DEPARTMENT OF

HEALTH

GOVERNMENT OF PUERTO RICO

EXHALE Strategies Implementation in Puerto Rico: Evaluation Report

September 2023 - August 2024

Puerto Rico Asthma Management and Control Unit
Auxiliary Secretariat of Health Integrated Services
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Overview:

The Puerto Rico Asthma Management and Control Unit (PRAMCU) recognize asthma as a major public health problem. The data from the Puerto Rico Asthma Surveillance System (PRASS) states that the asthma prevalence for children in Puerto Rico (PR) was 10.3% for 2021-2022. In other words, 1 out of 10 children between ages of 0 and 17 years have current asthma in PR. On the other hand, the data for 2022 suggests that 1 in 8 adults aged eighteen years or older (12.2%) have current asthma in PR. When we compare the data with other states and territories of the United States, Puerto Ricans living in the United States also had higher asthma prevalence when compared with other ethnic and racial groups (Szentpetery et al., 2016).

Asthma is a complex chronic disease, and it is a priority for the Puerto Rico Department of Health (PRDoH). For that reason, the PRAMCU has integrated the EXHALE strategies since 2019 in collaboration with the Centers for Disease Control and Prevention (CDC). This technical package represents strategies focused on improving asthma control and reducing healthcare costs. As part of this cooperative agreement, PRAMCU has developed activities to implement each one of the EXHALE strategies.

Each letter of the EXHALE acronym represents a strategy to be implemented under the PRAMCU and CDC cooperative agreement. Based on the definition of the EXHALE strategies, PRAMCU developed activities according to the Puerto Rican society, needs, and geographical location.

EXHALE Strategies:

First, it is essential to explain what each strategy means and their respective approaches. These strategies complement and work together to reinforce one another.

	Strategy	Approach
E	Education on Asthma Self-Management	• Expanding access to and delivery of asthma self-management education (AS-ME)
X	X-tinguishing smoking and exposure to secondhand smoke	• Reducing tobacco smoking • Reducing exposure to secondhand smoke
H	Home visits for trigger reduction and asthma self-management education	• Expanding access to and delivery of home visits (as needed) for asthma trigger reduction and AS-ME
A	Achievement of guidelines-based medical management	• Strengthening systems supporting guidelines-based medical care, including appropriate prescribing and use of inhaled corticosteroids • Improving access and adherence to asthma medications and devices
L	Linkages and coordination of care cross settings	• Promoting coordinated care for people with asthma
E	Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources.	• Facilitating home energy efficiency, including home weatherization assistance programs • Facilitating smokefree policies • Facilitating clean diesel school buses • Eliminating exposure to asthma triggers in the workplace whenever possible • Reducing exposure to asthma triggers in the workplace (if eliminating exposures is not possible)

Source: Hsu J., Sircar K., Herman E. & Garbe P. (2018). EXHALE: A technical Package to Control Asthma. Atlanta G.A. National Center for Environmental Health, Centers for Disease Control and Prevention.

PRAMCU implements the EXHALE strategies through the following activities or projects:

	Activities or projects based on the EXHALE Strategy
E	• "Open Airways for Schools" (OAS) • Asthma Self-Management Workshops for Children • Asthma Self-Management Workshops for Adults • Asthma Management Workshops for Parents and Caregivers • Community Outreach Interventions
X	Referrals to the Puerto Rico Quitline "Déjalo ya"
H	VIAS Project (Visitas Interactivas acerca del Asma en el hogar)
A	• Training activities for health professionals about asthma • AMED Project (Asthma Medication: Education & Demonstration)
L	Asthma School Registry
E	"Asthma Control in Schools" Online Course

The evaluation results of the implementation of these activities or projects are presented in this report to assess their effectiveness and identify areas for continuous program improvement.

IMPLEMENTATION OF EXHALE STRATEGIES:

The efforts of the Puerto Rico Asthma Management and Control Unit (PRAMCU) regarding the implementation of the EXHALE strategies and activities from **September 2023 to August 2024** are detailed below:

(E) – Education on Asthma Self-Management

The *Education on Asthma Self-Management* strategy includes the following projects: Open Airways for Schools (OAS), Community Outreach Interventions, and Asthma Management and Control Workshops for children, adolescents, adults, parents and caregivers.

A. Open Airways for School (OAS)

OAS is a program that educates and empowers children ages 8 to 11 through a fun and interactive approach to asthma self-management. The program teaches

children with asthma how to detect the warnings signs of asthma, avoid their triggers and make decisions about their health.

The curriculum was created by the American Lung Association (ALA) and each session lasts approximately 40 minutes, covering:

- Asthma basics and warning signs.
- Trigger identification and control.
- Symptom recognition and management.
- Physical activity and academic performance.
- Treatment adherence and medication use.

To be eligible for participation in the OAS project, the participants must meet the following criteria:

- be enrolled in a public or private school in PR
- be between the ages of 8 and 11 years old
- be a resident of Puerto Rico
- have a diagnosis of asthma

PRAMCU provides the project's lessons at public and private schools in PR with the principal's approval and the school nurse's presence. It is expected that children learn about asthma, its symptoms, and how to recognize asthma triggers at school, enabling them to manage and control their condition effectively.

For more information about this project, visit the ALA website: https://www.lung.org/lung-health-diseases/lung-disease-lookup/asthma/health-professionals-educators/open-airways-for-schools.

a. Evaluation Methods Implemented for OAS Project

As part of the evaluation process, participants completed pretests and posttests to measure changes in knowledge. Also, the Asthma Control Test was administered to determine the child's asthma status, whether it was controlled

or uncontrolled, based on the score obtained. Additionally, a satisfaction survey was conducted to evaluate the participants' level of satisfaction with the sessions' components. This survey included five questions to obtain the participants' feedback.

See attachments 3 and 4 for more details about the pretest and posttest; 5 for Asthma Control Test and 7 for the satisfaction survey.

b. Analysis

A basic descriptive analysis was conducted using simple measures such as the total number of participants, their distribution by sex and age, and the municipalities reached through the Open Airways for Schools (OAS) Project. Additionally, changes in knowledge were assessed by comparing the average pretest and posttest scores using a paired t-test. Since PRAMCU aimed to evaluate the difference between initial and final average scores, the analysis included data from 25 participants, excluding 3 individuals who did not complete both tests.

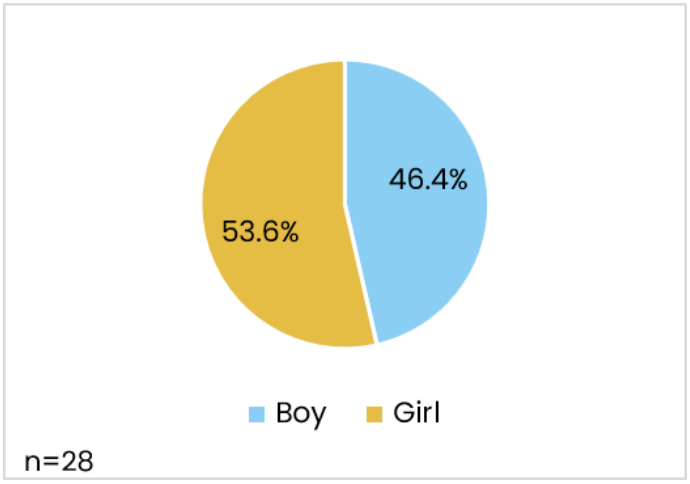
The asthma control status analysis consisted of the frequency of children with controlled asthma before and after the intervention. Higher scores of the Asthma Control Test (ACT) indicate better asthma control. For example, a score of 20 or above generally indicates well-controlled asthma, whereas a score below 20 suggests that asthma is not well-controlled and may require adjustments to the treatment plan. Additionally, changes in asthma control scores were assessed by comparing the average pretest and posttest scores using a paired t-test.

The level of satisfaction was also analyzed using the percentage and frequency of participants responses.

c. Results

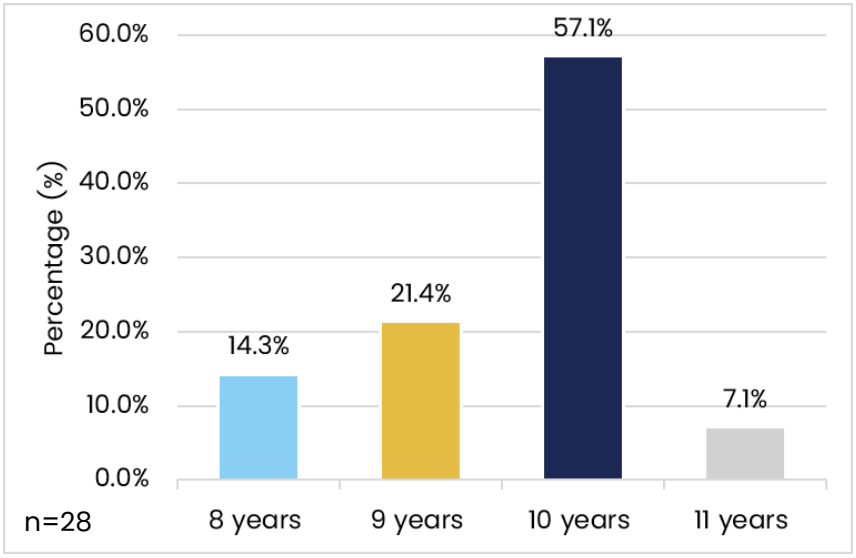
A total of 28 children who met the eligibility requirements were impacted with the OAS Project interventions. The following results include sex and age distribution, and the municipalities impacted by the OAS project. The results obtained from pre and posttests, Asthma Control Test, and the satisfaction survey are also included.

Figure 1. Percentage Distribution of Participants by Sex, OAS Project, 2023-2024.



The participant group consisted of 53.6% females and 46.4% males.

Figure 2. Distribution of participants by age, OAS Project, 2023-2024.

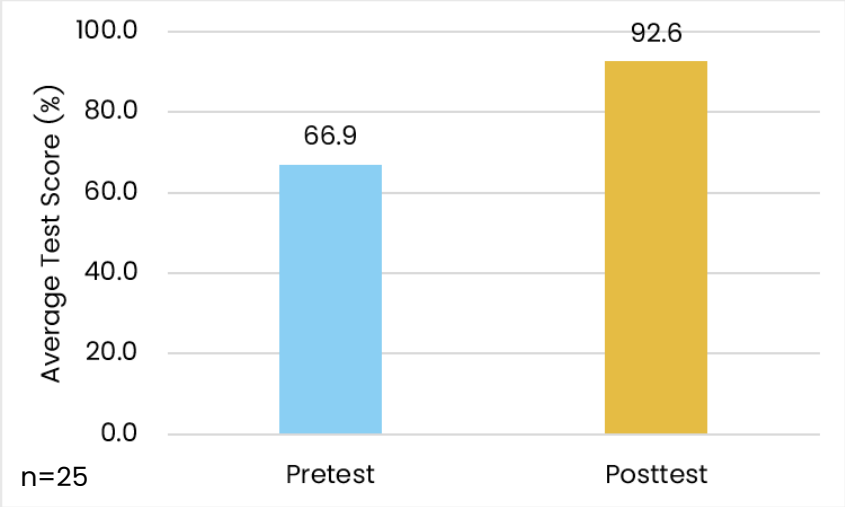


A total of 57.1% of the participants were 10 years old.

Figure 3. Map of municipalities impacted by the OAS Project, 2023-2024.

The OAS project impacted the municipalities of Barceloneta, Corozal, and Fajardo with the OAS project.

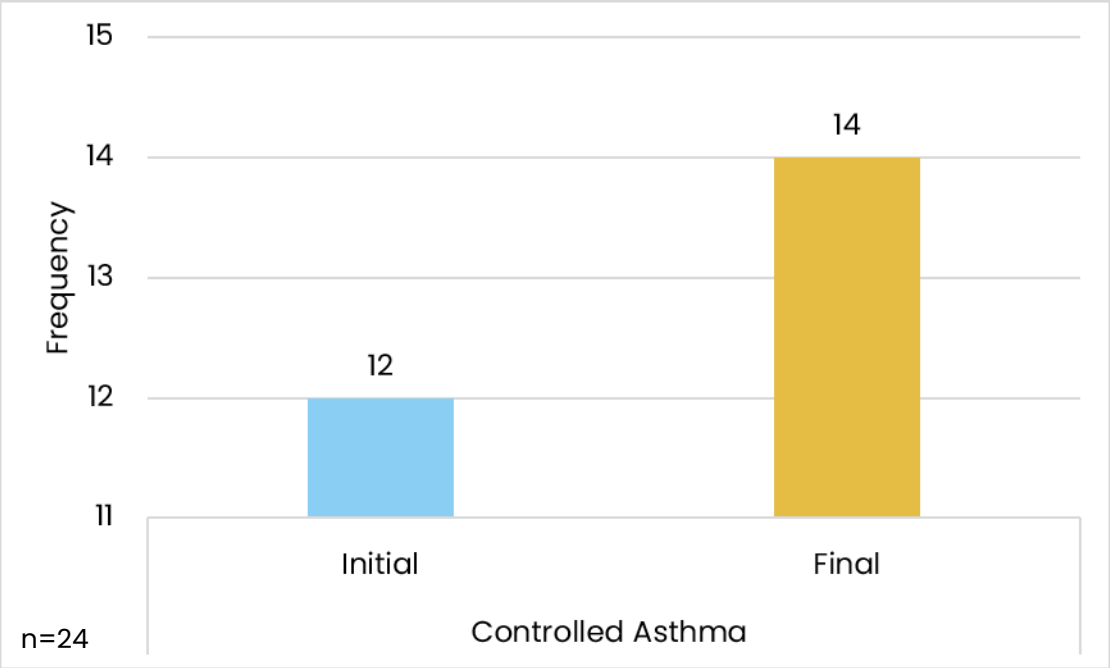
Figure 4. Average pretest and posttest results, OAS Project, 2023-2024.



In the pretest, participants demonstrated an average asthma knowledge score of 66.9%. In the posttest, an improvement was observed, with the average score increasing to 92.6%. This reflects a 25.7 percentage point gain in knowledge after participating in the project. A paired t-test indicated that posttest scores (M = 6.48, SD = 0.65) were significantly higher than pretest scores (M = 4.68,

SD = 1.44), with a mean difference of 1.80 points ($p<0.0001$). This indicates that the intervention produced a statistically significant improvement in levels of asthma knowledge.

Figure 5. Frequency of children with controlled asthma at the beginning and end of the OAS Project, 2023-2024.



A comparison of ACT results between the first and final sessions revealed an increase in the number of children with controlled asthma, from 12 to 14 (n=24). However, analysis indicated that this difference was not significant, even though it may represent clinical relevance. A paired t-test indicated that post-intervention ACT scores (M = 19.63, SD = 4.00) were not significantly higher than baseline scores (M = 18.83, SD = 4.58), with a mean difference of 0.79 points ($p=0.55$). These findings suggest that, while there was a modest increase in the number of children classified as controlled, no statistically significant improvement in ACT scores was detected following the intervention.

Satisfaction Survey:

A total of 15 participants completed the satisfaction survey and all of them (100%) rated the intervention as good, selecting this option from the available choices of 'bad,' 'regular,' or 'good'.

B. Asthma Self-Management Workshops for Children and Adolescents

The purpose of these workshops is to educate children on effective asthma management and control. Designed for participants ages 4 to 17, each session lasts approximately one hour. It is expected that children learn how to recognize asthma symptoms at their onset and follow the appropriate steps to manage the condition effectively.

The topics addressed in the Asthma Self-Management Workshops for Children are:

1. Definition of asthma and symptoms
2. Demonstration of adequate use of asthma medications
3. Asthma Action Plan
4. Identify and control the asthma triggers

a. Evaluation Methods

As part of the evaluation process, pretests and posttests were administered to participants to assess changes in knowledge. Also, the Asthma Control Test was administered to determine the child's asthma status, whether it was controlled or uncontrolled, based on the score obtained. There are two types of asthma control tests depending on participants' age: one for ages 4 to 11, and another for those 12 and older. See attachments 5 and 6 for more details about the Asthma Control Tests.

In addition, a satisfaction survey was conducted to evaluate participants' overall experience of the workshop. This survey included five questions to

obtain the participants' feedback. See attachments 1-4 and 7 for more details about pretests, posttests and the satisfaction survey.

b. Analysis

A basic descriptive analysis was conducted using simple measures such as the total number of participants, their distribution by sex and age, asthma diagnosis and the municipalities reached through the workshops.

Also, it was evaluated whether there was a significant difference in pretest and posttest scores using a paired t-test, as the sample sizes were large enough to rely on the t-test despite deviations from normality. Since PRAMCU aimed to assess the difference between initial and final average scores, the analysis included only participants who completed both tests. For grades 4–12, the initial sample was 1,727, with 34 excluded due to incomplete data, resulting in a final sample of 1,693. For kindergarten through 3rd grade, the initial sample was 531, with 33 excluded, leaving a final sample of 498.

The asthma control status analysis consisted of the percentage of children with uncontrolled asthma. Lower scores of the Asthma Control Test (ACT) indicate worst asthma control. For example, a score below 20 suggests that asthma is not well-controlled and may require adjustments to the treatment plan.

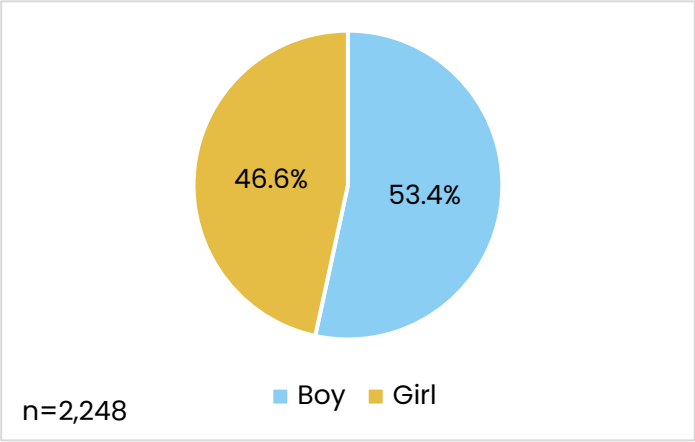
The level of satisfaction was also analyzed using the percentage and frequency of participants responses.

c. Results

A total of 2,258 children between the ages of 5 to 17 years were impacted by these workshops. When compared these results with the previous period from September 2022 to August 2023, the participation increased from 567 to 2,258.

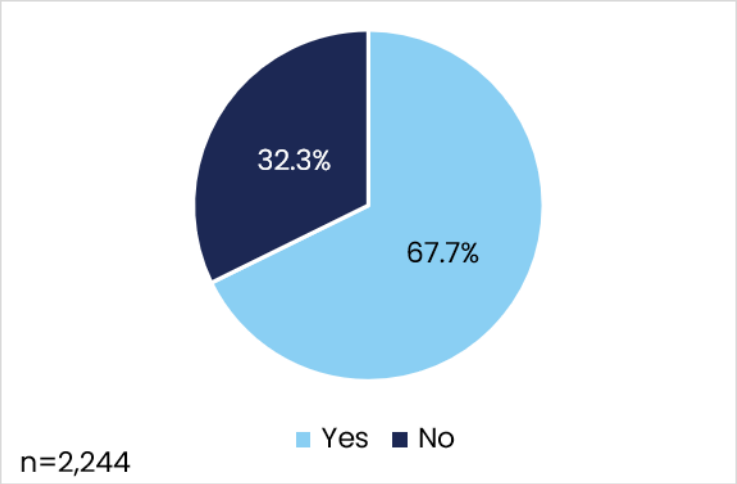
The following results include sex and age distribution, and the municipalities impacted by these workshops. The results obtained from pre- and posttests, Asthma Control Test, and the satisfaction survey are also included.

Figure 6. Percentage Distribution of Participants by Sex, Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



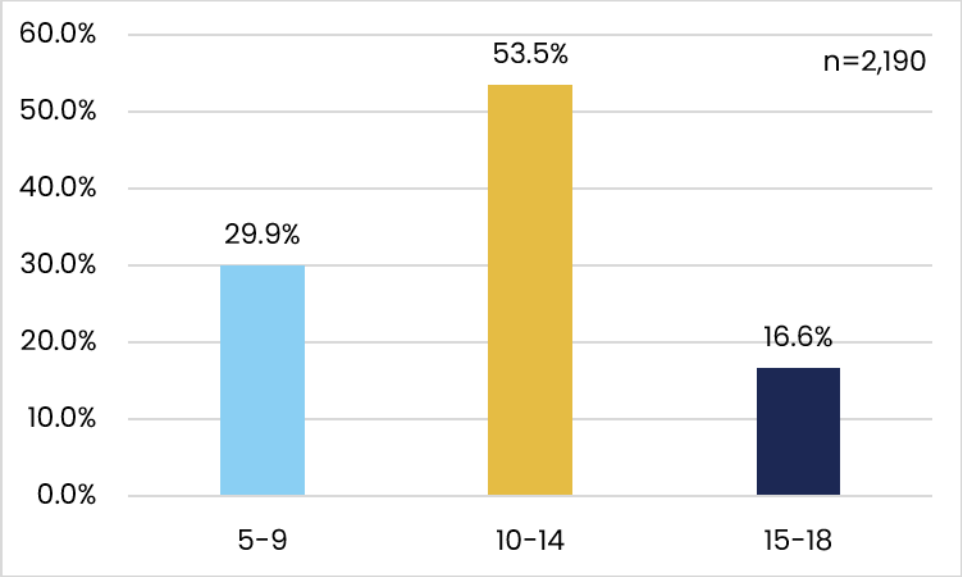
Of the participants who reported their sex, 53.4% were boys and 46.6% were girls (n=2,248).

Figure 7. Percentage Distribution of Participants by Asthma Diagnosis, Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



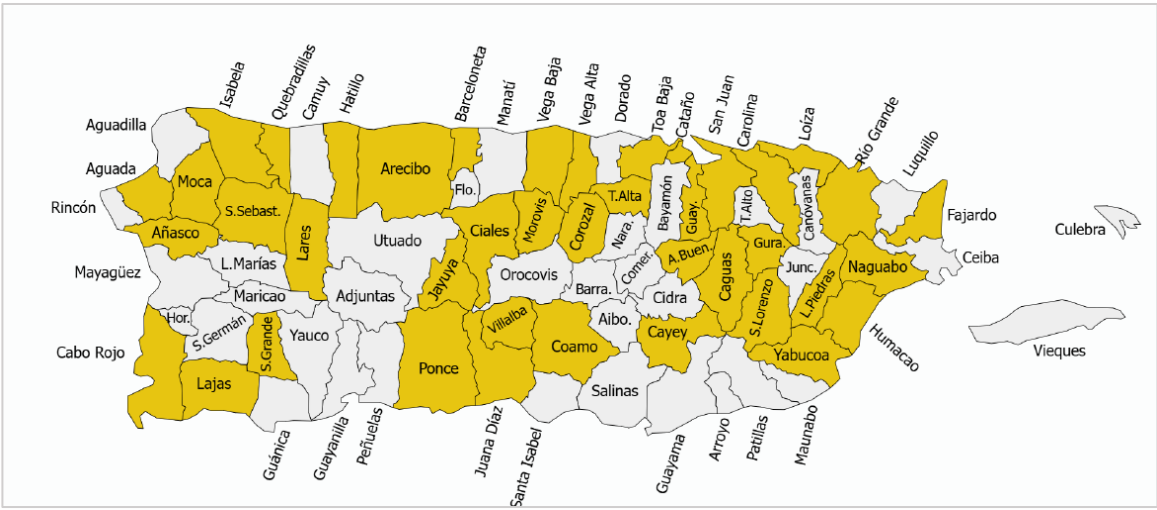
Also, 1,520 children were identified with an asthma diagnosis, corresponding to 67.7% of the participants who answered this question (n=2,244).

