DEPARTAMENTO DE SALUD

Puerto Rico
Department of Health

Puerto Rico Asthma Program Strategic Plan 2021-2025

PROGRAMA DE MANEJO Y CONTROL DEL ASMA
DEPARTAMENTO DE SALUD

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Executive Message

I am pleased to present the Strategic Plan for the Asthma Management and Control Program (PRAP) for the years 2020-2025. This plan shows how the asthma disease significantly affects people living with this health condition and those who are at risk of developing it. The Puerto Rico Asthma Management and Control Program from the Department of Health recognizes that this plan's fundamental purpose is to make our population healthy. Our public health efforts are directed to facilitate better access to adequate health services and environmental both external and internal, within homes and buildings that are healthy to prevent the condition's relapses.

Over the past year the Health Department's PRAP worked in collaboration with the Asthma Advisory Committee (CAA) and other partners to develop this plan. This was developed based on a structured process, obtaining feedback from different populations, including caregivers and patients with the disease. The strategic plan is designed for a period of 5 years, based on strategies.

Cordially,

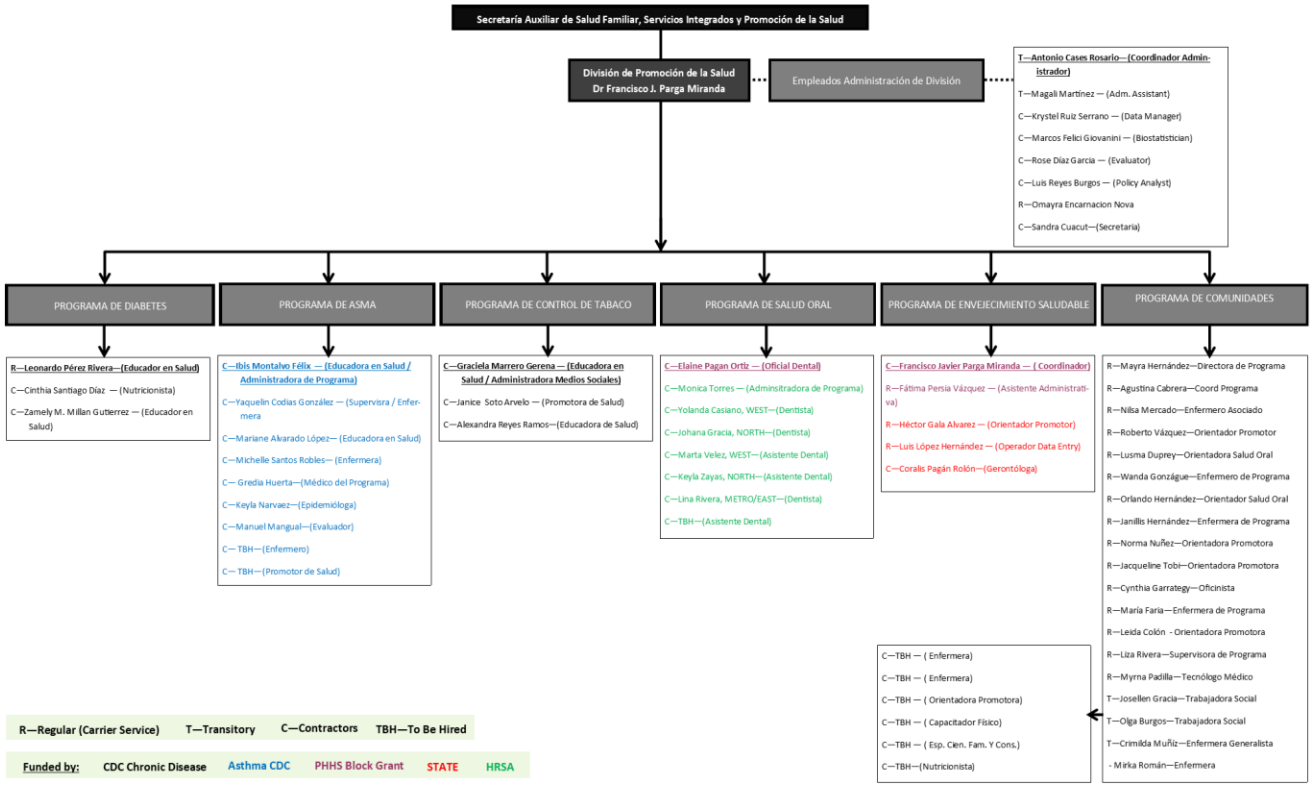
Antonio L. Cases Rosario, MPA
Director
Division for Chronic Diseases Prevention and Control

List of Acronyms

ALA	American Lung Association
ACBS	Asthma Call-Back Survey
ACHB	Asthma and Community Health Branch
ASES	Puerto Rico Health Insurance Administration / Administración de Seguros de Salud de Puerto Rico
BRFSS	Behavioral Risk Factor Surveillance System
CAA	Asthma Advisory Committee
CDC	Centers for Disease Control and Prevention EPA Environmental Protection Agency
CFSE	Puerto Rico State Insurance Fund
DERA	Diesel Emission Reduction Act
EPT	Evaluation Planning Team
EPR-3	Guidelines for the Diagnosis and Management of Asthma
FQHC	Federally Qualified Health Centers
GHP	Puerto Rico Government Health Plan
HCO	Health Care Organization
HUD	US Department of Housing and Urban Development
IEP	Individual Evaluation Plan
MAVI	Movement for the Achievement of Independent Living
MOU	Memorandum of Understanding
NACP	National Asthma Control Program
NAEPP	National Asthma Education and Prevention Program
NCEH	National Center for Environmental Health
PR	Puerto Rico
PRAC	Puerto Rico Asthma and Other Chronic Respiratory Diseases Coalition
PRASS	Puerto Rico Asthma Surveillance System
PRAP	Puerto Rico Asthma Program
PRDOH	Puerto Rico Department of Health

PRDOE	Puerto Rico Department of Education
PRPCA	Puerto Rico Primary Care Association
PRRD	Puerto Rico Demographic Registry
PCP	Primary Care Physician
QI	Quality Improvement
QGIS	Quantum Geographic Information
SABA	Short Acting Beta-Agonists
SEP	Strategic Evaluation Plan
UPR	University of Puerto Rico
VIAS	Asthma Interactive Home Visits

Organization Chart



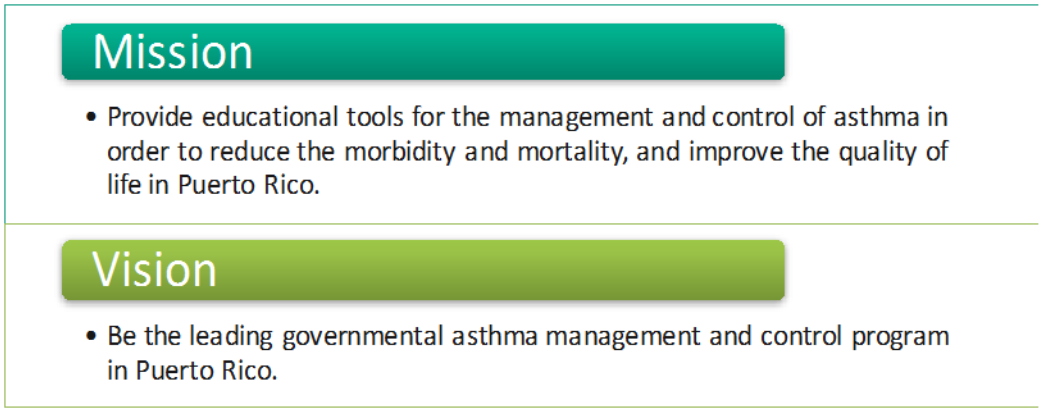
Introduction

Worldwide, asthma is the most common chronic disease among children, and it was estimated that more than 339 million people are currently living with asthma[1]. In the United States (US), by the year 2018, it was estimated that 25 million people had current asthma, including 5.5 million children under age 18[2]. According to the Asthma and Allergy Foundation of America (2019), asthma is more common in children than adults[3]. However, the 2018 National Health Interview Survey (NHIS) data shows that adults were more likely than children to have current asthma in the US[4]. It matches with the Behavioral Risk Factor Surveillance System's results that report an asthma lifetime prevalence for 2018 of 14.5% and an asthma current prevalence of 9.2% among adults compared to an asthma lifetime prevalence of 11.4% and an asthma current prevalence of 7.2% among children and adolescents[5]. With regards to the prevalence differences between genders, NHIS shows that females (9.1%) were more likely than males (6.2%) to have current asthma in the US[4]. Meanwhile, in children, a higher prevalence was reported among boys (8.3%) compared to girls (6.7%). As of Puerto Rico (PR), the 2018 asthma lifetime prevalence (18.5%) and the asthma current prevalence (11.1%) among adults were higher than the US asthma lifetime prevalence (14.5%) and the US asthma current prevalence (9.2%); with congruent differences in children[5]. In contrast with the US, PR prevalence of asthma over time tends to be higher in children than adults[5].

Asthma in PR has been recognized as a major public health problem. According to the Puerto Rico Asthma Surveillance System Report 2015-2019, in 2018, approximately 1 out of 7 children and 1 out of 9 adults living in Puerto Rico had current asthma[5]. Additionally, the Puerto Rico Behavioral Risk Factor Surveillance System (PR-BRFSS) shows that current asthma in PR is higher among women (14.8%) compared to men (7.0%). Puerto Ricans living in the US also presented higher asthma prevalence when compared with other ethnic and racial groups[5]. For 2018, the reported prevalence estimates of children living with asthma in PR was 14.1%; meanwhile, for adults in 2018 the prevalence of current asthma was 11.1%. Data shows that the current asthma prevalence of children living in PR is higher than children living in the US (14.1% vs 7.2%, respectively)[5]. Additionally, it shows that 22.6% of children with current asthma have uncontrolled asthma in PR.

To improve the quality of life of people living with asthma in PR, the Puerto Rico Department of Health (PRDoH), under a cooperative agreement with the Center for Disease Control and Prevention (CDC), founded the Puerto Rico Asthma Program (PRAP) in 2003[6]. To achieve this purpose, PRAP is working to maximize the reach, impact, efficiency, and sustainability of comprehensive asthma control services. Also, aligned with the objectives of Healthy People 2030, the PRAP mission is to improve asthma control, provide educational tools, reduce the burden, and improve the quality of life of asthma patients and their families[7].

Figure 1: Mission and Vision of the Puerto Rico Asthma Program



Asthma Program Logic Model

Asthma is a chronic disease that affects the Puerto Rican population disproportionally. To address this burden, the PRAP partnered with key collaborators to develop infrastructure and implement the EXHALE components. These strategies and activities aim to expand access, referrals, and delivery through partnerships, increase adoption and implementation of asthma-friendly environmental policies and reduce disparities in access. In the long term, it will also help decrease the asthma burden on the island, among others. The PRAP's logic model, presented in Figure 3 is a graphic representation that describes the relationship between program activities and the intended goals to be accomplished in the five-year grant period. The logic model was developed to provide detailed information regarding its components. The activities and strategies were focused on the principal program's components: infrastructure, services, and health system.

The PRAP logic model describes the relationships between the program activities, strategies, and the intended outcomes to achieve the overarching program goal. The first part of the model is the Puerto Rico Asthma epidemiology profile, which includes summary points of the burden of asthma in PR. The situation is connected to the inputs box, which contains the internal and external collaborators strategically established to attain the goals of the PRAP. Using these resources, we can advance to the next step of the logic model; the strategies and activities are divided into two major categories: A) Enhance program infrastructure and B) Leverage partnerships to expand EXHALE.

For the first category, we describe the activities for the five strategies proposed in the Funding Opportunity Announcement (FOA). Starting with leadership/program management, we intend to help strengthen our leadership and program management by promoting the action planning, coordination, and the expansion of asthma services, provide technical assistance and training in EXHALE to partners, and develop a strategic plan to address the PRAP's activities in the entire geographic area. In the strategic partnerships, the PRAP intends to engage partners to develop, evaluate, and sustain strategies designed to expand asthma control services, and identify and target common goals among partners.

The Puerto Rico Asthma Surveillance System (PRASS) is already in place; our goal for this activity is to maintain, expand the surveillance system to direct program activities, and describe the asthma burden in PR.

In the communication area activities, PRAP expects to implement Puerto Rico Asthma Program Communication Plan (CP) based on CDC message and NAEPP guidelines and develop educational communication products for people with asthma and their caregivers.

The last strategy, evaluation, includes the goals to improve the assessment of the program, such as updating and implementing the SEP to enhance services for effectiveness and efficiency and evaluation capacity building among stakeholders and the PRAP staff.

In the second category, we describe the activities for the six strategies that define EXHALE. For the education on asthma self-management, the activities to complete are to: Expand access to and delivery of AS-ME to people with asthma and their caregivers; Educate people with asthma, caregivers, students, teachers, among others in AS-ME skills; and Develop AS-ME

communications campaigns. To achieve the second strategy PRAP are to: Develop educational materials about X-tinguish smoking and second-hand smoke in collaboration with the Tobacco Program; Refer and promote the PR Quitline (PRQ) *Déjalo Ya*!

