

Pennsylvania Asthma Control Program

Year 3 Evaluation Report

October 2023

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Introduction

In September 2020, the Pennsylvania (PA) Asthma Control Program (ACP) was awarded a four-year cooperative agreement from the Centers for Disease Control and Prevention (CDC). This agreement supports the implementation and coordination of the EXHALE technical package, which is comprised of several evidence-based asthma interventions. These interventions include **E**ducation on asthma self-management; **eX**tinguishing smoking and second-hand smoke; **H**ome visits for trigger reduction and asthma self-management education (ASME); **A**chievement of guidelines-based medical management; **L**inkages and coordination of care; and **E**nvironmental policies to reduce indoor and outdoor asthma triggers. The PA ACP has been the collective effort of many partners at the state and community levels since 2006. In Year 3, the ACP funded partners were the Children’s Hospital of Philadelphia’s (CHOP) Community Asthma Prevention Program (CAPP), American Lung Association (ALA), Quality Insights (QI), Allegheny County Health Department (ACHD), Women for a Healthy Environment (WHE), and Duquesne University School of Pharmacy Center for Integrative Health (DUCIH).

Public Health Management Corporation’s (PHMC) Research & Evaluation Group (R&E) was contracted by PA Department of Health (DOH) to continue evaluation of the ACP activities. The evaluation’s primary concern was internal quality improvement and reporting requirements as described in the Notice of Funding Opportunity (NOFO) for the cooperative agreement. The purpose of this report is to (a) provide an overview of the Year 3 evaluation activities; (b) summarize findings; and (c) describe the programs’ mid-stream changes in response to successes and complications in implementation. The initial evaluation workplan for Year 4 is also described at the end of this report.

Summary of Evaluation Activities

DOH program administrators and evaluators reviewed and discussed recommendations in the Year 2 Evaluation Report in November 2022. At that time no significant changes to the Strategic Evaluation Plan (SEP) or Data Management Plan (DMP) were made. As the collective work of the ACP moved into its third year, evaluators anticipated conducting analyses on effectiveness of programs (with a larger sample size than observed in Year 2), costs associated with implementation, and health equity concerns not yet addressed. As participation in some programs did not increase as expected, evaluators shifted to examining the facilitating factors and complications in expanding reach and services. Evaluators continued to offer guidance to DOH and funded partners in real time, acting as a facilitator of shared decision making on issues such as goal setting, health equity, community engagement, and performance measures.

The informal Action Tracker initiated by evaluators in Year 2 was updated following the Year 2 Evaluation Report to document responses to lessons learned in the evaluation. The Action Tracker is updated quarterly by evaluators. Any actions initiated by the ACP and decisions from group discussion in ACP partner meetings or PAP meetings were documented if they stemmed from evaluation findings.

To facilitate a learning environment in the PAP, R&E presented two Evaluation Learning Sessions. The first was an overview of performance measure data for PA within the context of the National Asthma Control Program. The second session introduced *The Spectrum of Community Engagement to Ownership* and used an accompanying discussion guide by Rosa Gonzalez. These sessions are further described on page 14.

Throughout Years 1-3, R&E produced maps and one-page summaries to disseminate information about the ACP in a visual, public friendly format. The maps produced thus far focused on point locations of PAP member organizations and ACP interventions, and how they relate to asthma or social determinants of health surveillance data. These maps show where the ACP supports asthma interventions and engages with partner organizations. They also provide introductory information about the populations ACP interventions serve. The ACP strives to serve those most overburdened by asthma, so to better understand the historical context of neighborhoods served and generate new questions about outreach strategies, the most recent map displayed EXHALE intervention locations with redlining data. Historical redlining maps have been used in public health and medical sociology to identify where housing policy may be a lingering factor behind the impacts of housing quality and indoor air quality on those with asthma.

Following the CDC's recommendations to conduct economic evaluations, a cost analysis was piloted by evaluators. ACP funded partners had varying degrees of familiarity with economic evaluations, although they understood how they are used by decision makers and payors. Evaluators led a discussion with funded partners and DOH to identify their interests and whether any one program component would be the focus. The cost analysis pilot asked for all funded partners to contribute their total expenditures required to keep their respective EXHALE intervention operational. Then, evaluators planned to estimate the proportion of costs covered by ACP funds as compared to other funding sources. All but two partners agreed to participate in data collection; this limited the evaluators' ability to answer the evaluation questions but yielded important lessons for implementation of economic evaluation in the future.

Brief Findings by Program Component

The program components in this report are organized in order of priority according to ACP funded partners. The following sections summarize findings to (a) document progress made in accordance with the ACP work plan; (b) answer the evaluation questions that could be addressed with the data available at the time of reporting; and (c) identify opportunities for Year 4 planning and implementation.

Evaluation findings for each program component are written in response to evaluation questions, designated by section headings. A high-level summary table accompanying each component describes

progress to objectives, challenges, and opportunities. Additional outcome evaluation questions described in the SEP will be discussed in future years as data become available.

School based asthma self-management education and services

Progress to objectives	Challenges	Opportunities
Kickin’ Asthma (KA) implemented in 1 district, 10 participants DUCIH clinics in 4 districts, 7 schools 72 participants in DUCIH school clinics All schools in environmental justice (EJ) areas 47% of newly enrolled DUCIH participants had poorly controlled asthma at enrollment 67% of DUCIH participants with poorly controlled asthma at enrollment attended at least 60% of sessions, 83% of them had improved asthma control at follow up	Recruitment for Open Airways for Schools (OAS) & KA Communication with enrolled and interested families Transportation and location logistics for teen ASME pilot	Connection to a school with health sciences focus may have increased interest for their students

Are school based programs a) recruiting adults from high burden areas to be program facilitators; and b) reaching students who have the highest burden of disease?

The PA ACP includes environmental and social determinants of health in how it conceptualizes asthma burden. This is in addition to typical hospitalizations and other asthma health outcome metrics. OAS, KA, and DUCIH school clinics recruited staff and served children in environmental justice (EJ) areas or regions impacted by excess air pollution.¹ In Year 3, ALA trained four facilitators in Open Airways for Schools (OAS) and three in Kickin’ Asthma (KA).