Figure 8. Percentage Distribution of Participants by Age Group, Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



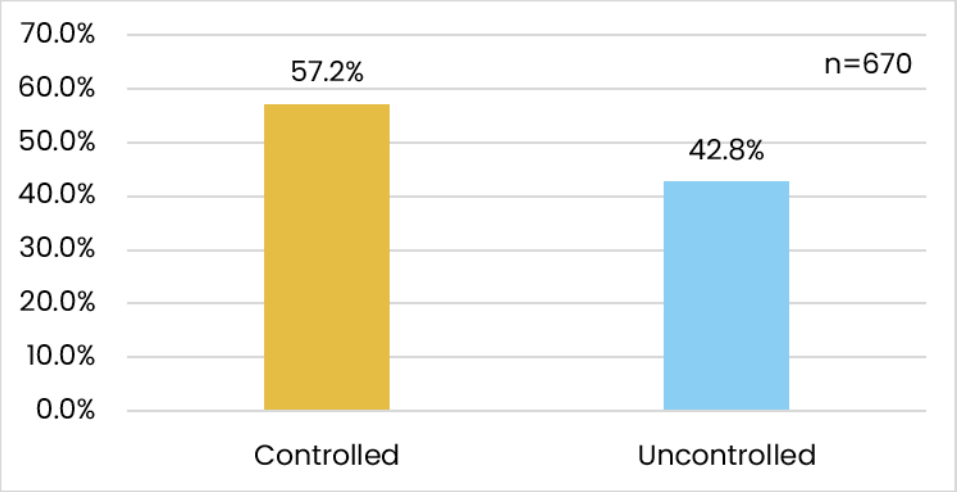
Regarding age, 29.9% of participants were 5 to 9 years old, 53.5% were 10 to 14 years old, and 16.6% were 15 years or older.

Figure 9. Map of municipalities impacted by Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



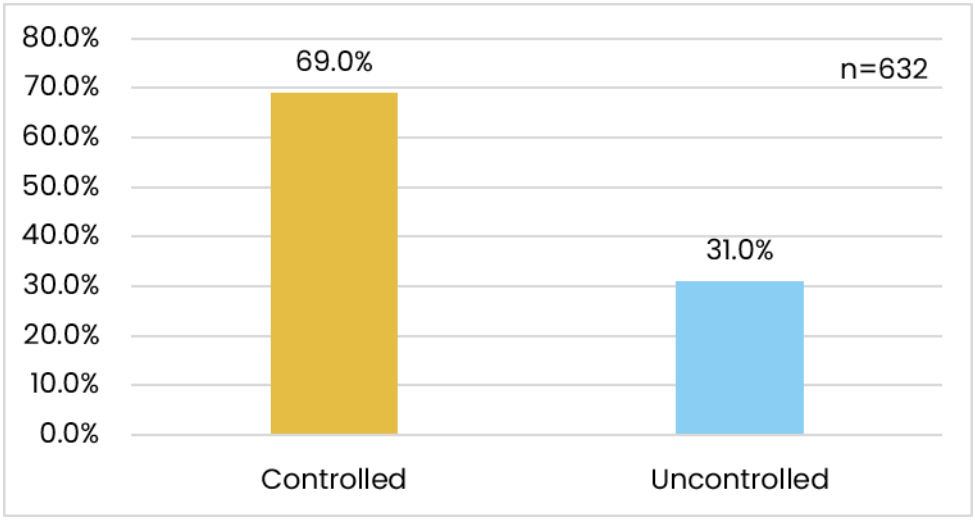
Asthma Self-Management Workshops for Children and Adolescents were provided in 41 municipalities, impacting the six health regions of Puerto Rico.

Figure 10. Percentage of Participants between ages 4-11 by Asthma Control Status, Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



Among the 670 participants aged 4 to 11 who completed the Asthma Control Test, 42.8% were found to have uncontrolled asthma at the time of the intervention.

Figure 11. Percentage of Participants between ages 12 and older by Asthma Control Status, Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



Among the 632 participants aged 12 to 18 who completed the Asthma Control Test, 31% were found to have uncontrolled asthma at the time of the intervention.

Pretest and posttest average scores:

Grades	Pretest Average Score (%)	Posttest Average Score (%)
Kindergarten – Third grade	57.6	81.6
Fourth - Twelfth grade	70.9	83.3

For the knowledge tests results (pretest and posttest), it was divided into two groups, kindergarten to third grade (K-3) and fourth through twelfth grade (4-12). The first group demonstrated an increase in average asthma knowledge scores from 57.6% to 81.6%, reflecting a gain of 24 percentage points, whereas the second group showed an improvement from 70.9% to 83.3%, corresponding to a gain of 12.4 percentage points.

Kindergarten – Third grade:

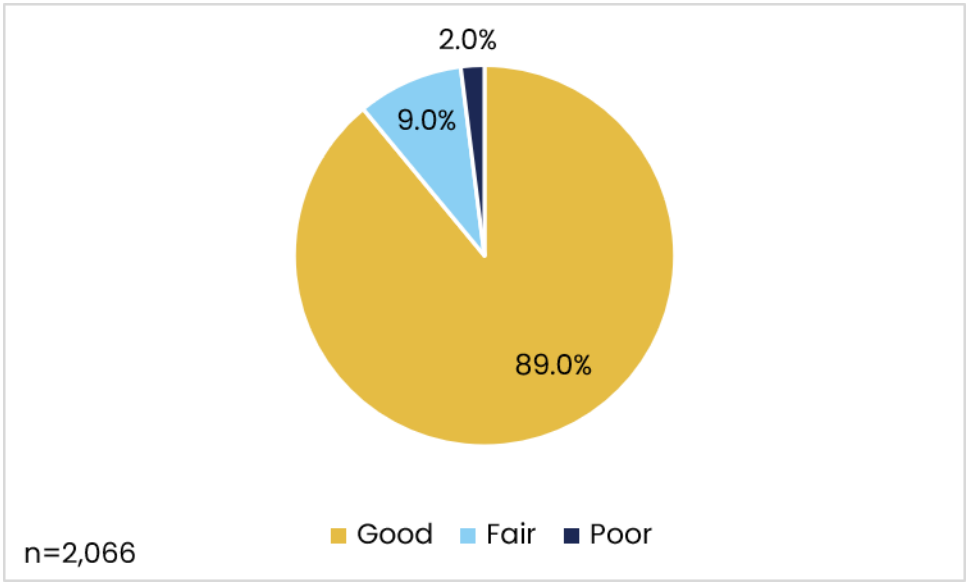
A comparison of pre- and post-intervention scores revealed an improvement following the intervention. A paired t-test indicated that post-intervention scores ($M = 3.24$, $SD = 0.98$) were significantly higher than baseline scores ($M = 2.31$, $SD = 1.10$), with a mean difference of 0.94 points ($p < 0.0001$). This statistically significant increase suggests that the intervention was associated with meaningful improvements in participants' scores, reflecting a positive change from pre- to post-assessment.

Fourth - Twelfth grade:

A comparison of pre- and post-intervention scores revealed an improvement following the intervention. A paired t-test indicated that post-intervention scores ($M = 5.83$, $SD = 1.08$) were significantly higher than baseline scores ($M = 4.96$, $SD = 1.08$), with a mean difference of 0.87 points ($p < 0.0001$). This

statistically significant increase suggests that the intervention was associated with meaningful improvements in participants' scores, reflecting a positive change from pre- to post-assessment among students in fourth through twelfth grade.

Figure 12. Participants' satisfaction results, Asthma Self-Management Workshops for Children and Adolescents, 2023-2024.



Of the total participants impacted by the children's workshops, 2,066 completed the satisfaction survey, of which 89% rated the intervention as good.

C. Asthma Self-Management Workshops for Adults

The purpose of these workshops is to educate the community on how to manage and control asthma. These workshops are aimed to impact adults 18 years or older and take approximately 1 hour to be completed. It is expected that the participants learn how to recognize the symptoms of asthma when they first occur and follow the appropriate management steps.

The topics addressed in this project are:

1. Definition of asthma, symptoms, and treatment
2. Adequate use of asthma medications

3. Identify and control the asthma triggers
4. Asthma statistics in Puerto Rico
5. Law 56 of 2006, Regulation 9224, and Administrative Order 473

a. Evaluation methods

The evaluation relied on descriptive methods to summarize participation and geographic reach. Attendance records from the workshops were reviewed to determine the total number of participants and the frequency of sessions conducted. Data was organized by municipality to assess the regional distribution of participants and identify the areas impacted by the intervention. This method provided a straightforward way to evaluate the scope of outreach and engagement across different communities.

b. Analysis

A basic descriptive analysis was performed, utilizing simple measures such as the frequency of the workshops, the number of adults that participated and their distribution by municipalities impacted.

c. Results

A total of 134 adults (18 years or older) were impacted with 7 workshops in four municipalities (Manatí, Moca, Ponce and San Sebastián).

Figure 13. Map of municipalities impacted by the adult workshops, 2023-2024.

D. Asthma Management Workshops for Parents and Caregivers

These workshops aim to educate, in approximately 1 hour, parents and caregivers of children with asthma on how to manage and control their condition. It is expected that they will learn how to recognize the symptoms of asthma when they first occur and follow appropriate management steps.

The topics addressed in this project are:

1. Definition of asthma, symptoms, and treatment
2. Demonstration of adequate use of asthma medications
3. Identification and control of asthma triggers
4. Rights and responsibilities of children in schools
5. The importance of the Asthma Action Plan

a. Evaluation Methods

As part of the evaluation process, pretests and post tests were administered to all participants to assess changes in knowledge. In addition, a satisfaction survey was conducted to evaluate participants' overall experience and their perceptions of each component of the workshops. The survey included both closed-ended and open-ended questions, allowing participants to provide

detailed feedback and suggestions. See attachments 8 and 9 for more details about pretest, posttest and the satisfaction survey.

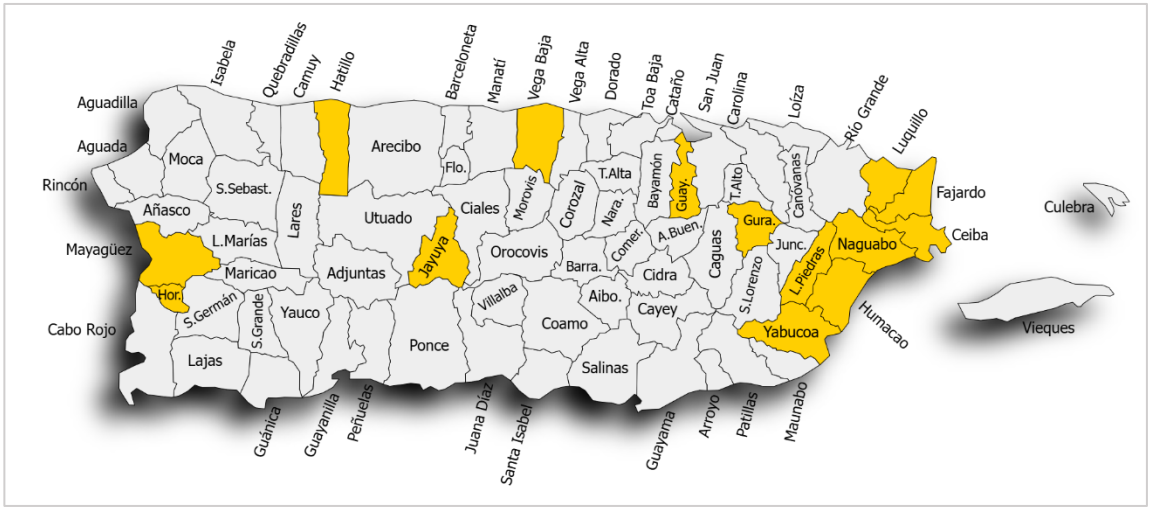
b. Analysis

A basic descriptive analysis was performed, utilizing simple measures such as the frequency of the workshops, the number of participants, the distribution by municipalities impacted and the level of satisfaction. The changes in knowledge were assessed by comparing the average pretest and posttest scores using a Wilcoxon signed-rank test, given that the distribution of the difference scores did not meet the assumption of normality.

c. Results

A total of 41 parents or caregivers were impacted with 9 workshops.

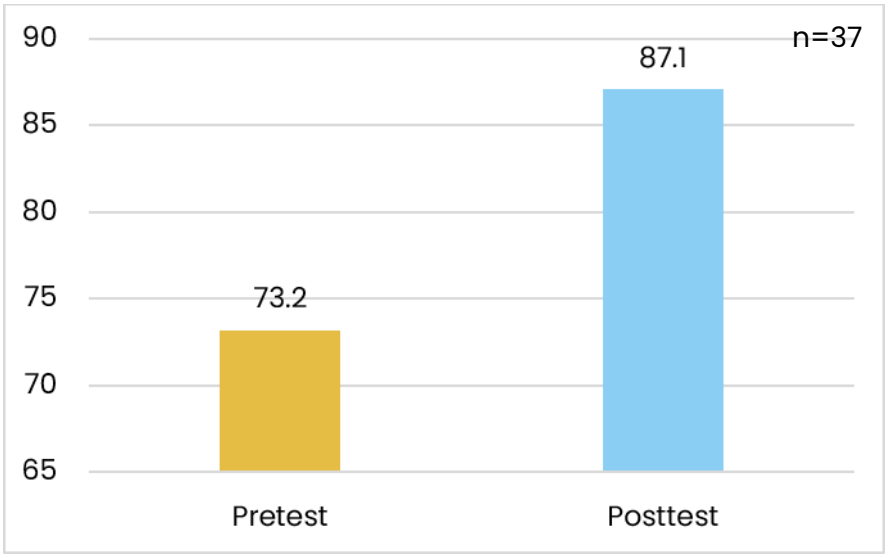
Figure 14. Map of municipalities impacted by the caregivers' workshops, 2023-2024.



Fourteen municipalities were impacted by the caregivers' workshops. The number of municipalities represented exceeds the number of workshops offered, as participants were identified by their place of residence rather than the workshop location (Ceiba, Fajardo, Guaynabo, Gurabo, Hatillo,

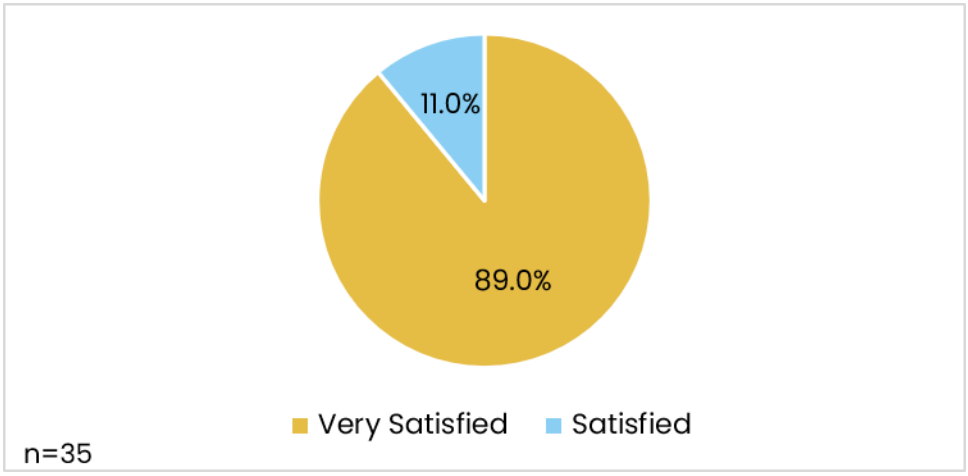
Hormigueros, Humacao, Jayuya, Las Piedras, Luquillo, Mayagüez, Naguabo, Vega Baja, and Yabucoa).

Figure 15. Average pretest and posttest results, Asthma Management Workshops for Parents and Caregivers, 2023-2024.



An increase in asthma knowledge was observed from an average test score of 73.2% to 87.1%. There was an percentage point gain of 13.8 points from the pretest to the posttest. This represents a relative improvement of approximately 19% compared to the pretest score. The results indicated a statistically significant increase in post-intervention scores compared to pre-intervention scores ($Z = 5.17$, $p < 0.0001$). The median difference was 1 point (IQR = 0–2), reflecting an overall improvement in participants' scores following the intervention. Specifically, 30 participants improved their scores, none showed a decrease, and 7 remained unchanged.

Figure 16. Participants' satisfaction with the caregivers' workshop, 2023-2024.



Of the total participants impacted by the caregivers' workshops, 35 completed the satisfaction survey. At the general level, all participants were satisfied with the workshop. A total of 89% of participants were very satisfied and 11% were satisfied.

E. Community Outreach Interventions

Community Outreach Interventions are targeted activities designed to engage with the public in accessible, community-based settings to promote health awareness and education. The goal is to increase community knowledge about asthma prevention, management, and treatment, encourage healthier behaviors, and connect individuals to local health services.

Includes:

- Health Education
- Distribution of educational materials
- Asthma Control Test
- Referrals to the Smoking Cessation Quitline

a. Evaluation methods

The evaluation relied on descriptive methods to summarize participation and geographic reach. Attendance records from the workshops were reviewed to determine the total number of participants, municipalities impacted and the frequency of activities. Data was organized by municipality to assess the regional distribution of participants and identify the areas impacted by the intervention. This method provided a straightforward way to evaluate the scope of outreach and engagement across different communities.

Additionally, participants who wished to assess their asthma control completed the Asthma Control Test, which classified their condition as controlled or uncontrolled based on their score.

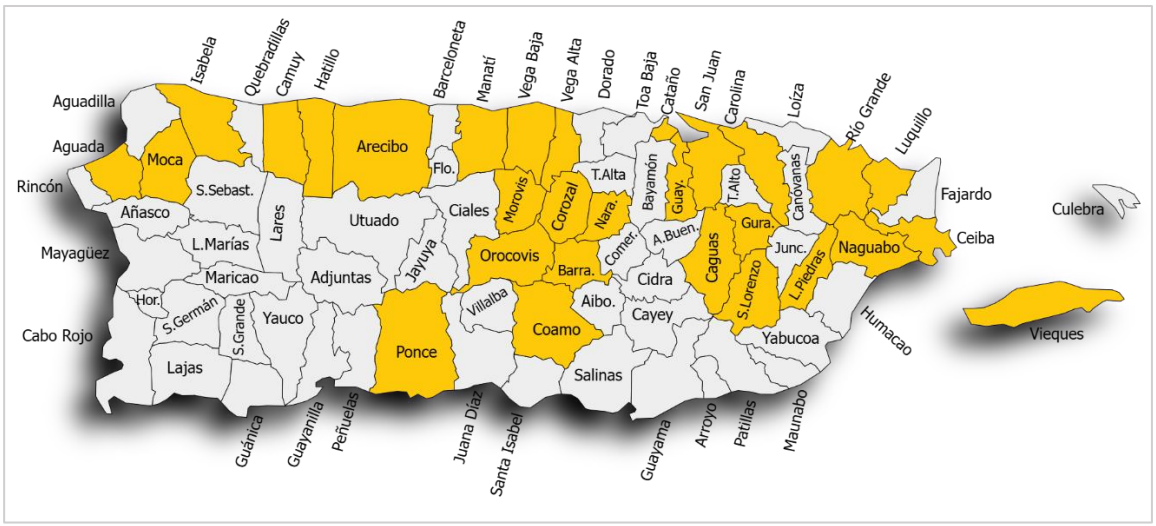
b. Analysis

A basic descriptive analysis was conducted using simple frequency measures, including the total number of adults who participated, the number of participants who reported a physician diagnosis of asthma, the distribution of participants across the municipalities reached, the number of participants who voluntarily completed an Asthma Control Test (ACT), the number whose ACT results indicated uncontrolled asthma, and the number of participants referred to the Puerto Rico Quitline (¡Déjalo Ya!).

c. Results

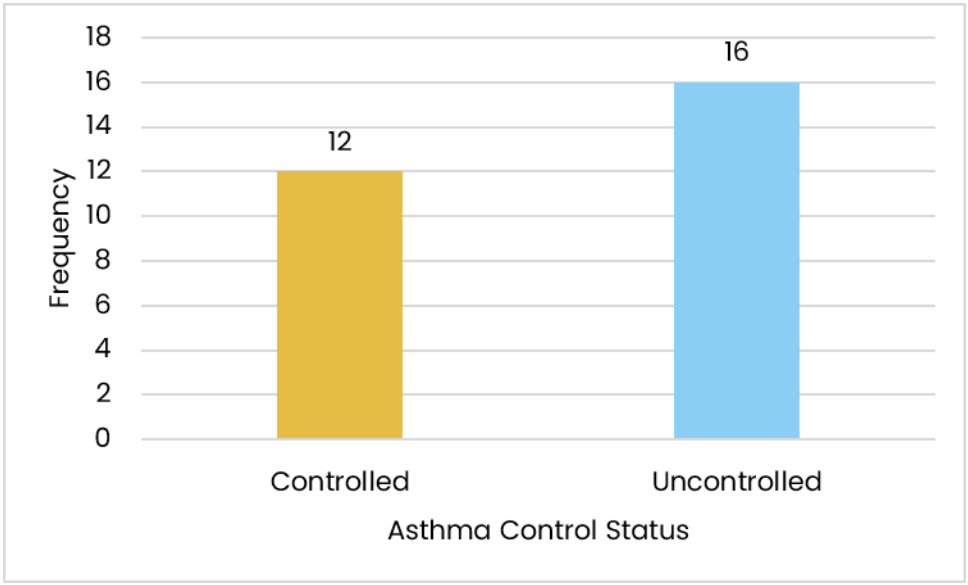
A total of 1,064 participants were reached through community outreach activities.

Figure 17. Map of municipalities impacted by the Community Outreach Activities, 2023-2024.



Community outreach activities were conducted across 30 municipalities.

Figure 18. Frequency of Participants by Asthma Control Status, Community Outreach Activities, 2023-2024.



Of 1,064 participants, 331 participants reported having asthma. Among those who voluntarily completed an Asthma Control Test (ACT), 28 assessments were administered, with 16 indicating uncontrolled asthma. The number of ACTs conducted reflects the voluntary nature of the screening and the logistical

constraints of community outreach settings, where a limited number of staff often provide education to multiple participants simultaneously.

Additionally, 8 individuals were referred to the Puerto Rico Quitline “¡Déjalo Ya!” (PRQ: 1-877-DEJALO).

(X) – Extinguishing smoking and secondhand smoke

The EXHALE Strategy "Extinguishing Smoking and Secondhand Smoke" was addressed by educating the community about the harmful effects of firsthand and secondhand smoke as asthma triggers, their impact on individuals with asthma, and by providing practical recommendations to avoid exposure. This component is integrated into various PRAMCU projects, including OAS and VIAS.

The Asthma Management and Control Unit and Tobacco Control Unit of the Puerto Rico Department of Health collaborate closely to implement this strategy. As part of this effort, participants receive educational and promotional materials related to smoking cessation, and a referral system is in place to connect individuals to appropriate services. PRAMCU actively works to identify caregivers who may benefit from smoking cessation support and refer them to the Puerto Rico Quitline “¡Déjalo Ya!” (PRQ: 1-877-DEJALO). Additionally, PRAMCU promotes participation in brief smoking cessation interventions offered by the Tobacco Control Program, helping to reduce tobacco exposure.

a. Evaluation Methods

As part of the evaluation process, the number of referrals made to the Puerto Rico Quitline (PRQ) was continuously updated in PRAMCU’s activities log. Additionally, since PRAMCU and the Puerto Rico Tobacco Control Unit (PRTCU) are part of the same division within the Puerto Rico Department of Health (PRDoH), PRTCU facilitates the information about the number of participants who have successfully accessed cessation services.

b. Analysis

A basic descriptive analysis was performed, using simple measures such as the number of participants referred to the PR Quitline, and the number of those who enrolled in the Quitline services.

c. Results

PRAMCU referred a total of eight adults to the Puerto Rico Quitline (PRQ), of whom two enrolled in the Quitline services.