To implement the Home-based strategies PRAP is focused on the control of asthma triggers and to provide AS-ME for the caregivers and children with uncontrolled asthma. The home- based strategy also includes the encouragement and delivery of the home-based project (VIAS) and the maintenance and expansion of the VIAS Referral System.

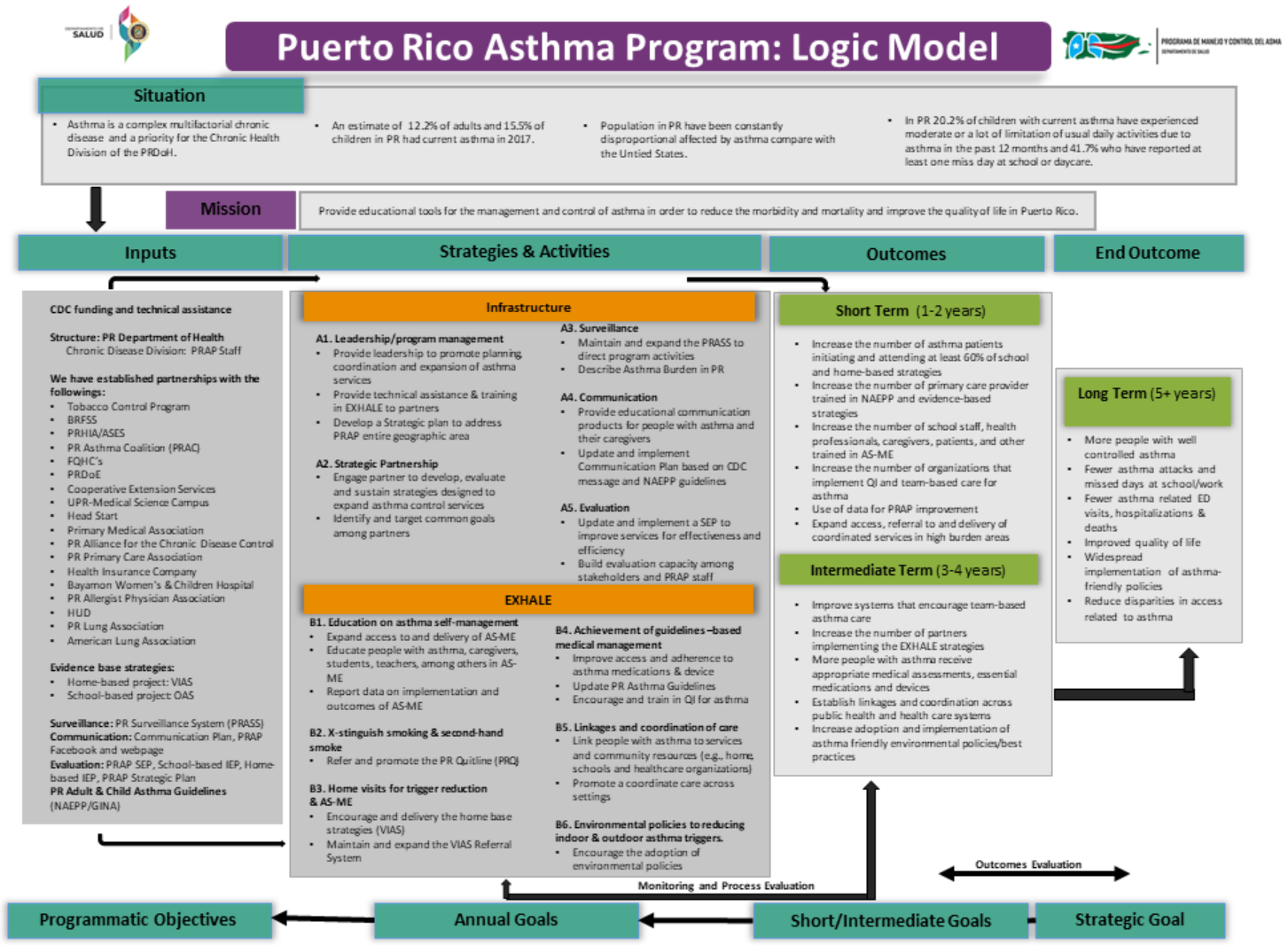
For the Achievement of Guidelines-based medical management strategy, PRAP are helping to improve access and adherence to asthma medications and devices; Update the PR Asthma Guidelines for adults and children; and Encourage and provide training for the Federally Qualify Health Centers (FQHC) in Quality Improvement (QI) for asthma condition.

For the Linkages and coordination of care strategy, PRAP proposes to link people with asthma to services and community resources (e.g., home, schools, and healthcare organizations) and also to promote coordinated care across settings. For the last strategy, Environmental policies to reduce indoor and outdoor asthma triggers, we will encourage and adopt environmental policies and encourage the adoption of other Tobacco policies such as Law 40, from 1993, as amended[12].

Regarding the outcomes, first, the short-term outcomes (1-2 years), we will: (1) increase the number of asthma patients initiating and attending at least 60% of school and home-based strategies, (2) increase the number of primary care providers trained in NAEPP and evidence-based strategies, (3) increase the number of school staff, health professionals, caregivers, patients and others trained in AS-ME, (4) increase the number of organizations that implement QI and team-based care for asthma, 5) use the obtained data for PRAP improvement, and (6) expand access, referral to and delivery of the coordinated services in high-burden areas. For the intermediate outcomes (3-4 years) we expect to: (1) improve systems that encourage team-based asthma care, (2) increase the number of partners implementing the EXHALE strategies, (3) increase the number of people with asthma that receives appropriate medical assessments, essential medications, and devices, (4) establish linkages and coordination across public health and health care systems, and (5) increase the adoption and implementation of asthma-friendly environmental policies/best practices. As long term outcomes (5+ years): (1) more people will have their asthma

controlled, (2) there will be fewer asthma-related ED visits, hospitalizations, and deaths, (3) people with asthma, will have an improved quality of life, (4) widespread the implementation of the asthma-friendly policies, and (5) decreased disparities in access related to asthma.

Figure 2: Puerto Rico Asthma Program: Logic Model



Programs Strengths, Weaknesses, Opportunities, and Threats (SWOT)

PRAP staff and partners identified some strengths, weaknesses, opportunities, and potential threats that support or affect our program. This information gives us a specific direction and motivate us to work to accomplish all our activities and achieve the program goals.

Our programs **Strengths** are as follow:

- Our program's educational components impact diverse populations around PR.
- The collaboration with different government agencies, non-profit organizations, pharmaceutical, FQHC, academy, doctors, and health professionals in PR allows us to impact the most vulnerable populations.
- Our program has a multidisciplinary team (health educators, physician, evaluator, nurses, and epidemiologist.
- A vast team of collaborators from a diversity of fields and disciplines participates in the Asthma Assessor Committee.
- The program has a trajectory of 18 years from being established. PRAP has been offering services in the Department of Health since 2003, through federal funds from the CDC.
- The component of services impacts the entire population of PR including Vieques and Culebra Island Municipalities.
- The VIAS Project (home-based) has a referrals system throughout the Island and is complemented with the collaboration of various professionals and organizations.
- Serves the population with and without a health insurance plan. PRAP staff have a protocol to identify patients without a health insurance plan. PRAP engage and coordinate with the health insurances to help them to get one.
- The program has presence on social networks such as its personal website www.proyectoasmapr.com , Facebook (2013), Instagram (2020), YouTube (2015) and LinkedIn (2020).
- PRAP also works with other risk factors that impact the patients with other chronic diseases.

- It has a solid programmatic infrastructure (specific work plan, strategic plans, Evaluation plans, Epidemiological Surveillance System, and an Advisory Committee specialize in Asthma.
- Offers technical assistance to organizations and partners in the areas of Surveillance, Evaluation, QI, and Communication.
- The staff participates in various work committees including: Asthma, Cancer and Tobacco and Oral Health Coalitions, Merit Review Committee for the Cooperative Extension Services of the University of Puerto Rico Mayaguez Campus, and the Chronic Disease Alliance.
- PRAP always integrates the collaborators in the decision making of the program.
- Effectiveness of the VIAS home visiting program helping the children with uncontrolled asthma.
- Educational materials are developed according to the asthma needs of the population that is going to be targeted. PRAP develops an educational material asthma checklist to evaluate all the material based on different criteria.
- The staff is constantly trained in various areas including home visiting, evaluation, speaking in public and development of educational material, among others.
- The evaluation component is implemented in all strategies.
- Provides technical assistance and asthma data to researchers inside and outside of PR.
- PRAP also serves as a Supervised Practice Center for public health students inside and outside of PR.
- PRAP serves as a mediator with other stakeholders that help us reach parents, caregivers in high asthma burden areas.

In addition to these program's strengths we have also identified **Weaknesses** that our program faces and propose possible solutions for these weaknesses. These are specified as follows:

Weaknesses	Possible Solutions
Our programmatic objectives depend on federal funding opportunities	Attain other sources of funding, whether state or federal to cover other needs of patients with asthma. Apply for different requests for proposals to get funding to implement more services through the Island.
Lack of development of public policies related to asthma in PR.	Plan and develop executive orders related to: The establishment of an Asthma Advisory Committee; Forbit the charge of the asthma action plan as part of the treatment of the condition; Forbit of purchases of cleaners with strong odors in schools; more access to coverage in asthma control medications; more access to specialist in asthma as: pediatric pulmonologists and allergists in the municipalities located at center and the west part of the Island; reimbursement to physicians and healthcare professionals who educate and provide home visits to asthma patients.
The need to obtain annual data from emergency room and hospitalizations and by municipalities.	The Department of Health should establishe as a requirement for the health insurances companies to report ER and Hospitalization in asthma patients to the PRASS; Develop an administrative order of the Health Insurance Commissioner or Secretary of Health that orders to the private insurance companies to provide ER and Hospitalization asthma data in PR to the PRAP; Develop an administrative order in order to require ASES and Medicaid to share asthma ER and Hospitalization of VITAL public health

Weaknesses	Possible Solutions
	insurance plan patient data with the Asthma Program.
Long and slow recruitment process of personnel.	Search for funds that create jobs with benefits for health professionals. Place job offers on our social media to increase number of possible candidates.
The administrative / political changes significantly impact programmatic processes.	Election ban; changes of state and federal government.
Increased prevalence of children and adults with asthma.	Search for other funds to expand the VIAS Children's Home Visiting Project to also offer it to adults. Continue requesting data from private health insurance organizations to develop an epidemiological map and a more realistic profile of asthma in PR. In this way we can observe the trends more closely
Limited space to have all staff together and to store patient incentives.	Search for a larger office to offer patient services and that all staff can be in one place, all together. Also, the larger space will allow to have more program incentives to offer to patients with asthma.
No funds are available for the purchase of computer programs aimed for the analysis and storage of quantitative and qualitative databases.	Identify external funds that allow the purchase of SPSS, Qualtrix, NVIVO, Antivirus and a cloud for the storage of the database.
There is no reimbursement to health professionals for asthma education and for asthma home visits in PR	In PR there is the need to identify federal codes (CMS) and funds to reimburse physicians and professionals who educate and offer asthma home visits.

Weaknesses	Possible Solutions
Achieve Linkages to care and Team Based Care in asthma by integrating the community.	Develop public policies that establish coordinated care linkage and chronic asthma care teams in Hospitals, Medical Offices and FQHC.
Promote the Asthma Program services through social media.	Search for external funds to cover expenses for the web page and asthma campaigns on social media and gain more followers.
Certify Asthma Program staff in AE-C.	Search for external funds to cover expenses for the asthma educator certification and obtain the practical workshop.
Environmental problems inside and outside the house after atmospheric phenomena.	Develop emergency plans related to asthma to help patients before, during and after an emergency due to an atmospheric phenomenon.
Island located in the Caribbean; climate change.	Train asthma staff in Healthy Homes to offer better services in Environmental Health; Develop public policies on environmental health to avoid asthma triggers and relapses of the condition.

Our SWOT analysis also included the identification of the opportunities that we, as a program, can take advantage of and the threats that the program can face. Opportunities that the program can offer and threats identified are described as follows:

Opportunities the program has for its growth:

- Increase the impact on younger populations through the incorporation of other social networks.
- Achieve integration of health professionals, doctors, and patients.
- Obtain funding to maximize adult educational services.

- Update and translate of NAEPP EPR-4 clinical guidelines adapted to PR.
- Incorporation of educational strategies in other health professionals.
- Integration of pharmaceuticals in the education of adherence to medications.
- Specialization in trigger and environmental health.

Threats the program faces:

- Identification of funding opportunities to subsidize the program.
- Lack of funds to incentivize physicians and health professionals to educate on asthma.
- Exodus of specialized health professionals and physicians to manage asthma.
- Access to transportation to impact the Islands Municipalities of Vieques and Culebra.
- Access to and coverage of medications by the health provider, specialists, and health services in general.
- Collection of the asthma action plan from the patient.
- Lack of specialists due to geographic distribution.
- Climate change and geographic location in PR.
- Poor knowledge to complete the asthma action plan in professionals.
- Lack of adherence to medications by the patients.

