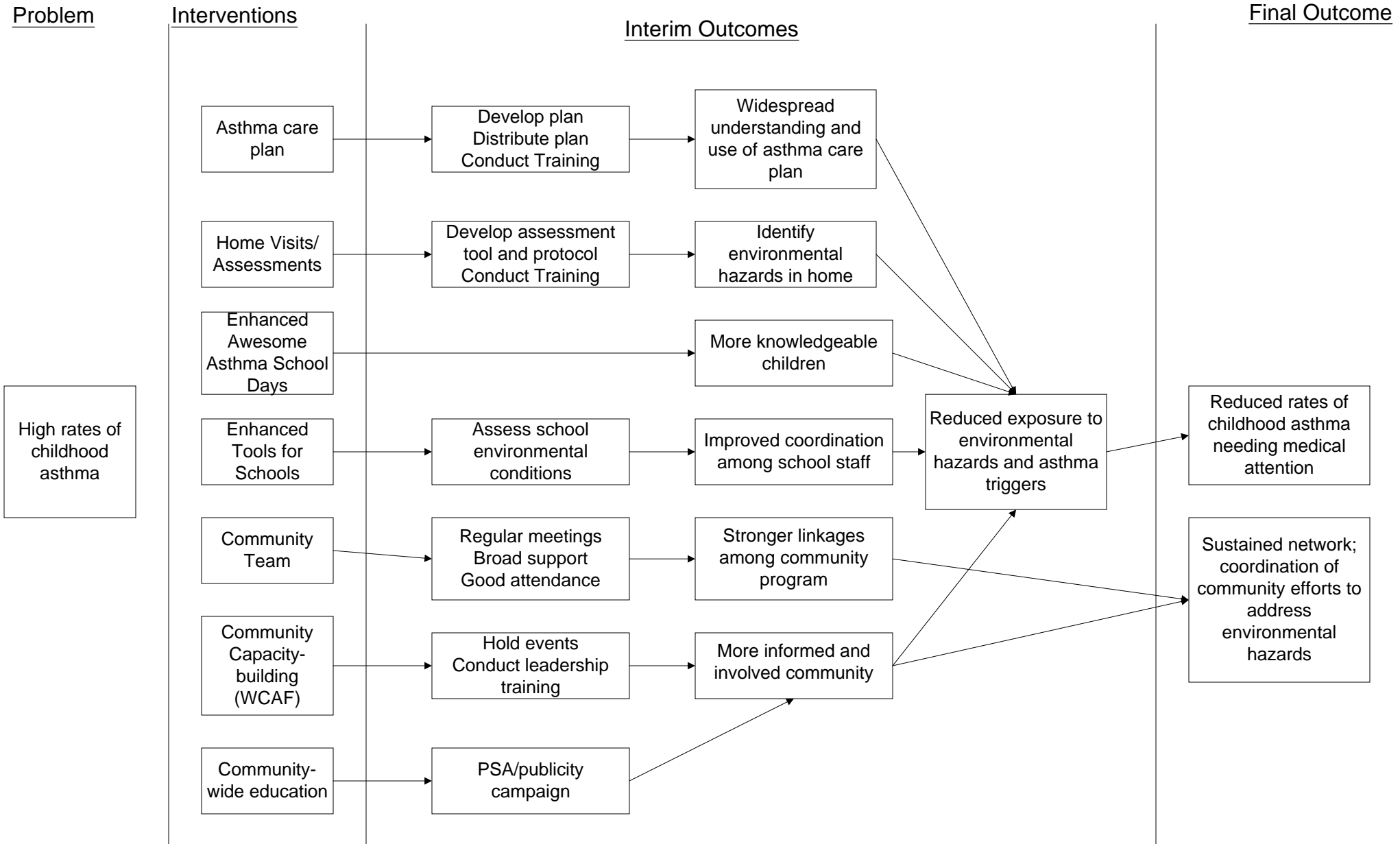


FIGURE 2

PROJECT FLOW CHART: LEAD INTERVENTIONS;
CHILD HEALTH CHAMPION PILOT PROGRAM, MILWAUKEE

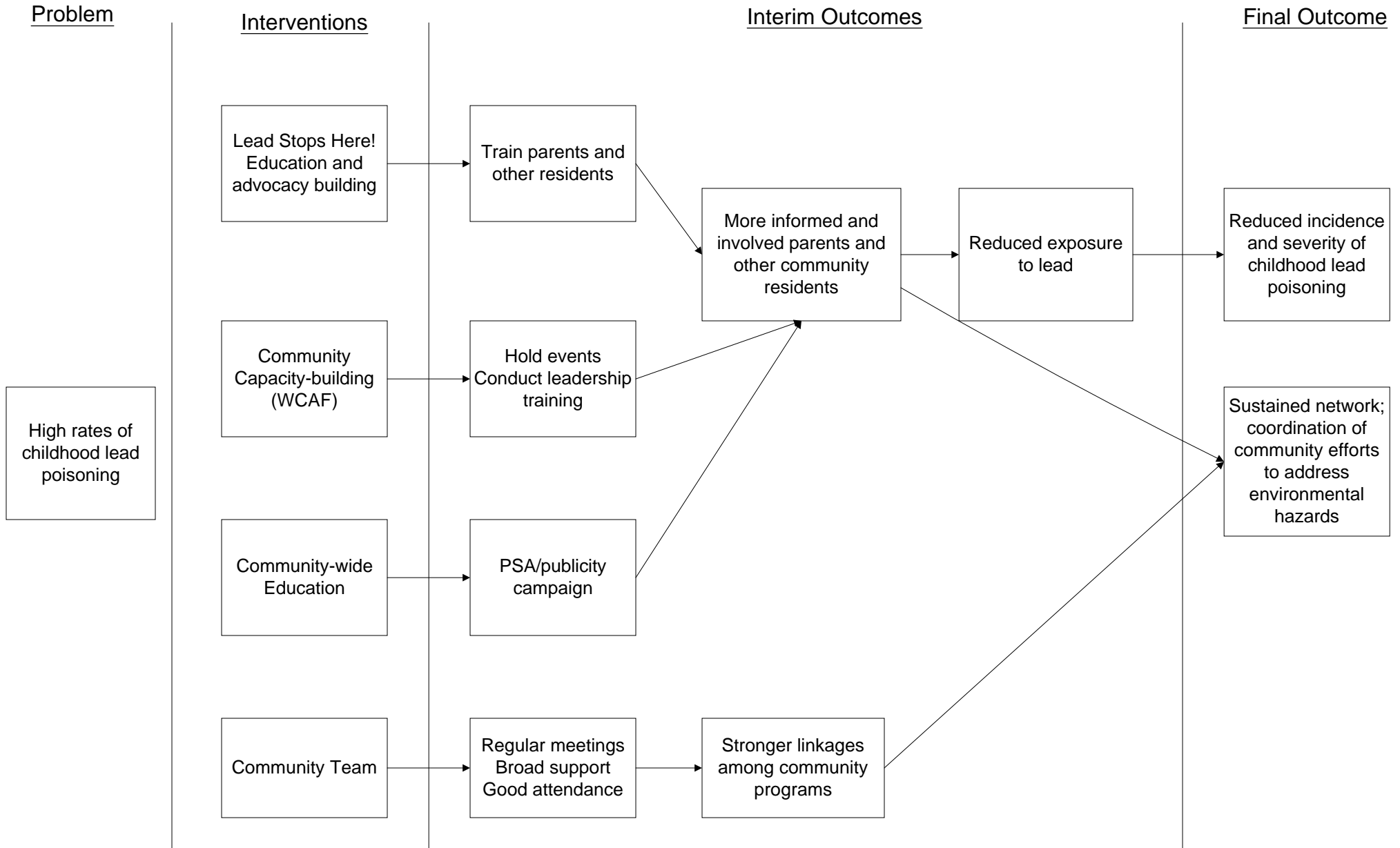


FIGURE 1

PROJECT FLOW CHART: CHEROKEE CHILD HEALTH CHAMPION PROGRAM

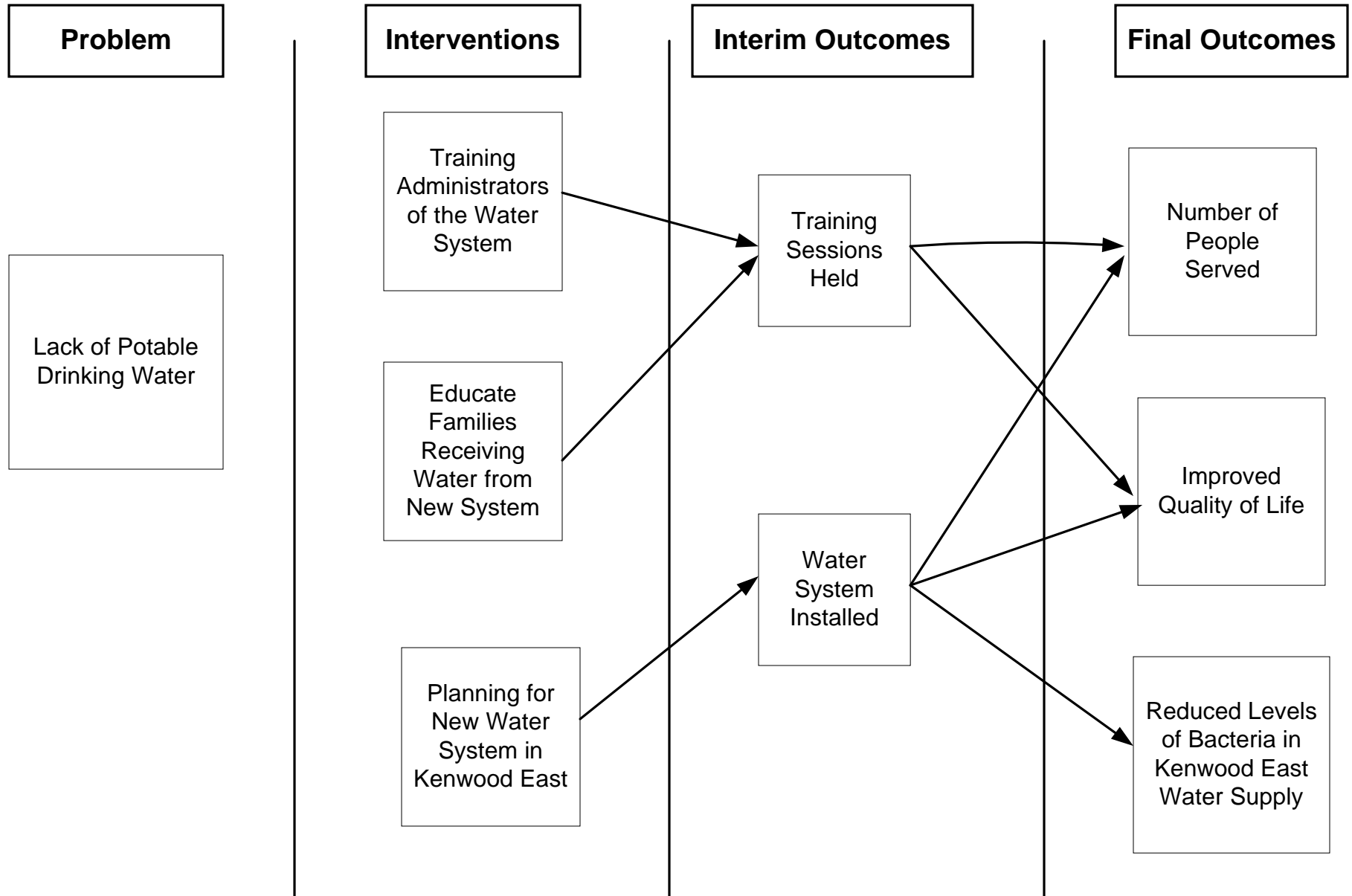


FIGURE 1

CHILD HEALTH CHAMPION PILOT PROGRAM--FLOW CHART FOR THE
NEW MADRID TRI-COMMUNITY PROJECT: LEAD ACTIVITIES

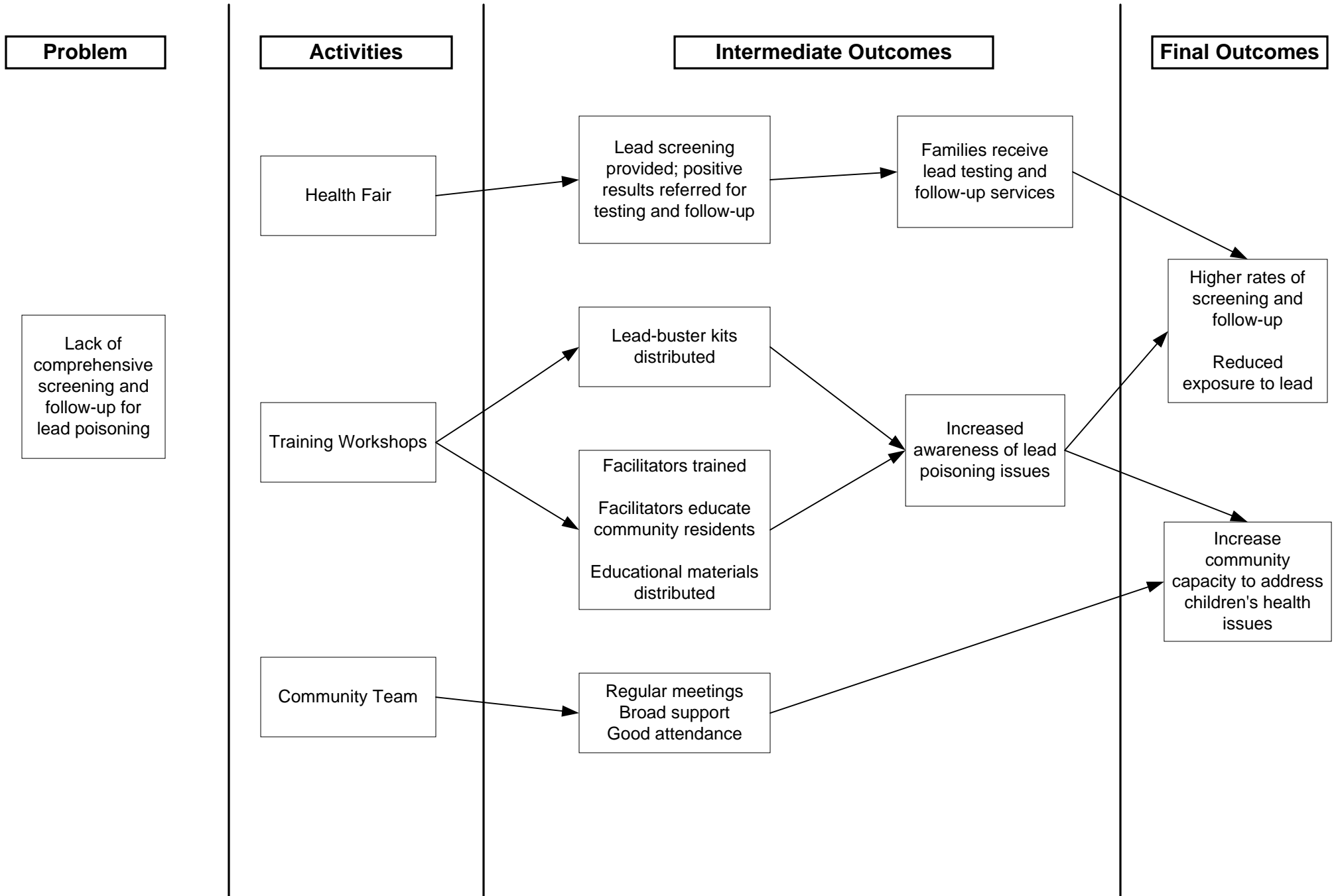


FIGURE 2

CHILD HEALTH CHAMPION PILOT PROGRAM--FLOW CHART FOR THE