The number reported under this indicator reflects only those participants who voluntarily agreed to be referred. This smoking cessation service is consistently offered and promoted during all PRAMCU activities, including community outreach interventions, home visits, and any other activities where a participant indicates that they smoke.

(H) – Home Visits for Trigger Reduction and Asthma Self-Management Education

The “Visitas Interactivas acerca del Asma en el hogar” (VIAS) project is a home-based asthma education initiative for residents of Puerto Rico, designed for children ages 4 to 17 with uncontrolled asthma and their caregivers. This program aims to reduce asthma triggers at home, enhance self-management skills, and ultimately decrease emergency room visits and hospitalizations due to asthma. VIAS is based on the "Breathing is Life: The control of asthma in our children" curriculum developed by the National Heart, Lung, and Blood Institute (NHLBI).

To achieve its goals, VIAS implements a structured intervention plan that includes:

- Two face-to-face home visits, where asthma triggers are identified, and families receive hands-on education.
- One video call, reinforcing key self-management techniques and strategies.

- Three follow-up calls at one month, six months, and twelve months to monitor progress and provide additional support.
- Educational materials on asthma management, proper medication use, and trigger reduction strategies.

Key topics include:

- Basic information about asthma
- Identify asthma triggers at home
- Demonstration of adequate use of asthma medications
- Asthma Action Plan
- Nutrition and physical activity education
- Educational Material

For this project, uncontrolled asthma is defined as:

- Score 19 points or less on the Asthma Control Test (ACT).
- In the past 12 months, meet any of the following conditions:
  - Had two or more visits to the Emergency Room due to asthma.
  - Experienced at least one hospitalization related to asthma.
  - Required the use of oral corticosteroids for asthma management.

a. Evaluation Methods

Pretest and posttest:

As part of the evaluation process, a pretest and posttest were administered to caregivers to assess changes in knowledge. See attachment 10 for more details about these tests.

Asthma Control Test (ACT):

Another evaluation tool used during the visits was the Asthma Control Test. This test was administered to participants to determine the child's asthma status,

whether it was controlled or uncontrolled, based on the score obtained. There are two types of asthma control tests depending on participants' age: one for ages 4 to 11, and another for those 12 and older. See attachments 5 and 6 for more details about the Asthma Control Test.

Environmental Protection Agency (EPA) form to identify asthma triggers and provide recommendations:

As part of the first visit, the EPA Form is completed to identify asthma triggers and provide recommendations for each family. These recommendations are discussed with the families to identify which ones they are willing to implement. During the third visit, the PRAMCU educational team verifies whether the recommendations given in the first visit have been met. For more details about this EPA Form visit: Strategies for Addressing Asthma in Homes.

Satisfaction survey:

A satisfaction survey was conducted to measure participants' perception of the project. The survey included sixteen closed- and two open-ended questions, allowing participants to share their thoughts and experiences. See attachments 11 for more details about the satisfaction survey.

Participants' interviews:

Throughout the project, interviews were conducted to gather information on treatment and the use of healthcare services, including emergency room visits and hospitalizations.

Example of questions included in the interviews are:

- In the past 4 weeks, how many times has the child visited a primary care physician or specialist for asthma-related care? Please include only visits due to asthma attacks, symptoms, or follow-up appointments for asthma management.

- In the past 4 weeks, has the child visited the emergency room due to asthma?
- In the past 4 weeks, has the child been hospitalized due to asthma?

b. Analysis

A basic descriptive analysis was performed, utilizing simple measures such as the number of families and their distribution by sex and age, and those municipalities impacted by VIAS Project. The change in knowledge was analyzed using the average pretest and posttest scores and a paired t-test for paired data.

Also, the analysis compared the frequency of healthcare service utilization—including physician visits, emergency room visits, and hospitalizations—between two time periods: the six months preceding the recruitment call and the six-month interval from the third visit to the 12-month follow-up call.

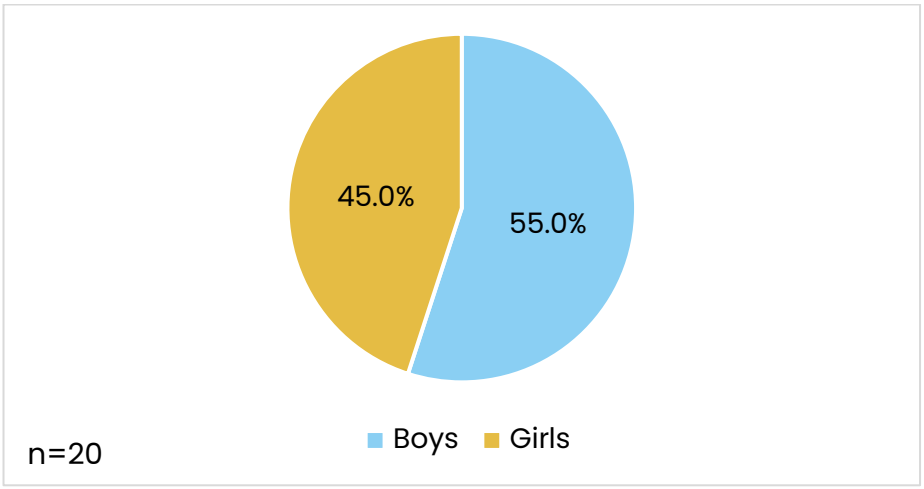
The asthma control status analysis consisted of the frequency of children with controlled asthma at the beginning of the first visit and at the end of the third visit. Higher scores of the Asthma Control Test (ACT) indicate better asthma control. For example, a score of 20 or above generally indicates well-controlled asthma, whereas a score below 20 suggests that asthma is not well-controlled and may require adjustments to the treatment plan. A paired t-test was conducted to evaluate changes in asthma control as measured by the ACT.

This evaluation also assessed the percentage of families who successfully implemented at least 50% of the recommendations accepted as part of the action plan to reduce asthma triggers at home, as well as participants' overall satisfaction with the interventions.

c. Results:

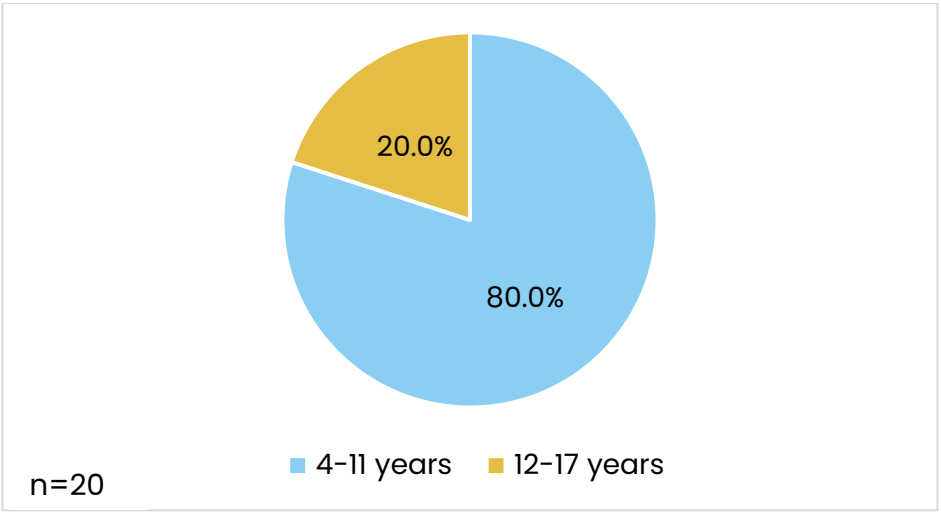
The VIAS project reached a total of 20 families with children and adolescents affected by asthma.

Figure 17. Distribution by sex of children and adolescents who participated in the VIAS Project, 2023-2024.



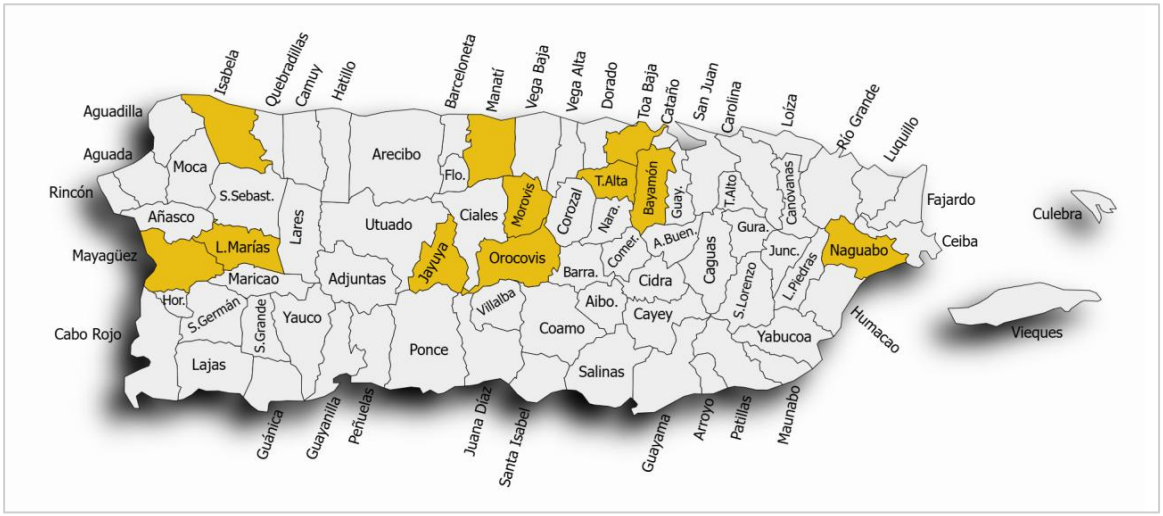
The participant group consisted of 45% girls and 55% boys.

Figure 18. Distribution by age of children and adolescents who participated in the VIAS Project, 2023-2024.



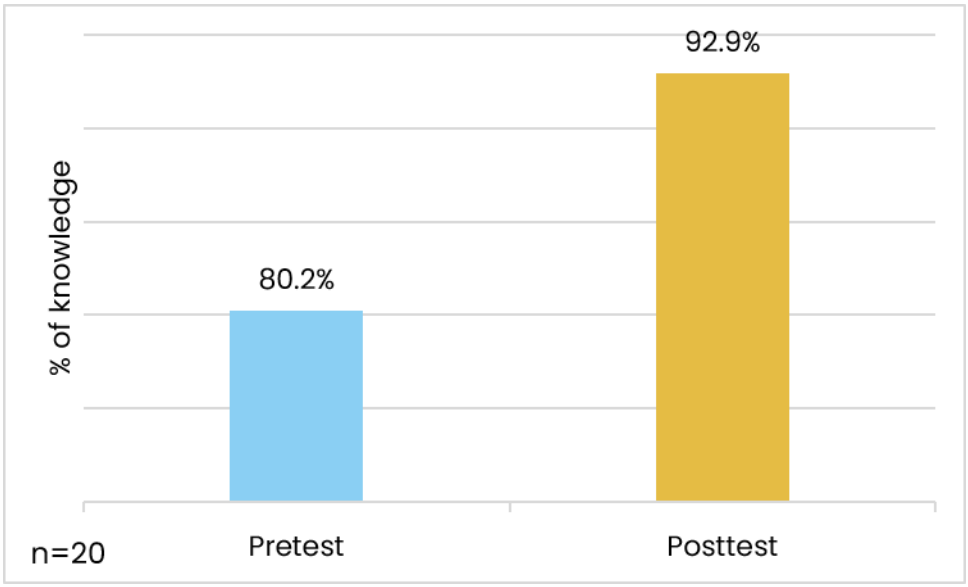
In terms of age distribution, 80% of the participants were children between the ages of 4 and 11 years old, and the other 20% were children between the ages of 12 and 17 years old.

Figure 19. Map of municipalities impacted by the VIAS Project, 2023-2024.



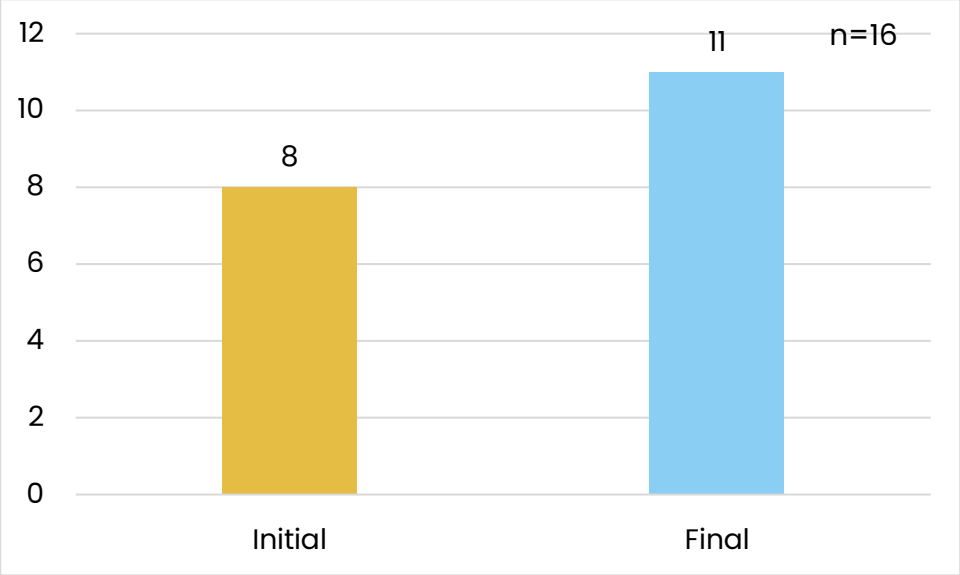
The VIAS project impacted the municipalities of Bayamón, Isabela, Jayuya, Las Marías, Manatí, Mayagüez, Morovis, Naguabo, Orocovis, Toa Alta, and Toa Baja.

Figure 20. Average pretest and posttest results, VIAS Project 2023-2024.



In the pretest, caregivers demonstrated an average asthma knowledge score of 80.2%. In the posttest, an improvement was observed, with the average score increasing to 92.9%. This reflects a 12.7 percentage point improvement in knowledge after participating in the project. Results showed a significant increase in knowledge from the pretest (M = 15.19, SD = 1.80) to the posttest (M = 16.81, SD = 1.17), with an average improvement of 1.8 points. This increase was statistically significant ($p < 0.0001$), indicating that the intervention led to a substantial improvement in participants' knowledge.

Figure 21. Frequency of children with controlled asthma at the beginning and end of the VIAS Project 2023-2024.



Regarding asthma control, ACT data were completed by 16 participants. Within this subgroup, the number of children with controlled asthma increased from 8 at the first visit to 11 by the end of the third visit. Mean ACT scores improved from M = 18.31 to M = 20.56, representing a statistically significant rise of 2.25 points ($p = 0.04$). This suggests that the intervention contributed to better asthma control among participating children.

Of the 20 participants who received the VIAS Project intervention, 11 successfully completed the 12-month follow-up call. The remaining nine could not be reached due to disconnected or changed phone numbers and nonresponse despite repeated contact attempts.

Figure 22. Number of VIAS participants by the frequency of visits to the physicians, 2023-2024.

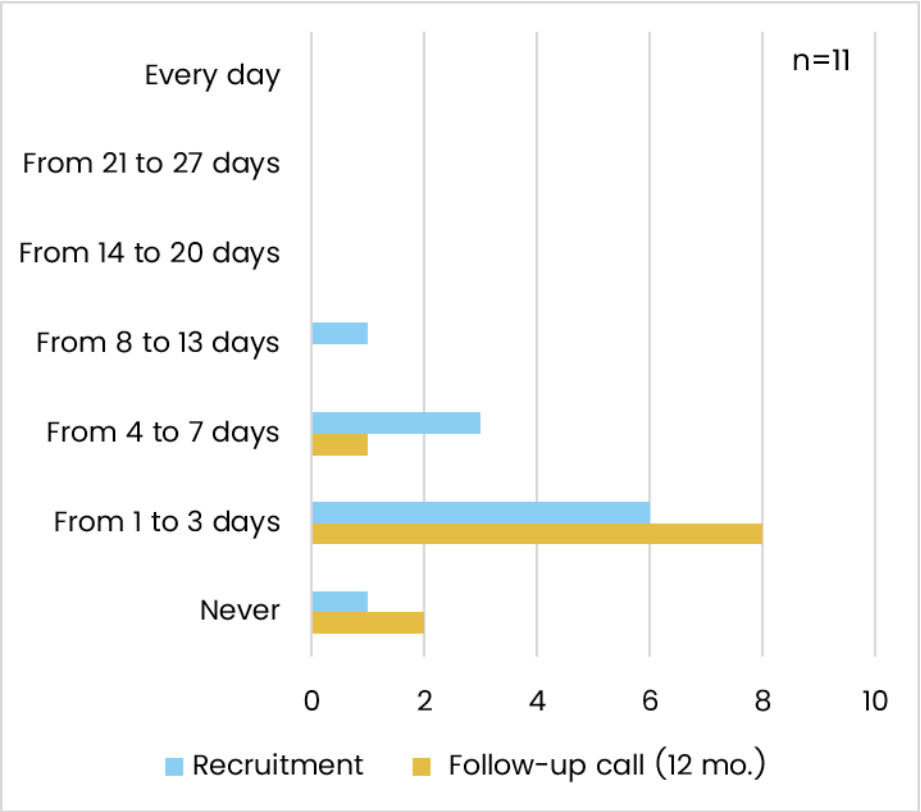
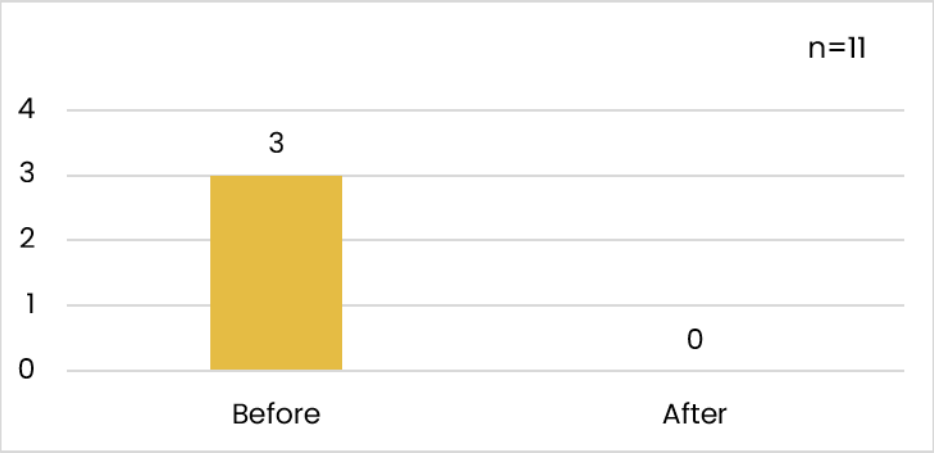


Figure 22 shows the frequency of physician visits in the VIAS participants between two periods: the six months preceding the recruitment call and the six-month interval from the third visit to the 12-month follow-up call (n=11). According to the results, no participants reported visiting a physician more than 13 days per month. Following the VIAS Project intervention, the number of participants who reported 8 to 13 physician visits decreased from 1 to 0. Those who reported 4 to 7 visits during the same period declined from 3 to 1. On the

other hand, the number of participants who reported 1 to 3 visits increased from 6 to 8, and those who reported no visits rose from 1 to 2.

Figure 23. Frequency of participants who reported hospitalizations before and after receiving the VIAS Project, 2023-2024.



A reduction in hospitalizations was observed, with 3 participants hospitalized during the six-month period prior to the recruitment call, compared to no hospitalizations reported during the six-month period preceding the follow-up call conducted twelve months after the third visit.

Figure 24. Frequency of participants who reported emergency room (ER) visits before and after receiving the VIAS Project, 2023-2024.

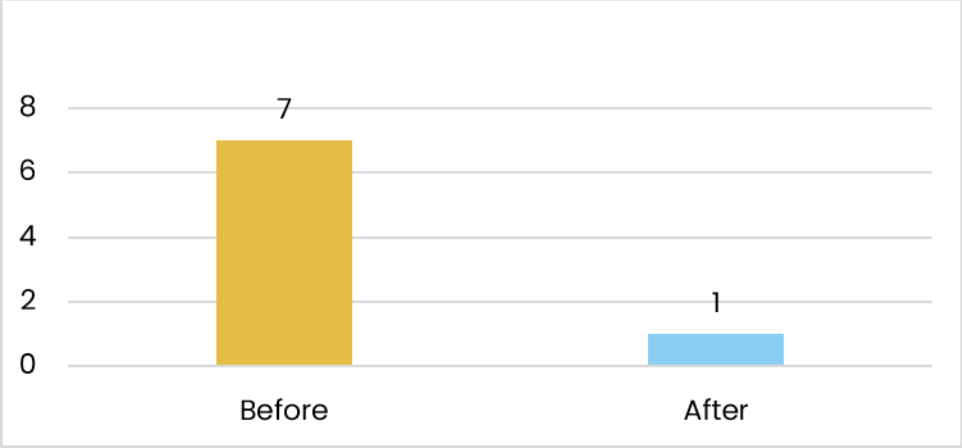


Figure 24 shows the number of participants who reported emergency room visits in the VIAS participants between two periods: the six months preceding the recruitment call and the six-month period preceding the follow-up call conducted twelve months after the third visit (n=11). The number of participants who reported ER visits decreased from 7 to 1.

Asthma triggers and recommendations:

Figure 25. Percentage of recommendations implemented by participants, VIAS Project, 2023-2024.

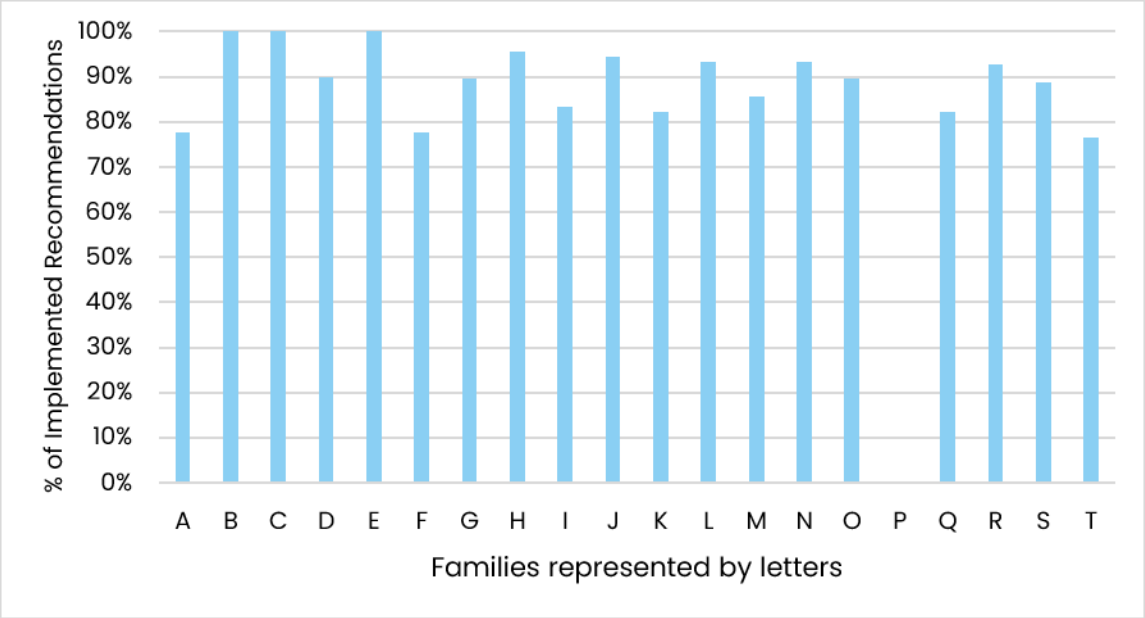


Figure 25 shows the percentage of recommendations implemented by family. The number of recommendations varied by family since asthma triggers found at each home were different. Each family accepted the recommendations they were willing to implement and those were included in the family's action plan to reduce asthma triggers. Based on the recommendations accepted in the action plan, an evaluation was conducted on the third visit to review which of those were implemented. The results showed that 100% of the families implemented at least 50% of the recommendations provided and one family

(represented by letter P) had no recommendations to reduce asthma triggers since those were not identified according to the EPA form; however, they received support through the educational component.