Strategic Plan Review Process

Stakeholders

Stakeholders play an important role in the elaboration of the Strategic Plan. The participation of key PRAP personnel and stakeholders (Table 1 and 2) will make possible the elaboration and update of the Strategic Plan. Also, they ensure the information gathered and used was developed with the integration of key stakeholders who also provide insights in how to improve the programs process and activities. Other Stakeholders that collaborated in the development of the Strategic Plan were the Puerto Rico Department of Health (Planning and Development Secretariat) and the Centers for Disease Control and Prevention (CDC).

Table 1. Program Collaborators

Asthma Program Staff	
Stakeholder Name: Antonio Cases	Title and Affiliation: MPA, Co-Principal Investigator - PRAP
Contribution to the Strategic Plan**:** ● Provide technical assistance to the Asthma Program ● Assist in the process of writing and reviewing the SP. ● Participate in CDC conference calls and evaluation webinars.	Role played in the construction of the Strategic Plan: ● Oversee PRAP interventions. ● Promote the dissemination and use of evaluation reports. ● Support the PRAP activities. ● Implement and make necessary adjustments to the SP. ● Assist in the development of evaluation reports. ● Assist in the process of writing the SP.
Stakeholder Name: Ibis Montalvo Felix	Title and Affiliation: MPHE, EdD candidate Program Manager - PRAP
Contribution to the Strategic Plan**:** ● Promote the participation of stakeholders in the development of the SP. ● Assist in the process of reviewing and editing the SP. ● Participate in CDC conference calls and evaluation webinars.	Role played in the construction of the Strategic Plan: ● Lead the evaluation team. ● Conduct community mobilization efforts ● Promote the engagement of stakeholders in evaluation activities. ● Monitor the implementation of the SP. ● Supervise PRAP staff in evaluation interventions. ● Promote the dissemination and use of PRAP reports. ● Support the PRAP activities ● Assist in the development of PRAP reports. ● Assist in the process of writing the SP.
Stakeholder Name: Yaquelin Codias González	Title and Affiliation: RN-BSN; Program Coordinator - PRAP
Contribution to the Strategic Plan**:** ● Promote the participation of stakeholders in the development of the SP. ● Assist in the process of reviewing and editing the SP.	Role played in the construction of the Strategic Plan: ● Promote the engagement of stakeholders in PRAP activities. ● Support the PRAP activities. ● Assist in the development of the SP and PRAP reports
Stakeholder Name: Keila Narváez Sánchez	Title and Affiliation: MS Candidate, Epidemiologist - PRAP
Contribution to the Strategic Plan: ● Provide surveillance data and technical assistance. ● Aid the evaluator in conducting the prioritization activities. ● Assist in the process of writing the SP	Role played in the construction of the Strategic Plan: ● Assist in the process of writing the SP. ● Assist in the monitoring of the implementation of the SP. ● Develop data collection instruments. ● Assist in the data analysis, interpretation of evaluation data, and report writing for PRAP. ● Participate in meetings of the evaluation planning team. ● Support the PRAP activities
Stakeholder Name: Manuel Mangual Martínez	Title and Affiliation: MS, Evaluator- PRAP

Asthma Program Staff	
Contribution to the Strategic Plan**:** ● Lead prioritization activities with stakeholders. ● Provide technical assistance on evaluation for PRAP. ● Participate in CDC conference calls and evaluation webinars. ● Assist in the process of writing and reviewing the SP and the reports on the prioritization activities.	Role played in the construction of the Strategic Plan: ● Co-lead the evaluation team. ● Develop and write the Strategic Plan and the evaluation report ● Maintain the PRAP Evaluation Team ● Present the SP and PRAP evaluation reports for the evaluation planning team. ● Develop the individual evaluation plan ● Develop the evaluation reports for PRAP ● Implement the Strategic Plan ● Support and evaluate all the activities of PRAP. ● Update PRAP reports. ● Develop CQI process. ● Report the performance measures to CDC

Table 2. Evaluation Team Members

Evaluation Committee members	
Stakeholder Name: Emily Lorán Velázquez	Title and Affiliation: MS, Evaluator Organization: Puerto Rico Department of Health- Epidemiology and Evaluation Unit
Contribution to the Strategic Plan**:** ● Provide technical assistance on the validation of questionnaires and data collection tools.	Role played in the construction of the Strategic Plan: ● Provide a different perspective on the meaningful use of the evaluation results. ● Participate in the annual review of the plan. ● Assist in the dissemination of evaluation findings. ● Providing technical assistance in evaluation plans. ● Participate in meetings of the evaluation planning team
Stakeholder Name: Rose Díaz Garcia	Title and Affiliation: MS, Evaluator Organization: Puerto Rico Department of Health- Chronic Disease Division
Contribution to the Strategic Plan**:** ● Provide technical assistance on the validation of questionnaires and data collection tools.	Role played in the construction of the Strategic Plan: ● Provide a different perspective on the meaningful use of the evaluation results. ● Participate in the annual review of the plan. ● Assist in the dissemination of evaluation findings. ● Providing technical assistance in evaluation plans. ● Participate in meetings of the evaluation planning team. ● Revise the infographic about the evaluation report
Stakeholder Name: Gilberto Ramos Valencia	Title and Affiliation: PhD, Biostatistician and Professor Organization: Biostatistics and Epidemiology Department at University of Puerto Rico Medical Science Campus

Evaluation Committee members	
Contribution to the Strategic Plan**:** ● Provide technical assistance and content expertise on health interventions and home-based interventions.	Role played in the construction of the Strategic Plan: ● Assist in the dissemination of evaluation findings. ● Provide a different perspective on the meaningful use of the evaluation results. ● Providing technical assistance on the evaluation of home-based educational activities. ● Participate in meetings of the evaluation planning team.
Stakeholder Name: Arelis Baerga Martínez	Title and Affiliation: MPH, Statistic and Evaluator Organization: Health Insurance Administration - ASES
Contribution to the Strategic Plan**:** ● Provide technical assistance on evaluation. ● Assist in the process of reviewing and editing the SP.	Role played in the construction of the Strategic Plan: ● Provide a different perspective on the meaningful use of the evaluation results. ● Participate in the annual review of the plan. ● Assist in the dissemination of evaluation findings. ● Providing technical assistance in evaluation plans. ● Review the ASES database result on the evaluation plan
Stakeholder Name: Ruth Ríos Motta	Title and Affiliation: PhD, Evaluator and Coordinator – Organization: University of Puerto Rico Medical Science Campus, Coordinator of the Doctoral Program in Public Health – Health Systems Analysis and Management
Contribution to the Strategic Plan**:** ● Provide technical assistance on evaluation. ● Assist in the process of reviewing and editing the SP.	Role played in the construction of the Strategic Plan: ● Provide a different perspective on the meaningful use of the evaluation results. ● Participate in the annual review of the plan. ● Assist in the dissemination of evaluation findings. ● Providing technical assistance in evaluation plans.

EXHALE Strategies:

I- Education on Asthma Self-management *(see Annex 1)*

A. OAS

PRAP is providing self-management education for children with asthma in schools. For this strategy, the PRAP's personnel were certified as Trainers by the American Lung Association (ALA) in the curriculum Open Airways for Schools (OAS). OAS is an Evidence School-based Asthma Management Program that educates and empowers children with asthma through a fun and

interactive approach. This curriculum was created and validated by the American Lung Association (ALA), for the control of asthma in Latino population in the US.

This is the most widely recognized Asthma Management Program for children in the nation. The program has been approved and recommended by the National Association of School Nurses and honored with a Health Education Research Award from the NAEPP. The CDC endorses the program as very effective for childhood asthma management. The Open Airways for Schools program has been evaluated and proven effective.

The OAS program teaches children with asthma ages 8 to 11 years how to detect the warning signs of asthma, avoid their triggers and make decisions about their health. The curriculum will provide asthma self-management education, leading to a healthier and active life. OAS consists of six interventions with a duration of 40 minutes in schools, for groups no more than 10 children with asthma per group. Each lesson is conducted by a Certified Facilitator and includes activities as group discussions, stories, games, role playing, and significant parental involvement.

The lessons' topics include:

1. Basic information and feelings about asthma
2. Recognizing and managing asthma symptoms
3. Solving problems with medicines and assessing symptoms
4. Finding and controlling asthma triggers
5. Keeping your battery charted and getting enough exercise
6. Doing well at school

The requirements to participate in the OAS program are (1) Be a student of the public or private schools of PR (2) Having 8 to 11 years old. (3) Live in PR and (4) have an asthma diagnosis.

The short- and medium-term outcomes are:

- Students with asthma can demonstrate an increased-on asthma self- management knowledge.

- Increase the number of participants with uncontrolled asthma that are referred to the home visiting program.

The long-term outcomes are:

- That Children with asthma can have better control and better quality of life.
- Decrease school absences by asthma.
- Decrease asthma related ER visits and hospitalization.
- Reduce disparities related to asthma.

As part of the PRAP's workplan, it is projected to coordinate three AS-ME training for asthma patients through schools-based initiatives (OAS) with the Puerto Rico Department of Education (PRDoE) and private schools. This initiative is evaluated taking in consideration the number of participants, a pre-test and post-test, and several assignments and activities that each student must complete during the lesson, or in home with their parent's assistance.

The OAS Evaluation include Pre and Post test and a survey to collect information about asthma control and management knowledge. The survey consists of 10 items that collect age, grade, gender, asthma, symptoms, trigger, action plan and physical activity. The primary goal is to measure a change in knowledge. The instruments are completed by the students and have the name of each participant so that we can identify them. The survey is self-administered before initiating the first lesson and at the end of the last lesson.

Satisfaction Survey: Collects the students' satisfaction about the OAS interventions. In addition, it collects perception of knowledge of medications, symptoms, and triggers. The questionnaire consists of 2 items. The survey is self-administrated by students at the end of the last lesson.

B. Teacher's training

The Asthma Self-Management Education (AS-ME) training for teachers is coordinated by PRAP with the Puerto Rico Department of Education (PRDOE), and private schools. In PR, Law #56 mandates school staff to be trained in asthma; it also allows students to self- medicate and requires trained school staff to assist the student if necessary. The PRAP provides training in asthma

self-management education to school staff using the *Puerto Rico Asthma Guide* based on the NAEPP EPR-3 asthma guidelines.

The PRAP staff provides training in asthma self-management education to physical education teachers, health teachers and school nurses. The participants complete a pre- and post-test and satisfaction survey.

Pre and Post test: A survey (also available via online) to collect information about asthma control and management knowledge. The survey consists of sociodemographic items that collect the age, grade, gender, position, school municipality, and other 10 items based on asthma, sign and symptoms, asthma trigger, asthma education patients including the asthma action plan and treatment. The primary goal is to measure and promote change in asthma knowledge. The survey is self-administered (also available via online) including a pre- test and a post- test at the end of training.

Satisfaction Survey: PRAP also identifies the participant's level of satisfaction about the training and the goal is to collect feedback and information to improve the training. The questionnaire consists of 8 items with a likert scale from very satisfied to very unsatisfied, and 2 open questions to collect feedback and comments from the participants. The survey is self-administered (also available via online) by the teacher at the end of the training.

II- X-tinguishing smoking and secondhand smoke ***(see Annex 5)***

In PRAP, we have helpful information for parents who intend to quit smoking. The program provides promotional materials and the referral option to the Puerto Rico Quitline *Déjalo Ya!*.

The PRQ **(**1-877-DEJALOS) provides for a year, free proactive professional telephone-based counseling to quit smoking for residents of 18 years and over in PR. The tobacco cessation services are provided by health professionals who offer intensive counseling, coaching and the preparation of personalized plans to quit, which in some cases (eligibility criteria and funds) may include the provision of nicotine replacement therapy (NRT).

The initiative helps people who want to quit smoking with a series of messaging calls that monitor the person's progress and are maintained providing help and motivational messages to help keep the participant from smoking. When people call this line, they receive telephone help to be able to

quit smoking. It is entirely free of cost and helps the person create a personalized plan to stop smoking, including 12 follow-up calls during a year, sending support material by mail, and motivational text messages.

During the calls, the professionals guide the participants on different alternatives to quit smoking (pharmacological and nicotine replacement therapy, among other modalities) and encourage the link between the smoker and health staff counseling with the main focus of the total cessation. The achievements of participants throughout the process are considered.

The division has an auto-referral, which can be completed by the person who has the interest and needs to start to quit smoking.