To quantify the network of OAS and KA facilitators available statewide, including facilitators trained by efforts outside of the ACP, evaluators examined records from the ALA national office about facilitator training. As of April 2023, there were 20 active OAS and 31 active KA facilitators on file for PA. Table 1 below displays the number of facilitators per county, the age-adjusted asthma hospitalization rate among children, and prevalence of asthma among children. Two counties containing asthma capitals, as identified by the Allergy and Asthma Foundation,² do not have any facilitators – Lehigh and Lackawanna. To understand the staffing of OAS & KA at any one time, it is important to remember that the number of facilitators available changes independent of the number of trainings completed. Facilitators can be lost over time due to expiration of certification or changes in employment that limit facilitators from implementing classes.

¹ Pennsylvania Department of Health, Division of Environmental Health Epidemiology, (2022). Pennsylvania Environmental Health Indicators Map. <https://padoh.maps.arcgis.com/home/webmap/viewer.html?useExisting=1>

² Asthma and Allergy Foundation of America, (2023). *2023 Asthma Capitals*. Retrieved from asthmacapitals.com.

Table 1. OAS & KA facilitators, by county, with asthma prevalence among children and total population asthma hospitalization rate

County	Number of OAS facilitators	Number of KA facilitators	% of students with asthma (SY20-21)	Age-adjusted child asthma hospitalization rate, 2019-2021 (per 100,000 population)
Philadelphia	8	6	17.27	269.9
Allegheny	4	15	8.96	80.1
Dauphin	3	2	10.27	66.9
Butler	1	0	8.36	28.1
Montgomery	1	1	10.36	68.0
York	1	0	12.61	25.4
Lancaster	1	1	7.79	31.5
Bucks	0	1	9.66	53.4
Chester	0	1	9.46	34.8
Cumberland	1	3	8.98	30.1

Note: Asthma prevalence and hospitalization rate were collected during the COVID-19 pandemic. As a result these metrics are likely under representing the true prevalence. Source: ALA Administrative Records, April 2023. Pennsylvania Department of Health, Bureau of Health Promotion and Risk Reduction, Asthma Control Program (2023). Asthma School Health Data Report by County.

<https://www.health.pa.gov/topics/Documents/Programs/Asthma%20School%20Health%20Data%20by%20County.pdf>

At the start of school year 2022-2023, 58 returning students participated in DUCIH school clinics. New enrollment began in October 2022, and a total of 72 students were active in the clinics during the year. The clinic locations active in Year 3 were the same as those in Year 2. The following summary information describes all participants across Years 1 through 3. Almost two-thirds of DUCIH participants identified as African American (65.2%). Almost one-quarter (19.1%) of participants identified as white, 11.2% as multiracial, 2.2% as Hispanic, and 2.2% as other races. More than half (59.3%) of participants were male and 40.7% were female. More than half (57.3%) of participants had intermittent asthma severity at baseline, while 23.6% fell under the category of ‘mild’ asthma severity, 13.5% ‘moderate persistent,’ and 3.4% ‘severe persistent.’ The most common healthcare coverage was medical assistance (87.6%), while 11.2% of students were covered by an employer-paid health plan and 1.0% by a private health plan.

Generally, school administrators consider students missing ten or more days of school in a school year as chronically absent. Over one quarter of participants (27.8%) had missed between one and eight days due to asthma. Eight students (11%) missed at least ten days due to asthma.

DUCIH clinic participants’ medication and health status were assessed at enrollment as well:

- 35.7% ($n=14$) of participants assessed were taking their medication only partially or not at all as prescribed;
- eight participants had one ER visit in the past year due to asthma, nine had two to three visits, and two had four to five visits.

Due to small sample size, the health status of OAS and KA participants at enrollment cannot be reported.

What are barriers and facilitating factors to implementation and expansion? What methods have been successful in recruiting participants? How do programs make mid-stream adjustments to implementation and recruitment based on reach, retention, and asthma outcomes of participants?

Past challenges with recruitment to OAS and KA remained persistent. Schools cited conflicting priorities and pressure to recuperate from COVID-19 pandemic learning loss as reasons why OAS or KA sessions would not be permitted. Language was also cited as a barrier, although options for conversational and written translation were accessible among ACHD staff. In Allegheny County (AC), meetings were held with Thrive 18, Latino Community Center, and Allegheny Intermediate Unit to introduce ASME programs and opportunities for hosting implementation. While these meetings were helpful for relationship building, they did not result in ASME implementation during this year. In Philadelphia (PHL), a pilot of KA was hosted with high school students, who gave valuable feedback on the activities and structure of sessions. They suggested role-playing and demonstrations of high-risk situations where they could practice what was learned.

ALA made a database of schools in AC to further outreach efforts. ALA cold-called and emailed 92 schools located in AC and spoke with eight regarding their interest in OAS or KA. However, the schools that responded were from middle class to wealthy school districts, which did not entirely align with the ACP's goal to serve overburdened populations. In April, ALA staff attended the Pennsylvania School Nurses Association (PASNAP) annual conference to share information with attendees. While these efforts cast a wide net, they generally did not divert from the typical outreach approaches observed in prior OAS and KA evaluations.

How effective is the program at achieving intended asthma-related outcomes?

In Year 3, data were collected from ten students in PHL who participated in KA. The mean age of participants was 14.9 years, and the age range was 11 to 17. Change in asthma control and asthma knowledge cannot be reported due to missing data. Post-participation, one participant reported visiting the emergency department because of breathing problems or asthma in the past three months.

Participants' asthma control test (ACT) scores after completing the final session:

- the mean ACT score was 19.8 (range= 15-25; SD = 3.26);
- eight participants (80%) had an ACT score of 20 or higher, indicating well-controlled asthma; and
- two participants (20%) had an ACT score of 19 or lower, indicating asthma that is not controlled well.

Table 2 below summarizes the asthma knowledge question responses at post-participation. Three participants answered all questions correctly. Most students could identify mold, exercise, smoke, and pollen as triggers, the quick relief inhaler as the asthma medication to take right away if they have trouble breathing, and that muscles around the airways get tight during an asthma episode.