NEW MADRID TRI-COMMUNITY PROJECT: ASTHMA ACTIVITIES

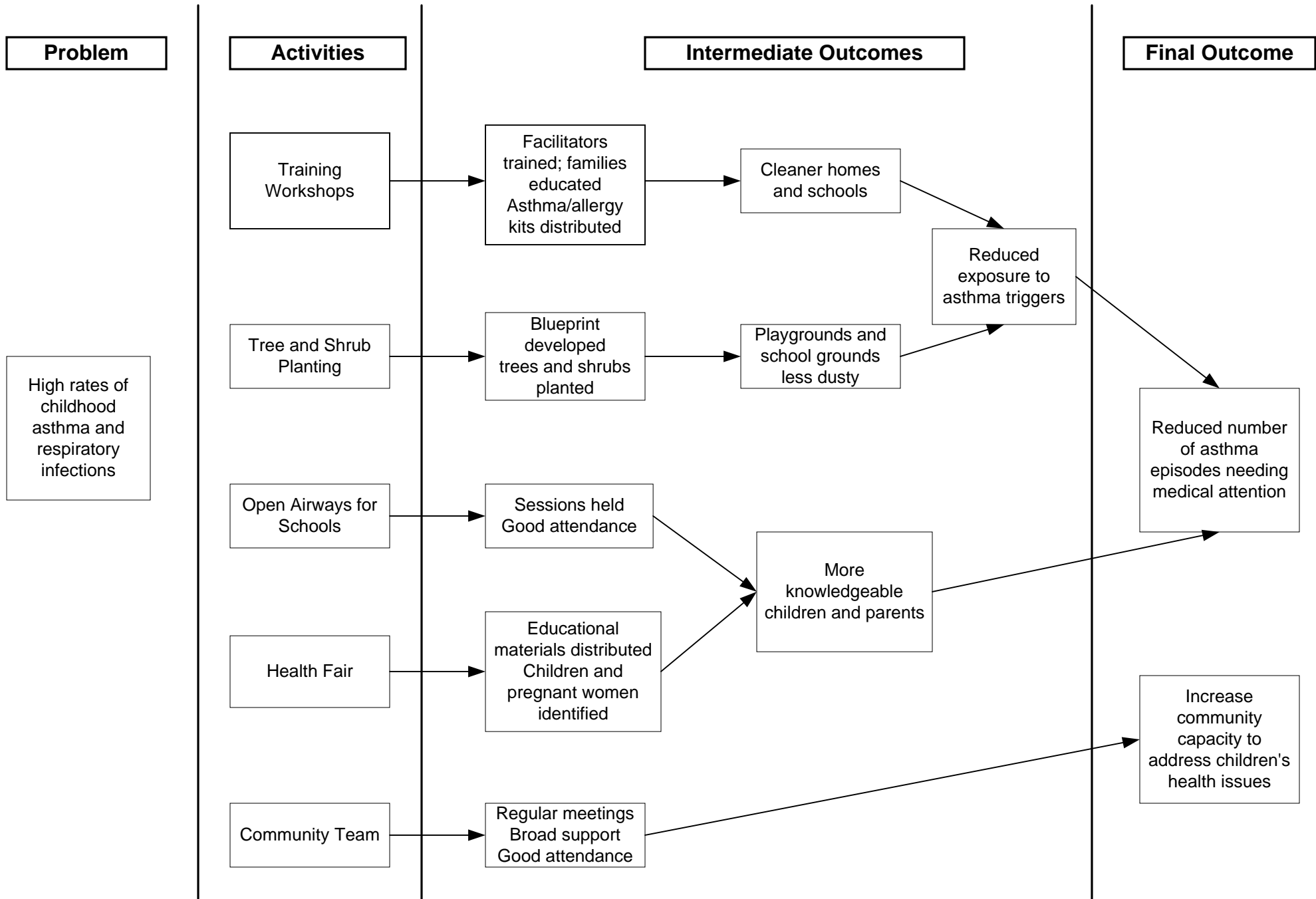


FIGURE 3

CHILD HEALTH CHAMPION PILOT PROGRAM--FLOW CHART FOR THE
NEW MADRID TRI-COMMUNITY PROJECT: WATER ACTIVITIES

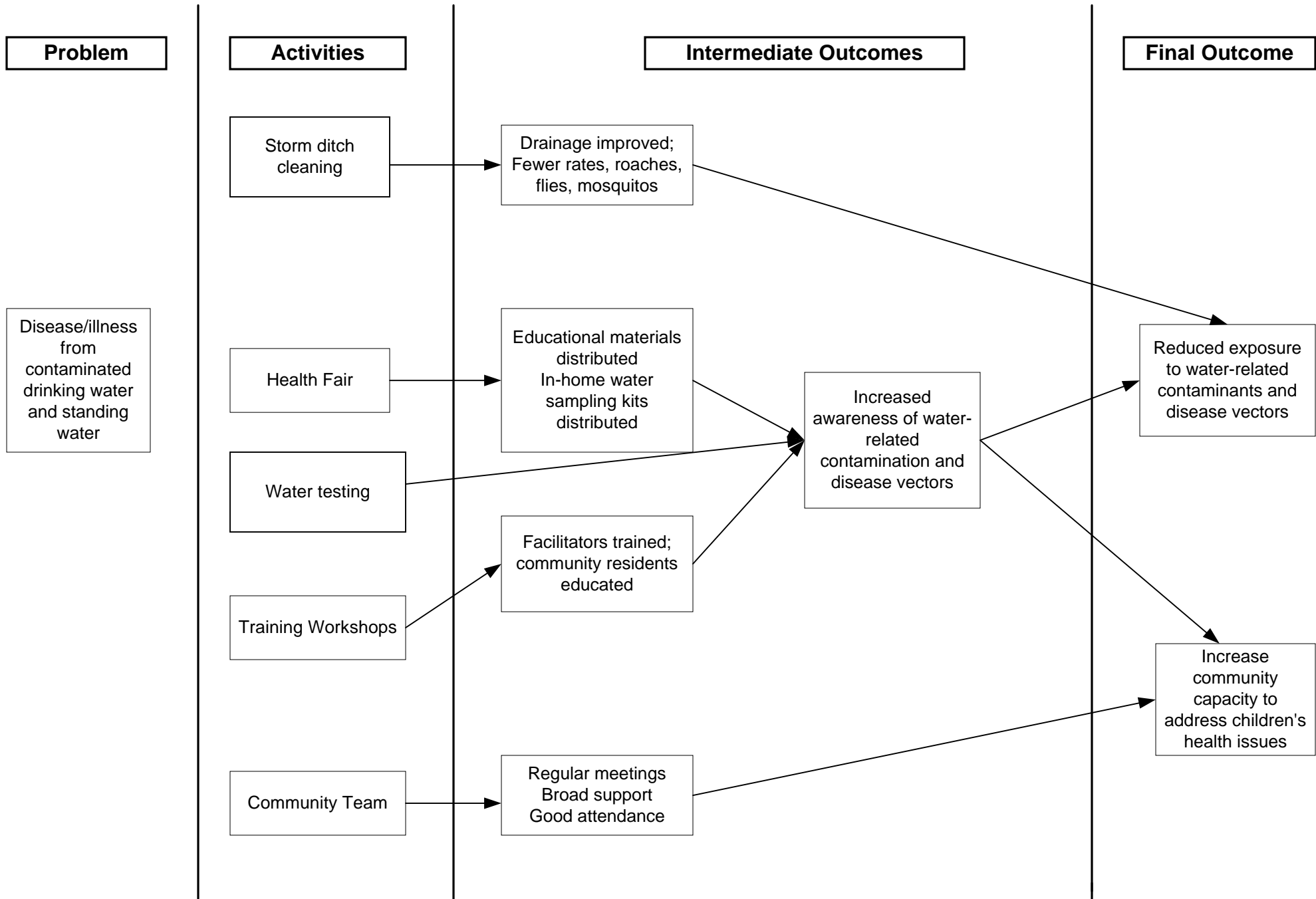


FIGURE 1

CHILD HEALTH CHAMPION PILOT PROGRAM
FLOW CHART FOR THE CHIPPEWA CREE TRIBE ACTION PLAN: LEAD ACTIVITIES

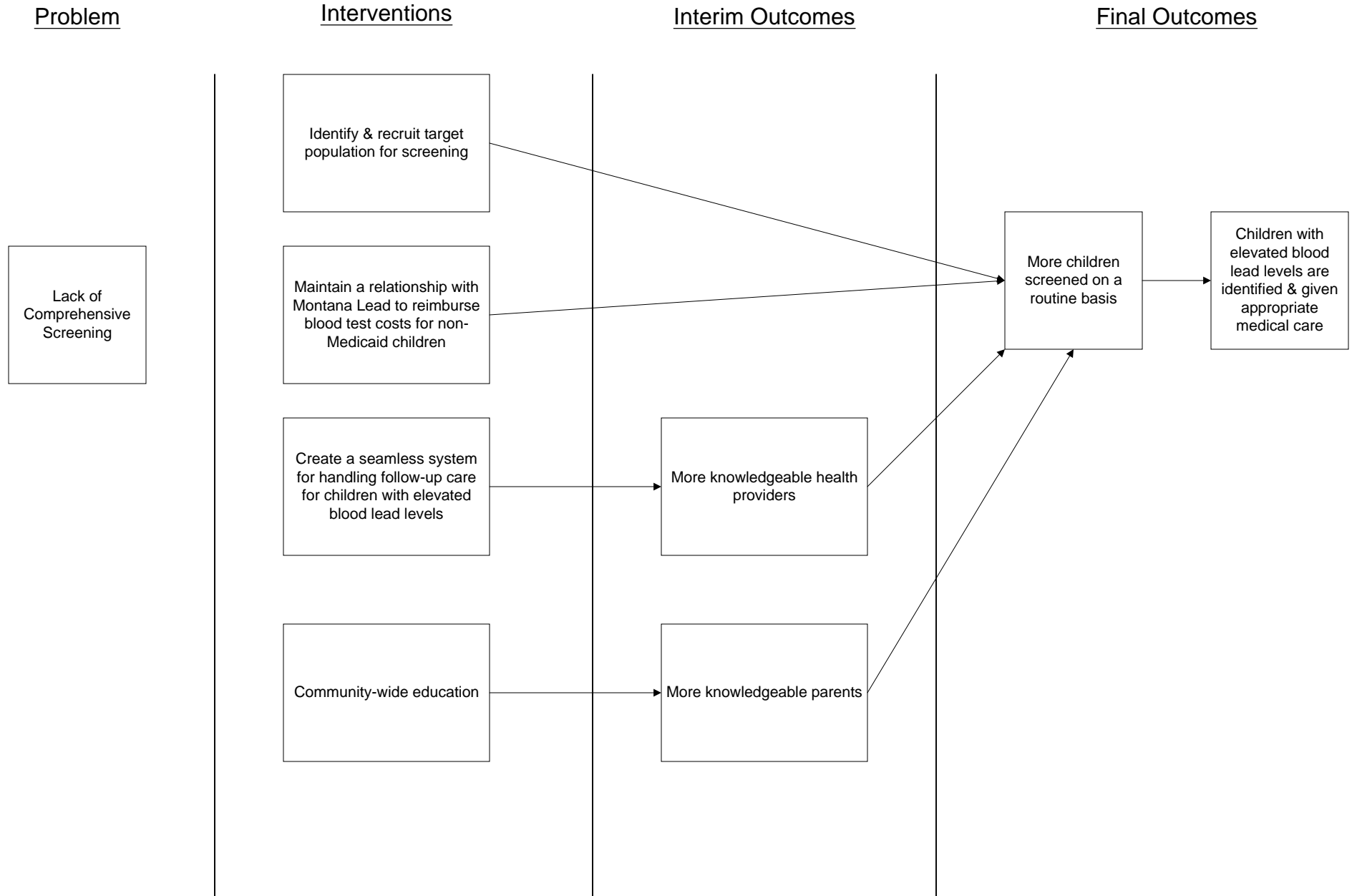


FIGURE 2

CHILD HEALTH CHAMPION PILOT PROGRAM
FLOW CHART FOR THE CHIPPEWA CREE TRIBE ACTION PLAN: AWARENESS BUILDING ACTIVITIES