Satisfaction Survey:

Regarding the satisfaction surveys conducted, 100% of the participants indicated that they were satisfied with the VIAS project and would recommend it to others.

(A) – Achievement of guidelines-based medical management

This strategy is supported by facilitating educational activities based on the Guidelines for the Diagnosis and Management of Asthma (NAEPP asthma guidelines EPR-3, EPR-4 and their updates). The training covers essential topics, including asthma pathophysiology, common triggers, and proper medication use. Additionally, healthcare providers receive guidance on how to correctly complete the Asthma Action Plan, ensuring patients receive a structured treatment plan tailored to their needs.

A. Asthma Management Training for Health Professionals

These trainings aim to enhance the knowledge and skills of healthcare providers in Puerto Rico regarding asthma diagnosis, management, and treatment. During the reporting period, PRAMCU delivered two educational interventions. One of them was coordinated by a health insurance provider in Puerto Rico, with our team leading the educational component. However, since the health insurance provider oversaw the logistics and evaluation process, PRAMCU had limited access to the resulting data. In contrast, the second training was fully organized by PRAMCU, including the planning and implementation of its evaluation, which allowed for complete access to the data collected.

a. Evaluation Methods

As part of the evaluation process, pretest and posttest were administered to participants to evaluate changes in knowledge. The assessment developed by the Puerto Rico Department of Health included 10 questions, whereas the training coordinated by the health insurance provider included 5 questions. In addition, two separate satisfaction surveys were administered in those trainings to evaluate the participants' perception of all the components of the activity. See attachments 12 to 14 for more details about the evaluation questions.

b. Analysis

A basic descriptive analysis was conducted using simple indicators, such as the number of health professionals impacted and whether the workshops were delivered virtually or in person. The change in knowledge for the training coordinated by the Puerto Rico Department of Health was analyzed using average pretest and posttest scores, absolute difference between each question of the pretest and posttest results and a Wilcoxon signed-rank test. In contrast, for the training organized by the health insurance provider, the analysis revealed duplicate responses, but PRAMCU did not have access to the data required to identify and remove them. For this reason, the reported results were limited to the number of pretest and posttest responses and the corresponding average test scores. As the data could not be validated, these findings should be interpreted with caution.

Regarding the satisfaction survey for the training coordinated by Triple S, the analysis focused on the proportion of respondents expressing satisfaction with the intervention and suggestions for improvement.

c. Results:

During this period, two educational interventions were delivered to health professionals, one virtual and one in person, reaching a total of 236 participants: 183 through a collaboration with a health insurance company (virtual) and 53 via PRAMCU-led training (in-person).

Training coordinated by the health insurance company:

During the training coordinated by the health insurance company, 287 pretests and 172 posttests were completed. Given that the total number of participants was 183, these figures indicate that some individuals completed the pretest more than once, while others did not complete the posttest.

The average test score from the pretest was 4.1 and for the posttest was 4.8. As the data could not be validated, these findings should be interpreted with caution.

Table 1: Number of responses from the pretest and posttest and the average test scores.

	Pretest	Posttest
Number of responses	287	172
Average test score	4.1	4.8

Of the 183 health professionals who participated in this training, 149 completed the satisfaction survey, yielding a response rate of approximately 81.4%. The feedback received was carefully categorized, suggesting overall satisfaction with the intervention. As shown in Table 2, 100 individuals provided feedback; of these, 89 expressed some level of satisfaction with the training, while 11 offered suggestions for improvement. The remaining 49 participants did not provide any input related to the session.

Table 2: Categories used to analyze the feedback responses from the health insurance company's satisfaction survey.

Category	Number of responses
Commentaries that express satisfaction with the intervention	89
Suggestions for improvement	11
Total	100

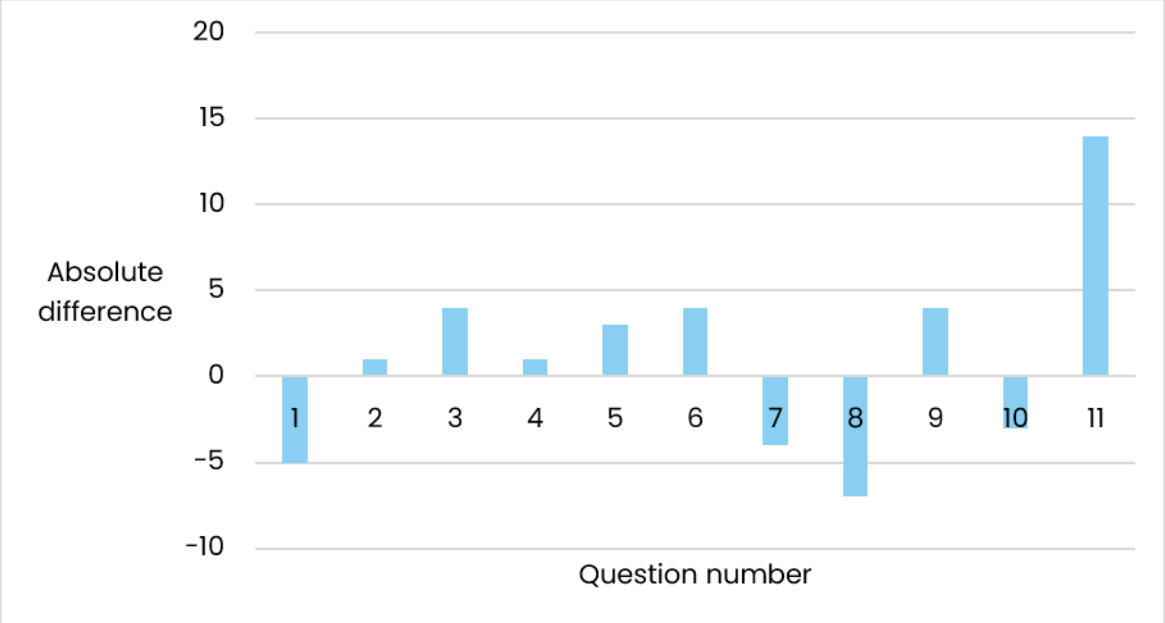
PRAMCU-led training:

The analysis of the absolute differences between pretest and posttest scores revealed an increase in knowledge across 7 of the 11 topics covered in the training. These gains suggest improved understanding in the areas of: Definition of asthma (Topic 2), Severity classification (Topic 3), Spirometry (Topic 4), Asthma self-management education (AS-ME) (Topic 5), Physical examination (Topic 6), Asthma triggers (Topic 9), and Asthma symptoms (Topic 11).

In contrast, four topics had lower scores in the posttest compared to the pretest: Asthma Action Plan (Topic 1), Rescue medication (Topic 7), Asthma prevalence in children (Topic 8), and Control medications (Topic 10). These findings suggest specific areas where the training content could be clarified or reinforced to improve learning outcomes in future sessions.

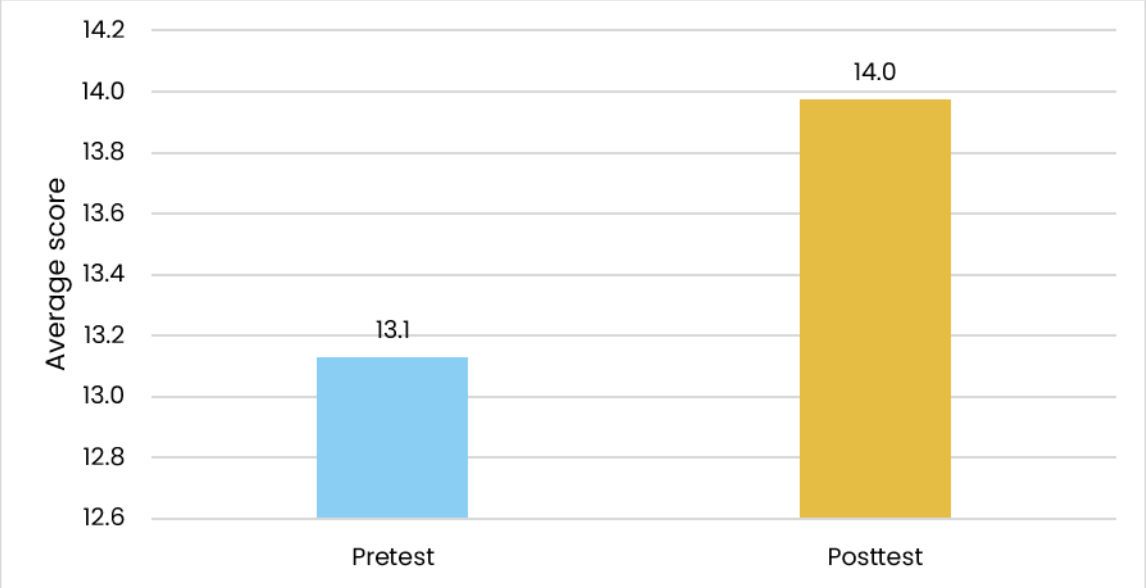
See attachment 13 for more information about each question of these tests.

Figure 26. Absolute difference between each question of the pretest and posttest results for the PRAMCU Asthma Management Training for Health Professional, 2023-2024.



When analyzing the overall average scores, there was a modest improvement from 13.1 in the pretest to 14.0 in the posttest, suggesting a positive overall impact of the training.

Figure 27. Average score of pretest and posttest results for the PRAMCU Asthma Management Training for Health Professional, 2023-2024.



A Wilcoxon signed rank test was conducted to assess differences in scores before and after the intervention, given that the distribution of differences did not meet normality assumptions (Shapiro–Wilk W = 0.9277, p = 0.015). The analysis revealed a statistically significant increase in postintervention scores compared to preintervention scores (Z = 2.27, p = 0.023). The median difference was 0 points (IQR = 0–2), with an average improvement of 0.85 points, indicating that several participants demonstrated progress following the intervention. These findings suggest that the intervention had a positive and statistically significant effect on the measured scores.

Unfortunately, the satisfaction evaluation data from the in-person training is not available, as the survey was administered by an external collaborator and the results were lost in the process of interchanging data. To improve access to this type of information and ensure evaluations are collected accurately and on time in the future, we will be transitioning to a digital evaluation process. This approach would allow us to receive and manage results directly.

B. Asthma Medication: Education and Demonstration (AMED project)

The AMED Project is an educational initiative aimed at expanding knowledge on the proper use of asthma medications to improve asthma management and control. PRAMCU provides training sessions for community health workers, nurses, teachers, physicians, and health educators to ensure they can effectively educate patients and demonstrate the correct use of asthma medication devices. Each training session lasts approximately two hours.

Key components of this project:

- Education on Asthma Management and Control
- Demonstration of adequate use of asthma medications
- Asthma demonstration devices and medications kits

- Role play
- Participation Certificate

Criteria to participate in AMED Project:

To be eligible for participation in the AMED project, the participants must meet the following criteria:

- Be a health care professional who cares for people with asthma.
- Commit to completing a monthly report of the patients oriented using the equipment provided.
    - Group orientations
    - Individual orientations

a. Evaluation Methods

As part of the evaluation process, a pretest and posttest were administered to all the participants, to evaluate the change in knowledge. In addition, a satisfaction survey was conducted to measure participants' overall satisfaction with the training and their perceptions of its components. The survey included both closed- and open-ended questions, allowing participants to share their thoughts and experiences. See attachments 15 and 16 for more details.

Moreover, the reports submitted by the participants were analyzed to calculate the number of people with asthma impacted by the trainees.

b. Analysis

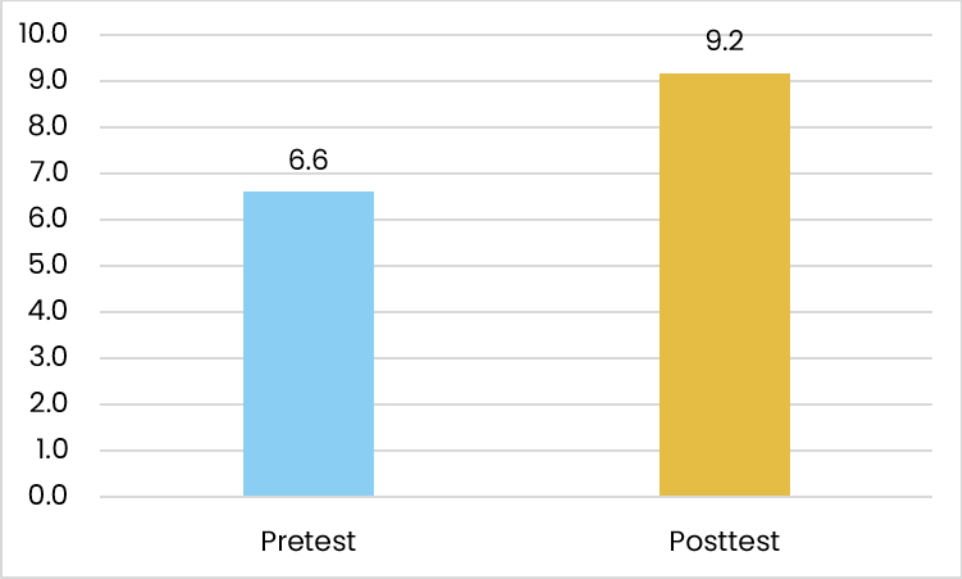
A basic descriptive analysis was performed, utilizing simple measures such as the number of professionals trained, the number of participants these professionals reached, and the number of group and individual orientations. Along with the descriptive analysis, a paired t-test was conducted to evaluate differences in scores before and after the intervention.

Regarding the satisfaction survey, the analysis focused on the proportion of respondents expressing satisfaction with the intervention.

c. Results

From September 2023 to August 2024, a total of 76 professionals were trained through the AMED project on the proper use of asthma medications for effective asthma management and control. Collectively, these professionals reached and educated 775 participants, including 140 students diagnosed with asthma. Twenty-four group interventions and 21 individual interventions were conducted during this timeframe.

Figure 28. Average score of pretest and posttest results for the AMED Project, 2023-2024.



An increase in average score was observed from 6.6 to 9.2. Also, the analysis using the paired t-test (n=70) revealed a statistically significant increase in postintervention scores compared to preintervention scores ($p < 0.0001$). The mean difference was 2.56 points, indicating that most participants improved following the intervention. These findings suggest that the intervention had a positive and statistically significant effect on the measured scores.

Regarding the satisfaction survey conducted, all participants that answered the survey (n=69) were very satisfied with the workshop.

(L) – Linkages and Coordination of Care across Setting

The "Linkages and Coordination of Care Across Settings" strategy focuses on establishing alliances and referral systems with key partners such as healthcare professionals, school nurses, health programs, and other stakeholders. Through these collaborations, PRAMCU promotes its services and facilitates referrals to various resources, including the VIAS project and the Puerto Rico Quitline for smoking cessation.

As part of this strategy, PRAMCU worked closely with the Puerto Rico Department of Education (PRDoE) to implement the Asthma School Registry, which aligns with Law 56 of 2006 and Regulation 9224. This registry aims to ensure that every student with asthma has a complete Asthma Action Plan. Law 56 allows students to self-administer asthma medications in schools, while Regulation 9224 outlines the required documentation that parents must submit for medication administration. By ensuring the completion and submission of the Asthma Action Plan, schools play a vital role in supporting students' asthma management, while PRAMCU helps track and facilitate the necessary documentation for students to self-administer their asthma medications in schools.

Also, PRAMCU established collaboration agreements with partners to strengthen the efforts to improve asthma education, data collection, and management strategies across Puerto Rico.

A. Referrals System

a. Evaluation Methods

Referrals for the VIAS project were managed through the REDCap platform. The PRAMCU developed a standardized form to collect data on patients with

uncontrolled asthma. This form was distributed via email and promoted through multiple channels, including the PRDoH website, social media platforms such as Facebook, and printed materials such as flyers and brochures. Referrals coud be submitted in two formats: (1) self-referrals completed by families of children with asthma, and (2) referrals submitted by healthcare professionals responsible for managing the child's asthma.

As part of the evaluation process, PRAMCU utilized the activities log sheet to systematically track the number of individuals referred to the Puerto Rico Quitline. PRAMCU key staff performed quality control of the data to ensure the records include essential details such as date of referral, referring source, and participant demographics information. The referral data was analyzed to identify trends, such as geographical distribution, target population reach, and referral success rates.

b. Analysis

A basic descriptive analysis was performed, using simple measures such as number of referrals received for the VIAS project, those who were eligible to participate, families contacted, completed interventions, recruitment calls made by visitors. Also, the number of referrals made to support families in need of home remediation services was calculated and the number of referrals provided for Puerto Rico Quitline for smoking cessation, and how many of these participants accessed the services.

c. Results

PRAMCU received a total of 115 referrals for the VIAS Project. Of these, 104 were eligible to participate. After removing six duplicate entries, 98 unique referrals

remained. From this group, 28 individuals were contacted, and 17 successfully completed the intervention.

In total, visitors made 51 calls: 19 were unsuccessful, 9 were scheduled for a later time, and 23 were completed. Among the completed calls, 2 participants were found to be ineligible, 4 declined participation, and 17 met the eligibility criteria. Three of the 20 families impacted corresponded to referrals originally received in the previous year.

Some collaborators that made referrals to the VIAS project 2023-2025 were:

- PR Children's Hospital
- PR Department of Education
- Health promoters from the PR Public Health Trust
- Some pneumologists and pediatricians

During the reporting period, a total of 8 referrals were successfully made to the Puerto Rico Quitline “Déjalo Ya!” under the PRDoH Tobacco Control Program, providing participants with access to valuable support and tools to quit smoking. Of the eight participants referred, two enrolled in the Puerto Rico Quitline services, while the remaining six are on a waiting list to complete their enrollment.

In addition, nine referrals were made to the *Oficina de Ayuda al Ciudadano* across various municipalities to support families in need of home remediation services. These referrals were provided, and the responsibility for follow-up rested with the families.

B. Asthma School Registry

The Asthma School Registry is a system designed to collect information on children with asthma across Puerto Rico. Through collaboration with both

public and private schools, this system seeks to ensure that all children with asthma have an Asthma Action Plan as part of their treatment, and that this document is properly provided to their schools.

a. Evaluation Methods

The Asthma School Registry is managed through the REDCap platform. PRAMCU developed a standardized form to collect data about students with asthma in public and private schools. This form is distributed via email to the school nurses or the designated staff and requires information about the school, number of children with asthma and their asthma action plan. Once the period to complete the Asthma School Registry finishes, PRAMCU sends an evaluation form to every school that completed the registry to collect their feedback about the platform and the general process. See attachment 17 for more details about the Asthma School Registry Evaluation form.

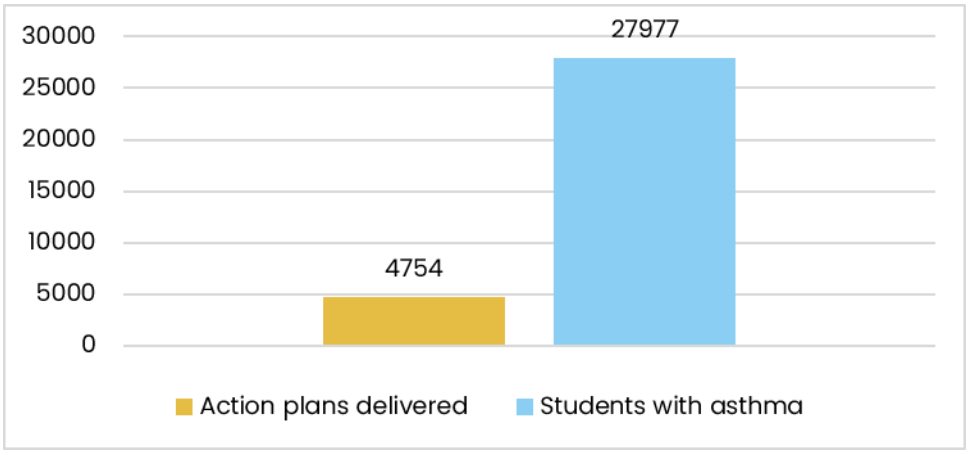
b. Analysis

The analysis of the Asthma School Registry was focused on the number of children with asthma reported by school staff, the number of students with an asthma action plan on file at the school, and the barriers identified in completing the required documentation process. Additional topics are addressed in the annual report of the Asthma School Registry.

c. Results

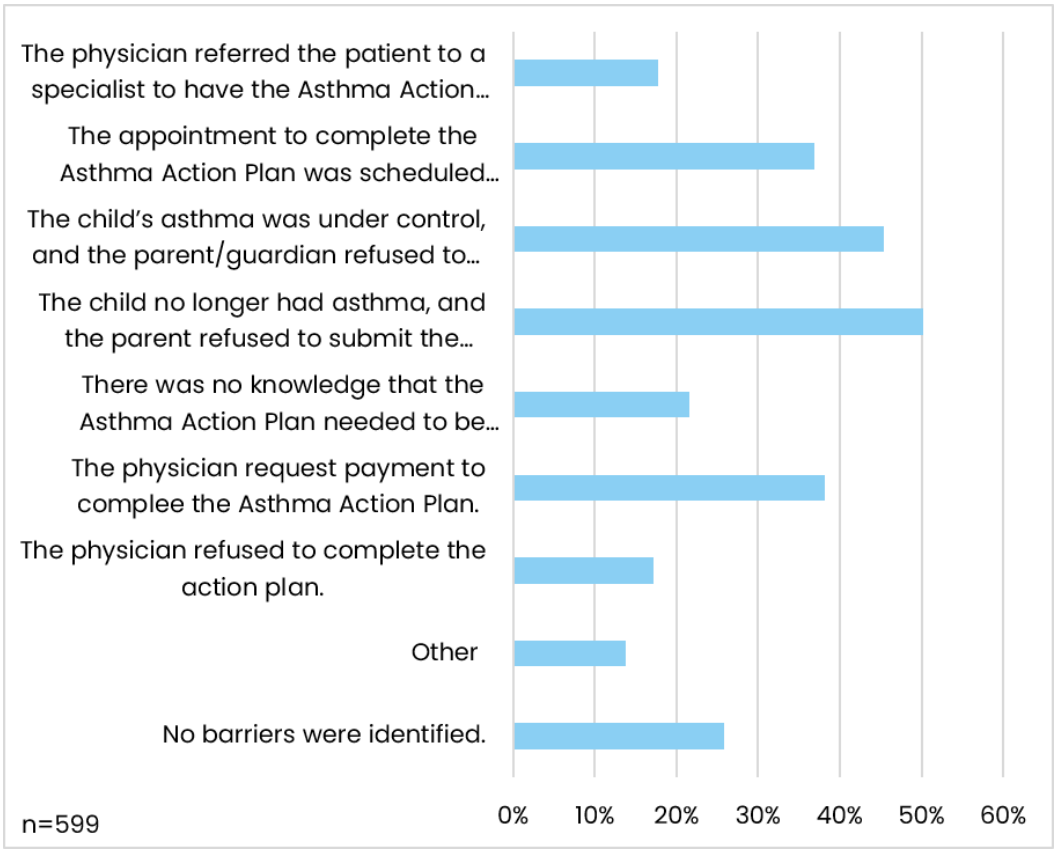
A total of 891 schools entered information to the Asthma School Registry and 597 completed the evaluation form. This means that 67% of these schools completed the survey.