Table 2. Responses to asthma knowledge questions, after participation in KA

	Frequency Post %
Which of the following are asthma triggers? (Check all that apply)	
Mold	90
Exercise	90
Smoke	80
Pollen	90
Cold weather	60
What asthma medication should you take right away if you have trouble breathing?	
Quick Relief Inhaler (correct)	80
Controller Inhaler	10
All of the above	0
None of the above	10
What happens during an asthma episode? (Check all that apply)	
Muscles around the airways get tight	90
Swelling in the airways	60
Extra mucus in the airways	70
None of the above	0

The data across three years of DUCIH clinics provides insights about the overall service use and longer-term asthma outcomes participants. Across all students who enrolled in the clinics, the average number of visits was 5.23 ($n=93$). Most participants (97.8%) had at least one follow-up visit. Eighty-eight participants received at least one follow-up visit and took the Asthma Control Test. The first and second visits were separated by a range of four and 189 days, with an average of 56 days between the first and second visit. Table 3 below outlines the number of participants by number of total clinic visits.

Table 3. School clinic participants by number of visits received

Total number of visits	1	2	3	4	5	6	7	8	9	10	11
Number of students	3	14	15	10	6	11	15	8	7	2	2

Of those who received at least one follow up visit and took the Asthma Control Test, one-third demonstrated improved asthma control from first to final visit. Only five demonstrated decreased asthma control from first to last visit (6%). Of the 52 who did not demonstrate any change in asthma control score from first to last visit, 86% had had well-controlled asthma at enrollment.

The average asthma knowledge score at intake was 4.67 (out of a total score of 7) ($n=33$). On participants' last visit, the average score was 5.94 ($n=48$). Eighteen participants' knowledge improved from their first to last visit, while only four scored lower on knowledge questions.

Smoking cessation services and referrals

Progress to objectives	Challenges	Opportunities
44 caregivers were referred to cessation resources	Supporting caregivers who are not ready to quit	ACHD pilot tobacco cessation program

How are referrals made to smoking cessation resources, and what infrastructure is set up to support referral systems? How are referral processes integrated into existing program implementation and workflow?

Smoking cessation services and referrals operated in the same way as in prior years. CAPP referred 42 individuals with identified tobacco use to the PA Quitline (1-800-QUIT-NOW). These smoking cessation referrals represented approximately half of families enrolled in CAPP.³ The DUCIH Asthma Program Coordinator continued to screen caregivers of newly enrolled students in school clinics for tobacco use. All who screened positive were referred to the PA Quitline, as well as the DUCIH tobacco cessation program. Two referred caregivers elected to participate during Year 3. This program is also available to the public. In addition, ACHD received approval for a pilot tobacco cessation program set to begin early in Year 4.

Community-based services

Progress to objectives	Challenges	Opportunities
WHE disseminated educational content at 20 workshops and attended 46 outreach/community events. 1,895 individuals were reached at the community events 51 home assessments completed 2 internal referrals between ACP partners New promotional materials translated into Spanish Communication of Whole Home Repairs Program opportunity to families	Low utilization of findhelp.org referral platform	

Are programs reaching those who have the highest burden of disease? What methods have been successful in recruiting participants?

WHE continually participated in community outreach events and were able to join 46 such events in Year 3. Together, these events reached an estimated 1,895 people. Most of the neighborhoods where community outreach events were held were EJ areas.⁴ WHE distributed information on healthy homes, asthma, indoor air quality info at events. Table 4 below lists the community events attended and the location ZIP code.

³ Assuming one child participant in each family.

⁴ Pennsylvania Department of Health, Division of Environmental Health Epidemiology, (2022). Pennsylvania Environmental Health Indicators Map. <https://padoh.maps.arcgis.com/home/webmap/viewer.html?useExisting=1>

Table 4. Community events attended by WHE, by ZIP code

Event	ZIP code
Beverly's Babies Free Community Baby Shower in Oakland	15212
Beverly's Babies Free Community Baby Shower in Duquesne	15110
Beverly's Babies Free Community Baby Shower in Millvale	15209
Beverly's Babies Free Community Baby Shower in Southside	15203
Beverly's Babies Free Community Baby Shower in Wilkinsburg	15221
Beverly's Babies Free Community Baby Shower in Hazelwood	15207
Jeremiah's Place Jere-Bear Fair	15206
Northside Community Day	15212
McKeesport Community Birthday Party	15132
Clairton Inn Ribbon Cutting	15025
McKeesport Community Day	15132
A Village for Kids Festival in McKeesport	15132
Clairton Back to School Event	15025
McKees Rocks Wellness Community Day	15136
Duquesne Reads Back to School Event	not available
UPMC Magee Wilkinsburg Health and Wellness Fair	15221
Office of Children, Youth, and Families Staff Retreat	15222
Family Links Resource Fair	15206
Hill District Community Resource Fair	15219
Beverly's Babies Free Community Baby Shower in East Liberty	15206
Beverly's Babies Free Community Baby Shower in Penn Hills	15235
Beverly's Babies Free Community Baby Shower in Braddock	15104
Beverly's Babies Free Community Baby Shower in Carrick	15210
UPMC Magee Women's Health Fair Pentecostal Temple	15213
Senator Lindsey Williams Community Fair	15237
UPMC SIDS Awareness	15213
Black Women and Girls Expo	15213
Duquesne Community Resource Fair	15282
Mom Owned Market	15217
Mon Valley Housing Fair	15120
Power to Empower	15212
Office of Children, Youth, and Families Staff Event	15222
Steel Valley Family Center Holiday Distribution	15120
Clairton Family Center Holiday Distribution	15025
Triumph Baptist Church Women's Health Event	15237
Beverly's Babies Free Community Baby Shower in Northside	15212
Imani Christian Health Fair Duquesne	15221
Chartiers Early Learning Resource Fair	15220
Mon Valley Providers Council Clothing/Resource Fair	15145

In addition to community outreach, the 51 healthy home assessments focused on residents of environmental justice areas. These assessments act as an opportunity to educate families on asthma and allergy mitigation in the home using local context and data, and to distribute resources to the families (for instance, cleaning kits, pest management supplies, dehumidifiers, etc.).

What are barriers and facilitating factors to implementation and expansion? How do programs make mid-stream adjustments to implementation and recruitment based on reach, retention, and asthma outcomes of participants?