Second and Third-hand Smoke

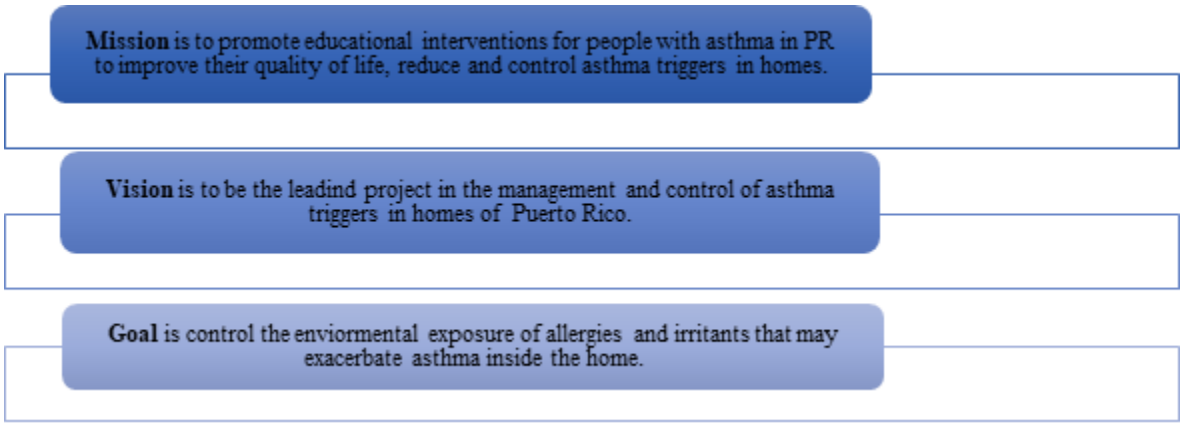
The Asthma Program also has educational materials on what is Second and Third-Hand Smoke. Second-hand smoke is that which remains in the environment and is inhaled by a non-smoker. Third-hand smoke is the one that remains impregnated on the surfaces, whether in the curtains, furniture, or clothes. It is equally harmful to asthmatic people because it is one of the triggers that affect them the most, especially children. Our home visitors discussed this topic during the VIAS Project visits as part of the asthma triggers inside the house. In the first VIAS visit, they talk about the different asthma triggers, and one of those that is talked about is cigarette smoke. It is explained in detail to the minor participant's family what is second-hand and third-hand smoke is and how it can affect asthmatic people. Both second and third-hand smoke are mentioned in our VIAS project visits and in our workshops that we offer.

III- Home visits for trigger reduction and asthma self-management education ***(see Annex 2)***

With the aim of reducing the impact of asthma in the population of Puerto Rico, the Asthma Program of the Department of Health in the Health Promotion Division of the Auxiliary Secretariat of Family Health Integrated Services and Health Promotion, has developed the VIAS project (Spanish acronym for *Asthma Interactive Home Visits)* VIAS Project provide training to home visitors on asthma self- management and other topics of relevance to home visiting activities. Educational interventions for the family will include general education about asthma, action plan,

and appropriate materials for greater understanding and management of asthma triggers. The health regions where the home interventions will be provided are: Metro, Bayamón, Arecibo, Aguadilla, Mayagüez, and Caguas. All these resources will help to reduce the asthma ER visits and hospitalizations in PR.

Figure 2: VIAS project Mission, Vision and Goal



In addition to the VIAS project mission, vision, and goal, our home visiting project has established two main objectives that are expected to be achieved on every home visit. These are:

1. Increase the knowledge and skills on asthma self-management in caregivers, children, and adolescents from ages 4 to 17 who have uncontrolled asthma.
2. Control environmental exposure of allergens and irritants that can exacerbate asthma in children and adolescents from ages 4 to 17 who have uncontrolled asthma.

Table 3: Indicators and Standards for each evaluation question linked to the performance measures.

Evaluation Question	**Criteria or Indicator**	**Standards**	**Performance Measures**
1. To what extent has the project been implemented as planned?	• Number of participants attending sessions • Percent of participants initiating and attending at least three (60%) sessions of projects. • Protocol compliance o Percent of visits performed between and within the time planed	• At least 75 participants initiating the interventions • At least 30% of participants initiating and attending at least two sessions of project. • At least 60% of visits was performed between and within the time planed	G. Number and demographics of participants initiating and attending at least 60% of sessions of guidelines-based intensive asthma self-management education.

2. Has the participants' caregiver increased their knowledge of asthma management?	· Percent of increase knowledge in asthma managing · Percent of participants adopt Action Plan for Triggers · Numbers of participants that use a long-term control medication (adherence) · Number of participants who completing the sessions having controlled asthma	· At least 60% of participants that complete all sessions increase their knowledge in managing asthma. · Participants achieve at least 60% of the accepted recommendation to manage asthma triggers. · At the end of the third visit, decrease 30% of participants with poorly controlled asthma and were not using a long-term control medication regularly on enrollment. · Increase 40% of	H. Number of participants attending at least 60% of intensive asthma self-management education sessions who successfully complete a return demonstration of basic asthma self-management knowledge and skills. K. Number of participants who: had poorly controlled asthma and were not using a long-term control medication regularly on enrollment; who reported better adherence to long-term control medication a month or more after completing intensive asthma

		participants with better adherence to long-term control medication. · At least 60% of participants have controlled asthma at the end of the third visits.	self-management education. L. The number of participants with poorly controlled asthma on enrollment who report their asthma is “well-controlled” one month or more after attending at least 60% of intensive asthma self-management education sessions.

Evaluation Question	Criteria or Indicator	Standards	Performance Measures
3. How effective is the VIAS project effective in reducing asthma related hospitalizations and emergency or urgent room?	· Frequency of decrease hospitalization · Frequency of decrease emergency or urgent room department	· At least 60% of participants decrease the frequency of hospitalizations after 12 months after the third visits · At least 60% of participants decrease the frequency of ED visits after 12 months after the third visits	M. Number and percent of participants completing the program who report a decrease in the frequency of hospitalizations and ED visits during the 12 months' post trainings.

Evaluation Question	Criteria or Indicator	Standards	Performance Measures
4. How successful is the referral system?	· Elapsed time for first contact · Number of participants who do not have a primary health service provider on the enrollment, who obtain referral for primary or specialized care for asthma. · Number of participants who do not have health insurance on the enrollment, who obtain referral to a public or private health insurance provider.	· At least 75% of first contact was performed within the time planed. · All participants who do not have a primary health service provider was referral for primary or specialized care for asthma. · All participants who do not have health insurance was referral to a public or private health insurance provider.	R. Number and percent of participants in intensive asthma self-management education sessions who were referred by a Health Care Organization.

IV. Achievement of Guidelines-based medical management ***(see Annex 3)***

The achievement of guidelines-based on medical management is one of the most important parts, because we provide educational workshops to the physicians and health professionals based on asthma guidelines. In those workshops PRAP establishes that asthma is important and is considered as a public health problem, refreshes concepts about asthma pathophysiology, asthma diagnosis and treatment, asthma triggers, asthma education for the patients and motivates the physicians to complete the asthma action plan for the patients treatment. PRAP also educates the physician on how to complete the asthma action plan for the patients.

During the period of March 2021 to August 2021, the Puerto Rico Asthma Program will be updating their Puerto Rican Asthma Guideline based on NAEPP EPR-4 Asthma Guidelines upgrade shared with all of us in January 2021. Also, PRAP will be updating and translating the asthma guidelines in collaboration with the Asthma Assessor Committee group of physicians. As part of this activity, PRAP will be developing an Individual Evaluation Plan with the specific objectives, activities, indicators, and goals established in the PRAP workplan.

V. Linkages and coordination of care across settings ***(see Annex 4)***

Our linkages and coordination of care across settings strategy is based on collaborations with other PRAP stakeholders. This includes FQHCs, doctors (pneumologist, pediatricians, and allergists), hospitals, and primary care health providers. The purpose of the linkages to care is to establish a connection between the FQHC/physicians, the patients/ caregivers, schools, and the community. This connection between all settings, will help the patients to get control of their asthma and to get the necessary help to have access to medical services and medical treatment.

VI. Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources

During this period, PRAP will begin a collaboration with the University of Puerto Rico Medical Sciences Campus and the Public Health Program of Industrial Hygiene, to collaborate in a project based on EPA Grant called: DERA (Diesel Emission Reduction Act) This project will be implemented for approximately 10 years and will help a lot of trucks and school buses to change their catalysator to reduce the diesel emissions. Those diesel emissions can be harmful to the

children in school and to the communities. PRAP will be connecting these initiatives with the PRDOE, Communities in the Metro Area and with the Asthma Assessor Committee. This collaboration will help us to identify children with asthma in those communities that can be potential participants to the VIAS Project.

PRAP will also be collaborating with EPA developing an Indoor Air Quality (IAQ) Guidelines for caregivers that are participating in the VIAS Project. These guidelines will help the caregiver to establish the importance of the IAQ and make baby steps changes in their environment to have a healthier home quality of air.

Communications Plan

Communication Plan Summary

The Health Communication plan aims to identify priority messages and their action plan for managing and control of people living with asthma and their caregivers. The purpose of the plan communication is to promote a coordinated educational system where we can implement different interventions at the community.

Communication it's an essential tool in the way to demonstrate the effectiveness of a program. The PRAP had selected some dissemination formats of the results of the evaluation. These formats include infographics, presentations, leaflet, posters, flyers, and booklets. Findings will also be shared with other states programs key stakeholders, academics, parents, and caregivers.

Social Media

Social media is a platform to exchange information and messages between persons. PRAP has an active Facebook page, Instagram page, and uses WhatsApp to connect with asthma patients and their caregivers. The expectations for next year are to create and integrate more social media pages of the PRAP to have scope to more population and help to reduce the visits to emergency rooms.

Web Page

PRAP has a web page with updated information who concerns the asthma population and their respective caregivers. Having a web strategy in place is important to achieve good results and maintain informed people who visit it. Interested people can follow the PRAP web page in the following link: http://www.proyectoasmapr.com/home-1.html.

Technical Assistance

Technical assistance is important to provide targeted support to PRAP with a development need or problem. It is commonly referred to as consulting. TA may be delivered in many ways, such as one-on-one consultation, small group facilitation, or through a web-based clearinghouse.

Table 4: Communication Plan Summary

Purpose	Indicators	Audience	Possible Formats	Timing	Person Responsible
Evaluation Plan Process	At least 3 meetings to discuss tasks	PRAP, PR Chronic Disease Division, Key Stakeholders	Email, partner meetings	Annually	PRAP staff
Final Evaluation Plan	1 final evaluation plan	PRAP, PR Chronic Disease Division, Key Stakeholders	Website, webinar, email	Annually	PRAP Evaluator
Provide updates and collaborations	At least 2 meetings to discuss updates and collaborations	PRAP staff, Key Stakeholders	Meeting discussions	As needed during implementation	PRAP Evaluator
Share findings and lessons learned	At least 1 Meeting to share findings and lessons learned	All Stakeholders	Powerpoint presentation	August 2021	PRAP Evaluator
Discuss recommendations with staff and stakeholders	At least 1 meeting to discuss recommendations	PRAP and key stakeholders	Meeting discussions	September 2021	PRAP staff
Present lessons learned during cooperative agreement cycle	At least 1 Meeting to present lesson learned	PRAP staff and key stakeholders	Meetings discussions	Annually	PRAP Evaluator
Adopt recommendations	Incorporation of recommendations	PRAP staff and key stakeholders	Meeting discussions	Annually	Program Manager

Communication					
Purpose	**Indicators**	**Audience**	**Possible Formats**	**Timing**	**Person Responsible**
Implement interventions of Pediatric Asthma and Law 56	Implement at least 2 Pediatric Asthma and Law 56 interventions.	Head start centers personal, primary school personal	Powerpoint presentation, virtual presentation	Quarterly	PRAP visitors
Implement PRAP educational activities	Implement at least 2 PRAP educational activities in the same school	Students of private and public schools	Powerpoint presentation, virtual presentation	Annually	PRAP visitors
Implement OAS in private schools	Implement at least 2 OAS in private schools	Students with asthma in schools	Groups workshop	Annually	PRAP visitors
Implement Questionnaires	Implement a questionnaire to identify the use of NAEPP communication messages	caregivers	Questionnaires	Annually	PRAP staff
Develop Educational materials	Develop at least 3 educational materials in collaboration with parents and caregivers	stakeholders	Fact sheets, brochures, posters	Annually	PRAP health educator
Create Social media group	Create and maintain a social media group for parents and caregivers who participated in VIAS project	Social media users	Educational material	Annually	PRAP visitors
Create Questionaries	Create and implement a questionnaire for parents and caregivers to evaluate the social media satisfaction	Parents and caregivers	questionnaires	Annually	PRAP evaluator
Implement NAEPP activities	At least implement 2 NAEPP guide activities for health professionals	Health Professionals	PowerPoint presentation, workshop	Quarterly	PRAP staff
Implement Questionnaire	Implement a follow up questionnaire to explore the use of	Health Professionals	Questionnaires	Annually	PRAP staff

	guidelines and messages				
Create and update Data base	Create and update a database for those impacted by NAEPP guide interventions	Health Professionals	Database	Annually	PRAP supervisor
Maintain Partnership	Maintain at least 3 partners participating in Asthma Assessor Committee meetings.	Asthma collaborators	Personal meetings	Annually	PRAP manager
Communication Products	At least 1 communication product has been developed in collaboration with a partner	Collaboration partners	Educational intervention	Quarterly	PRAP communicator
Memorandum of Understanding	At least 3 MOU with health insurance companies	Insurance managers	Written agreement	Annually	PRAP manager
Provide Communication activity	At least provide 1 communication activity for health insurance companies	Health insurance communities	Radio or television interview	Annually	PRAP communicator
Identify senators and representatives	Identify senators and representatives for those highest prevalence regions	Senators and representatives	In person meeting	Annually	PRAP manager
Development of educational material	Development of 1 educational material for policy makers	General population	Fact sheet, brochure.	Annually	PRAP health educator
Establishment of MOUs	Establishment of MOU´s with Legislative Health Commission	Health commission personal	Written agreement	Annually	PRAP manager
Implement Legislative activities	Implement at least 1 legislative activities	Legislative collaborators	In person meeting	Once every 4 years	PRAP manager