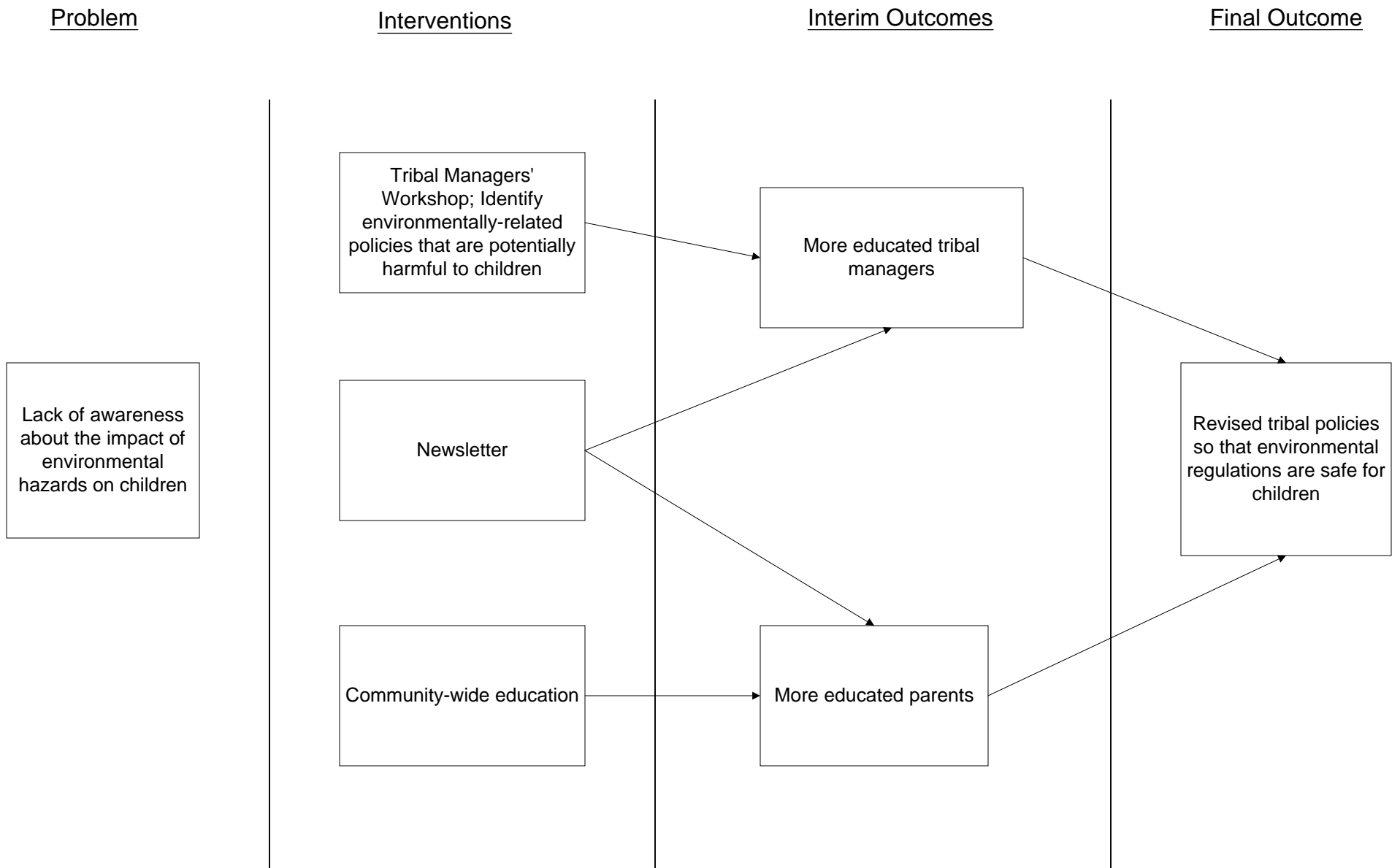


FIGURE 1

CHILD HEALTH CHAMPION PILOT PROGRAM
FLOW CHART FOR NOGALES ACTION PLAN

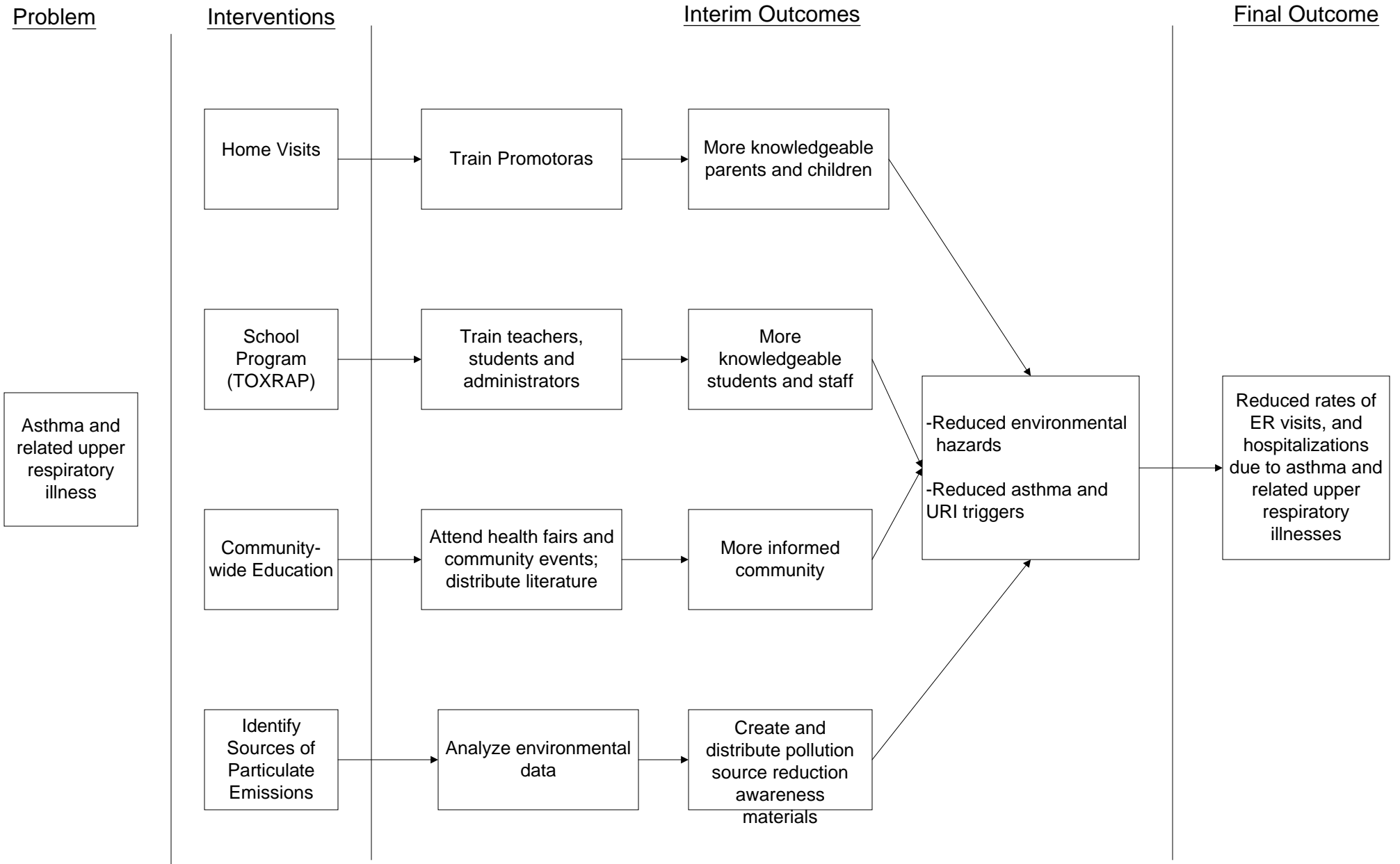


FIGURE 1

CHILD HEALTH CHAMPION PILOT PROGRAM
FLOW CHART FOR LOS ANGELES ACTION PLAN

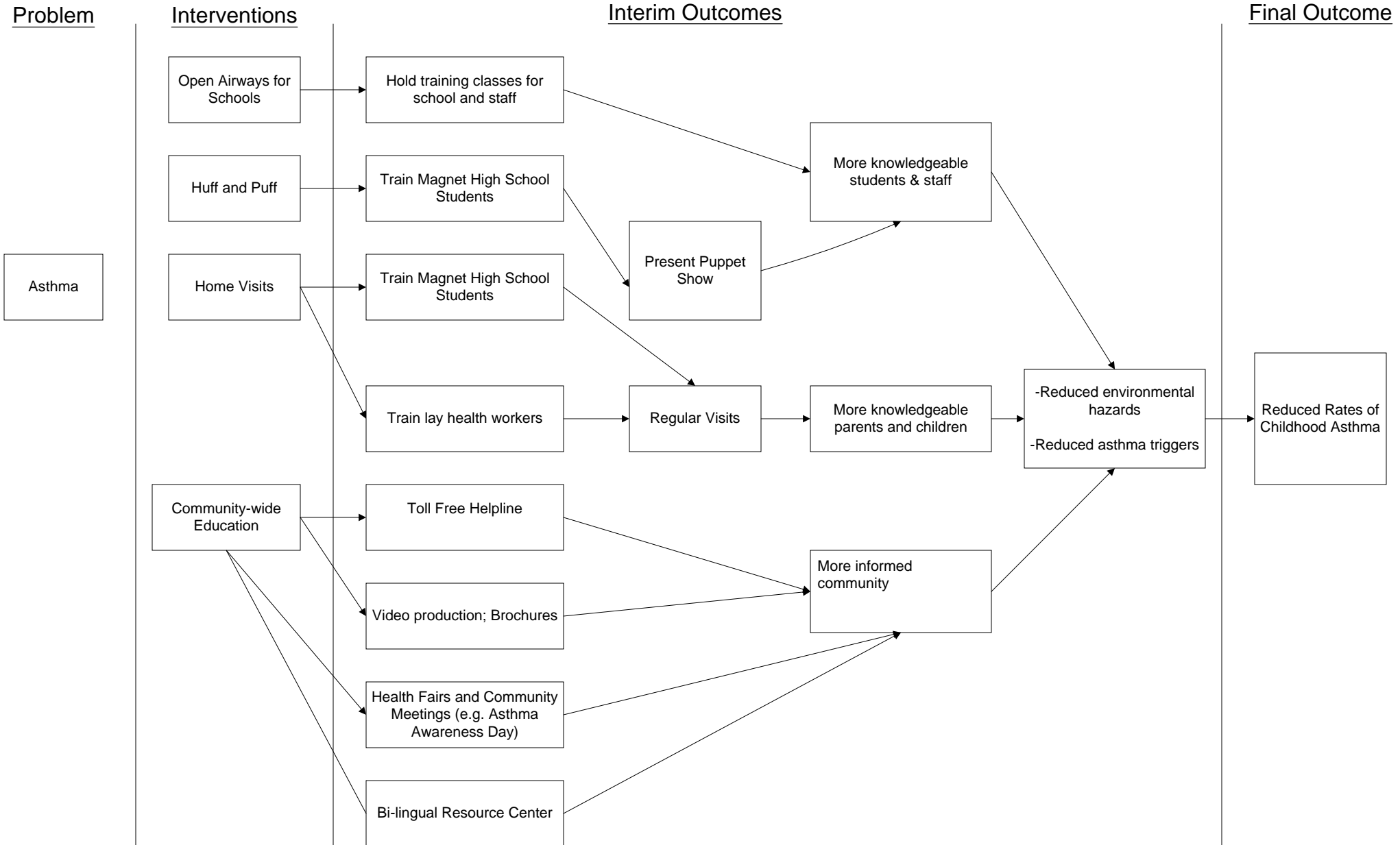


FIGURE 1

CHILD HEALTH CHAMPION PILOT PROGRAM
LOGIC MODEL: TOPPENISH

Problem

Interventions

Interim Outcomes

Final Outcome

High Rates of
Childhood
Asthma

Convene
Community Team

Home Visits

Parent Support
Groups

Provider Training

Community-wide
Education