Community events continue to be positive opportunities to increase reach of educational materials. WHE distributed a new flyer about healthy home assessments and promotional materials were printed in Spanish. Decreased use of the findhelp.org referral platform seemed to indicate fewer referrals between funded partners. With the Whole Homes Repair Program open for applications, WHE communicated this opportunity, administered by Action Housing Inc., to families. WHE noted that the amount will only reach an estimated 200-250 households. Within the first round of applications, 3,400 households applied and 125 homes were selected, indicating demand far outweighs supply.⁵

To what extent are program participants (a) being referred to and (b) utilizing referrals to community-based services?

The findhelp.org referral platform “seemed to burn out,” as described by one staff member. Only two referrals were reported between ACP funded partners. ACHD and partners plan to revisit a coordinated referral system in Year 4. WHE received funding from HUD to offer home repair services, which can help to fill the gap as Rebuild Together Pittsburgh will no longer be a part of the ACP referral partnership. WHE operationalized the application process and identified preferred contractors in preparation to begin home repairs in Year 4.

Home visit services

Progress to objectives	Challenges	Opportunities
CAPP: 421 intervention visits and 432 follow up visits delivered, 80 children enrolled in CAPP, 37 families enrolled in CAPP+ DUCIH: 7 new families enrolled, 12 families received visits, and 2 completed six month follow up	Maintaining contact with participants and their caregivers	CHW focused on Chester County Whole Home Repairs Act and expanded opportunities for referrals to repairs, in cases where CAPP+ cannot address need

Are home visit services being implemented as intended?

CAPP and DUCIH home visiting programs collectively enrolled 87 families. CAPP conducted 853 home visit - 421 of these were newly initiated home intervention visits, and 432 were follow-up visits. CAPP had more visits with families in-person (58%) than virtual (42%) this year. CAPP participants received follow-up visits at 3-, 6-, and 12-months post-enrollment, so this year’s follow-up visits included both follow-ups for newly enrolled participants in Year 3 and for those who enrolled during the prior year. DUCIH provided visits to 12 families total, 2 of which completed their six month follow up.

⁵ Morrison, Oliver. 90.5 WESA “Pittsburgh-area residents can apply for new round of Whole-Home Repairs.” October 17, 2023. Retrieved from <https://www.wesa.fm/development-transportation/2023-10-17/pittsburgh-whole-home-repairs>

Are programs reaching those who have the highest burden of disease? What methods have been successful in recruiting participants?

At enrollment, 46% of CAPP participants had poorly controlled asthma. A majority of CAPP participants were African American or Black (84%), and fewer identify as Hispanic (6%), Caucasian or White (5%), multi-racial or another racial category (3%), and bi-racial (2%). This reflects the demographic composition of the West Philadelphia neighborhoods where CAPP is focused, which are also identified as EJ areas with a history of redlining policies. The CHOP electronic medical record systems continued to be the primary source of eligible families for outreach. The proportion of participants identifying as African American is even more predominant in the CAPP+ home repairs program (97%).

What are barriers and facilitating factors to implementation and expansion?

Local presentations boosted community awareness of CAPP. This included asthma education presentations during back-to-school nights and community health events attended by over 300 people. CAPP hired and designated a specific CHW to expand the program's reach in Chester, PA.

To what extent are program participants (a) being referred to and (b) utilizing referrals to community-based services?

All CAPP participants received referrals for the Philadelphia Department of Public Health's integrated pest management, One House at A Time (a program providing beds for children), and remediation supplies (i.e., pillow/mattress covers). Additional referrals to other resources were given following a social determinants of health (SDOH) screening process. CAPP maintained linkages with payors for reimbursement of services, community services, healthcare, and other state-level programs. In addition, they maintained linkages with community services such as financial counseling, home inspections, and clutter removal. A total of 187 referrals were made to SDOH resources. In addition, the CAPP+ Block Build project offers exterior home repairs. Most CAPP participants live in row homes, which due to their design can have a downstream impact on neighbors if individual homes are in disrepair. Comprehensive repairs to the entire row are needed to ensure longevity of the construction and indoor remediation efforts. The project completed the exterior repair of 21 homes this year, which exceeded the year's goal of 20.

How effective is the program at achieving intended asthma-related outcomes?

CAPP has historically been successful at retaining participants in the intervention until they are eligible for 12 month follow up. Half (51%) of participants who completed the intervention had poorly controlled asthma at enrollment. All CAPP participants who began with poorly controlled asthma at enrollment and remained in the program showed asthma control improvement at 12 months. Findings on asthma control for DUCIH participants were not available at the time of reporting.

Asthma friendly policy promotion

Progress to objectives	Challenges	Opportunities
New sponsors were identified for HB2155 regarding stock albuterol inhalers in schools	Addressing the concerns of education-focused legislators regarding HB2155	Promotion at future “Day at the Capitol” events Local efforts to pilot implementation of stock albuterol policy

How were opportunities for expansion of asthma control services and asthma friendly policies prioritized?

Discussion about policy efforts with ACP funded partners and the PAP continued to raise the stock albuterol policy as a priority. The Clean Indoor Air Act (CIAA) was also mentioned in meetings as ALA lead efforts to close policy loopholes. ALA hosted a “Day at the Capitol” event, which featured both policies. ALA staff, community members, and other interested parties attended discussions with state legislators. Typically, this event has focused on tobacco control, so the addition of the stock albuterol policy was a key opportunity. Senator Culver and Representative Hill-Evans were identified as the new primary sponsors. Senator Culver worked with the Secretary of Education and scheduled a meeting with the Chair of the Senate Education Committee to discuss next steps.

Meanwhile, Dr. Tyra Bryant-Stephens collaborated with other local interested parties to plan implementation of stock albuterol policy in the School District of Philadelphia. Procurement and funding for inhalers were details Dr. Bryant-Stephens gave particular attention to and several options were identified, such as donations by pharmaceutical companies. At the time of reporting, an implementation plan was still in development.

Discussion about the CIAA with the PAP or ACP funded partners was geared toward information sharing rather than planning actions for partners to initiate. PA’s current CIAA contains exemptions that allow tobacco use and secondhand smoke in over 1,300 venues (i.e., bars, casinos, private clubs). In addition, e-cigarettes are not included under the CIAA.

