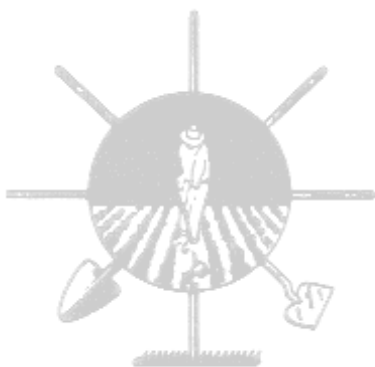


***REDUCING THE
FREQUENCY AND
SEVERITY OF
CHILDHOOD ASTHMA***

*A training curriculum for lay health
educators*

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Activity	Methodology	Materials Needed	Time
Introduction <i>Complete pre-tests; review the workshop objectives</i>	Group Discussion	<ul style="list-style-type: none"> • Asthma Pre-test • Handout 1: Workshop Objectives 	30 mins
What is Asthma? <i>Overview the respiratory system and explain what happens during an asthma attack</i>	Group Discussion and Demonstration	<ul style="list-style-type: none"> • Handout 2: Respiratory System • Poster of Respiratory System • Flip Chart and Markers • Handout 3: Lungs Before and During an Asthma Attack • Blank or scrap paper 	30 mins
Symptoms of Asthma <i>Discuss the symptoms of asthma</i>	Group Discussion	<ul style="list-style-type: none"> • Flip Chart and Markers • Example of asthma action plan 	15 mins
Triggers of Asthma <i>Describe the causes and triggers</i>	Group Activity and Brainstorm	<ul style="list-style-type: none"> • Flip Chart and Markers • Pictures of Common Asthma Triggers • Handout 4: Common Asthma Triggers 	45 mins
Treatment and Management of Asthma <i>Understand general treatment and management practices for asthma; Explain steps to reduce the frequency of asthma episodes & minimize asthma triggers at home</i>	Group Activity, Brainstorm, Skit	<ul style="list-style-type: none"> • Pictures of Asthma Triggers • Flip Chart and Markers • Handout 5: Clear Your Home of Asthma Triggers • Handout 6: How to Take Care of Your Asthma • Handout 7: Special Care for Babies 	90 mins
Who is Affected by Asthma <i>Overview who is at risk from asthma</i>	Group Discussion	<ul style="list-style-type: none"> • Flip Chart and Markers 	30 mins
Review <i>Review topics discussed in the workshop</i>	Game Show	<ul style="list-style-type: none"> • Game pieces 	45 mins
Promoting Asthma Education in the Community <i>Practice techniques to promote asthma awareness in the community</i>	Directed Role Play		45 mins
Conclusion and Evaluation <i>Complete the post-tests and evaluation forms</i>	Group Discussion	<ul style="list-style-type: none"> • Asthma Post-test • Workshop Evaluation Form 	15 mins

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Reducing the Frequency and Severity of Childhood Asthma

(Total time: about 6 1/2 hours)

Workshop Objectives

- Define asthma
- Review what happens during an asthma attack
- Recognize the symptoms of an asthma attack
- Describe the causes and triggers of asthma
- Understand general treatment and management practices for asthma
- Explain steps to reduce the frequency of asthma episodes and minimize asthma triggers in the home
- Review who is affected by asthma
- Practice techniques to promote asthma awareness in the community

I. Introduction

Pre-test

Time: 15 minutes

Materials: Asthma Pre-tests

Distribute the pre-test to the participants before starting the workshop. Explain that this is a questionnaire to help the facilitator make sure that she is presenting the information effectively and doing her job well. Ask participants to answer the questions without consulting with anyone else. If anyone has questions or needs help to answer the questions, ask the facilitator. When all have finished, collect the pre-tests and explain that you will go over the correct answers at the end of the workshop.

Icebreaker Activity: Stand Up, Sit Down

Time: 10 minutes

Ask the group a series of general questions and ask participants to stand when a question applies to them. Prepare a couple of questions that will give you a sense of the group's general level of knowledge about asthma. For example:

Who has experienced an asthma attack?

Who has seen an asthma attack?



- Who has a child with asthma?
- Who has asthma?
- Who has a family member with asthma?
- Who has carpeting in their home?
- Who has pets?
- Who is a smoker?
- Who lives with a smoker?