Regular Meetings;
Broad Support;
Good Attendance

Regular Visits;
Curriculum Used

Regular Meetings;
Good Attendance

All (x%?)
Providers Trained

Health Fairs, etc.
Held

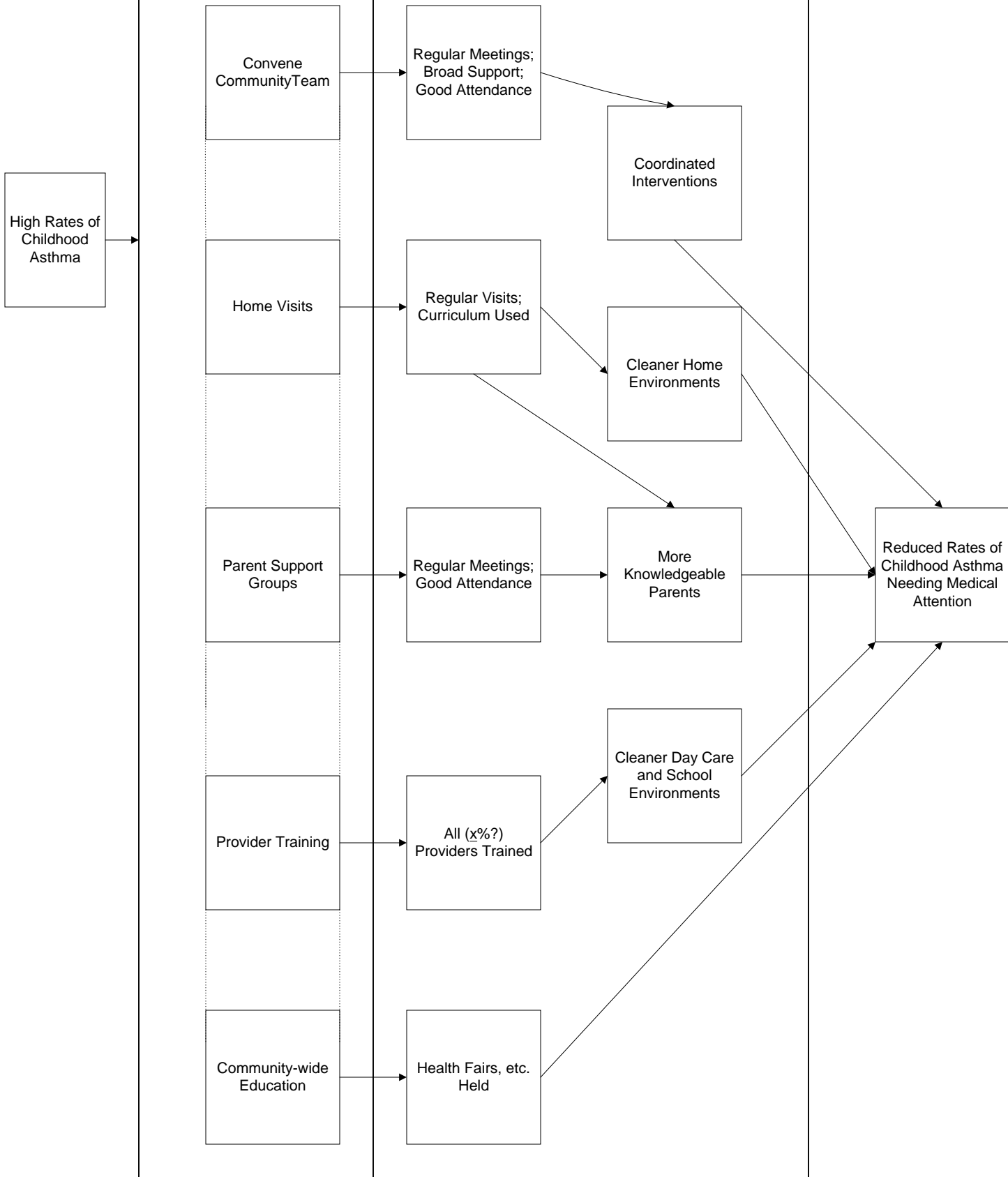
Coordinated
Interventions

Cleaner Home
Environments

More
Knowledgeable
Parents

Cleaner Day Care
and School
Environments

Reduced Rates of
Childhood Asthma
Needing Medical
Attention



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APPENDIX B

MOCK FORMS FOR CHCPP LOCAL EVALUATIONS (ACTUAL FORMS BEING USED VARY BY SITE)