Implementation of quality improvement processes to establish & encourage guideline-based care

Progress to objectives	Challenges	Opportunities
5 total practices/FQHCs participating, 1 new site recruited 5,435 estimated number of children with asthma who have access to the service or are impacted by the intervention	Lack of buy-in from staff Staff turnover EHR function and reporting	Mid-project assessments show positive signs of improved care and alignment with guidelines

Is the quality improvement initiative being implemented as intended? How many practices have completed the workflow assessment and developed practice goals?

The reach of quality improvement (QI) activities expanded this year, with an estimated 5,435 children with asthma potentially impacted by improvements to healthcare. Five practices participated in the quality improvement (QI) activities, one of which was a federally qualified health center newly recruited. The newly recruited practice was previously involved in the CDC 1404 funding. Participating practices served six counties in southeastern and northeastern PA - Philadelphia, Delaware, Lehigh, Wayne, Chester, and Montgomery. Philadelphia, Delaware, Montgomery, and Lehigh counties are within the top quartile of age-adjusted asthma hospitalization rates in the state (over the years 2016-2019).⁶ While four of the five practices are not physically located in an EJ area, they are within a short distance. Three practices not in an EJ area are 0.2 to 0.6 miles from at least one. The one rural practice is 8.3 miles from the closest EJ area. The practice in an EJ area is also located in an asthma capital.⁷

All participating sites completed the initial workflow assessment and moved on to establishing goals and activities. The most common areas of focus were flu and COVID-19 vaccines programs; assessment and monitoring of asthma severity; use of asthma action plans with patients; and the use of EHR registry reports to identify patients with a diagnosis of asthma and information for population health management.

What are facilitators and barriers to implementation for both the QI staff and practices?

QI staff noted the following barriers to implementation of QI activities: provider resistance to modifying and adding to workflows; staff turnover causing changes to project contact and practice workload; limitations in EHR functionality. The new participating practice had previously been involved under 1404 funding, and an initial assessment showed they have maintained some of previously recommended quality initiatives. This is a positive sign that this practice, if committed in their engagement, can continue to build upon progress made. Mid-project analyses also indicated that practices have made improvements in some areas over their baseline assessment.

Pennsylvania Asthma Partnership

Progress to objectives	Challenges	Opportunities
3 full PAP meetings (1 – 2 hours; 2 – 1 hour) Vision statement approved by members 86% of members voted that community engagement goals should reach the “collaborate” stage	Starting the process of creating a sustainable team structure to move the Strategic Plan work forward Maintaining momentum of workgroups	Action steps identified by members to support a stock albuterol policy

⁶ Pennsylvania Department of Health, Division of Environmental Health Epidemiology, (2022). Pennsylvania Environmental Health Indicators Map. <https://padoh.maps.arcgis.com/home/webmap/viewer.html?useExisting=1>

⁷ Asthma and Allergy Foundation of America, (2023). *2023 Asthma Capitals*. Retrieved from <https://aafa.org/wp-content/uploads/2023/09/aafa-2023-asthma-capitals-report.pdf>

How has the PAP promoted statewide planning, coordination, and expansion of asthma activities and resources?

The PAP acted as a hub of information and collaborative planning for leaders in healthcare, advocacy, environmental health, and local government representatives. PAP communications often contained relevant funding opportunity announcements, policy efforts, and notable publications or current events from the field shaping the collaborative work. New surveillance products were released for public use, including an asthma emergency department visits factsheet and school health data report by county. The school health data report is particularly notable because for the first time childhood asthma surveillance data (dating back to 2013) is presented by county alongside other relevant metrics chosen by PAP members. The additional metrics include conventional tobacco and e-cigarette use by teens; population race and ethnicity; environmental exposures (i.e., gas wells, particulate matter); and local staffing of school nurses and ASME facilitators. In addition, the PAP served as a networking and resourcing opportunity for new staff in counties starting their own health department. These new health departments attended meetings and asked for information about funding and operations of interventions to address environmental asthma triggers in the home.

How has the PAP engaged members, community members, and key individuals, and what are the characteristics of those groups?

PAP meetings were scheduled quarterly, and individual work group meetings were held ad hoc as facilitated by DOH. Scheduling polls were used to determine when meetings would occur. A poll distributed via email usually circulated for one week, after which DOH would send out the meeting invite. Typically, six to eight weeks passed between the scheduling poll and the meeting occurrence. The activities of the PAP's workgroups did not break new ground in Year 3, but the workgroups continued to meet.

As of August 2023, 36 individuals representing 22 unique organizations comprise the PAP membership list. Six organizations had at least one representative at all three meetings over the course of the year. Between 16 and 23 individuals attended each meeting. Individuals have left the PAP for various reasons including funding for asthma-related work ending, changes in employment, and reasons unknown to evaluators.

The content of PAP meetings, facilitated by DOH on Microsoft Teams, included breakout session time for networking, large group discussion, and information sharing. Unstructured networking time in breakout sessions happened in two-thirds of meetings. Email and Microsoft Teams continue to be where documents are shared, although traffic in the Teams platform remains low.

The PAP vision and mission statements were workshopped in large group discussions, breakout sessions, consensus polling, and Google Jamboard. PAP members wanted to ensure that these statements were accessible to a lay audience and reflected the members' values. They also prioritized retaining language pointing to social determinants of health in the mission statement. The approved vision statement was "People with asthma in Pennsylvania achieve their best health." At the time of reporting the mission statement was still in development.

The PAP provided information and talking points of how to support advocacy efforts for the stock albuterol bill. A Jamboard brainstorming session centered on action steps members could take to support the stock albuterol bill in each stage of planning and implementation. This session was informed by Volerman et al. *Ensuring Access to Albuterol in Schools: From Policy to Implementation*⁸, a formal statement published by the American Thoracic Society with contributions by PAP member, Dr. Tyra Bryant-Stephens. This paper outlines the guidelines, literature, statutes, regulations, and implementation of medication access in schools, synthesizing recommendations for stock albuterol policy. Dr. Bryant-Stephens was a member of the stakeholder group consulted for the paper. The Jamboard space gathered action steps from PAP members on the following: building a stakeholder coalition; identifying funding sources; creating briefs and factsheets; addressing opposition; drafting legislation; and testifying.