Workshop Objectives

Time: 5 minutes

Materials: Handout 1 (Asthma Workshop Objectives)

Distribute Handout 1: Workshop Objectives. Review the objectives with the group. Ask them if there are any questions or objectives that they would like to cover that are not included on the handout. Tell the group that throughout the workshop they should feel free to ask questions whenever there is anything they don't understand, and that by the end of the day, you will try to answer all their questions as best you can.

II. What is Asthma?

Questions for discussion

- ? What is asthma?

Explain to the group that asthma is a chronic lung disease that is characterized by difficulty in breathing. In the United States approximately 6 million children and 14 million adults have asthma. Asthma causes children to miss school, stay out of sports activities and visit the hospital more than any other chronic disease. More than 4,000 people die each year from asthma and it is the number 1 chronic disease among children.

Respiratory System

Time: 15 minutes

Materials: Handout 2, poster of respiratory system or flip chart & markers

Since asthma is a disease that affects breathing, it is important to understand our respiratory system or the parts of body that are involved with breathing. Distribute Handout 2: Respiratory System. Review the handout with the group. It may be helpful to enlarge the handout or buy a pre-made poster of the respiratory system. Or, you can draw a picture of 2 trees next to each other. Explain to the group that some people often refer to the respiratory system as a tree and its branches. Before you begin your explanation, turn the

drawing upside-down so that it more closely resembles the bronchi, bronchioles and alveoli. On either the drawing or the ready-made poster, refer to the various parts of the respiratory system as you explain what they do.

Explain that when we breathe, air is taken in through the nose or mouth and reaches the lungs by passing through the windpipe, which divides into two *bronchi*, one for each lung. Each bronchus further divides into many bronchioles, which eventually lead to tiny air sacs called the *alveoli*, in which oxygen from the air is transferred to the bloodstream, and carbon dioxide from the bloodstream is transferred back out to the air.

Asthma involves only the bronchi and bronchioles (airways), and not the alveoli. The airways are cleaned by trapping stray particles in a thick layer of mucus that covers the surface of the airways. Glands inside the lungs constantly produce new mucus, which is then either coughed or swept up to the windpipe by tiny hairs on the lining of the airways. Once the mucus reaches the throat, it is either coughed up to the mouth or swallowed.

Airways Demonstration

Time: 10 minutes

Materials: piece of paper, Handout 3

Distribute a blank piece of paper or scrap paper to each participant. Ask everyone to roll up the paper like a tube. Tell them to imagine this is an airway in their lungs.

Explain that when everything is working normally, the muscles that are wrapped around the airways are very thin and loose, and the airway is wide open. This makes it easy to move air in and out of the air sacs. Have the participants blow through the tube and put their hand at the end of the tube. When the airways are open like this tube, air can get in and out easily.

The asthmatic's airways are oversensitive to irritants. In response to stimuli, the airways may become obstructed by 1) constriction of the muscles around the airways, 2) inflammation or swelling of the lining inside the airways, or 3) increased mucus production. The airways become either narrowed or completely blocked so it is harder to move air in and out of the air sacs.

Now have the participants crumple their paper tube to make it really tight. Tell them to blow through the tube again. Ask them some questions before offering the following explanations.

? Can you breathe in any fresh air?



- ? What kind of sound comes through the tube?
- ? What happens to the air that you try to blow out?

This is what it's like in the airways during an asthma attack. When the airways are clogged, carbon dioxide gets trapped in the air sacs, exhaling becomes difficult, and the chest cavity becomes enlarged. Because exhaling is difficult, too much stale air remains in the lungs after each breath and less fresh air is taken in. Less oxygen is available for the body and carbon dioxide builds up in the lungs and causes the blood supply to become acidic. If the asthma remains untreated, the acidity in the blood may rise to toxic levels.

Distribute Handout 3: Lungs Before and During an Asthma Attack.

III. Asthma Symptoms

Group Discussion

Time: 15 minutes

Materials: Flip chart and markers

Ask the group to remember the sound of air being forced through the crumpled tube.

? Describe other symptoms or sounds someone might make when having an asthma attack.

- Wheezing
- Coughing
- Shortness of breath
- Chest tightness
- Breathlessness
- Heavy breathing
- Gasping for air
- Tiredness (from lack of sleep, lack of oxygen, etc.)

Once the airways become clogged or blocked, it takes more effort to force air through them, so that breathing becomes labored. This forcing of air through narrowed or blocked airways can make a whistling or rattling sound, called wheezing. Irritation of the airways by excessive mucous may also lead to coughing.

? How do you think it feels to not be able to breathe? Would you be able to think clearly? How can you prepare yourself for your or your child's next asthma attack?