Social Media					
Purpose	**Indicators**	**Audience**	**Possible Formats**	**Timing**	**Person Responsible**
Continue publish daily relevant information for the public in the PRAP Facebook page	PRAP will post 2 publications daily on the Facebook page.	Facebook users and followers of the PRAP Facebook page	Facebook posts	Daily	PRAP communicator
Continue sharing information weekly about asthma care to caregivers in WhatsApp	At least share 2 educational materials weekly in the WhatsApp group of caregivers	Caregivers	Text messages and share educational material	Weekly	PRAP visitors
Create an Instagram page of PRAP	Instagram page will be created	Instagram users	Instagram post as videos or pictures	Annually	PRAP communicator
Create a twitter page of PRAP	Active the twitter page	Twitter users	posts	Annually	PRAP communicator
Create a YouTube Channel of PRAP	Open a YouTube page and upload PRAP educational videos	YouTube users	videos	Annually	PRAP communicator
Web Page					
Purpose	**Indicators**	**Audience**	**Possible Formats**	**Timing**	**Person Responsible**
Update PRAP webpage with new information and educational material	Page will be upgraded at the beginning of each cycle	Visitor of web page	Website	Annually	PRAP manager, health educator & health promoter
Link of information and inscription for VIAS project	At least 5 participants will register through the link of the webpage	Visitor of web page	Website	Annually	PRAP manager
Link of information and inscription for OAS in schools project	At least 1 school will register through the link of the webpage	Visitor of web page	Website	Annually	PRAP manager
Technical Assistance					
Purpose	**Indicators**	**Audience**	**Possible Formats**	**Timing**	**Person Responsible**
Collaborate with the office communicator of the secretary	At least one activity in collaboration with the personal of the press office	Personal of press office	Meetings	As needed during implementation	PRAP communicator

Collaborate with other programs of the secretary	At least 2 activities with the assistance of other programs of the secretary	Personal of other programs	Meetings	As needed during implementation	PRAP staff

Surveillance

Puerto Rico Asthma Surveillance System Description

The Puerto Rico Asthma Surveillance System (PRASS) is an ongoing collaborative surveillance system sponsored by the Centers for Disease Control (CDC) to obtain national data on asthma prevalence in adults and children of PR. This data is used to determine the lifetime and the current asthma prevalence, asthma control indicators, prevalence of uncontrolled asthma in adults and children with current asthma, asthma related claims from the Public Health Insured Population, work related asthma, and asthma mortality rates. The objective of this surveillance system is to provide an update of the asthma burden in the population of PR to identify target populations to direct prevention efforts and culturally appropriate asthma services. To achieve this, the PRASS uses data from several sources, which include the Behavioral Risk Factor Surveillance System (BRFSS), the Asthma Call-Back Survey (ACBS), Puerto Rico Health Insurance Administration (ASES, for its acronym in Spanish), the Puerto Rico State Insurance Fund Corporation (CFSE, for its acronym in Spanish), and the Puerto Rico Demographic Registry (PRRD, for its acronym in Spanish). In addition, PRASS uses maps to illustrate asthma burden by regions.

A. The following are brief descriptions of these data sources:

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a cross-sectional surveillance survey that collects state data about U.S. residents regarding their health-related risk behaviors and events, chronic health conditions, and use of preventive services[8,9]. Currently, the BRFSS collects data in all 50 states as well as in the District of Columbia and U.S. territories (including Puerto Rico)[10]. The BRFSS completes more than 400,000 adult interviews each year, making it the largest continuously conducted multi-mode (mail, landline phone, and cell phone) health survey system in the world (https://www.cdc.gov/brfss/)[8]. The BRFSS has a complex sample design that provides a representative sample of the population of each state and allows for population estimates[11]. The

child selection module provides child estimations, and the respondent (the person in charge of the child) is used as a proxy for these child estimations.

Primarily, the PRASS uses the BRFSS data to obtain information about lifetime asthma and current asthma. Lifetime asthma corresponding to the survey is defined as an affirmative response to the question: "Have you ever been told by a doctor, nurse, or other health professional that you have asthma?"; current asthma is defined as an affirmative response to the questions "Have you ever been told by a doctor, nurse, or other health professional that you have asthma?" and "Do you still have asthma?". In addition, PRASS uses data from socio-demographic characteristics, comorbidities, and risk factors, which are defined according to the corresponding BRFSS codebook[12].

Asthma Call-Back Survey (ACBS)

The ACBS is an in-depth asthma survey developed and funded by the Asthma and Community Health Branch (ACHB) in the National Center for Environmental Health (NCEH)[13]. The ACBS addresses critical questions regarding the health and experiences of the persons living with asthma. This data is provided at the state and local levels. The ACBS is conducted approximately two weeks after the BRFSS survey, among respondents who reported ever being diagnosed with asthma. If a state includes children in the BRFSS and the randomly selected child has ever been diagnosed with asthma, then the child is eligible for the ACBS. If both the selected child and the BRFSS adult in a household have asthma, then only one or the other is eligible for the ACBS[14].

The PRASS uses the ACBS data to obtain information about uncontrolled asthma and the prevalence of asthma control indicators among adults and children with current asthma. Uncontrolled asthma was defined through an algorithm that estimates the concept of impairment established in the Guidelines for the Diagnosis and Management of Asthma (EPR-3). The algorithm was designed to consider day symptoms, night symptoms, limited activity, and Short-Acting Beta-Agonists (SABA) or nebulizer/inhaler use in the last 30 days. The asthma control variable has three (3) categories: "well controlled", "not controlled", and "very poorly controlled". The level of asthma control was established by taking the most severe level among the components that define asthma control. For the purposes of the prevalence and probability analyses, PRASS modifies the three levels in the control variable to produce two levels. Participants who were classified as "not

well controlled" and "very poorly controlled" merged into one category named "uncontrolled"; and the other category remained as "well controlled" (For more details see Attachment 1). All ACBS variables were labeled and analyzed following the ACBS History and Analysis Guidance from the CDC-NACP.

Lifetime, current, and uncontrolled asthma prevalence with 95% confidence intervals are estimated using the Survey Data Analysis component in STATA V. 15 for Windows. Pearson Chi-square tests from the design are used to evaluate differences among lifetime, current asthma, and uncontrolled asthma by socio-demographic characteristics, behaviors, comorbidities, cost barriers, asthma knowledge, missed workdays, and missed days at school. The data is weighted using Puerto Rico's population to reflect PR socio-demographic characteristics. The margins of the final weight for adults include gender by age group, race/ethnicity, education, marital status, tenure, gender by race/ethnicity, age group by race/ethnicity, and phone ownership. The weight variable for children include the following margins: age by gender, race/ethnicity, gender by race/ethnicity, age by race/ethnicity, and phone ownership. For geographic regions, the following additional margins are included: region, region by age group, region by gender, and region by race/ethnicity. For the ACBS combined year analysis, the weighting variable is divided by three, the combined total years (2015-2017).

Puerto Rico Health Insurance Administration (ASES, for its acronym in Spanish)

The Puerto Rico Health Insurance Administration is a public corporation with the responsibility of implementing, managing, negotiating through contracts with insurers and Health Services organizations, a health insurance system that eventually provide all island residents with access to quality medical-hospital care; regardless of the economic condition and ability to pay of those who require it[15]. The Puerto Rico Government Health Plan (GHP) is also known as Plan Vital which provides a health insurance system that furnishes access covered services to Puerto Rico's Medicaid population[16]. ASES reported a total population insured under GHP of 1,261,588 enrollees as of June 2018. Additionally, according to the 2018 American Community Survey 5-Year estimates, ASES covers 61.8% of the health-insured population in Puerto Rico[17]. ASES collaborates with PRASS, providing data about the asthma-related claims, including those for visits to the emergency department and hospitalizations. In addition to ASES, eight private health insurance companies collaborate with PRAP providing data about these types of claims.

From 2017-2019, asthma-related claims in emergency department (ED) visits and hospitalizations were defined as any reported claims with a primary diagnosis using International Classification of Diseases (ICD) 10-CM of J45*. The asthma-related claims data include hospitalizations and ED visits for in-PR (in-state) residents that occurred outside PR hospitals.

Puerto Rico State Insurance Fund Corporation (CFSE, for its acronym in Spanish)

The primary purpose of CFSE is to guarantee the constitutional right of every worker to be protected against risks to their health in their place of employment. The CFSE was created under the Worker's Compensation System Act (No. 45 of April 18, 1935). This Act. established a compulsory workers' insurance system under an exclusive state fund, called State Insurance Fund, administered by the central government agency. With the approval of the Law No. 83 of October 29, 1992, the agency adopted a corporate structure to provide agility and efficiency in the operations and services it provides[17].

This data source collaborates with PRASS providing information related to occupational asthma. From 2013-2015, the ICD-9-CM (493) was used until the fourth quarter of 2015. Since then, the asthma cases have been identified using the ICD-10-CM (J45). The information provided by CFSE and used by PRASS are occupational asthma, filed cases, Employer's Accident Report, and the Voluntary Accident Report. Occupational asthma is job-related and caused by inhaling fumes, gases, dust, or other potentially harmful substances. Filed cases are cases filed by injured workers that receive medical services for the first time under the benefits of Act No. 45 of April 1935, Compensation for At-Work Accidents. Employer's Accident Report is a document signed by the employer that is required by law, informing the CFSE about the occurrence of an accident, illness, or injury suffered by the employee and because of employment. This document allows the employer to provide his comments regarding the employer-employee relationship and the occurrence of the accident. Finally, Voluntary Accident Report is an alternate mechanism for a worker to file a claim for a work accident or occupational disease when the employer refuses to file the employer's report.

Puerto Rico Demographic Registry (PRRD, for its acronym in Spanish)

The main function of the PRRD is the data collection and recordkeeping of vital events (including births, deaths, and marriages), the issuance of certifications of these events, the custody

and preservation of civil books, and the production of vital statistics reports. For 2015-2018, Asthma-related deaths data was provided by the PRRD. This data includes mortality by sex and age distribution. From 2015-2019, asthma death cases were identified as those deaths coded as J45-J46 as the underlying cause of death using the ICD-10.

Maps

The information obtained from those data sources have been useful for the creation of maps that bring a better understanding of asthma impact in geographical areas. PRASS reorganizes municipalities of Puerto Rico in the following six Health Regions as defined by the Puerto Rico Department of Health (PRDoH): Aguadilla/Mayagüez, Arecibo, Bayamón, Caguas, Ponce, and San Juan/Fajardo. Quantum Geographic Information System (QGIS) for Windows is used to map lifetime and current asthma prevalence (data provided by the BRFSS) by Health Regions. Also, PRASS uses applications such as PowerPoint to illustrate the prevalence of lifetime asthma, current asthma, asthma emergency department claim rates, and asthma hospitalization claim rates by Health Regions. These maps are used to identify regions in Puerto Rico where the population is disproportionately affected by asthma and to organize activities linked to the needs of these people.

Evaluation

Technical Assistance

The Evaluation team and the Advisory Committee will be offering technical assistance and collaborations with other programs and organizations. During this time, the evaluation team has collaborated giving technical assistance to the Program of Health Communities and MAVI. The program of Health Communities received technical assistance in the revision of their program's questionnaires and other materials. Also, during these 4 years we will be collaborating with them in the revision of their programs strategic plan. Technical assistance in how to prepare questionnaires using the Microsoft Forms platform and a workshop in how to do an auto evaluation of their program were given for the organization of MAVI. Besides these collaborations, we achieved to integrate Dr. Heriberto Marín from the University of Puerto Rico Medical Sciences Campus from the Department of Health Administration in the School of Public Health in our evaluation team. Dr. Marín collaborated in giving a webinar about the importance of economic evaluation in health systems. During this webinar we had participation from the PRAP staff and

Evaluators from the different programs from the PRDoH. Finally, Dr. Marín will also collaborate with the PRAP in the analysis of the data for our program business case.

Plan for Implementation with other stakeholders

Other than the activities that will be realized by the PRAP staff there are others that will be in collaboration with our advisory committee, our evaluation team and other stakeholders. These types of collaborations for these activities are to ensure an outcome that will give us a direction in maximizing our efforts in reducing the asthma prevalence in Puerto Rico. The activities mentioned below, and the expected outcomes mentioned on table 5 will be based on the years established on our strategic plan. The mentioned activities are also described on our implementation timeline on table 6.