Figure 29. Number of students with asthma vs number of asthma action plans delivered to schools.



As shown in Figure 29, a total of 4,754 action plans were submitted, out of 27,977 students reported to have asthma.

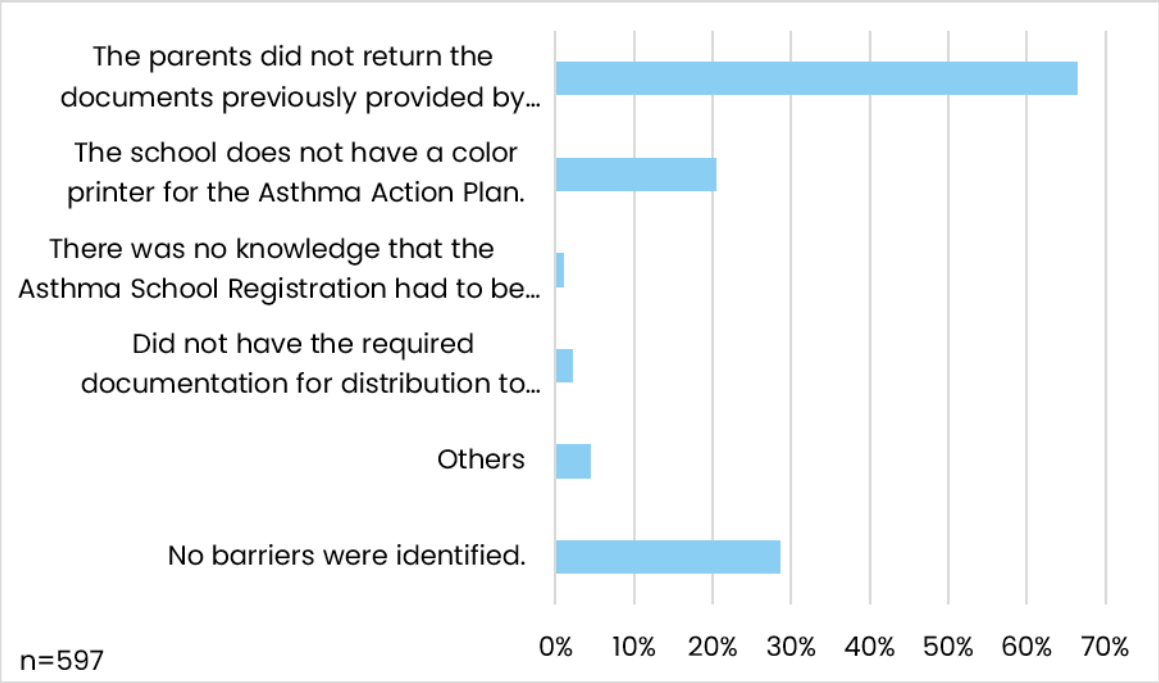
Figure 30. Percentage of participants who identified barriers for parents in obtaining the asthma action plan.



The main barriers reported by school staff regarding parents' ability to obtain the Asthma Action Plan include the following:

- 50%-The child no longer had asthma, and the parent refused to submit the documents.
- 45%-The child's asthma was under control, and the parent or caregiver refused to submit the documents.
- 38%-The physician request payment to complete the Asthma Action Plan.
- 37%-The appointment to complete the Asthma Action Plan was scheduled beyond the document submission deadline.
- 26%-No barriers were identified.
- 22%-There was no knowledge that the Asthma Action Plan needed to be completed or submitted.
- 18%-The physician referred the patient to a specialist to have the Asthma Action Plan completed by that professional.
- 17%-The physician refused to complete the action plan.
- 14%-Others

Figure 31. Percentage of participants who identified barriers affecting schools in collecting students' asthma action plans.



Furthermore, the main barriers reported by the school in submitting the Asthma Action Plan include the following:

- 66%-The parents did not return the documents previously provided by school staff.
- 20%-The school does not have a color printer for the Asthma Action Plan.
- 29%-No barriers were identified.
- 5%-Others
- 2%-Did not have the required documentation for distribution to parents or caregivers.
- 1%-There was no knowledge that the Asthma School Registry had to be completed

C. Collaborations

Some organizations that collaborated with PRAMCU from September 2023 to August 2024 were the following:

1. Columbia University, New York
2. Puerto Rico Health Insurance Administration
3. Coalition for a Tobacco-Free Puerto Rico
4. Alliance for Chronic Disease Control (ACEC, Spanish acronym)
5. Puerto Rico Association of Primary Health Care Providers (ASPPR, Spanish acronym)
6. PR Department of Education
7. Association of Private Education in Puerto Rico
8. PR Public Health Trust
9. University of Puerto Rico – Medical Science Campus
10. PR Insurance Commissioner Office (OCS, Spanish acronym)
11. PR Behavioral Risk Factor Surveillance System
12. American Lung Association
13. Universidad Central del Caribe (UCC)
14. PR Demographic Registry
15. Puerto Rico Coalition for Asthma & Other Chronic Respiratory Conditions
16. Centers for Disease Control and Prevention

(E) – Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources

This strategy is applied through multiple approaches to help families and communities reduce asthma triggers both in the home and school environments, as well as in public spaces.

A. Reduction of asthma triggers through the VIAS Project

Through the VIAS project, PRAMCU helps families identify asthma triggers in the home and provides resources to mitigate exposure to them. During home visits, PRAMCU staff works with participants to assess their home environment for common asthma

triggers, such as dust, pests, and allergens. Based on these assessments, a plan is developed to minimize exposure, and resources are provided to families.

a. Evaluation Methods

As part of the evaluation process, a standardized form was completed during the first and third home visits. During the initial visit, the visitor identified asthma triggers present in the home environment and provided specific recommendations to reduce or eliminate them. Together, the visitor and the caregiver developed a personalized action plan, in which the caregiver committed to implement selected recommendations. A copy of the plan was provided to the caregiver, and the information was also documented in the program records for follow-up and analysis.

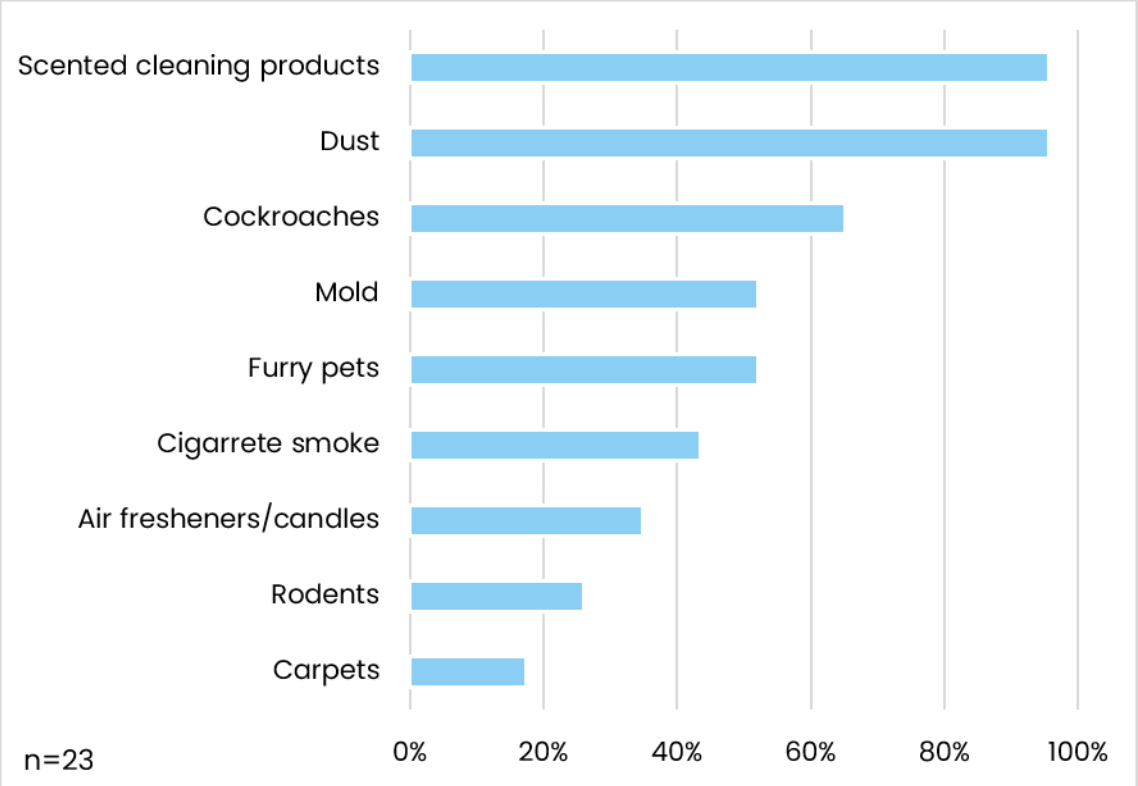
b. Analysis

This section presents an analysis of the percentage of homes in which each evaluated asthma trigger was observed and the number of families willing to take action to reduce them. For specific recommendations aimed at reducing these triggers, please refer to Section (H) – Home Visits for Trigger Reduction and Asthma Self-Management Education.

c. Results:

Although 20 participants completed the project, the results shown in Figure 32 reflect data from all 23 families who initially enrolled. In contrast, Figure 33 presents the results for the 20 families who completed all visits.

Figure 32. Percentage of homes where each evaluated asthma trigger was observed.



The most common asthma triggers in the homes of VIAS participants were scented cleaning products and dust (96%), followed by cockroaches (65%), mold (52%), and furry pets (52%).

Figure 33. Numbers of recommendations selected by families to reduce the asthma trigger identified in the home vs. number of those who implemented the recommendations.

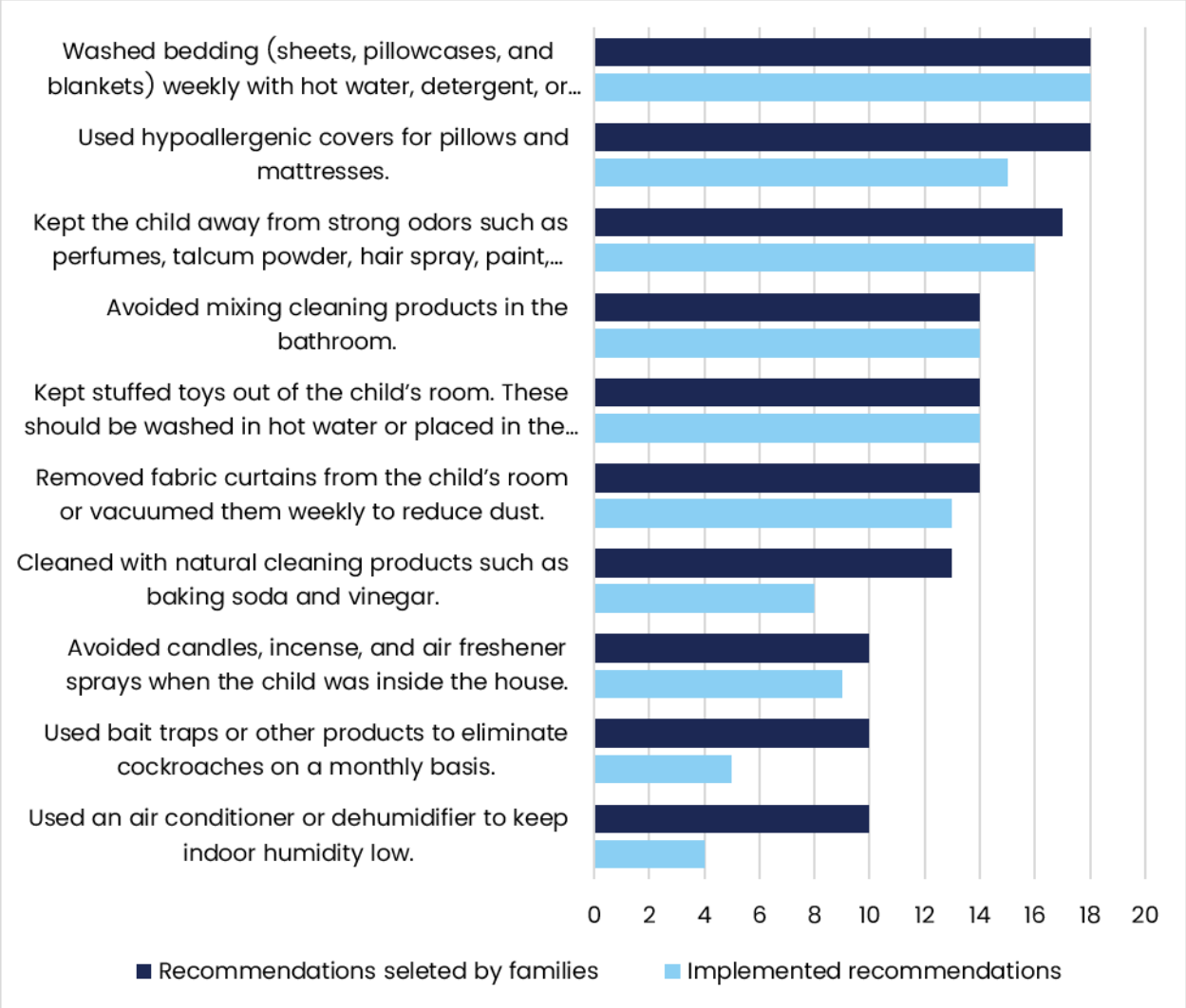


Figure 33 highlights in navy blue the top ten recommendations most frequently selected by families to reduce asthma triggers in the home. The most commonly chosen actions addressed issues related to dust mites, strong odors, cleaning products, cockroaches, and humidity. Out of a list of 50 available recommendations, families were most willing to: wash bedding regularly; use hypoallergenic covers for pillows and mattresses; keep children away from strong odors; avoid mixing cleaning products in the bathroom;

remove or vacuum fabric curtains weekly; keep stuffed toys out of the child's room; clean with natural products like baking soda and vinegar; avoid candles, incense, and air freshener sprays indoors; use bait traps or other methods to control cockroaches monthly; and use an air conditioner or dehumidifier to maintain low indoor humidity.

On the other hand, Figure 33 displays in sky blue the number of families who implemented the selected recommendations. The most frequently implemented action was washing bedding regularly, while the least implemented was using an air conditioner or dehumidifier to maintain low indoor humidity.

B. Asthma Control in Schools Online Course

The Asthma Control in Schools online course was designed for key school personnel, including teachers, principals, school nurses, counselors, and others, in compliance with Regulation 9224, which supports Law 56 of 2006.

Coordination of the course typically began when schools contacted the Puerto Rico Asthma Management and Control Unit (PRAMCU) via email or phone. Once communication was established, the program worked with the school to schedule the course, which was delivered virtually through the CANVAS platform. The course had a duration of approximately 1.5 hours and remained accessible for a 48-hour period. It was available free of charge to all educational institutions across Puerto Rico.

The following topics are addressed:

1. Definition of Asthma, Symptoms, and Treatment
2. Demonstration of Adequate use of Asthma Medications
3. Asthma statistics in Puerto Rico
4. Law 56 of 2006, Regulation 9224, and Administrative Order 473
5. Services provided by PRAMCU

Finally, participants receive a certificate valid for 3 years upon meeting the following criteria:

1. Complete the Contact Information for the Certification.
2. Complete the Pretest.
3. Complete the 6 information modules about asthma control in schools.
4. Complete the Posttest with a minimum score of 7.
5. Complete the Satisfaction Survey.
6. Meet the required time of the course, which consists of 1 hour and 30 minutes. The platform allows the course to be completed consecutively or in time intervals for 48 hours.

a. Evaluation Methods

As part of the evaluation process, pretest and posttest were administered to school staff participants to assess changes in knowledge. In addition, a satisfaction survey was conducted to measure participants' perception of the course. The survey included both closed- and open-ended questions, allowing participants to share their thoughts and experiences. For more details about the 'Asthma Control in Schools' online course tests and satisfaction survey, see Attachments 19 and 20.

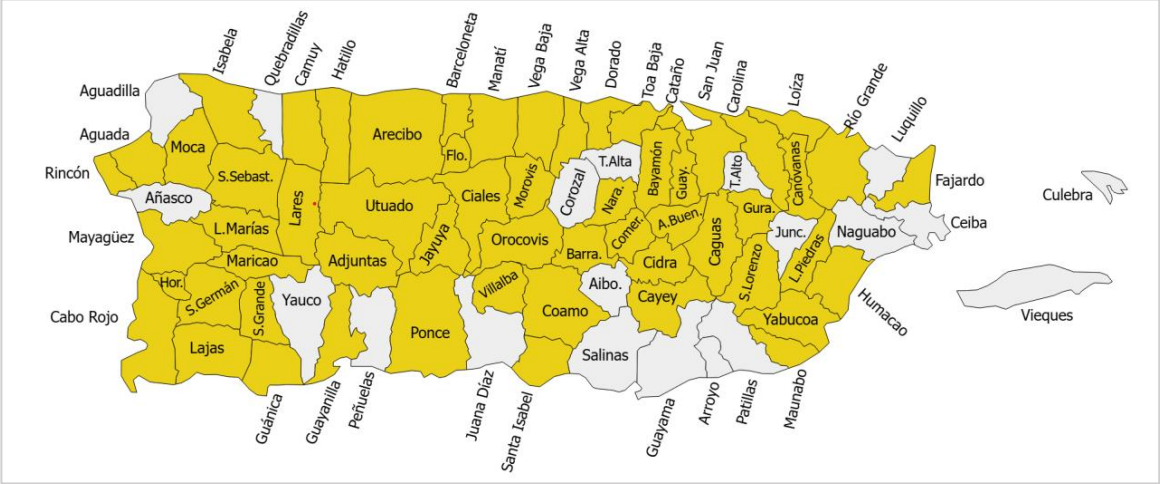
b. Analysis

A basic descriptive analysis was conducted using simple measures such as the number of participants, the number of schools impacted, the number of municipalities involved, and the percentage of participants who passed the course. Participant satisfaction was assessed by calculating response frequencies and percentages. To evaluate changes in knowledge, average scores from pretests and posttests were compared. A paired-sample t-test was performed to determine whether the observed differences in scores were statistically significant.

c. Results

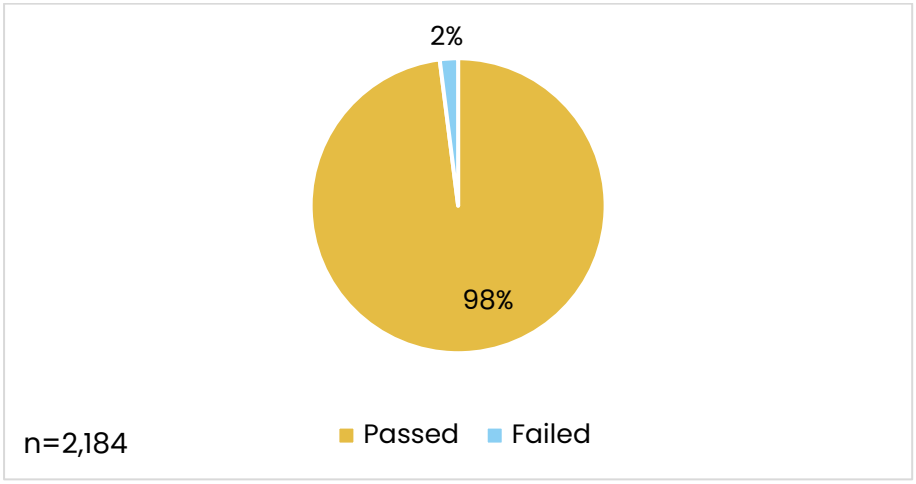
The online course 'Asthma Control in Schools' impacted 2,654 school personnel—including teachers, principals, school nurses, and counselors—across 129 academic institutions throughout Puerto Rico. When compared to the previous period 2022 to 2023, participation increased from 1,767 to 2,654.

Figure 34. Map of municipalities impacted by the "Asthma Control in School" online course.



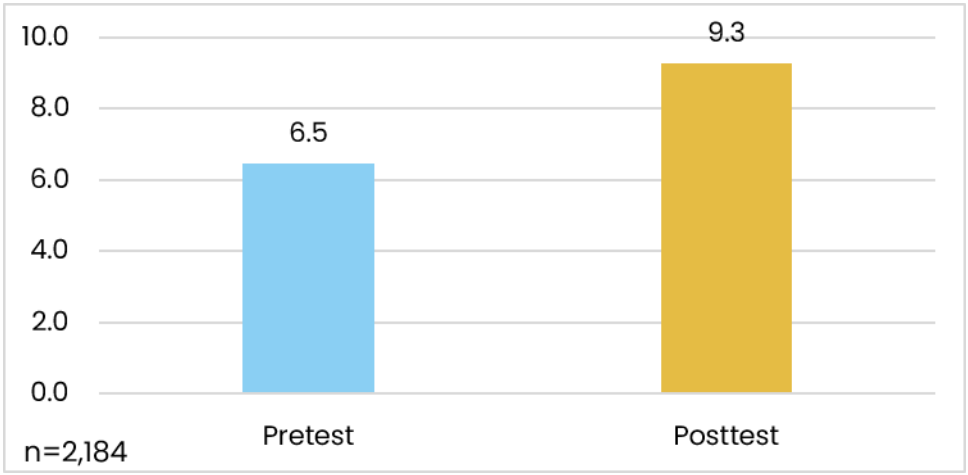
The online course 'Asthma Control in Schools' reached 58 municipalities across all of Puerto Rico's health regions.

Figure 35. Percentage of participants who passed the course.



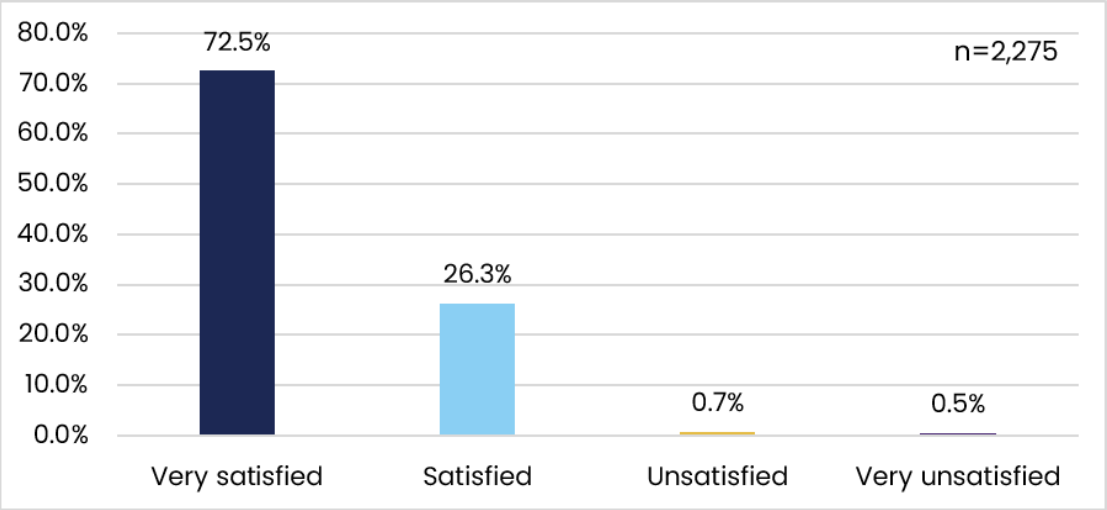
A total of 2,184 professionals successfully completed the course requirements, including both the pre-test and post-test assessments. Of these participants, 98% passed the course.