- Most doctors recommend that parents of asthmatic children prepare an "action plan" and give copies to the child's

teacher or childcare provider so they know what to do and who to call if the child has an asthma attack.

Most action plans list the child's asthma triggers, the medicines the child should take in various situations and the people to contact in case of emergency.

Distribute examples of asthma action plans or develop one of your own. The Sesame Street "A is for Asthma" caregivers guide and the PBS Kids "Arthur's All About Asthma" curriculum guide both have blank forms in English and Spanish for parents to fill out.

IV. What Triggers Asthma?

Doctors don't know exactly what causes asthma but they know that individuals with asthma have airways that are very sensitive to certain irritants (or "triggers"). These irritants are small and often microscopic particles that we can breathe in. When an asthmatic breathes in these irritants, they can cause the airway muscles to tighten or the airway lining to swell.

Asthma Triggers

Time: 45 minutes

Materials: Pictures of common asthma triggers, drawing of a house, tape, flip chart & markers, Handout 4

Before the workshop, make a large poster-size drawing of a cross-section of a house. Place this drawing on a wall. Also prepare several (about 15-20) pictures of possible asthma triggers (see list below). These could be drawings, photographs, magazine cut-outs, or even small toys. This collection should also include items not likely to provoke an asthma attack (such as a fish, empty cup, cellular phone or television).

Divide the participants into small groups and give each group about 4 or 5 of the pictures of asthma triggers. Give them 5 minutes to discuss among their groups what in the picture could be an asthma trigger. For example, if there is a picture of a carpet, then they would explain that dust in the carpet could trigger an asthma attack in some people. Have each group prepare a 5-minute presentation to explain their conclusions to the rest of the participants. As they go through each trigger, make sure you correct any errors or cover any information they left out. Ask them to tape the picture onto the drawing of the house, in an area where it would likely be found.

After you have gone through all the items, ask the group to brainstorm other possible asthma triggers. Write their responses

V. Asthma Management and Treatment

Reducing Exposures to Environmental Triggers

Time: 30 minutes

Materials: Pictures of common asthma triggers, drawing of a house, tape, flip chart & markers, Handout 5 (EPA Brochure "Clear Your Home of Asthma Triggers")

Have the participants reassemble into their small groups. They will discuss the same asthma triggers as before, but this time, they will discuss what simple steps they could take to reduce or eliminate their exposure to that irritant in their home or when they are outside.

Have them prepare a presentation to the rest of the participants. As each group finishes its discussion of an item, remove it from the house drawing. When you have gone through each item in the house, return to the list of triggers on the flip chart (generated in the previous activity). Discuss how to avoid or eliminate each of those items.

These are some suggestions:

Smoke

Do not allow people to smoke in your home. If adults must smoke, get them to smoke outside. Try to convince them to stop smoking.

Dust

Keep your home clean as dust free as possible and try to vacuum frequently. **If you have asthma**, try to get someone else to vacuum for you one to two times per week and do not stand in the room while it is being vacuumed. If you have to vacuum, wear a dust mask and make sure the vacuum bag has a microfilter.

Mold

Control moisture to control mold.

- Fix leaky faucets, pipes and other sources of water.
- Clean mold with water and bleach
- Open windows while cooking, washing dishes and clothes.
- Maintain low humidity (30 - 50% RH). If necessary, use a dehumidifier.

Pets

Keep away from sleeping area and keep sleeping area or bedroom door closed.



Dust mites

- Wash sheets, blankets and pillows weekly in hot water.
- Keep stuffed toys off bed or wash them weekly with hot water.
- Cover mattresses and pillows with special covers made of dense cotton or plastic. If possible, remove rugs from bedroom.

Cockroaches

Take preventive measures:

- Do not leave food out; store food in airtight containers.
- Caulk and seal cracks and crevices.
- Fix leaky pipes and faucets and wipe up spills.
- To kill roaches, try using boric acid (where toddlers or pets won't get it) or sticky traps. Keep garbage bags closed or tightly sealed and empty garbage daily.

Air Pollution

Stay indoors with doors and windows closed on days when air pollution is high (especially when there are high levels of ozone, sulfur dioxide or soot).

Pesticide Spray

Stay indoors with doors and windows closed when pesticides are sprayed near your home. Ask nearby growers to notify you when spraying will occur.