Table 5: List of activities to be implemented collaboratively with stakeholders

Activities	Expected Outcomes
• Mobilize partners to plan, implement, evaluate, and sustain strategies designed to expand the reach of asthma control services, particularly among target audiences with significant disparities in asthma health outcomes as compared with the general population with asthma.	• Identify 3 schools at high burden areas of asthma for each year by 2025. • Establish collaboration with 3 physicians or primary health care providers at high burden areas of asthma by 2025. • Provide 2 asthma services and interventions for audiences with significant health disparities for the Island of Vieques and Culebra by 2025.
• Maintain and enhance the recipient asthma surveillance system, monitor, and use data to guide strategic action.	• Maintain collaborations with stakeholders such as the Behavioral Risk Factor Surveillance System, Asthma Call Back Survey, Puerto Rico Insurance Administration, Puerto Rico State Insurance Fund Corporation and Puerto Rico Demographic Registry and seek new databases by 2025.

Activities	Expected Outcomes
• Describe the burden of asthma in PR using population-based surveillance data.	• Identify new specific audiences affected by asthma per region for each year • Publish 2 fact sheets yearly with PRASS information about the asthma burden yearly.
• Collaborate with stakeholders to conduct systematic, high quality evaluations of EXHALE services and expansion of strategies for effectiveness and efficiency.	• Maintain collaborations with the Evaluation Team and Asthma Program advisory committee. • Continuous evaluation during each year of Programs Individual Plans. • Continuous dissemination during each year of evaluation reports and products. • Yearly evaluation of Asthma program educational materials.
• Build evaluation capacity.	• Establish at least 1 new collaboration to provide capacity building for the program stakeholders per year. • Establish 2 capacity building for PRAP staff in topics of evaluation per year.
• Use evidence to support business cases.	• Maintain collaborations with Medicaid and establish reimbursement code for PRAP by year 2025. • Revision of PRAP Business Case yearly and provide cost effectiveness of VIAS project. • Provide at least 1 capacity building in Business Case to PRAP staff.

Activities	Expected Outcomes
• Expand access to and delivery of home visits for asthma triggers.	• Implement the home VIAS Project for 50 childrens with uncontrolled asthma that live in high burden areas. • Establish 4 meetings to encourage health care insurances, hospitals, and schools for referrals of people with asthma for the home based VIAS project.

Implementation Timeline

As part of the evaluation the activities monitoring is very important. Table 6 presents a graphic representation of the proposed periods to implement the different activities so that our objectives can be accomplished during these 4 years. The Table is divided into quarterly periods Q1 – September to November, Q2 – December to February, Q3 March to May, Q4 – June to August where we expect to start and complete the task. Estimated time of fulfillment is highlighted.

Table 6: Timeline of activities based on years 2021-2025.

Category A: Enhance Program Infrastructure								
Strategy AI: Leadership and Program Manager								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
AI.1	Provide leadership to encourage planning, coordination and expansion of asthma services and the adoption of evidence-based practices.	Position asthma control as a high priority within the PRDoH.	Program Manager Program Coordinator Division Leader	B				

		Assess and monitor the quality of asthma care in PR in the selection of asthma quality measures.	Program Manager Program Coordinator Division Leader	B	
AI.2	Within the first 18 months, develop a strategic plan for asthma control which addresses the PRAP entire geographic area	Meeting with partners to update the PRASP based on EXHALE strategies.	Evaluator Epidemiologist	B	
AI.3	Provide technical assistance, training, and other resources to partners	Guide and train to assist partners in implementing effective programs and other activities.	Communicator Evaluator	B	
		Maintain a website where educational, surveillance, and evaluation information will be easily accessible to defined audiences.	Nurse Health Educator Communicator Program Coordinator Program Pediatrician	B	
		Share best practices and lessons learned	Communicator Evaluator	B	
AI.4	Monitor the progress of activities implemented and provide annual updates for partners.	Monitor the PRASP activities progress.	Program Manager Evaluator	B	
		Monitor the EXHALE activities progress	Program Manager Program Coordinator	B	
Strategy AII: Strategic Partnerships					
Activity #	Activity	Objective	Lead Role	Performance Measure	Years 2021-2022 / 2022-2023 / 2023-2024 / 2024-2025
AII.1	Mobilize partners to plan, implement, evaluate, and sustain strategies designed to expand the reach of asthma control services,	Mobilize partners to implement, evaluate, and sustain strategies designed to expand the reach of asthma control services among audiences with	PRAP Staff	B	

	particularly among target audiences with significant disparities in asthma health outcomes as compared with the general population with asthma.	significant disparities in asthma.						
AII.2	Identify priority populations and goals that are common among partners representing multiple sectors.	Identify population and goals that are common amount partners.	Health Educator Program Coordinator Program Manager Nurse Communicator	B				
Strategy AIII: Surveillance								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
AIII.1	Maintain and enhance the recipient asthma surveillance system, monitor, and use data to guide strategic action.	Maintain and enhance the asthma surveillance system.	Program Manager Epidemiologist Evaluator	A				
AIII.2	Describe the burden of asthma in PR using population-based surveillance data.	Identify the asthma burden in PR.	Program Manager Epidemiologist Evaluator Communicator Health Educator	A				
Strategy AIV: Communication								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
AIV.1	Conduct health communication activities to support people with asthma and their caregivers.	Conduct health communication activities to support people with asthma.	Health Educator Program Coordinator Program Manager Nurse					

			Communicator Program Pediatrician		
AIV.2	Tailor activities to address specific needs of identified audiences, paying attention to culture, literacy and other factors of these groups.	Tailor activities to address specific needs.	PRAP Staff		
AIV.3	Define key audiences and develop behavioral communication products and messaging based on NAEPP, EPR-4 guidelines.	Identify key audiences and develop communication products.	Program Manager Program Coordinator Communicator Nurse Health Educator	C, D, F, G	
Strategy AV: Evaluation					
Activity #	Activity	Objective	Lead Role	Performance Measure	Years 2021-2022 / Years 2022-2023 / Years 2023-2024 / Years 2024-2025
AV.1	Collaborate with stakeholders to conduct systematic, high quality evaluations of EXHALE services and expansion of strategies for effectiveness and efficiency.	Collaborate with stakeholders to conduct evaluation and expand services.	Program Manager Program Coordinator Evaluator Epidemiologist Communicator	E	
AV.2	Build evaluation capacity	Provide capacity building in evaluation	Program Manager Program Coordinator Evaluator Epidemiologist Division Leader	A, E	
AV.3	Use evidence to support business cases	Develop business cases based on information generated from economic evaluations for expanding EXHALE and to support coverage of asthma services and medications	Program Manager Program Coordinator Evaluator	B, C, E	

			Program Pediatrician		

Category B: Leverage Partnerships to expand EXHALE								
Strategy BI: Education on Asthma Self-Management								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
BI.1	Expand access to and delivery of AS-ME to people with asthma and their caregivers.	Raise public awareness and increase the use of existing AS-ME programs.	Program Manager Program Coordinator Health Educator Nurse Communicator Program Pediatrician	C, F, G				
BI.2	Educate people with asthma and caregivers in AS-ME skills.	Facilitate partner delivery of AS-ME in multiple setting for people with asthma and their caregivers and by a variety of providers.	Program Manager Program Coordinator Health Educator Nurse Communicator Program Pediatrician	C, F, G				
BI.3	Report data on implementation and outcomes of AS-ME programs.	Develop and disseminate evaluation products of the AS-ME programs outcomes with the community and CDC.	Evaluator Epidemiologist Communicator Health Educator Nurse	F, G				
Strategy BII: Extinguish smoking and exposure to second-hand smoke								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
BII.1	Work with partners to make referrals to	Make referral for the Puerto Rico QuitLine and develop	Program Manager Program Coordinator	C				

	available smoking cessation programs.	educational material about SHS.	Health Educator Nurse Communicator Program Pediatrician Division Leader					
Strategy BIII: Home Visits for trigger reduction and AS-ME								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
BIII.1	Expand access to and delivery of home visits for asthma triggers.	Provide home visiting for children with uncontrolled asthma.	PRAP Staff	C				
BIII.2	Report implementation and outcomes data related to home visits for asthma trigger reduction and AS-ME in the PM.	Develop an outcome reports related to the asthma trigger reduction and AS-ME.	Program Manager Program Coordinator Evaluator Epidemiologist Health Educator Communicator Nurse	C				
Strategy BIV: Achievement of guidelines-based medical management								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
BIV.1	Strengthen systems, including QI initiatives to support guidelines based on medical care.	Encourage Medicaid MCO, other health plans, health care organizations, school-based health centers and group practices to choose asthma as a topic for QI activities.	PRAP Staff	C, D				

BIV.2	Improve access and adherence to medications and devices.	Develop tools to encourage shared treatment decision-making; in which patients with asthma and their HCP decide on treatment based on patient goals, preferences, and concerns.	Program Manager Program Coordinator Health Educator Communicator Nurse Program Pediatrician	C, D				
Strategy BV: Linkages and coordination of care across settings								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
BV.1	Ensure linkages to community resources.	Develop new or strengthen existing partnership between asthma services, providers, and local, state, or regional organizations that address relevant social determinants of health.	PRAP Staff	C				
BV.2	Encourage coordinated care (including team-based care) across settings.	Encourage HCP organizations, health insurance plans, schools, community organizations and others to emphasize coordinated care through patient-centered medical homes, disease management, case management, and school-or community-based programs	Program Manager Program Coordinator Nurse Program Pediatrician	C				
BV.3	Report information on the implementation of coordinated care activities and linkages to community resources in	Provide information and reports of the asthma coordinate care activities and	Program Manager Program Coordinator	C				

	the performance measure.	the linkages to community.	Evaluator Epidemiologist					
Strategy BVI: Adopt Environmental policies or best practices to reduce indoor and outdoor asthma triggers								
Activity #	Activity	Objective	Lead Role	Performance Measure	Years	Years	Years	Years
					2021-2022	2022-2023	2023-2024	2024-2025
BVI.1	Encourage the adoption of environmental policies and best practices.	Maintain partner with TCP and Tobacco Coalition to promote smoke-free policies that reduce exposure of non-smokers to second-hand smoke.	Program Manager Program Coordinator	C				
		Collaborate with partners that encourage healthy home initiatives and weatherization assistance program for low income families.	Program Manager Program Coordinator	C				
BVI.2	Report information on entities that adopt new policies and best practices in the annual performance report.	Adoption of new policies and best practices.	Program Manager Program Coordinator Health Educator Nurse Communicator	C				