Figure 36. Average pretest and posttest results, 'Asthma Control in Schools' online course, 2023-2024.



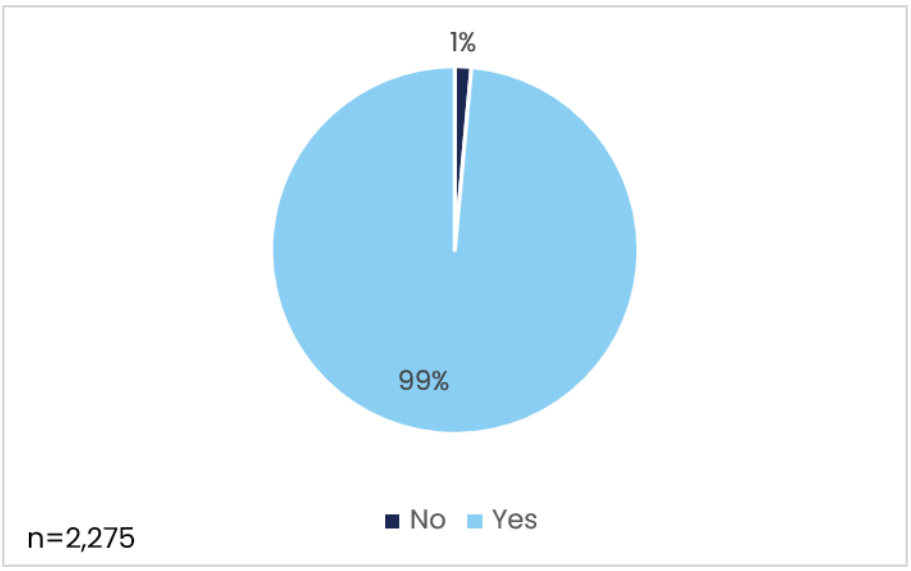
An increase in knowledge was observed, with the mean score improving from 6.5 on the pretest to 9.3 on the posttest, representing an approximately 43.1% relative improvement compared to the pretest score. The analysis using the paired t-test (n = 2,184) revealed a statistically significant increase in post-intervention scores compared to pre-intervention scores ($p < 0.0001$). The mean difference was 2.82 points (SD = 2.03), indicating that most participants improved following the intervention. These findings suggest that the intervention had a positive and statistically significant effect on the measured knowledge scores.

Figure 37. Percentage of Participants Reporting General Satisfaction with the 'Asthma Control in Schools' Online Course, 2023-2024.



Out of the 2,654 school personnel who enrolled in the Asthma Control in Schools online course, 2,275 completed the post-course satisfaction survey, resulting in a strong response rate of approximately 85.7%. Among respondents, 72.5% reported being *very satisfied* with the course, while 26.3% indicated they were *satisfied*. Only 1.2% of participants expressed dissatisfaction, with responses categorized as either *unsatisfied* or *very unsatisfied*.

Figure 38. Percentage of participants willing to recommend the course to others, 2023-2024.



A total of 2,242 participants (99% of survey respondents) indicated they would recommend the course to others.

Discussion

The evaluation findings for the reporting period from September 2023 to August 2024 demonstrate substantial progress in improving asthma awareness, knowledge, and control among diverse populations in Puerto Rico. Through PRAMCU's comprehensive, multi-tiered strategies (including school-based education, virtual training, community outreach, caregiver engagement, and home-based interventions) the program has yielded promising outcomes in both reach and impact. This progress is supported by clear evidence of program effectiveness, measured through the implementation of EXHALE strategies, achievement of objectives, performance indicators, documented outcomes, and observable changes in knowledge and behavior.

Furthermore, program impact was assessed following the intervention through follow-up visits, which revealed that beyond improvements in asthma knowledge and control, participants demonstrated sustained behavioral changes over time, such as continued asthma management and consistent implementation of recommended practices.

Participants demonstrated measurable gains in asthma related knowledge, and satisfaction rates were consistently high. A comparative analysis of pre and posttest results revealed statistically significant improvements, particularly in interventions facilitated by the Puerto Rico Department of Health, where learning outcomes were assessed using paired t-tests and Wilcoxon signed-rank tests. Additionally, satisfaction survey data reflected strong approval from participants such as parents

and caregivers, children, and healthcare providers, affirming the relevance, quality, and practical value of the components delivered throughout the program.

The OAS Project served as a key pillar of asthma education for children, with 53.6% of participants identifying as female and 57.1% being 10 years of age. Impacting the municipalities of Barceloneta, Corozal, and Fajardo, the program reached 28 children between 8 and 11 years old who learned to recognize symptoms, identify triggers, and manage their condition more effectively. Knowledge improved from an average of 66.9% in the pretest to 92.6% in the posttest, a gain of 25.7 percentage points ($p < 0.0001$). A comparison of ACT results between the first and final sessions revealed an increase in the number of children with controlled asthma, from 12 to 14. However, statistical analysis indicated that this difference was not significant, even though it may hold clinical relevance. All 15 participants who completed the satisfaction survey rated the intervention as "good," reflecting that the sessions were not only informative but also well received. These outcomes suggest that school-based education can strengthen health awareness among children managing asthma.

The Asthma Self-Management Workshops for Children and Adolescents reached 2,258 participants between the ages of 5 and 17, with 53.4% identifying as boys. Of those who reported it, 67.7% had an asthma diagnosis, and the age distribution showed that 29.9% were 5 to 9 years old, 53.5% were 10 to 14 years old, and 16.6% were 15 years or older. The workshops impacted 41 municipalities across Puerto Rico's six health regions, providing education on symptoms, medication use, and trigger control. Knowledge improved significantly ($p < 0.0001$) from 57.6% to 81.6% among kindergarten to third grade participants, and from 70.9% to 83.3% among fourth to twelfth grade participants. Asthma control tests revealed that 42.8% of children aged 4 to 11 and 31% of adolescents aged 12 to 18 had uncontrolled asthma

at the time of the intervention. Finally, 2,066 participants completed the satisfaction survey, with 89% rating the workshops as “good,” underscoring the positive reception of the program.

The Asthma Self-Management Workshops for Adults reached 134 participants ages 18 and older through seven sessions conducted in the municipalities of Manatí, Moca, Ponce, and San Sebastián. These workshops provided education on asthma symptoms, treatment, medication use, and trigger control, while also addressing local asthma statistics and relevant health regulations such as Law 56 of 2006, Regulation 9224, and Administrative Order 473. The evaluation relied on descriptive methods, highlighting the geographic reach and participation levels across the four municipalities. By engaging adults in practical strategies for recognizing symptoms and managing their condition, the workshops contributed to strengthening community awareness and promoting better asthma control practices.

The Asthma Management Workshops for Parents and Caregivers reached 41 participants across fourteen municipalities, providing education on symptoms, treatment, medication use, trigger control, and the importance of the Asthma Action Plan. The statistically significant improvement in knowledge ($p<0.0001$), provides evidence to say that the intervention effectively enhanced participants’ understanding of asthma management. With 30 individuals showing higher scores and none experiencing a decline, the workshops strengthened caregivers’ ability to recognize symptoms and respond appropriately. Satisfaction levels were also high, with all respondents reporting positive experiences. These outcomes highlight the value of engaging parents and caregivers in asthma education, reinforcing their critical role in supporting children’s health both at home and in school environments.

PRAMCU's tobacco-related efforts supported the strategy “Extinguishing Smoking and Secondhand Smoke” by raising awareness of the harmful effects of tobacco exposure as an asthma trigger and promoting practical steps to reduce risk. Integrated into projects such as OAS and VIAS, and implemented in collaboration with the Tobacco Control Unit, these efforts included educational materials, referrals to the Puerto Rico Quitline “¡Déjalo Ya!” (1-877-DEJALO), and brief cessation interventions. During the reporting period, eight adults were referred to the Quitline, with two enrolling in services. Although participation was voluntary, the consistent promotion of cessation resources highlights PRAMCU’s role in reducing tobacco exposure and fostering healthier environments for individuals with asthma.

Home-based interventions through VIAS reached 20 families across 11 municipalities, providing tailored education to reduce asthma triggers and strengthen self-management skills. Of the participants, 55% were boys, 80% were between 4 and 11 years of age, and 20% were adolescents between 12 and 17 years. Caregivers demonstrated a statistically significant gain in knowledge, with scores increasing from 80.2% to 92.9% ($p < 0.0001$). Asthma control improved across age groups: among children ages 4–11, ACT scores showed better control by the end of the intervention, while adolescents ages 12–17 also demonstrated progress, though fewer in number. It is important to note that although 20 participants were enrolled, ACT data were complete for 16 children; within this subgroup, the number of children with controlled asthma increased from 8 to 11 by the third visit, with mean ACT scores rising from 18.3 to 20.6, a statistically significant improvement ($p = 0.04$).

Among the families who completed the 12-month follow-up, reductions were observed in physician visits, hospitalizations, and emergency room use, with ER visits declining from 7 to 1 and hospitalizations eliminated entirely. All families implemented

at least half of the recommended strategies to reduce asthma triggers at home, reinforcing the practical impact of the program. Satisfaction was uniformly high, with 100% of participants reporting positive experiences and willingness to recommend the initiative. These findings highlight the effectiveness of home visits in improving asthma knowledge, reducing healthcare utilization, and fostering healthier living environments for children and adolescents with asthma.

The achievement of guidelines-based medical management through Asthma Management Workshops for Health Professionals evidenced both reach and impact. A total of 236 health professionals participated across two interventions (one virtual and one in person) while an additional 76 professionals received specialized training in medication education and demonstration, reflecting strong engagement from the healthcare sector. The collaboration with a health insurance company reached 183 professionals, though limitations in data validation reduced the possibility of conducting a complete analysis of the reported outcomes. Average scores increased modestly from 4.1 to 4.8, and satisfaction was high, with 81.4% of participants completing the survey and the majority expressing positive feedback. In contrast, the PRAMCU-led workshop provided a more robust analysis. Knowledge improvements were observed in 7 of the 11 topics assessed, particularly in areas such as asthma definition, severity classification, spirometry, and self-management education. Although four topics showed declines in posttest scores, these results highlight areas where future training content can be strengthened. Overall average scores improved from 13.13 to 13.97, and the Wilcoxon signed-rank test confirmed a statistically significant increase ($p=0.023$), The median difference was 0 points (IQR=0–2), with an average improvement of 0.85 points, indicating that several participants demonstrated progress following the intervention. These findings suggest that the training had a measurable effect on participants' knowledge, reinforcing the value of

structured, guideline-based education. The absence of satisfaction data from the in-person training underscores the importance of transitioning to digital evaluation methods to ensure complete and reliable feedback in future sessions. Collectively, these outcomes highlight the potential of guideline-driven educational interventions to enhance provider competence and strengthen asthma management practices across Puerto Rico.

The AMED Project results evidenced effectiveness in expanding knowledge on the proper use of asthma medications among health professionals in Puerto Rico. A total of 76 professionals were trained, who collectively reached 775 individuals, including 140 students diagnosed with asthma, through both group and individual orientations. Knowledge gains were substantial, with average scores increasing from 6.6 to 9.2, representing a mean difference of 2.56 points, a change confirmed as statistically significant ($p < 0.0001$). These results indicate that the intervention had a measurable and positive impact on participants' understanding of asthma medication use. Beyond knowledge acquisition, the program's reach into schools and communities underscores its potential to strengthen asthma management practices at multiple levels. Satisfaction with the training was uniformly high, with all 69 respondents reporting being very satisfied, reflecting the acceptability and perceived value of the initiative. Collectively, these findings highlight the AMED Project as a practical and effective strategy for equipping health professionals with the skills necessary to educate patients, demonstrate correct medication use, and ultimately contribute to improved asthma control in Puerto Rico.

The Linkages and Coordination of Care Across Settings strategy demonstrated the importance of building alliances to strengthen asthma management across Puerto Rico. Through collaborations with hospitals, schools, health promoters, and

physicians, PRAMCU received 115 referrals for the VIAS Project, of which 98 were unique and eligible. From this group, 28 individuals were contacted, 23 families initially enrolled, and 17 referred during this period successfully completed the intervention, with an additional 3 referrals from previous years also completing it. This progression occurred due to several operational factors, including the limited availability of home visitors, who also support other projects, the intention to cover municipalities across all health regions, and the team's capacity at the time, which allowed for approximately two families per month. Each case required a substantial time investment involving three home visits, multiple coordination and confirmation calls, and three follow-up calls per family, all of which shaped the pace and distribution of completed interventions. Despite these operational limitations, PRAMCU remains firmly committed to providing families with the education and support they need to better manage asthma and improve their quality of life.

Additional linkages expanded the reach of PRAMCU's work: eight referrals were made to the Puerto Rico Quitline "Déjalo Ya!", with two participants enrolling and six pending enrollments, while nine referrals were directed to the *Oficina de Ayuda al Ciudadano* for home remediation services. These efforts highlight the program's ability to connect families not only to asthma-specific interventions but also to complementary resources that address environmental and behavioral risk factors.

The Asthma School Registry, implemented in collaboration with the Puerto Rico Department of Education, further reinforced coordination of care by ensuring that students with asthma have a complete Asthma Action Plan in compliance with Law 56 and Regulation 9224. This initiative positioned schools as critical partners in asthma management, enabling students to self-administer medications safely while promoting accountability in documentation. Although barriers to completing the

registry were identified, the process provided valuable insights into the challenges schools face in collecting and submitting required forms. As part of this effort, a total of 27,977 children were identified as having asthma across participating schools, of whom 4,754 had a completed Asthma Action Plan on file, representing 17% of students with asthma. These findings highlight both the progress achieved and the continued need to strengthen school-based documentation and compliance to ensure that all students with asthma have an updated and accessible action plan.

The Asthma Control in Schools Online Course demonstrated significant reach and impact in strengthening asthma management within the educational sector. During the reporting period, 2,654 school personnel (including teachers, principals, school nurses, and counselors) completed the training, representing a substantial increase compared to the previous year (491 participants in 2022–2023). Of these, 2,142 (98%) professionals successfully passed the course and received certification valid for three years, ensuring compliance with Law 56 of 2006 and Regulation 9224. A total of 129 schools across Puerto Rico were impacted, highlighting the program's broad geographic coverage. The virtual format delivered through the CANVAS platform facilitated accessibility, allowing participants to complete the course flexibly within a 48-hour window. Knowledge assessment using pre- and posttests demonstrated a statistically significant improvement in participants' understanding of asthma-related concepts. Average scores increased from 6.5 to 9.3, yielding a mean difference of 2.8 points. This change was confirmed through a paired t-test with 2,184 participants, which showed the improvement to be statistically significant ($p < 0.0001$). These findings indicate that the course effectively strengthened participants' knowledge of asthma symptoms, treatment options, and school-based management practices. Satisfaction survey results further reflected positive perceptions of the training, reinforcing its acceptability and relevance for school staff.

Collectively, these outcomes underscore the effectiveness of the online course in equipping school personnel with the knowledge and tools necessary to support students with asthma, promote adherence to legal requirements, and foster safer school environments across Puerto Rico.

Linkages and coordination of care are essential for expanding the reach of asthma programs, improving access to services, and ensuring continuity of care across healthcare, educational, and community settings. By strengthening referral pathways and institutional collaborations, PRAMCU has laid the foundation for a more integrated system of asthma management in Puerto Rico.

Conclusion

Overall, the evaluation highlights the broad scope and tangible success of PRAMCU's initiatives. The combination of increased participation, knowledge gains, improved asthma control, reduced healthcare utilization, and high satisfaction underscores the effectiveness of the program's holistic and collaborative approach to asthma control in Puerto Rico.

Attachments:

1. ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CHILDREN AND ADOLESCENTS: PRE-TEST FOR GRADES K-3RD

Taller de Manejo y Control de Asma K-3

PRE-PRUEBA

Nombre: _____ Fecha: _____

Instrucciones: ✓ **CIRCULA 1 OPCIÓN POR CADA PREGUNTA.** **EJEMPLO:** a

1. ¿En qué **grado** estás?

Kinder	1°	2°	3°

2. ¿Cuántos **años** tienes?

5	6	7	8	

3. ¿Eres **niño o niña**?

Niño	Niña

4. Tienes asma

Sí	No

PREGUNTAS DE ASMA

5. ¿Qué parte del cuerpo afecta el **asma**?:

a. estómago	b. pulmones	c. corazón

6. Los **pulmones** ayudan a llevar:

a. agua al cuerpo	b. aire al cuerpo	c. comida al cuerpo

7. El asma te puede causar:

a. dolor de estomago	b. tos	c. fiebre

8. ¿Los niños con asma pueden **jugar** en la clase de **educación física**?

a. Sí	b. No

1

2. ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CHILDREN AND ADOLESCENTS: POST-TEST FOR GRADES K-3RD

Taller de Manejo y Control de Asma K-3

POST PRUEBA

Nombre: _____ Fecha: _____

Instrucciones: ✓ **CIRCULA 1** OPCIÓN POR CADA PREGUNTA. **EJEMPLO:** a

1. ¿En qué **grado** estás?

Kinder	1°	2°	3°

2. ¿Cuántos **años** tienes?

5	6	7	8	

3. ¿Eres **niño o niña**?

Niño	Niña

4. Tienes asma

Sí	No

PREGUNTAS DE ASMA

5. ¿Qué parte del cuerpo afecta el **asma**?:

a. estómago	b. pulmones	c. corazón

6. Los **pulmones** ayudan a llevar:

a. agua al cuerpo	b. aire al cuerpo	c. comida al cuerpo

7. Los niños con asma pueden sentir:

a. dolor de estomago	b. tos	c. fiebre

8. ¿Los niños con asma pueden **jugar** en la clase de **educación física**?

a. Sí	b. No

2

3. OAS AND ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CHILDREN AND ADOLESCENTS: PRE-TEST FOR GRADES 4TH OR HIGHER

Taller de Manejo y Control de Asma

PRE PRUEBA

Nombre: _____ Fecha: _____

Nombre de Escuela: _____

Instrucciones: ✓ **CIRCULA 1** OPCIÓN POR CADA PREGUNTA. **EJEMPLO:** a

1. ¿En qué **grado** estás?

1°	2°	3°	4°	5°	6°	7°

2. ¿Cuántos **años** tienes?

7	8	9	10	11

3. ¿Eres **niño o niña**?

 Niño  Niña

PREGUNTAS DE ASMA

4. El asma es una enfermedad que **afecta** mi(s):

a. estómago 	b. pulmones 	a. corazón 

5. Los **pulmones** ayudan a llevar:

a. agua al cuerpo 	b. aire dentro y fuera del cuerpo 	c. alimento al cuerpo 

6. Los niños con asma podrían **sentir**:

a. mareo, frio y vómitos 	b. tos, pitillo, pecho apretado y problemas para respirar 	c. sueño, dolor en las piernas y manos 

1

7. Algunas cosas **(desencadenantes)** que podrían hacerme tener asma son:

a. carne, arroz y china 	**b.** cucarachas, humo de cigarrillo y mascotas 	**c.** dormir, sudar y bañarse 

8. Lo **primero** que debo hacer cuando tengo síntomas de asma es:

a. decírselo a un adulto 	**b.** tomar mis medicamentos 	**c.** llamar al médico 

9. **El plan de acción** del asma me ayuda a:

a. conocer los alimentos que debo comer para mejorar el asma 	**b.** conocer que ejercicios puedo hacer para fortalecer los pulmones 	**c.** conocer cuánto y cuando debo tomar los medicamentos 

10. ¿Los niños con diagnóstico de asma pueden **correr** en la clase de educación física?

a. Sí 	**b.** No 

4. OAS AND ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CHILDREN AND ADOLESCENTS: POST-TEST FOR GRADES 4TH OR HIGHER

Taller de Manejo y Control de Asma

POST PRUEBA

Nombre: _____ Fecha: _____

Nombre de Escuela: _____

Instrucciones: ✓ **CIRCULA 1** OPCIÓN POR CADA PREGUNTA. **EJEMPLO:** a

1. ¿En qué **grado** estás?

1°	2°	3°	4°	5°	6°	7°

2. ¿Cuántos **años** tienes?

7	8	9	10	11

3. ¿Eres **niño o niña**?

PREGUNTAS DE ASMA

4. El asma es una enfermedad que **afecta** mi(s):

a. estómago	b. pulmones	a. corazón

5. Los **pulmones** ayudan a llevar:

a. agua al cuerpo	b. aire dentro y fuera del cuerpo	c. alimento al cuerpo

6. Los niños con asma podrían **sentir**:

a. mareo, frio y vómitos	b. tos, pitillo, pecho apretado y problemas para respirar	c. sueño, dolor en las piernas y manos

1

7. Algunas cosas **(desencadenantes)** que podrían hacerme tener asma son:

a. carne, arroz y china 	**b.** cucarachas, humo de cigarrillo y mascotas 	**c.** dormir, sudar y bañarse 

8. Lo **primero** que debo hacer cuando tengo síntomas de asma es:

a. decírselo a un adulto 	**b.** tomar mis medicamentos 	**c.** llamar al médico 

9. El **plan de acción** del asma me ayuda a:

a. conocer los alimentos que debo comer para mejorar el asma 	**b.** conocer que ejercicios puedo hacer para fortalecer los pulmones 	**c.** conocer cuánto y cuando debo tomar los medicamentos 

10. ¿Los niños con diagnóstico de asma pueden **correr** en la clase de educación física?

a. Sí 	**b.** No 

5. CHILDHOOD ASTHMA CONTROL TEST FOR CHILDREN 4 TO 11 YEARS

Nombre y apellido del paciente: _____ Fecha de hoy: _____

Prueba de Control del Asma de la Infancia para niños de 4 a 11 años de edad

Cómo contestar la Prueba de Control del Asma de la Infancia

- **Paso 1** Deje que su niño/a conteste las **primeras cuatro preguntas (de la 1 a la 4).** Si su niño/a necesita ayuda para leer o entender alguna pregunta, usted lo/la puede ayudar pero deje que él/ella sea quien elija la respuesta. Conteste usted las **tres preguntas** restantes **(de la 5 a la 7)** y no permita que las respuestas de su niño/a afecten sus respuestas. No hay respuestas correctas o incorrectas.
- **Paso 2** Anote el número correspondiente a cada respuesta en el cuadro de la derecha.
- **Paso 3** Sume todos los puntos en los cuadros para obtener el total.
- **Paso 4** Llévele la prueba a su doctor para hablar sobre el puntaje total de su niño/a.

19 puntos o menos

Si su hija/a obtuvo 19 puntos o menos, puede ser una señal de que su asma no está tan bien controlada como podría serlo. Lleve esta prueba a su doctor para hablar con él sobre los resultados.

Deje que su niño/a conteste estas preguntas.

1. ¿Cómo está tu asma hoy?

0	1	2	3	PUNTAJE
Muy mal	Mal	Bien	Muy bien	

2. ¿Qué tan problemática es tu asma cuando corres, haces ejercicio o practicas algún deporte?

0	1	2	3	
Es un problema grande, no puedo hacer lo que quiero hacer.	Es un problema y no me siento bien.	Es un problema pequeño pero está bien.	No es un problema.	

3. ¿Tienes los debido a tu asma?

0	1	2	3	
Sí, siempre.	Sí, la mayoría del tiempo.	Sí, algo del tiempo.	No, nunca.	

4. ¿Te despiertas durante la noche debido a tu asma?

0	1	2	3	
Sí, siempre.	Sí, la mayoría del tiempo.	Sí, algo del tiempo.	No, nunca.	

Por favor complete usted las siguientes preguntas.