PAP members were engaged in two evaluation learning sessions - one educating the members about how the CDC utilizes performance measures, and one discussing *The Spectrum of Community Engagement to Ownership*.⁹ The session on performance measures was hosted in response to questions about how the CDC uses data collected from ACP interventions. The discussion on the Spectrum of Community Engagement to Ownership prompted PAP members to identify the community members the PAP would like to involve and how that involvement would occur. This tool was distributed by CDC evaluation technical advisors as a resource for reflection and goal setting. The stages of engagement in the spectrum are (moving from a low to high degree of engagement) inform, consult, involve, collaborate, and defer. When polled, 86% of attendees chose “collaborate” as the ideal relationship they would like to have with community members. Two members identified that “inform” or “involve” could be good stages to start this work. This poll represented 36% of the PAP membership list.

How does the structure and membership of the PAP contribute to reaching program goals?

Characteristics of a healthy partnership (i.e., synergy, collaboration, receipt of benefits from participation) can indicate collective will to reach mutual goals. Evaluators fielded the third cross-sectional survey to gather members’ perceptions of these characteristics in the PAP. Members were given an adapted online version of the Partnership Self-Assessment Tool (PSAT).¹⁰ The June PAP meeting allowed for time for members to take the survey. Data collection continued through September 6, 2023. The evaluation team planned to keep the survey open for 8-10 weeks but extended the initial response timeframe in August order to improve response rate. Most respondents participated during the June PAP meeting. The survey received sixteen members responses, thirteen complete (i.e., the participant

⁸ Volerman, A., Lowe, A. A., Pappalardo, A. A., Anderson, C. M. C., Blake, K. V., Bryant-Stephens, T., Carr, T., Carter, H., Cicutto, L., Gerald, J. K., Miller, T., Moore, N. S., Phan, H., Sadreameli, S. C., Tanner, A., Winders, T. A., & Gerald, L. B. (2021). Ensuring Access to Albuterol in Schools: From Policy to Implementation. An Official ATS/AANMA/ALA/NASN Policy Statement. *American journal of respiratory and critical care medicine*, 204(5), 508–522. <https://doi.org/10.1164/rccm.202106-1550ST>

⁹ Rosa Gonzalez, Facilitating Power, (2019). *The Spectrum of Community Engagement to Ownership*. Retrieved from <https://movementstrategy.org/resources/the-spectrum-of-community-engagement-to-ownership/>

¹⁰ Center for the Advancement of Collaborative Strategies in Health. *Partnership Self-Assessment Tool*. Retrieved from <https://atrium.lib.uoguelph.ca/xmlui/handle/10214/3129?show=full>.

clicked through the entire survey) and three partial responses. One strategic plan workgroup member, two communications workgroup members, and two EJ/health equity workgroup members responded to the survey.

A high mean (4.0 or above) can be indicative of a strong characteristic. The following items achieved a mean of 4.5 or above.¹¹ Members largely agreed on the first three items, which had standard deviations under 0.5.

- *“empowering people involved in the partnership”*
- *“fostering respect, trust, and inclusiveness, and openness in the partnership”*
- *“creating an environment where differences of opinion can be voiced,”*
- *“resolving conflict among partners,”* and
- *“minimizing the barriers to participation in the partnership’s meetings and activities, i.e., by holding them at convenient places and times.”*

In contrast, only one item received a Likert mean greater than 4.5 in Year 1. All items with this scale had means between 3.4 to 5. The question about how well the partnership connects to political decision-makers, government agencies, and other organizations ($n=10$; $M=3.4$; $SD=0.966$) received the lowest mean response. Responses to *“coordinating communication among partners,” “coordinating communication with people and organizations outside the partnership,”* and *“providing orientation to new partners as they join the partnership”* had high standard deviations (greater than one), indicating less consensus between PAP members. Detailed tables of responses are available in Appendix B.

Respondents indicated that they received various benefits from being a part of the PAP, such as *“enhanced ability to address an important issue”* and *“ability to have a greater impact than I could have on my own.”* Every benefit was received by more than 50% of respondents, however, there was no single benefit received by all. Regarding drawbacks, some respondents experienced *“diversion of time and resources away from other priorities or obligations,” “insufficient influence in partnership activities,” “[being] viewed negatively due to association with other partners or the partnership,”* and *“conflict between my job and the partnership’s work.”*

Next Steps

The content of this report will be reviewed and discussed with DOH and ACP funded partners to facilitate a shared understanding of findings and guide an Action Plan. This will be done while also considering progress made in the past three years. The ACP may choose to return to next steps in earlier evaluation reports if it is determined meaningful progress has not been made, or if insufficient time has passed for noticeable change. Figure 1 below contains an estimated timeline of Year 4 evaluation activities.

¹¹ Forty-one survey questions asked participants to rank a trait or competency of the partnership on a five-point Likert scale (i.e., 1-poor to 5-excellent). A high mean (4.0 or above) can be indicative of success in a competency.

Figure 1. Tentative Timeline for Year 4 Evaluation Activities

Key Evaluation Activities	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Evaluation Planning												
Update Strategic Evaluation Plan (as needed)												
Monthly evaluation calls with DOH												
Refine Individual Evaluation Plans in alignment with SEP												
Select topics and schedule fourth Evaluation Learning Session (as needed)												
Evaluation planning for next NOFO and assist with proposal												
Support activities for community member involvement												
Data Management and Analysis												
Revise PM spreadsheet and instructions												
Field PAP self-assessment tool, data analysis												
Interviews with key staff												
Analysis of OAS & KA data												
Review monthly and quarterly reports, provide feedback												
Reporting												
Attend ACP funded partner meetings, facilitate data or evaluation discussions (as needed)												
Craft Year 3 one-page summary												
Post Year 3 evaluation products to DOH website												

Note: Not all evaluation activities are reflected in this table as activities are dependent upon program implementation, changes in evaluation plans, and ACP priorities.

Appendix A. Data Sources, by Program Component and Evaluation Question

The following tables are organized by program component and outline data sources used to answer each evaluation question.