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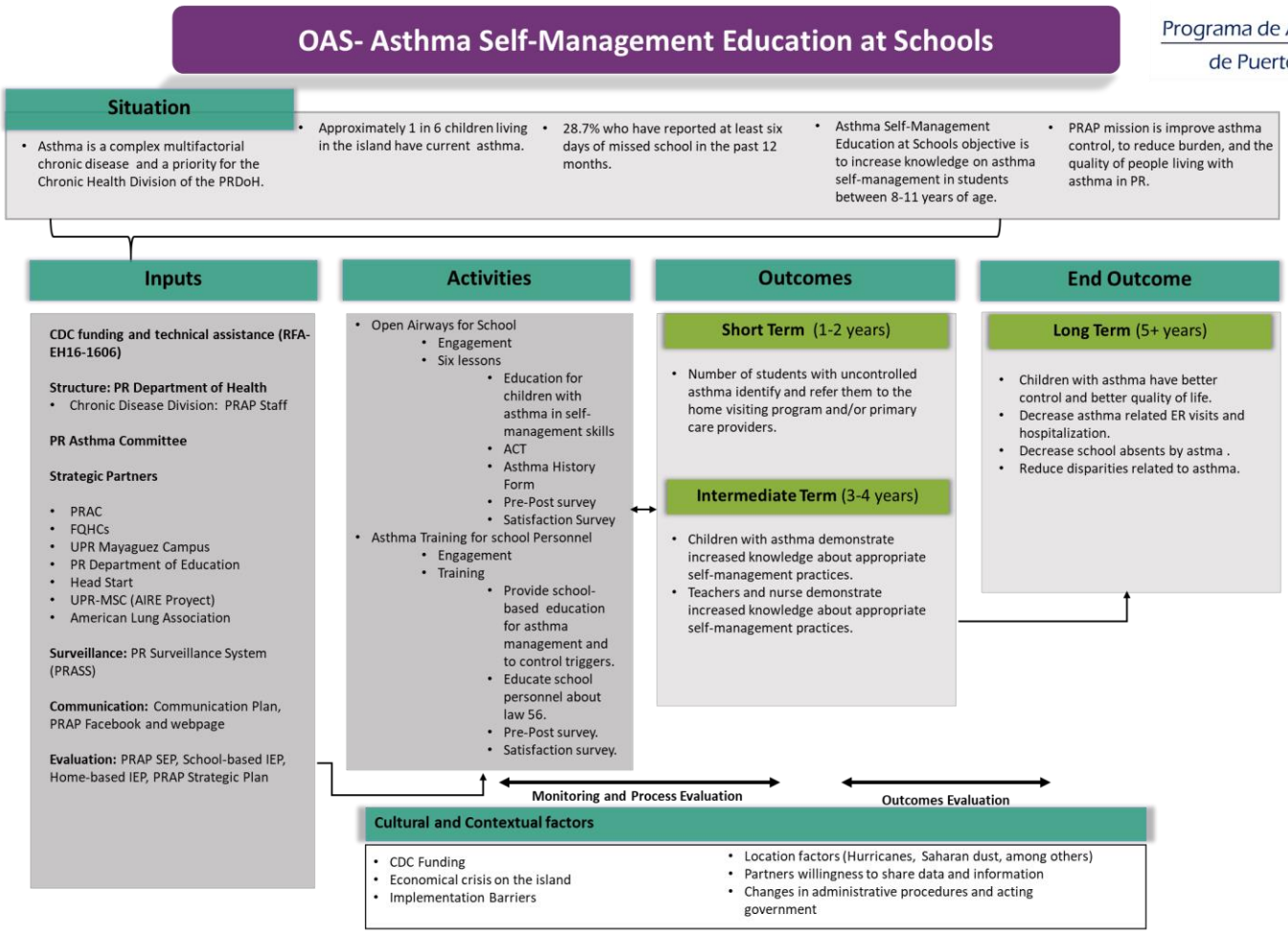
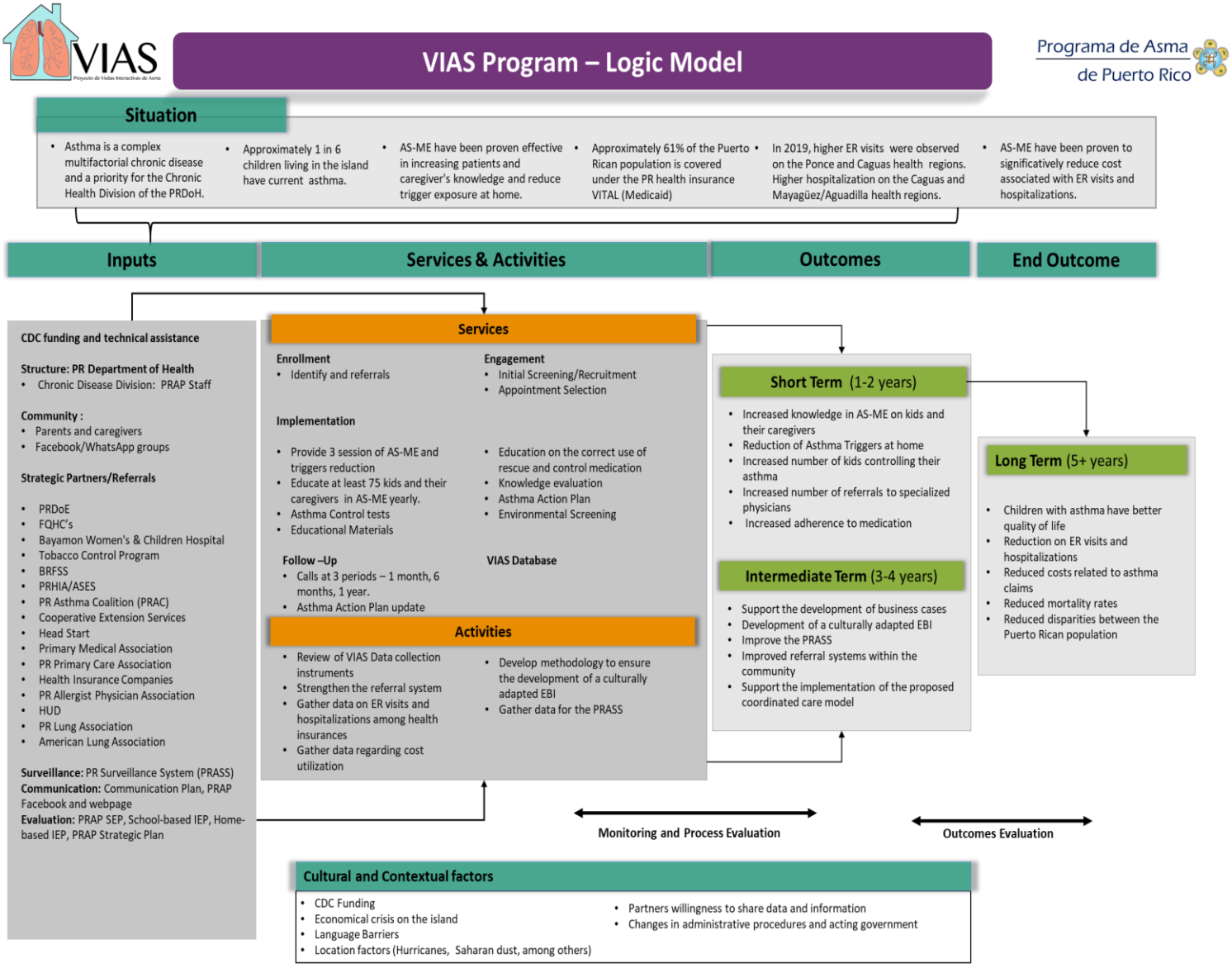
Appendix