5. Durante las últimas 4 semanas, ¿cuántos días tuvo su niño/a síntomas de asma durante el día?

5	4	3	2	1	0	
Nunca	De 1 a 3 días	De 4 a 10 días	De 11 a 18 días	De 19 a 24 días	Todos los días	

6. Durante las últimas 4 semanas, ¿cuántos días tuvo su niño/a respiración sibilante (un silbido en el pecho) durante el día debido al asma?

5	4	3	2	1	0	
Nunca	De 1 a 3 días	De 4 a 10 días	De 11 a 18 días	De 19 a 24 días	Todos los días	

7. Durante las últimas 4 semanas, ¿cuántos días se despertó su niño/a durante la noche debido al asma?

5	4	3	2	1	0	
Nunca	De 1 a 3 días	De 4 a 10 días	De 11 a 18 días	De 19 a 24 días	Todos los días	

TOTAL

GlaxoSmithKline This material was developed by GlaxoSmithKline.

SALUD Programa de Asma de Puerto Rico

Printed in USA. HM3012R0 June 2011

6. ASTHMA CONTROL TEST FOR PEOPLE AGED 12 YEARS AND OLDER

Nombre del paciente: _____ Fecha de hoy: _____

La prueba Asthma Control Test™:

- Es una prueba para personas con asma a partir de los 12 años de edad. Proporciona una puntuación numérica que sirve para evaluar el control del asma.
- Es reconocida por los Institutos Nacionales de Salud (NIH) en sus pautas de asma de 2007.[1]
- Ha sido validada clínicamente con respecto a la evaluación de especialistas mediante espirometría.[2]

PACIENTE:

1. Escriba el número de cada respuesta en la casilla de puntuación proporcionada.
2. Sume las casillas de puntuación para obtener el TOTAL.
3. Hable acerca de los resultados con su proveedor de servicios de salud.

						PUNTUACIÓN
1. En las últimas 4 semanas, ¿cuánto tiempo el asma le impidió hacer todo lo que quería en el trabajo, la escuela o el hogar?	Todo el tiempo (1)	La mayor parte del tiempo (2)	Parte del tiempo (3)	Muy poco tiempo (4)	En ningún momento (5)	
2. Durante las últimas 4 semanas, ¿con qué frecuencia experimentó dificultad respiratoria?	Más de una vez al día (1)	Una vez por día (2)	Tres a seis veces por semana (3)	Una o dos veces por semana (4)	En ningún momento (5)	
3. Durante las últimas 4 semanas, ¿con qué frecuencia los síntomas de asma (sibilancia, tos, dificultad respiratoria, opresión o dolor en el pecho) lo despertaron en la noche o más temprano de lo habitual por la mañana?	Cuatro noches o más por semana (1)	Dos o tres noches por semana (2)	Una vez por semana (3)	Una o dos veces (4)	En ningún momento (5)	
4. Durante las últimas 4 semanas, ¿con qué frecuencia ha usado el inhalador de rescate o medicamento en nebulizador (tal como albuterol)?	Tres veces o más por día (1)	Una o dos veces por día (2)	Dos o tres veces por semana (3)	Una vez por semana o menos (4)	En ningún momento (5)	
5. ¿Cómo calificaría el control de su asma durante las últimas 4 semanas?	Sin ningún control (1)	Mal controlada (2)	Algo controlada (3)	Bien controlada (4)	Completamente controlada (5)	
						TOTAL

Si su puntuación es 19 o menos, es posible que su asma no esté tan controlada como debería. Independientemente de la puntuación obtenida, comparta los resultados con su proveedor de servicios de salud.

NOTA: Si su puntuación es 15 o menos, es posible que sea un indicio de que su asma esté muy mal controlada. Si este fuera el caso, comuníquese con su proveedor de servicios de salud de inmediato.

PROVEEDOR DE SERVICIOS DE SALUD:

- **Incluya la puntuación de la prueba Asthma Control Test™ en la historia clínica de su paciente para llevar un seguimiento de su control del asma.**

Referencias: 1. US Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute. *Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma (EPR-3 2007).* NIH Item No. 08-4051. http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm. Con acceso el 31 de marzo de 2017. **2.** Nathan RA et al. *J Allergy Clin Immunol.* 2004;113:59-65.

GSK desarrolló este material.

7. OAS AND ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CHILDREN AND ADOLESCENTS: SATISFACTION SURVEY

¿QUÉ TE PARECIÓ LA CLASE DE ASMA?

Escuela: _____ Fecha: _____

Instrucciones:

- ✓ MARCA CON UN X UNA CARITA COMO RESPUESTA A CADA PREGUNTA.
- ✓ NO HAY RESPUESTA BUENA O MALA.

Ejemplo: 

	Buena	Regular	Mala
1. La clase de asma fue:			
2. La maestra de asma fue:			

	Mucho	Regular	Poco
3. ¿Cuánto aprendiste de medicamentos para el asma en la clase?			
4. ¿Cuánto aprendiste de los síntomas de asma en la clase?			
5. ¿Cuánto aprendiste de desencadenantes de asma en la clase?			

¡¡GRACIAS!!

¡Recuerda: El Asma se controla!

8. ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CAREGIVERS: PRE-TEST AND POST-TEST

DEPARTAMENTO DE SALUD

Unidad de Manejo y Control de Asma
Sección de Prevención y Control de Enfermedades Crónicas
Secretaría Auxiliar de Servicios de Salud Integral (SASSI)

____PRE-PRUEBA **____POST-PRUEBA**

Lugar del adiestramiento: _____ Fecha: _____
Correo electrónico: _____ Edad: _____
Municipio donde reside: _____
Relación con el menor diagnosticado con asma: ☐Padre ☐Madre ☐Otro: _____
¿Usted ha sido diagnosticado alguna vez con asma por un médico? ☐Sí ☐No

Instrucciones: Marque con una **X** la respuesta que considere correcta para cada una de las premisas o preguntas.

Premisa	Cierto	Falso
Los niños o niñas que no han presentado síntomas en más de un año, no tienen que entregar el Plan de Acción de Asma a la escuela.		
El asma es una condición crónica que, aunque no tiene cura, se puede controlar.		
Los medicamentos de rescate se utilizan cuando comienzan los síntomas.		
Los medicamentos de mantenimiento o control se usan durante un tiempo prolongado para evitar los ataques de asma, aunque no se presenten síntomas.		
Tomarse los medicamentos tal cual el médico los recetó es parte del proceso de adherencia al tratamiento.		
El plan de acción del asma es una guía para que el cuidador y el paciente conozcan qué medicamentos utilizar según la zona en la que se encuentre.		
Los síntomas comunes del asma son la dificultad para respirar, molestia en la garganta, tos y fiebre.		
El hongo, las cucarachas y algunas mascotas se consideran alérgenos que podrían provocar el asma.		
El asma persistente se divide en: leve, moderada y severa.		

Pregunta	1 mes	4 meses	6 meses
¿Cuánto es el plazo que tiene el padre, madre o encargado para entregar los formularios y el plan de acción para el asma en la escuela?			

9. ASTHMA SELF-MANAGEMENT WORKSHOPS FOR CAREGIVERS: SATISFACTION SURVEY

Número de identificación: ____-____

DEPARTAMENTO DE SALUD

Programa de Manejo y Control de Asma
División de Promoción para la Salud
Secretaría Auxiliar de Salud Familiar, Servicios Integrados y Promoción de la Salud

ENCUESTA DE SATISFACCIÓN

Correo electrónico: _____ **Fecha:** _____

Para nosotros es importante conocer cómo usted se siente con los servicios educativos para el manejo del asma ofrecidos por la Unidad de Manejo y Control de Asma. De tener alguna duda, puede solicitor asistencia. Una vez finalice, puede entregarla al personal de la Unidad.

Instrucciones: *Para cada una de las siguientes premisas marque con una* ***X*** *la respuesta que mejor corresponda a su opinion.*

¿Cuán satisfecho estás con…	Muy satisfecho	Satisfecho	Insatisfecho	Muy Insatisfecho
… la ***organización*** del adiestramiento?				
… la ***relevancia*** (importancia) del contenido presentado?				
… la organización del ***contenido*** presentado?				
… las ***estrategias*** utilizadas para presenter los temas?				
… la oportunidad para hacer ***preguntas***?				
… la oportunidad de ***participación***?				
… el ***dominio*** del tema por parte de los conferenciantes?				
.. la **duración** del adiestramiento?				
… la ***actividad*** en general?				

Número de identificación: _ _ _ -_ _ _ _

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Secretaría Auxiliar de Salud Familiar, Servicios Integrados y Promoción de la Salud

¿Qué fue lo más que te **gustó** del adiestramiento?

_____

_____

¿Qué cambios **recomiendas** para el próximo adiestramiento?

_____

_____

10. VIAS: PRE- AND POST TEST FOR CAREVIGERS

Número de identificación: _ _ _ _-_ _ _ _
Entrevistador (Iniciales): _ _ _

DEPARTAMENTO DE SALUD
Programa de Manejo y Control de Asma
División de Promoción para la Salud
Secretaría Auxiliar de Salud Familiar, Servicios Integrados y Promoción de la Salud

PROYECTO VIAS
FORMA 8:
PRUEBA GENERAL

Fecha: _____
(mm/dd/aaaa)

☐ Pre- Prueba
☐ Post- Prueba

Instrucciones:
Conteste las siguientes preguntas haciendo una "X" al lado de la respuesta que mejor represente su contestación. Es importante que sepa que no hay problema si saca mal la respuesta. Para nosotros lo importante es saber cuánto usted conoce sobe el asma antes de la educación que le proveeremos y al finalizar el proyecto haremos otra prueba para ver si fue efectiva nuestra intervención educativa.

Pregunta
1. El sistema respiratorio se compone de los siguientes órganos: ___a. nariz, boca, tráquea y pulmones. ___b. diafragma y lengua. ___c. tráquea y amígdalas.
2. El asma es una enfermedad crónica que afecta principalmente _____. ___a. el estómago. ___b. los pulmones. ___c. el hígado.
3. El asma es considerada una enfermedad crónica porque_____. ___a. tiene cura, como un catarro. ___b. no tiene cura, ya que sigue presente en el niño aunque se sienta bien. ___c. se activa en presencia de un provocador.
4. Para las personas con asma, la tos, la sibilancia (pito) y la presión en el pecho se consideran_____. ___a. efectos secundarios de la medicina. ___b. provocadores de la condición. ___c. síntomas comunes de la enfermedad.
5. ¿Cuándo se deben utilizar los medicamentos de control (a largo plazo)? ___a. Nunca, ya que no son necesarios. ___b. Todos los días, aun cuando el niño se sienta bien. ___c. Solamente cuando comienzan los síntomas.
6. ¿Cuándo se deben utilizar los medicamentos de rescate (alivio rápido)? ___a. Todos los días, aun cuando el niño se sienta bien. ___b. Nunca, ya que no son necesarios. ___c. Tan pronto comienzan los síntomas del asma.

Número de Identificación: __ __ __ -__ __ __ __
Entrevistador (Iniciales): __ __ __

DEPARTAMENTO DE SALUD
Programa de Manejo y Control de Asma
División de Promoción para la Salud
Secretaría Auxiliar de Salud Familiar, Servicios Integrados y Promoción de la Salud

Pregunta
7. Si su niño/a está tomando medicamentos de rescate todos los días, usted debe: ___a. no hacer nada, ya que eso es normal. ___b. llamar al doctor para que reevalúe el tratamiento y el plan de acción del menor. ___c. ignorar los síntomas y seguir con el medicamento.
8. La cámara espaciadora facilita que el medicamento llegue _____. ___a. a los pulmones. ___b. al estómago. ___c. al corazón.
9. La herramienta que se utiliza para medir cuán bien el paciente puede sacar el aire de los pulmones es _____. ___a. el medidor de flujo espiratorio máximo "*Peak Flow*". ___b. la cámara espaciadora. ___c. el inhalador de dosis medida.
10. El Plan de Acción para el asma es una guía que está dividida en tres zonas (verde, amarillo y rojo) e incluye: ___a. cuando realizar actividad física o ir a la escuela. ___b. los medicamentos, las dosis y cuándo utilizarlos según las indicaciones del médico. ___c. las destrezas y las cualidades positivas que los padres poseen con el tratamiento del niño.
11. Una persona que está en la zona roja del plan de acción puede presentar los siguientes síntomas: ___a. duerme toda la noche y respira normalmente. ___b. uñas o labios azulados, dificultad para respirar, jugar y caminar. ___c. tos por las noches, pero puede realizar algunas de sus actividades normales.
12. Uno de los factores que puede desencadenar los síntomas del asma es el siguiente: ___a. comer rápido los alimentos. ___b. emociones fuertes como reír y llorar. ___c. tomar mucha agua.
13. Otro desencadenante del asma en algunos pacientes puede ser el_____. ___a. vapor del agua. ___b. jabón sin olor. ___c. excremento de las cucarachas.
14. El lugar de la casa donde más tiempo pasa el niño debe ___a. estar libre de polvo, alérgenos e irritantes. ___b. poseer cortinas y alfombras. ___c. tener plantas naturales.

Número de identificación: _ _ _ _-_ _ _ _
Entrevistador (iniciales): _ _ _

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Pregunta
15. Los niños con asma deben ___a. estar sentados todo el tiempo para no fatigarse y sentirse mal. ___b. practicar actividad física o algún deporte como pelota, natación y tenis. ___c. dejar de tomar sus medicamentos antes de practicar algún deporte.
16. ¿Cuál podría ser un factor de riesgo para desarrollar asma? ___a. Migraña ___b. Conjuntivitis ___c. Obesidad y el sobrepeso
17. Algunos alimentos podrían ser desencadenantes del asma en los pacientes. Ejemplo de estos son: ___a. carne de res, pavo, pollo ___b. lechuga, maíz, espinaca ___c. pescado, nueces y leche
18. ¿Qué debe hacer luego de utilizar los medicamentos para el asma? ___a. Comer algo dulce ___b. Enjuagarse la boca ___c. Tomar agua caliente

Para cada una de las preguntas marque con una X la respuesta que mejor represente la contestación de la persona entrevistada.				
Pregunta	Mucho	Regular	Poco	Nada
19. ¿Cuán capacitado se siente, para explicar el plan de acción de asma de su niño/a, a maestros, familiares o los cuidadores del niño?				
20. ¿Cuánto usted considera que puede explicar lo que es el asma, en sus propias palabras?				
21. ¿Cuánto usted conoce acerca de los medicamentos para tratar el asma de su niño/a?				
22. ¿Cuán capaz se siente usted de asistir a su niño/a con el uso de los medicamentos para el asma?				
23. ¿Cuánto usted reconoce los desencadenantes o provocadores del asma de su niño/a, en su hogar?				
24. ¿Cuán capaz se siente de identificar los posibles desencadenantes del asma en los alimentos de su niño?				

¡GRACIAS por responder la Pre-Prueba!

11. VIAS: SATISFACTION SURVEY

DEPARTAMENTO DE SALUD
Programa de Manejo y Control de Asma
División de Promoción para la Salud
Secretaría Auxiliar de Salud Familiar, Servicios Integrados y Promoción de la Salud

PROYECTO VIAS
FORMA 4:
ENCUESTA DE SATISFACCIÓN

Para nosotros es importante conocer cómo usted se siente con los servicios educativos para el manejo y control del asma ofrecidos por el Proyecto VIAS. Agradeceremos que complete esta encuesta. Su opinión nos ayudará a mejorar nuestro proyecto. De tener alguna duda, puede solicitarnos asistencia. Una vez finalice, puede entregarla al personal del proyecto. Muchas gracias.

Para cada una de las siguientes premisas marque con una X la respuesta que mejor corresponda a su opinión.

Premisas	Muy en Desacuerdo (1)	Algo en Desacuerdo (2)	Algo de Acuerdo (3)	Muy de Acuerdo (4)
1. El material educativo presentado era fácil de entender.				
2. El visitador/a manejó el tiempo de forma adecuada.				
3. El visitador/a demostró dominio del tema.				
4. El visitador/a explicó la información de una manera simple.				
5. Se sintió cómodo para realizar sus preguntas.				
6. Luego de culminar las intervenciones educativas, usted se sintió más preparado para manejar los síntomas del asma.				
7. Luego de culminar las intervenciones educativas, usted se sintió más confiado para manejar los síntomas del asma.				

Premisas	Muy en Desacuerdo (1)	Algo en Desacuerdo (2)	Algo de Acuerdo (3)	Muy de Acuerdo (4)
8. Se presentaron formatos alternos para la comprensión del material.				
9. Se ofreció información útil sobre el manejo de asma.				
10. El visitador/a facilitó el intercambio de ideas.				
11. Los incentivos ofrecidos en cada una de las intervenciones fueron útiles para su hijo/hija/familiar con asma.				
12. El horario en que se llevaron a cabo las intervenciones fue adecuado.				
13. Se me ha hecho fácil aplicar lo que he aprendido en las intervenciones educativas.				
14. Al aplicar lo que he aprendido en las intervenciones educativas he visto mejoría en los síntomas de mi hijo/hija/familiar con asma.				
15. El visitador/a mostró respeto ante las necesidades en mi hogar.				
16. Recomendaría este proyecto a otras personas con asma.				

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¿Cuál fue el aspecto más beneficioso de haber participado del Proyecto VIAS?

_____

_____

_____

_____

¿Cómo podemos mejorar las intervenciones educativas de asma que ofrecemos? Escriba las sugerencias para lograr mejoras en el proyecto.

_____

_____

_____

_____

12. ASTHMA MANAGEMENT WORKSHOPS FOR HEALTH PROFESSIONALS BY TRIPLE S: PRE- AND POST-TEST (DIGITAL)

Prueba: Nuevas Guías en el Manejo y Control del Asma

1. Los objetivos del tratamiento del asma son aliviar y controlar los síntomas, reducir el riesgo de exacerbaciones graves y minimizar los efectos adversos del tratamiento.
    a. Cierto
    b. Falso
2. El manejo del asma no incluye el tratamiento de los factores de riesgo modificables y las comorbilidades, la comprobación y corrección de la adherencia y la técnica de inhalación, las estrategias no farmacológicas y la educación para el autocontrol.
    a. Cierto
    b. Falso
3. Todas las personas con asma deben tener un plan de acción por escrito, el cual debe evaluarse y actualizarse periódicamente.
    a. Cierto
    b. Falso
4. La región de San Juan es la que tiene la mayor prevalencia de asma tanto para niños, adolescentes y adultos en Puerto Rico.
    a. Cierto
    b. Falso
5. La Ley #56 y el Reglamento 9224 establecen la obligación de todo medico de completar un plan de acción para el control de asma y una certificación médica para todo paciente/estudiante que atienda.
    a. Cierto
    b. Falso

13. PRAMCU'S ASTHMA MANAGEMENT WORKSHOPS FOR HEALTH PROFESSIONALS: PRE- AND POST-TEST (DIGITAL)

Pre-Prueba

Please complete the survey below.

Thank you!

1) El plan de acción de asma es un documento con información estándar que aplica de la misma manera para todos los pacientes sin adaptarse a sus necesidades individuales.

◯ Cierto ◯ Falso

2) El asma se considera una condición crónica multifactorial que ocurre debido a interacciones complejas entre los genes y el medio ambiente.

◯ Cierto ◯ Falso

3) El asma se clasifica como intermitente, moderada y persistente.

◯ Cierto ◯ Falso

4) Según recomendado por las guías de manejo y control de asma, la espirometría debe realizarse solamente para establecer diagnóstico de asma.

◯ Cierto ◯ Falso

5) La información que debe recibir el paciente asmático en cuanto a las competencias esenciales y el manejo del asma es la siguiente:
(Marque todas las que apliquen.)

☐ Plan de acción escrito para el asma
☐ Adherencia al tratamiento médico
☐ Información sobre el asma
☐ Método del uso del inhalador

6) El examen físico del paciente de asma debe enfocarse en las vías respiratorias superiores, auscultar el área del tórax y examinar la piel.

◯ Cierto ◯ Falso

7) Los medicamentos de acción rápida (rescate) se utilizan para tratar síntomas de asma.

◯ Cierto ◯ Falso

8) En Puerto Rico la prevalencia de asma en niños es mayor que en niñas.

◯ Cierto ◯ Falso

9) Algunos de los factores ambientales que pueden desencadenar asma son:
(Marque todas las que apliquen.)

☐ Ácaros del polvo
☐ Cucarachas
☐ Mascotas (gatos y perros) en el hogar
☐ Humo del Tabaco

10) Los corticoisteroides inhalados se utilizan como medicamentos de acción prolongada (control) para prevenir episodios de asma bloqueando la inflamación y reduciendo la sensibilidad de las vías respiratorias.

○ Cierto ○ Falso

11) Los síntomas más comunes del asma son la dificultad para respirar, molestia en la garganta, tos y fiebre.

○ Cierto ○ Falso

14. ASTHMA MANAGEMENT WORKSHOPS FOR HEALTH PROFESSIONALS BY TRIPLE S: SATISFACTION SURVEY (DIGITAL)

Evaluación – Nuevas Guías en el Manejo y Control del Asma

1. Día que participó de la actividad.
    a. Miércoles 21 de febrero de 2024
    b. Miércoles 28 de febrero de 2024
2. La actividad tuvo un balance adecuado entre presentaciones, discusión y/u otras estrategias de enseñanza.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
3. La metodología utilizada en el desarrollo de la actividad estuvo adecuada.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
4. Los periodos de discusión (sesiones de preguntas y respuestas) tenían dirección y propósito.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
5. El material educativo distribuido ilustró los conceptos claves discutidos en la actividad.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
6. La actividad me ayudó a formular generalizaciones con relación a los temas cubiertos.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo

1

e. No aplica

7. El contenido ofrecido en la actividad contribuye al desarrollo de mis conocimientos y destrezas profesionales utilizados en el desempeño de mis funciones.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
8. El contenido presentado es de gran aplicabilidad para el desempeño de mis funciones profesionales.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
9. Me encuentro satisfecho con el contenido ofrecido en la actividad.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
10. Los recursos presentaron el contenido de forma organizada y coherente.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
11. Los recursos demostraron dominio del tema.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica
12. Los recursos promovieron la discusión y la participación efectiva de los participantes.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo

d. Firmemente en desacuerdo
e. No aplica

13. Los recursos demostraron habilidad para explicar.
    a. Firmemente de acuerdo
    b. De acuerdo
    c. En desacuerdo
    d. Firmemente en desacuerdo
    e. No aplica

14. Señale algunos temas de interés para actividades futuras:

15. Comentarios Adicionales:

15. AMED: PRE- AND POST-TEST

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PROYECTO AMED
PRUEBA

Nombre: _____ Fecha: _____
(mm/dd/aaaa)

Instrucciones:
Conteste las siguientes preguntas haciendo una "X" al lado de la respuesta que mejor represente su contestación.

Pregunta
1. Dispositivo que permite verificar si los síntomas de asma se encuentran bajo control o empeorando. ___a. Cámara espaciadora. ___b. Medidor de flujo máximo. ___c. Plan de acción.
2. Guía personalizada que ayuda a manejar el asma. ___a. Medidor de flujo máximo. ___b. Plan de acción. ___c. Cámara espaciadora.
3. Se utiliza junto al inhalador de dosis medida para administrar mejor el medicamento para el asma. ___a. Cámara espaciadora. ___b. Medidor del flujo máximo. ___c. Inhalador.
4. Medicamentos que se toman todos los días se conocen como medicamentos de: ___a. Control. ___b. Rescate. ___c. Alivio.
5. Medicamentos de primera línea para tratar el asma, ya que el medicamento llega directo al pulmón. ___a. Inyectables. ___b. Orales. ___c. Inhalados.
6. Factores que pueden causar síntomas o exacerbación del asma se conocen como: ___a. Atacantes. ___b. Provocadores. ___c. Sintomáticos.
7. Los corticosteroides orales se utilizan como: ___a. Medicamentos de uso diario. ___b. Medicamentos de ataques de asma graves. ___c. Medicamentos de uso solo en sala de emergencias.
8. Puede administrarse el medicamente tanto de pie como sentado. ___a. Cierto. ___b. Falso.