School based asthma self-management education and services	
Evaluation Question	Data Sources
Are school-based programs a) recruiting adults from high burden areas to be program facilitators; and b) reaching students who have the highest burden of disease?	ALA program records, quarterly reports, monthly reports, student participant pre-post surveys, DOH Environmental Health Indicator Map, DUCIH participant data, evaluation planning and technical assistance (TA) meeting notes, performance measure (PM) data
What are barriers and facilitating factors to implementation and expansion? What methods have been successful in recruiting participants?	Quarterly reports, monthly reports, TA meeting notes
How do programs make mid-stream adjustments to implementation and recruitment based on reach, retention, and asthma outcomes of participants?	Quarterly reports, monthly reports, TA meeting notes
How effective is the program at achieving intended asthma-related outcomes?	Student participant pre-post surveys, DUCIH participant data, PM data

Smoking cessation services and referrals	
Evaluation Question	Data Sources
How are referrals made to smoking cessation resources, and what infrastructure is set up to support referral systems? How are referral processes integrated into existing program implementation and workflow?	Quarterly reports, monthly reports, TA meeting notes

Community based services	
Evaluation Question	Data Sources
Are programs reaching those who have the highest burden of disease? What methods have been successful in recruiting participants?	Quarterly reports, monthly reports
What are barriers and facilitating factors to implementation and expansion?	Quarterly reports, monthly reports, TA meeting notes
How do programs make mid-stream adjustments to implementation and recruitment based on reach, retention, and asthma outcomes of participants?	Quarterly reports, monthly reports, TA meeting notes
To what extent are program participants (a) being referred to and (b) utilizing referrals to community-based services?	Findhelp.org referral records

Home visit services	
Evaluation Question	Data Sources
Are home visit services being implemented as intended?	Annual report, quarterly reports, monthly reports, TA meeting notes
Are programs reaching those who have the highest burden of disease? What methods have been successful in recruiting participants?	Quarterly reports, monthly reports, TA meeting notes, DOH Environmental Health Indicator Map, PM data
What are barriers and facilitating factors to implementation and expansion?	Quarterly reports, monthly reports, TA meeting notes
How do programs make mid-stream adjustments to implementation and recruitment based on reach, retention, and asthma outcomes of participants?	Quarterly reports, monthly reports, TA meeting notes
To what extent are program participants (a) being referred to and (b) utilizing referrals to community-based services?	Quarterly reports, monthly reports, PM data, Findhelp.org referral records
How effective is the program at achieving intended asthma-related outcomes?	PM data, DUCIH participant data

Asthma friendly policy promotion	
Evaluation Question	Data Sources
To what extent have partnerships and policies been leveraged to expand the EXHALE strategies?	Quarterly reports, monthly reports, PAP meeting notes, key informant interviews
How were opportunities for expansion of asthma control services and asthma friendly policies prioritized?	Quarterly reports, monthly reports, regulatory documentation

Implementation of quality improvement processes to establish & encourage guideline-based care	
Evaluation Question	Data Sources
Is the quality improvement initiative being implemented as intended?	Annual report, quarterly reports, PM data, DOH Environmental Health Indicator Map
How many practices have completed the workflow assessment and developed practice goals?	Annual report, quarterly reports
What are facilitators and barriers to implementation for both the QI staff and practices?	Annual report, quarterly reports

Pennsylvania Asthma Partnership	
Evaluation Question	Data Sources
How has the PAP promoted statewide planning, coordination, and expansion of asthma activities and resources?	Monthly reports, PAP meeting notes, Strategic plan documentation, TA meeting notes
How has the PAP engaged members, community members, and key individuals, and what are the characteristics of those groups?	PAP meeting notes, PAP operations documentation
How does the structure and membership of the PAP contribute to reaching program goals?	Partnership self-assessment tool
How has the PAP demonstrated addressing health equity in their work?	Monthly reports, PAP meeting notes, Strategic plan documentation, TA meeting notes

Appendix B. Pennsylvania Asthma Partnership Supplement Materials

Table B-1. Membership list as of August 30th, 2023

Name	Organization
Bob Butler	Allegheny County Health Department
Jim Weeden	Allegheny County Health Department
Tanya Haley	American Lung Association
Michelle Naccarati-Chapkis	Women for a Healthy Environment
Lindsay Fraser	Women for a Healthy Environment
Germaine Patterson	Women for a Healthy Environment
Jennifer Elliott	Duquesne University
Brittani Namey	Duquesne University
Tyra Bryant-Stephens	CHOP CAPP
Taquan Carey	CHOP CAPP
Colleen Tingey	CHOP CAPP
Andrea Rodi	Quality Insights
Robina Montague	Quality Insights
Sarah String	PHMC
Jaime Kishpaugh	PHMC
Isaac Lief	Philadelphia Department of Public Health
Dave Synnamon	Allentown Health Bureau
Tori McQueen	Montgomery County Department of Health & Human Services
Lynda Mitchell	Allergy & Asthma Network
Erin Sullivan	Environmental Protection Agency
Janice Bolden	Environmental Protection Agency
Dion Lerman	PA Integrated Pest Management
Valerie Luebke	Erie County Department of Health
Katie Noss	PA Association of Community Health Centers
Rachna Saxena	City of Scranton
Sabine Charles	Lackawanna County
Henry Radulski	Wilkes-Barre City Health Department
Amy Cover	United Healthcare Community & State
David Kelley	PA DHS, Office of Medical Assistance Programs
Barb Fickel	PA DOH-BHPRR

Table B-1 cont'd. Membership list as of August 30, 2023

Name	Organization
Sara Thuma	PA DOH-BHPRR
Amy Flaherty	PA DOH-BHPRR
Barb Orwan	PA DOH-BHPRR
Jun Yang	PA DOH-EPI
Attah Mbrah	PA DOH-EPI
Katie Sneeringer	PA DOH-EPI

Table B-2. Member responses to statements about characteristics and climate of collaboration

<i>By working together, how well are these partners able to...</i>	<i>M (SD)</i>
Identify new and creative ways to solve problems (n=15)	3.73 (0.594)
Include the views and priorities of the people affected by the partnership's work (n=14)	3.86 (0.864)
Develop goals that are widely understood and supported among partners (n=15)	3.73 (0.704)
Identify how different services and programs in the commonwealth relate to the problems the partnership is trying to address (n=15)	3.80 (0.862)
Respond to the needs and problems of the commonwealth (n=15)	3.93 (0.594)
Implement strategies that are most likely to work in the commonwealth (n=15)	3.87 (0.640)
Obtain feedback from individuals and organizations in the commonwealth that can either block the partnership's plans or help them move forward (n=15)	3.67 (0.900)
Carry out comprehensive activities that connect multiple services, programs, or systems (n=15)	3.67 (0.816)
Clearly communicate to people in the commonwealth how the partnership's actions will address problems that are important to them (n=14)	3.64 (0.745)
<i>Please rate the total effectiveness of your partnership's leadership in:</i>	<i>M (SD)</i>
Taking responsibility for the partnership (n=14)	3.64 (0.745)
Inspiring or motivating people involved in the partnership (n=14)	4.14 (0.770)
Empowering people involved in the partnership (n=14)	4.50 (0.650)
Communicating the vision of the partnership (n=14)	4.29 (0.825)