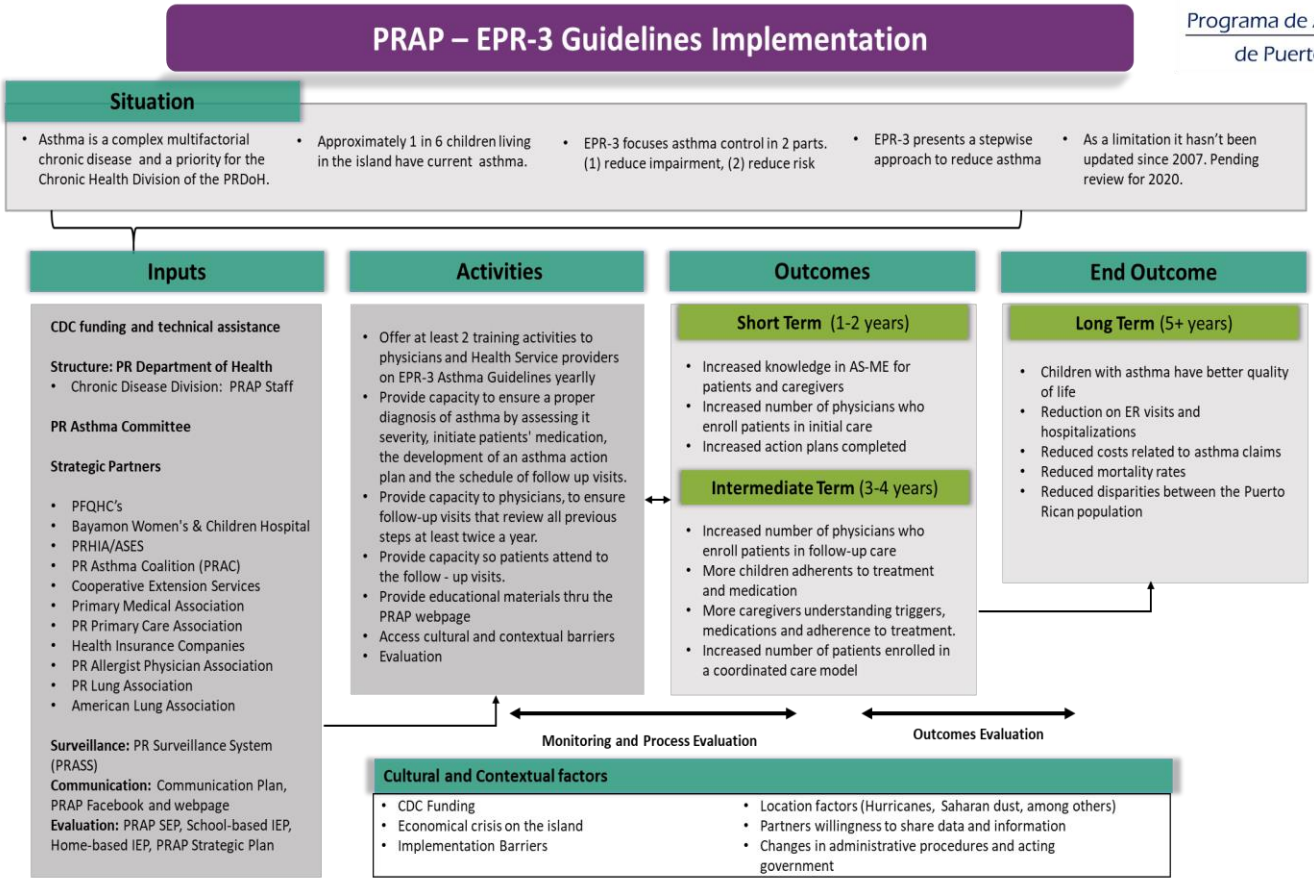
Annex #1



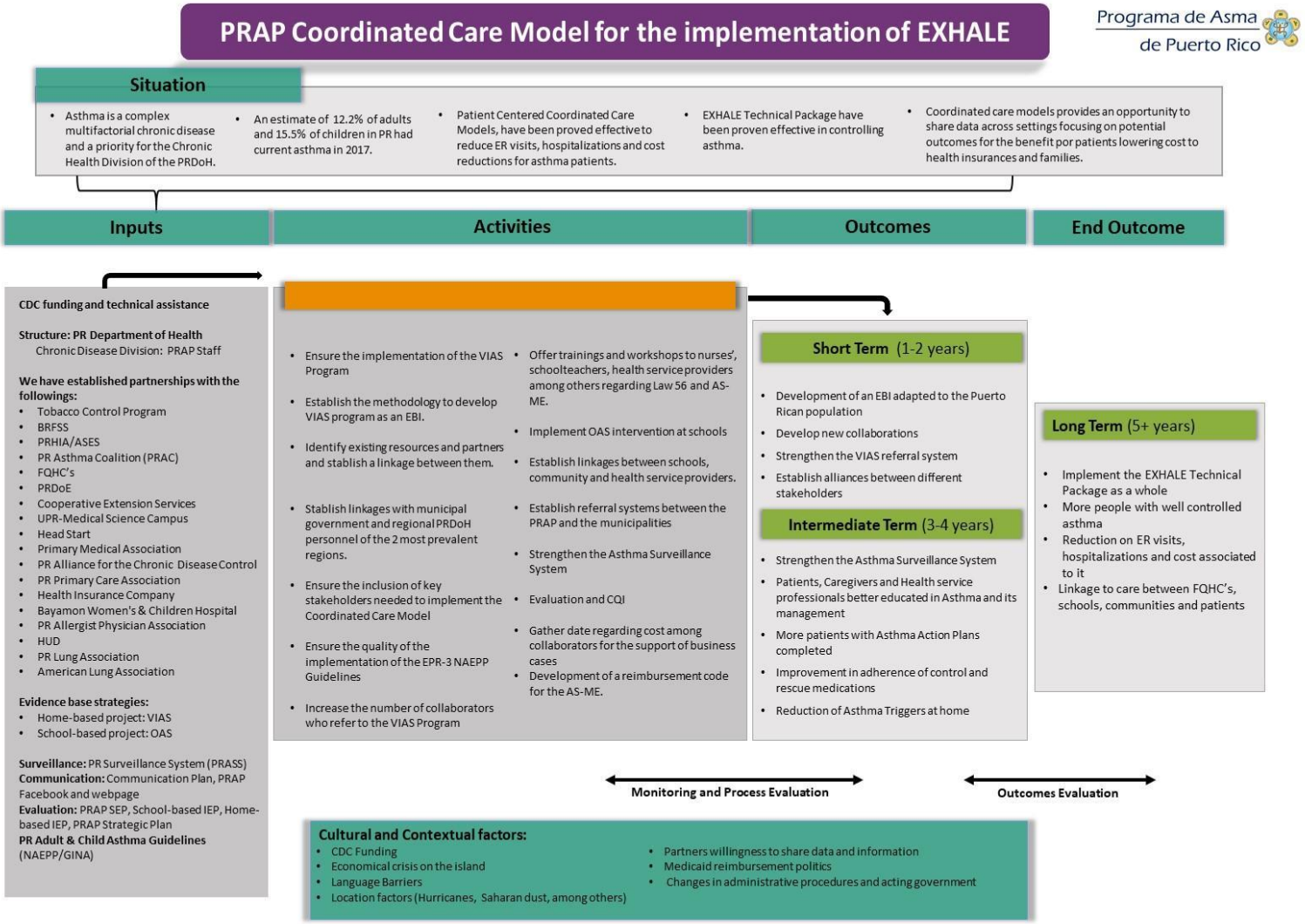
Annex #2


VIAS
Proyecto de Visitas Interactivas de Asma
VIAS Program – Logic Model
Programa de Asma de Puerto Rico
Situation
Asthma is a complex multifactorial chronic disease and a priority for the Chronic Health Division of the PRDoH.
Approximately 1 in 6 children living in the island have current asthma.
AS-ME have been proven effective in increasing patients and caregiver's knowledge and reduce trigger exposure at home.
Approximately 61% of the Puerto Rican population is covered under the PR health insurance VITAL (Medicaid)
In 2019, higher ER visits were observed on the Ponce and Caguas health regions. Higher hospitalization on the Caguas and Mayagüez/Aguadilla health regions.
AS-ME have been proven to significatively reduce cost associated with ER visits and hospitalizations.
Inputs
Services & Activities
Outcomes
End Outcome
CDC funding and technical assistance
Structure: PR Department of Health
Chronic Disease Division: PRAP Staff
Community :
Parents and caregivers
Facebook/WhatsApp groups
Strategic Partners/Referrals
PRDoE
FQHC's
Bayamon Women's & Children Hospital
Tobacco Control Program
BRFSS
PRHIA/ASES
PR Asthma Coalition (PRAC)
Cooperative Extension Services
Head Start
Primary Medical Association
PR Primary Care Association
Health Insurance Companies
PR Allergist Physician Association
HUD
PR Lung Association
American Lung Association
Surveillance: PR Surveillance System (PRASS)
Communication: Communication Plan, PRAP Facebook and webpage
Evaluation: PRAP SEP, School-based IEP, Home-based IEP, PRAP Strategic Plan
Services
Enrollment
Identify and referrals
Engagement
Initial Screening/Recruitment
Appointment Selection
Implementation
Provide 3 session of AS-ME and triggers reduction
Educate at least 75 kids and their caregivers in AS-ME yearly.
Asthma Control tests
Educational Materials
Education on the correct use of rescue and control medication
Knowledge evaluation
Asthma Action Plan
Environmental Screening
Follow –Up
Calls at 3 periods – 1 month, 6 months, 1 year.
Asthma Action Plan update
VIAS Database
Activities
Review of VIAS Data collection instruments
Strengthen the referral system
Gather data on ER visits and hospitalizations among health insurances
Gather data regarding cost utilization
Develop methodology to ensure the development of a culturally adapted EBI
Gather data for the PRASS
Short Term (1-2 years)
Increased knowledge in AS-ME on kids and their caregivers
Reduction of Asthma Triggers at home
Increased number of kids controlling their asthma
Increased number of referrals to specialized physicians
Increased adherence to medication
Intermediate Term (3-4 years)
Support the development of business cases
Development of a culturally adapted EBI
Improve the PRASS
Improved referral systems within the community
Support the implementation of the proposed coordinated care model
Long Term (5+ years)
Children with asthma have better quality of life
Reduction on ER visits and hospitalizations
Reduced costs related to asthma claims
Reduced mortality rates
Reduced disparities between the Puerto Rican population
Monitoring and Process Evaluation
Outcomes Evaluation
Cultural and Contextual factors
CDC Funding
Economical crisis on the island
Language Barriers
Location factors (Hurricanes, Saharan dust, among others)
Partners willingness to share data and information
Changes in administrative procedures and acting government

Annex #3

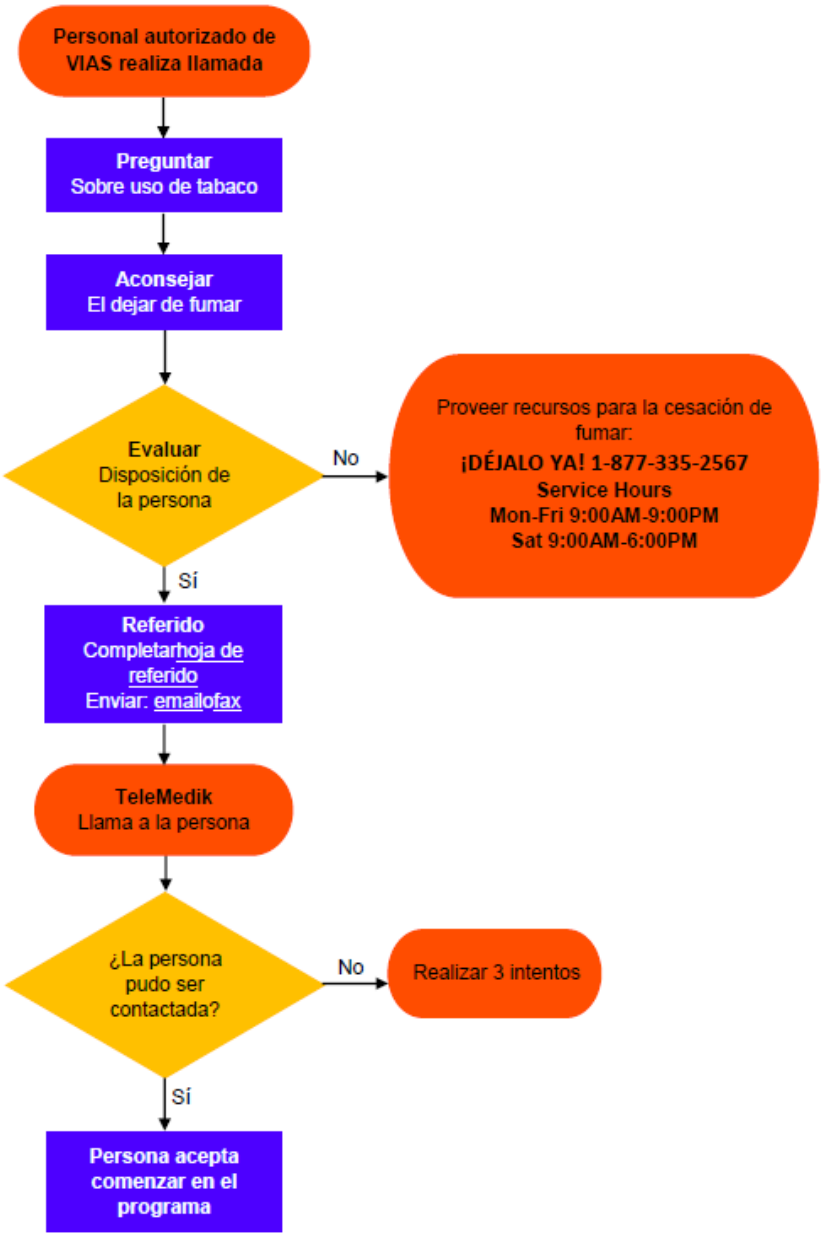

PRAP – EPR-3 Guidelines Implementation
Programa de Asma de Puerto Rico
Situation
Asthma is a complex multifactorial chronic disease and a priority for the Chronic Health Division of the PRDoH.
Approximately 1 in 6 children living in the island have current asthma.
EPR-3 focuses asthma control in 2 parts. (1) reduce impairment, (2) reduce risk
EPR-3 presents a stepwise approach to reduce asthma
As a limitation it hasn't been updated since 2007. Pending review for 2020.
Inputs
CDC funding and technical assistance
Structure: PR Department of Health
Chronic Disease Division: PRAP Staff
PR Asthma Committee
Strategic Partners
PFQHC's
Bayamon Women's & Children Hospital
PRHIA/ASES
PR Asthma Coalition (PRAC)
Cooperative Extension Services
Primary Medical Association
PR Primary Care Association
Health Insurance Companies
PR Allergist Physician Association
PR Lung Association
American Lung Association
Surveillance: PR Surveillance System (PRASS)
Communication: Communication Plan, PRAP Facebook and webpage
Evaluation: PRAP SEP, School-based IEP, Home-based IEP, PRAP Strategic Plan
Activities
Offer at least 2 training activities to physicians and Health Service providers on EPR-3 Asthma Guidelines yearlly
Provide capacity to ensure a proper diagnosis of asthma by assessing it severity, initiate patients' medication, the development of an asthma action plan and the schedule of follow up visits.
Provide capacity to physicians, to ensure follow-up visits that review all previous steps at least twice a year.
Provide capacity so patients attend to the follow - up visits.
Provide educational materials thru the PRAP webpage
Access cultural and contextual barriers
Evaluation
Outcomes
Short Term (1-2 years)
Increased knowledge in AS-ME for patients and caregivers
Increased number of physicians who enroll patients in initial care
Increased action plans completed
Intermediate Term (3-4 years)
Increased number of physicians who enroll patients in follow-up care
More children adherents to treatment and medication
More caregivers understanding triggers, medications and adherence to treatment.
Increased number of patients enrolled in a coordinated care model
End Outcome
Long Term (5+ years)
Children with asthma have better quality of life
Reduction on ER visits and hospitalizations
Reduced costs related to asthma claims
Reduced mortality rates
Reduced disparities between the Puerto Rican population
Monitoring and Process Evaluation
Outcomes Evaluation
Cultural and Contextual factors
CDC Funding
Economical crisis on the island
Implementation Barriers
Location factors (Hurricanes, Saharan dust, among others)
Partners willingness to share data and information
Changes in administrative procedures and acting government

Annex #4


PRAP Coordinated Care Model for the implementation of EXHALE
Programa de Asma de Puerto Rico
Situation
Asthma is a complex multifactorial chronic disease and a priority for the Chronic Health Division of the PRDoH.
An estimate of 12.2% of adults and 15.5% of children in PR had current asthma in 2017.
Patient Centered Coordinated Care Models, have been proved effective to reduce ER visits, hospitalizations and cost reductions for asthma patients.
EXHALE Technical Package have been proven effective in controlling asthma.
Coordinated care models provides an opportunity to share data across settings focusing on potential outcomes for the benefit por patients lowering cost to health insurances and families.
Inputs
Activities
Outcomes
End Outcome
CDC funding and technical assistance
Structure: PR Department of Health
Chronic Disease Division: PRAP Staff
We have established partnerships with the followings:
Tobacco Control Program
BRFSS
PRHIA/ASES
PR Asthma Coalition (PRAC)
FQHC's
PRDoE
Cooperative Extension Services
UPR-Medical Science Campus
Head Start
Primary Medical Association
PR Alliance for the Chronic Disease Control
PR Primary Care Association
Health Insurance Company
Bayamon Women's & Children Hospital
PR Allergist Physician Association
HUD
PR Lung Association
American Lung Association
Evidence base strategies:
Home-based project: VIAS
School-based project: OAS
Surveillance: PR Surveillance System (PRASS)
Communication: Communication Plan, PRAP Facebook and webpage
Evaluation: PRAP SEP, School-based IEP, Home-based IEP, PRAP Strategic Plan
PR Adult & Child Asthma Guidelines (NAEPP/GINA)
Ensure the implementation of the VIAS Program
Establish the methodology to develop VIAS program as an EBI.
Identify existing resources and partners and stablish a linkage between them.
Stablish linkages with municipal government and regional PRDoH personnel of the 2 most prevalent regions.
Ensure the inclusion of key stakeholders needed to implement the Coordinated Care Model
Ensure the quality of the implementation of the EPR-3 NAEPP Guidelines
Increase the number of collaborators who refer to the VIAS Program
Offer trainings and workshops to nurses', schoolteachers, health service providers among others regarding Law 56 and AS-ME.
Implement OAS intervention at schools
Establish linkages between schools, community and health service providers.
Establish referral systems between the PRAP and the municipalities
Strengthen the Asthma Surveillance System
Evaluation and CQI
Gather date regarding cost among collaborators for the support of business cases
Development of a reimbursement code for the AS-ME.
Short Term (1-2 years)
Development of an EBI adapted to the Puerto Rican population
Develop new collaborations
Strengthen the VIAS referral system
Establish alliances between different stakeholders
Intermediate Term (3-4 years)
Strengthen the Asthma Surveillance System
Patients, Caregivers and Health service professionals better educated in Asthma and its management
More patients with Asthma Action Plans completed
Improvement in adherence of control and rescue medications
Reduction of Asthma Triggers at home
Long Term (5+ years)
Implement the EXHALE Technical Package as a whole
More people with well controlled asthma
Reduction on ER visits, hospitalizations and cost associated to it
Linkage to care between FQHC's, schools, communities and patients
Monitoring and Process Evaluation
Outcomes Evaluation
Cultural and Contextual factors:
CDC Funding
Economical crisis on the island
Language Barriers
Location factors (Hurricanes, Saharan dust, among others)
Partners willingness to share data and information
Medicaid reimbursement politics
Changes in administrative procedures and acting government

Annex #5

FLUJOGRAMA DE REFERIDOS DEL PROYECTO VIAS A LA LÍNEA DE CESACIÓN DE FUMAR EN PUERTO RICO



Annex #6

Attachment 1

Table 1: Asthma control algorithms description

Element	Age groups	Well controlled	Uncontrolled	
			Not well controlled	Very poorly controlled
Day Symptoms[a]	All	≤ 2 days per week	>2 days per week, but not daily	All days (daily)
Night Symptoms[b]	0-4 years	< 2 per month	[2-4] per month	≥ 5 per month
	5-11 years	< 2 per month	[2-8] per month	≥ 9 per month
	≥ 12 years	< 3 per month	[3-12] per month	≥ 13 per month
SABA-medication (Nebulizer or/and Inhaler)	All	≤ 0.29 uses per day	0.29< used per day < 2.00	≥ 2.00 uses per day
Limited activities[c]		No limitation	Some limitation	Extremely limited
	All	Not at all or No current asthma, nothing happened past year	A little or A moderate amount	A lot

[a] Response to the question "During the past 30 days, on how many days did you have any symptoms of asthma?" and "Do you have symptoms all the time? All the time" means symptoms that continue throughout the day. It does not mean symptoms for a little while each day."

[b] Response to the question "During the past 30 days, on how many days did symptoms of asthma make it difficult for you to stay asleep?"

[c] During just the past 30 days, would you say you limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?