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FORM 4

CHILD HEALTH CHAMPION PILOT PROGRAM
HOME VISITS

Home Visitor: _____

Child ID	Activities at Home Visit	Child Age	Other Follow-up Information (e.g. school days missed)

B-4

COST FORM 1

CHILD HEALTH CHAMPION PILOT PROGRAM
LABOR COSTS

Intervention	Total Labor Costs	
	EPA-Supported	Other
Community Education		
School Education		
Lead Screening		
Home Visiting		
Water Quality Planning		
Other		

ALTERNATIVE COST FORM 1

CHILD HEALTH CHAMPION PILOT PROGRAM
WORKSHEET FOR ALLOCATING STAFF COSTS

Staff/Team Member/Volunteer: _____

Month: _____

Day	Number of Hours, By Intervention					
	Community Education	School Education	Lead Screening	Home Visiting	Water Quality Planning	Other
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

COST FORM 2

CHILD HEALTH CHAMPION PILOT PROGRAM
OTHER DIRECT PROGRAM COSTS

Intervention	<p style="text-align: center;">Other Direct Program Costs</p> <p style="text-align: center;">Do not include overhead and other indirect costs. Include direct costs such as travel, consultant/subcontracts, supplies (e.g. brochures, posters), rent for space for meetings</p>
Community Education	
School Education	
Lead Screening	
Home Visiting	
Water Quality Planning	
Other	

One Time Purchases: Description

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APPENDIX C

INTERIM AND FINAL OUTCOMES MEASURED IN LOCAL EVALUATIONS

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TABLE C.1

INTERIM AND FINAL OUTCOMES MEASURED IN LOCAL EVALUATIONS

	Asthma/Air Quality			Lead Poisoning			Water Quality:
	Improved awareness of asthma triggers	Reduced exposure to triggers in home	Fewer asthma episodes (various measures)	Improved awareness of lead poisoning	Reduced exposure in home	Improved screening/testing rates	Improved Awareness of Water Quality Problems
Manchester, NH			T		T		
Newark, NJ		T	T				
Washington, DC							
Prichard, AL			T			T	
Milwaukee, WI		T	T				
Cherokee Nation, OK							
New Madrid, MO	T		T	T			T
Rocky Boy Reservation, MT							
East Los Angeles, CA		T	T				
Nogales, AZ		T	T				
Toppenish, WA		T	T				

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