Table B-2 (cont'd). Member responses to statements about characteristics and climate of collaboration	
	M(SD)
Working to develop a common language within the partnership (n=14)	4.43 (0.646)
Fostering respect, trust, and inclusiveness, and openness in the partnership (n=14)	4.79 (0.426)
Creating an environment where differences of opinion can be voiced (n=14)	4.79 (0.426)
Resolving conflict among partners (n=10)	4.80 (0.422)
Combining the perspectives, resources, and skills of partners (n=13)	4.38 (0.768)
Helping the partnership be creative and look at things differently (n=14)	4.14 (0.949)
Recruiting diverse people and organizations into the partnership (n=13)	4.15 (0.987)
<i>Please rate the effectiveness of your partnership in carrying out:</i>	<i>M (SD)</i>
Coordinating communication among partners (n=14)	4.14 (1.167)
Coordinating communication with people and organizations outside the partnership (n=10)	4.20 (1.135)
Organizing partnership activities, including meetings and projects (n=14)	4.43 (0.756)
Preparing materials that inform partners and help them make timely decisions (n=14)	4.36 (0.842)
Performing secretarial duties (n=11)	4.45 (0.820)
Providing orientation to new partners as they join the partnership (n=9)	4.00 (1.323)
Evaluating the progress and impact of the partnership (n=13)	4.46 (0.660)
Minimizing the barriers to participation in the partnership's meetings and activities; i.e., by holding them at convenient places and times. (n=14)	4.50 (0.855)
<i>How well does the partnership use:</i>	<i>M (SD)</i>
Financial resources (n=14)	3.92 (0.494)
In-kind resources (n=14)	3.86 (0.663)
Time (n=14)	4.07 (0.616)
<i>Please indicate how much you agree with the following statements on appropriate pace of development:</i>	<i>M (SD)</i>
This collaborative group has tried to take on the right amount of work at the right pace. (n=14)	4.07 (0.616)

Table B-2 (cont'd). Member responses to statements about characteristics and climate of collaboration	
	M (SD)
We are currently able to keep up with the work necessary to coordinate all the people, organizations, and activities related to this collaborative project. (n=16)	4.00 (0.784)
<i>For each of the following types of resources, to what extent does your partnership have what it needs to work effectively:</i>	M (SD)
Money needs (n=7)	3.86 (0.690)
Time needs (n=11)	4.09 (0.831)
Equipment and goods needs (n=8)	3.75 (0.707)
Skills and expertise needs (n=13)	4.31 (0.630)
Data and information (n=12)	4.08 (0.793)
Connections to target populations (n=13)	3.77 (0.439)
Connections to political decision-makers, government agencies, other organizations/groups (n=10)	3.40 (0.966)
Legitimacy and credibility (n=13)	4.31 (0.630)
Influence and ability to bring people together for meetings and activities (n=13)	4.08 (0.760)
<i>For each of the following benefits, please indicate whether you have or have not received the benefit as a result of participating in the partnership:</i>	M (SD)
Enhanced ability to address an important issue (n=13)	0.92 (0.277)
Development of new skills (n=13)	0.62 (0.506)
Heightened public profile (n=13)	0.77 (0.439)
Increased utilization of my expertise or services (n=13)	0.92 (0.277)
Acquisition of useful knowledge about services, programs, or people in the community (n=13)	0.92 (0.277)
Enhanced ability to affect public policy (n=13)	0.69 (0.480)
Development of valuable relationships (n=14)	0.93 (0.267)
Enhanced ability to meet the needs of my constituency or clients (n=13)	0.69 (0.480)
Ability to have a greater impact than I could have on my own (n=13)	0.92 (0.277)
Ability to make a contribution to the community (n=13)	0.92 (0.277)

Table B-2 (cont'd). Member responses to statements about characteristics and climate of collaboration	
<i>For each of the following drawbacks, please indicate whether you have or have not received the drawback as a result of participating in the partnership:</i>	<i>M (SD)</i>
Diversion of time and resources away from other priorities or obligations (n=13)	0.08 (0.277)
Insufficient influence in partnership activities (n=13)	0.15 (0.376)
Viewed negatively due to association with other partners or the partnership (n=16)	0.08 (0.289)
Frustration or aggravation (n=12)	0 (0)
Insufficient credit given to me for contributing to the accomplishments of the partnership (n=13)	0 (0)
Conflict between my job and the partnership's work (n=13)	0.08 (0.277)
<i>So far, how have the benefits of participating in this partnership compared to the drawbacks? (n=13)</i>	<i>1.00 (0.707)</i>
<i>How comfortable are you with the way decisions are made in the partnership? (n=13)</i>	<i>3.77 (0.439)</i>
<i>How often do you:</i>	<i>M (SD)</i>
Support the decisions made by the partnership (n=13)	4.08 (0.641)
Feel that you have been left out of the decision-making process (n=13)	1.54 (0.776)
<i>How satisfied are you with:</i>	<i>M (SD)</i>
The way the people and the organizations in the partnership work together (n=13)	4.08 (0.760)
Your influence in the partnership (n=13)	4.00 (0.816)
Your role in the partnership (n=13)	4.08 (0.641)
The partnership's plans for achieving its goals (n=13)	4.15 (0.801)
The way the partnership is implementing its plans (n=13)	4.00 (0.577)

Source: PAP Self-Assessment Survey, adapted from the Partnership Self-Assessment Tool. Forty-one survey questions asked participants to rank a trait or competency of the partnership on a five-point Likert scale (i.e., 1-poor to 5-excellent). A high mean (4.0 or above) can be indicative of success in a competency. No questions were required, so n sizes vary depending on the question.

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