16. AMED: SATISFACTION SURVEY

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PROYECTO AMED
ENCUESTA DE SATISFACCIÓN

Para cada una de las preguntas marque con una X la respuesta que mejor represente su contestación.				
Pregunta	Mucho	Regular	Poco	Nada
1. ¿Cuán satisfecho está con la organización de la capacitación?				
2. ¿Cuán satisfecho está con la relevancia (importancia) del contenido presentado?				
3. ¿Cuán satisfecho esta con la duración de la capacitación?				
4. ¿Cuán satisfecho está con la capacitación en general?				

5. ¿Le recomendaría esta capacitación a otra persona? ☐ Sí ☐ No

6. ¿Qué fue lo más que te gusto de la capacitación?

_____

_____

_____

7. ¿Qué cambios recomienda para mejorar la capacitación?

_____

_____

_____

¡GRACIAS!

17. Asthma School Registry: Evaluation Form

Evaluación del Registro Escolar de Asma

Reciba un cordial saludo de parte de la Unidad de Manejo y Control de Asma.

Quisieramos conocer cuál ha sido su experiencia completando el Registro Escolar de Asma. Su opinión es bien importante para nosotros y nos ayudará a mejorar y facilitar el proceso de registro.

Lea cuidadosamente cada premisa y seleccione la respuesta que más le parezca adecuada. Esto le tomará alrededor de 2-3 minutos.

La fecha límite para completar esta encuesta es el 15 de mayo de 2024.

Les agradecemos por su compromiso con la salud de sus estudiantes.

Email/Correo electrónico de la persona que está completando el formulario (su email):

_____
(Utilice su dirección de correo electrónico institucional, pues el mensaje de confirmación será enviado a la dirección de correo eletrónico que usted provea.)

Información de la escuela

Tipo de escuela:

○ Pública ○ Privada

Seleccione su escuela:

Municipio de la escuela:

◯ Adjuntas ◯ Aguada ◯ Aguadilla ◯ Aguas buenas ◯ Aibonito ◯ Añasco ◯ Arecibo
◯ Arroyo ◯ Barceloneta ◯ Barranquitas ◯ Bayamón ◯ Cabo rojo ◯ Caguas
◯ Camuy ◯ Canóvanas ◯ Carolina ◯ Cataño ◯ Cayey ◯ Ceiba ◯ Ciales ◯ Cidra
◯ Coamo ◯ Comerío ◯ Corozal ◯ Culebra ◯ Dorado ◯ Fajardo ◯ Florida ◯ Guánica
◯ Guayama ◯ Guayanilla ◯ Guaynabo ◯ Gurabo ◯ Hatillo ◯ Hormigueros ◯ Humacao
◯ Isabela ◯ Jayuya ◯ Juana díaz ◯ Juncos ◯ Lajas ◯ Lares ◯ Las Marías ◯ Las Piedras
◯ Loíza ◯ Luquillo ◯ Manatí ◯ Maricao ◯ Maunabo ◯ Mayagüez ◯ Moca ◯ Morovis
◯ Naguabo ◯ Naranjito ◯ Orocovis ◯ Patillas ◯ Peñuelas ◯ Ponce ◯ Quebradillas
◯ Rincón ◯ Río Grande ◯ Sabana Grande ◯ Salinas ◯ San Germán ◯ San Juan
◯ San Lorenzo ◯ San Sebastián ◯ Santa Isabel ◯ Toa Alta ◯ Toa Baja ◯ Trujillo Alto
◯ Utuado ◯ Vega Alta ◯ Vega Baja ◯ Vieques ◯ Villalba ◯ Yabucoa ◯ Yauco

Encuesta de Satisfacción

¿Cómo clasificaría la Plataforma del Registro Escolar de Asma en cuanto a la facilidad de su utilización?

◯ Fácil ◯ Regular ◯ Difícil

¿Por qué?

Plataforma del Registro Escolar de Asma

	Sí	No
¿Tuvo dificultad para completar la información de los estudiantes?	◯	◯
¿Tuvo problemas para acceder al Registro de Asma con el enlace que le fue brindado?	◯	◯
¿Considera que necesita un adiestramiento para completar el Registro de Asma?	◯	◯

Entrega del Informe del Registro Escolar de Asma:

	Sí	No
¿Considera apropiada la fecha del 30 de marzo de cada año para entregar el Informe del Registro de Asma?	◯	◯

Antes de llenar el informe:

	Sí	No
¿Encontró de manera fácil el acceso al Registro Escolar de Asma?	◯	◯

¿Encontró las instrucciones para completar el Registro Escolar de manera clara?	○	○
¿Utilizó los recursos disponibles en la página de internet de la Unidad de Asma como guía para completar el informe?	○	○
¿Tomó el adiestramieto ofrecido por la Unidad de Manejo y Control de Asma donde se explicó como completar el Registro de Asma?	○	○

¿Qué modalidad preferiría para tomar el adiestramiento del Registro Escolar de Asma? ○ Virtual ○ Presencial

Utilidad del adiestramiento

¿Le pareció útil la demostración del uso de la plataforma en el adiestramiento?	○ Sí ○ No
¿Le pareció necesaria la explicación sobre la enfermedad del asma en el adiestramiento?	○ Sí ○ No
¿Le pareció necesaria la explicación sobre la política pública en el adiestramiento?	○ Sí ○ No

Mientras completaba el informe:

	Sí	No
¿Tuvo problemas para volver a acceder al formulario una vez ya había comenzado?	○	○
¿Tuvo alguna dificultad con la contraseña para volver a acceder al informe?	○	○
¿En algún momento perdió información que ya había sometido?	○	○

Después de llenar el informe:

	Sí	No
¿Pudo verificar que la información de los estudiantes fuera la correcta?	○	○

¿Pudo corregir cualquier error en la información sometida a la plataforma cuando fue necesario?	○	○

Asistencia recibida

¿Usted se comunicó con la Unidad de Manejo y Control del Asma para asistencia técnica?

○ Sí ○ No

¿Qué medio de comunicación utilizó?

○ Llamada telefónica ○ Correo electrónico ○ Otro

¿Recibió respuesta por parte del personal de la Unidad de Manejo y Control de Asma?

○ Sí ○ No

¿Fue la situación resuelta o su duda aclarada?

○ Sí ○ No

Barreras identificadas

Seleccione todos las barreras que indicaron los padres o encargados para obtener el Plan de Acción de Asma:
Puede seleccionar más de una respuesta.

☐ No indicaron problemas.
☐ El médico se rehusó a llenar el plan de acción.
☐ El médico quiso cobrar por llenar el plan de acción.
☐ No tenían conocimiento de que había que completar o entregar el Plan de Acción de Asma.
☐ Su niño(a) "ya no tenía asma" y se rehusó a entregar los documentos.
☐ Su niño(a) "tenía el asma controlada" y se rehusó a entregar los documentos.
☐ La cita para completar el plan de acción excedía el periodo de tiempo para la entrega del documento.
☐ El médico lo envió a un especialista para que fuera este otro profesional (ej. neumólogo) quien le completara el Plan de Acción de Asma.
☐ Otro

Especifique

Seleccione las barreras que la escuela presentó para recopilar los Planes de Acción de Asma de los estudiantes:
Puede seleccionar más de una respuesta.

☐ No hubo barreras.
☐ No tenía los documentos necesarios para entregarle a los padres o encargados.
☐ No tenía conocimiento de que había que completar el Registro Escolar de Asma.
☐ La escuela no cuenta con impresora a color para el Plan de Acción de Asma.
☐ Los padres no entregaron los documentos brindados previamente por el personal escolar.
☐ Otros

Especifique

¿Tiene alguna recomendación para mejorar el Registro Escolar de Asma?

18. VIAS: TRIGGERS RECOMMENDATION CHECKLIST

Número de identificación: __ __ __ -__ __ __ __

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PROYECTO VIAS

FORMA 9:

RECOMENDACIONES PARA LOS DESENCADENANTES IDENTIFICADOS VISITA 3

Identifique junto al cuidador las recomendaciones que logró poner en práctica para disminuir o eliminar la presencia de los desencadenantes identificados.

Factores que desencadenan el asma	Recomendaciones	Logró	No lo logró	NA
 Mascotas con pelo dentro del hogar ___ Sí ___ No	Preguntó a su médico si su hijo es alérgico a las mascotas (especialmente a las que tienen pelaje).			
	Si es alérgico, la mejor manera de disminuir la exposición es sacar a la mascota de la casa y limpiar todas las superficies con las que la mascota entró en contacto.			
	Mantuvo a la mascota fuera del dormitorio del niño.			
	Mantuvo a la mascota alejada de las alfombras, cuartos y muebles.			
	Enseñó al niño a lavarse las manos o a evitar el contacto con mascotas que tengan pelo.			
	Bañó regularmente las mascotas con pelaje.			
	Retiró las alfombras de la casa, si puede hacerlo.			
	Limpió las alfombras de la casa semanalmente.			
	Retiró las alfombras del dormitorio del niño			
	Retiró los muebles de tela del cuarto del niño			
	Usó forros hipoalergénicos para almohadas y matres			
	Mantuvo los juguetes de peluche fuera del cuarto del niño. Deberá lavarlos en agua caliente o colocarlos en el			

1

Las imágenes y el contenido fueron tomadas del currículo Respirar es Vida y de páginas de internet solo para propósitos educativos.

Número de identificación: __ __ __ -__ __ __ __

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¿Tiene alfombras, muebles de tela o cortinas de tela en la habitación del niño/a? ___ Sí ___ No	refrigerador dentro de una bolsa de plástico una vez al mes por 48 horas			
	Lavó la ropa de cama (sábanas, cubre almohadas y colchas) con agua caliente, detergente o bicarbonato de sodio todas las semanas. Deberá secarlas utilizando el ciclo caliente durante al menos 30 minutos en la secadora o al aire libre cuando haga mucho sol			
	Retiró las cortinas de tela del cuarto del niño o pasarle la aspiradora (vacuum) semanalmente para evitar el polvo			
¿Permite que su hijo/a tenga peluches en la habitación? ___ Sí ___ No	Pasó la aspiradora en la casa una o dos veces por semana			
	Mantuvo al niño fuera de la habitación que se está aspirando			
	Usó una aspiradora con filtro HEPA (High Efficiency Particulate Assistance)			
	Pasó la aspiradora en las alfombras, cortinas y muebles de tela una vez por semana			
	Compró una que se ajuste a su necesidad			
En los últimos 12 meses, ¿ha notado olor a humedad, moho/rancio, dentro de su hogar o ha visto manchas de hongo en las paredes o techo? ___ Sí ___ No 	Arregló las llaves y tuberías que gotean.			
	Limpió con un producto que no emane olor las superficies mohosas como: paredes, pisos y muebles de cocina o baño, cuando el niño no esté presente			
	Mantuvo fuera de la casa las plantas con tiesto			
	Luego de utilizar el baño, abrió una ventana o prendió el extractor para evitar el moho y la humedad			
	Colocó bicarbonato de calcio o bolsas antihumedad en el closet. Esto para evitar la humedad en la ropa			
	Utilizó un acondicionador de aire o deshumidificador para mantener baja la humedad interior			

2

Las imágenes y el contenido fueron tomadas del currículo Respirar es Vida y de páginas de internet solo para propósitos educativos.

Número de identificación: _ _ _ _-_ _ _ _

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	Si el cuarto del niño/a tiene aire acondicionado, siguió las instrucciones del fabricante para limpiar y cambiar los filtros y mantener el drenaje limpio			
En los últimos 12 meses, ¿ha visto cucarachas dentro de su hogar? ___ Sí ___ No 	Mantuvo los alimentos tapados y la basura cerrada			
	Usó trampas con cebo u otros productos para eliminar las cucarachas mensualmente			
	Si usó una sustancia química en spray, mantuvo al niño fuera de la casa hasta que el olor desaparezca			
	Pidió al propietario que elimine las cucarachas con un plaguicida que no sea tóxico			
En los últimos 12 meses, ¿ha visto rastros de ratones o ratas dentro de su hogar? ___ Sí ___ No 	Arregló las llaves y tuberías que gotean			
	Mantuvo la basura en zafacones con tapa, dentro y fuera de la casa			
	Retiró agua y alimentos de mascotas durante la noche			
	Mantuvo superficies, mesas y pisos limpios y el fregadero seco. Secar y guardar platos y utensilios de cocina			
	Selló las grietas de su casa			
	Colocó escrines en ventanas y puertas de la casa			
	Utilizó ratoneras, asegurándose que estén ubicadas en áreas fuera del alcance de niños y mascotas			
 Durante los pasados 30 días, ¿alguien ha fumado dentro de	Insistió en que nadie fume dentro de la casa y dentro del carro. Consideración adicional: El vapor del cigarrillo electrónico que se exhala aún puede tener productos químicos tóxicos. Se sugiere evitar utilizar cigarrillos electrónicos cerca de sus familiares con asma			
	No utilizó repelentes que se encienden con fuego dentro de la casa			

3

Las imágenes y el contenido fueron tomadas del currículo Respirar es Vida y de páginas de internet solo para propósitos educativos.

Número de identificación: _ _ _ _-_ _ _ _

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su casa? ___ Sí ___ No	Si estuvo en contacto con una persona que fuma, lavó la ropa inmediatamente o dejarla afuera tendida			
	Mantuvo al niño alejado del humo dentro de la casa y fuera de ella			
En los pasados 30 días, ¿su hijo/a ha estado expuesto a otros tipos de humo (humo de áreas aledañas que entre al hogar, fogatas, BBQ, etc.)? ___ Sí ___ No	Si realiza un BBQ en su casa, mantuvo al niño alejado del mismo			
	Si a su hogar ingresa humo de segunda mano, proveniente de la calle o de la casa de algún vecino, habló con la persona. Sugirió a la persona reubicarse cuando fume en una posición contraria a la dirección del viento, para evitar la entrada del humo al hogar			
	Si usted tiene una planta eléctrica, la colocó a 20 pies de la casa, preferiblemente en la parte de atrás. De esto no ser posible, ubicó al niño en el cuarto más lejano de la planta eléctrica, para evitar provocar los síntomas			
¿En los pasados 30 días usted ha utilizado productos de limpieza o de olor con aromas fuertes cuando el niño esta presente? ___ Sí ___ No	Mantuvo al niño alejado de los olores fuertes, como perfume, talco, laca de spray para el pelo, pinturas y productos de limpieza			
	Al trabajar con sustancias químicas o corta grama, lavó y guardó la ropa de trabajo separada de la del niño			
	Evitó las velas, inciensos y spray de olor cuando el niño estuvo dentro de la casa			
	Evitó hacer mezclas de productos de limpieza en el baño			
	Limpió con productos de limpieza naturales como: bicarbonato de sodio, vinagre, etc.			

4

Las imágenes y el contenido fueron tomadas del currículo Respirar es Vida y de páginas de internet solo para propósitos educativos.

19. ASTHMA CONTROL IN SCHOOLS' ONLINE COURSE: PRE AND POST TEST

Preprueba

Para obtener su certificación deberá cumplir con los siguientes requisitos:

Completar la Información de contacto para la certificación junto con la Pre-prueba. *Esta información es necesaria que la complete para que pueda recibir su certificado.Completar los 6 módulos de información acerca del Control del Asma en las escuelas, observando los videos completos.Completar la Posprueba con una puntuación mínima de 70%.Completar la Encuesta de satisfacción.Cumplir con el tiempo requerido del curso que consiste en 1 hora y 30 minutos. *La plataforma permite que se complete de forma consecutiva o en intervalos de tiempo durante las 48 horas otorgadas.Para más información o aclaración de dudas puede comunicarse con Paola Casal o Mirelys Valentín al 787-765-2929 ext. 4149, 4145 o nos puede escribir a programa.asma@salud.pr.gov.

Fecha y hora (D-M-Y H:M) _____

Nombre completo: _____
(Se utilizará este nombre para crear su certificado de participación.)

Correo electrónico _____

Tipo de escuela:
○ Pública
○ Privada

Municipio donde labora:

- ◯ Adjuntas
- ◯ Aguada
- ◯ Aguadilla
- ◯ Aguas buenas
- ◯ Aibonito
- ◯ Añasco
- ◯ Arecibo
- ◯ Arroyo
- ◯ Barceloneta
- ◯ Barranquitas
- ◯ Bayamón
- ◯ Cabo rojo
- ◯ Caguas
- ◯ Camuy
- ◯ Canóvanas
- ◯ Carolina
- ◯ Cataño
- ◯ Cayey
- ◯ Ceiba
- ◯ Ciales
- ◯ Cidra
- ◯ Coamo
- ◯ Comerío
- ◯ Corozal
- ◯ Culebra
- ◯ Dorado
- ◯ Fajardo
- ◯ Florida
- ◯ Guánica
- ◯ Guayama
- ◯ Guayanilla
- ◯ Guaynabo
- ◯ Gurabo
- ◯ Hatillo
- ◯ Hormigueros
- ◯ Humacao
- ◯ Isabela
- ◯ Jayuya
- ◯ Juana díaz
- ◯ Juncos
- ◯ Lajas
- ◯ Lares
- ◯ Las Marías
- ◯ Las Piedras
- ◯ Loíza
- ◯ Luquillo
- ◯ Manatí
- ◯ Maricao
- ◯ Maunabo
- ◯ Mayagüez
- ◯ Moca
- ◯ Morovis
- ◯ Naguabo
- ◯ Naranjito
- ◯ Orocovis
- ◯ Patillas
- ◯ Peñuelas
- ◯ Ponce
- ◯ Quebradillas
- ◯ Rincón
- ◯ Río Grande
- ◯ Sabana Grande
- ◯ Salinas
- ◯ San Germán
- ◯ San Juan
- ◯ San Lorenzo
- ◯ San Sebastián
- ◯ Santa Isabel
- ◯ Toa Alta

	◯ Toa Baja ◯ Trujillo Alto ◯ Utuado ◯ Vega Alta ◯ Vega Baja ◯ Vieques ◯ Villalba ◯ Yabucoa ◯ Yauco
Ocupación	◯ Maestro ◯ Enfermero ◯ Director Escolar ◯ Trabajador Social ◯ Orientador ◯ Psicólogo ◯ Asistente Administrativo ◯ Oficial de Salud ◯ Otro
Indique la otra profesión:	_____
¿Ha sido diagnosticado alguna vez con asma por un médico?	◯ Sí ◯ No

PREPRUEBA

El asma es una enfermedad crónica que provoca que:

◯ Las vías respiratorias se inflamen.
◯ Las vías respiratorias se estrechen.
◯ Se dificulte respirar.
◯ Todas las anteriores.

Los síntomas más comunes del asma son:

◯ Tos, dolor en el estómago, carraspera y mal aliento
◯ Tos, dolor de cabeza, caries y alergia
◯ Dificultad para respirar, dolor de cabeza, tos y carraspera
◯ Tos, sibilancias, presión en el pecho y dificultad para respirar

El asma persistente se clasifica en:

◯ Leve, intermitente y persistente
◯ Moderada, severa e intermitente
◯ Leve, moderada y severa
◯ Leve, aguda y crónica

Algunos desencadenantes del asma son:

◯ Vitaminas, olores fuertes y emociones
◯ Alimentos, medicamentos y el sueño
◯ Condiciones médicas, alimentos y minerales
◯ Condiciones médicas, humo y animales

¿De qué manera se puede ayudar a que los estudiantes con asma realicen actividad física?

- ◯ Identificando los estudiantes con asma.
- ◯ Fomentando que los estudiantes se preparen antes de realizar la actividad.
- ◯ Modificando la actividad de ser necesario.
- ◯ Todas las anteriores.

El Plan de Acción:

- ◯ Es una guía personalizada que ayuda a la persona con asma, a sus cuidadores y maestros, a conocer y manejar el asma.
- ◯ Describe cómo controlar el asma y cómo manejarla cuando empeore o cuando tenga un ataque.
- ◯ Explica cuándo se debe llamar al médico o ir a una sala de emergencia.
- ◯ Todas las anteriores.

Los medicamentos para el asma se dividen en:

- ◯ Manejo y control
- ◯ Manejo y rescate
- ◯ Control y rescate
- ◯ Control, manejo y rescate

En Puerto Rico para el 2018-2020 se estimó que:

- ◯ Aproximadamente 1 de cada 8 niños y adolescentes tenían asma actual.
- ◯ Aproximadamente 2 de cada 10 niños y adolescentes tenían asma actual.
- ◯ Aproximadamente 3 de cada 10 niños y adolescentes tenían asma actual.
- ◯ Aproximadamente 4 de cada 10 niños y adolescentes tenían asma actual.

La Ley 56 del 2006 establece que:

- ◯ Solo los estudiantes de escuela pública tendrán derecho a administrarse, por cuenta propia, los medicamentos para el tratamiento de su condición.
- ◯ Solo los estudiantes de escuela privada tendrán derecho a administrarse, por cuenta propia, los medicamentos para el tratamiento de su condición.
- ◯ Todo estudiante de escuela pública o privada tendrá derecho a administrarse, por cuenta propia, los medicamentos para el tratamiento de su condición.
- ◯ Todo estudiante de escuela pública o privada tendrá derecho a que la enfermera escolar le administre los medicamentos para el tratamiento de su condición.

¿Qué es lo primero que se debe realizar durante un episodio de asma en la escuela?

- ◯ Informar a la oficina del director.
- ◯ Permitir que el estudiante se administre el medicamento según su Plan de Acción.
- ◯ Sentar al estudiante en posición recta.
- ◯ Llamar al cuidador y recomendarle llevar al estudiante a Sala de Emergencias.

20. ASTHMA CONTROL IN SCHOOLS' ONLINE COURSE: SATISFACTION SURVEY

Encuesta de Satisfacción

	Muy satisfecho	Satisfecho	Insatisfecho	Muy insatisfecho
¿Cuán satisfecho está con la organización del curso?	○	○	○	○
¿Cuán satisfecho está con la organización del contenido presentado en cada módulo?	○	○	○	○
¿Cuán satisfecho está con las estrategias utilizadas para presentar los temas?	○	○	○	○
¿Cuán satisfecho está con la duración del curso?	○	○	○	○
¿Cuán satisfecho está con el curso en general?	○	○	○	○

¿Recomendaría este curso a otra persona?
○ Sí
○ No

¿Qué fue lo más que le gustó del curso?

¿Qué cambios recomienda para mejorar el curso?

List of Acronyms

ACEC	Alliance for Chronic Disease Control
ACT	Asthma Control Test
ALA	American Lung Association
AS-ME	Asthma Self-Management Education
ASPPR	Puerto Rico Association of Primary Health Care Providers
AMED	Asthma Medication: Education and Demonstration Project
CDC	Centers for Disease Control and Prevention
EPR 3	Guidelines for the Diagnosis and Treatment of Asthma Expert Panel Report 3
EPA	Environmental Protection Agency
ER	Emergency Room
NHLBI	National Heart, Lung, and Blood Institute
NAEPP	National Asthma Education and Prevention Program
OCS	Insurance Commissioner Office
OAS	Open Airways for Schools
PR	Puerto Rico
PRQ	Puerto Rico Quitline
PRAMCU	Puerto Rico Asthma Management and Control Unit
PRASS	Puerto Rico Asthma Surveillance System
PRDoE	Puerto Rico Department of Education
PRDoH	Puerto Rico Department of Health
PRTCU	Puerto Rico Tobacco Control Unit
UCC	Universidad Central del Caribe
VIAS	Asthma Interactive Home Visits

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