Explain that it is very important to try to reduce exposure to asthma triggers wherever the child may be. Indoors, it is important to reduce or eliminate exposure to tobacco smoke, house dust, dust mites, cockroaches, fleas, indoor molds, and cat dander. It is important to keep children inside with windows and doors closed during periods of high air pollution (from ozone, sulfur dioxide or particulate matter) and when pesticides are being sprayed.

Explain that avoiding these irritants can prove to be a challenge, since children can be in many different environments: at home, school, day care setting, or homes of friends and relatives, but many things are under their control.

Distribute Handout 5: Clear Your Home of Asthma Triggers (EPA Brochure)

Medical Treatment of Asthma

Group Discussion

Time: 30 minutes

Materials: Flip chart and markers, Handouts 6 and 7

? What kinds of treatments are used to control asthma?

There are two kinds of medications for asthma: preventive medicines and rescue medicines. The treatment of asthma depends on its severity. Treatment of mild asthma focuses on relieving occasional symptoms as they occur by use of short-acting, inhaled bronchodilators. Treatment of moderate or severe asthma, however, attempts to alleviate both the constriction and inflammation (swelling) of the airways, through the use of both bronchodilators and anti-inflammatories. To obtain the maximum benefit from these medications, it's important to learn how to use the inhalers correctly.

- *Rescue* medicine or bronchodilators help stop an asthma attack that has started. Bronchodilators relax muscles that have tightened around the airways. They relieve symptoms but they cannot reduce or prevent the swelling that causes the symptoms. These medicines can be taken at the first sign of a wheeze, cough, or tightness of the chest. However, they are not meant to be used to stop attacks every day over a long period of time. If symptoms are present once or twice a week, a bronchodilator may be all that is needed to control asthma symptoms.
- *Preventive* or anti-inflammatory medicines are medicines that reduce or reverse the swelling in the airways that cause the asthma symptoms. These medicines help to keep asthma attacks from starting. They work slowly over many weeks to stop the swelling in the airways. If you have symptoms more than once or twice a week, anti-inflammatory medicines are needed. Many people take their preventive medicine all year long for many years. You cannot become addicted or hooked on these asthma medicines even if you use them for many years. It's important to remember that these medicines help to reduce the number and severity of asthma attacks, but won't completely eliminate them.

Many people living near the Mexican border buy medications at lower prices in Mexico, where medications are available without prescription from most pharmacies. As a result, many parents and/or pharmacists often misdiagnose asthma as bronchitis or other upper respiratory infections. Antibiotics and other medications prescribed for such infectious diseases are not effective in treating asthma. Therefore, parents should consult with a medical professional for a proper diagnosis before purchasing medication in Mexico. Also, misuse of antibiotics should be strongly discouraged because such improper use can lead to the

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creation of drug-resistant bacteria which are difficult to treat in the particular patient and the general population.

Inform participants that, for those who are eligible, asthma medications are covered by Medicaid.

The physical activity of children whose asthma is under control should *not* be restricted. Children should be encouraged to exercise and participate in sports to increase their pulmonary capacity, improve breathing and thereby help decrease the severity of asthma attacks.

Distribute Handout 6: How to Take Care of Your Asthma.

Important note: Since every asthma patient is different, parents need to consult a doctor to develop a personal management plan for their children with asthma.

Guest speaker

It may be helpful to invite a representative from the local chapter of the American Lung Association, a Certified Asthma Educator, or a nurse or nurse practitioner from a local health clinic to the workshop to demonstrate the proper use of asthma medication and equipment, such as inhalers and nebulizers. While the participants will not be administering medication or teaching others how to use equipment for the treatment of asthma, it is very helpful for them to be familiar with methods of asthma medication before speaking with others about asthma in general.

Special Care for Babies

Skit

Time: 20 minutes

Materials: Baby doll or blanket

Ask for 2 volunteers to help you. Arrange two chairs so that the 2 volunteers can sit next to each other, facing the rest of the group.

Comadre: Hello comadre (or compadre), how are you? How's your baby?

Mother: (*carries the baby in her arms*) Hello comadre. She's doing well. She's a beautiful baby isn't she? But lately she's been having a little trouble breathing. Look now, see how her nostrils are getting big? And she's making that strange grunting sound. She seems to be turning a little pale. What do you think it is?

Comadre: I'm not sure. I've never seen a baby react like that. Why don't you give her some chamomile tea or some warm milk? That usually calms my babies down.

Mother: OK. I'll try that. (*pretends to give her a drink from a cup*) She doesn't want to drink anything and now look how her chest is getting bigger. I'm getting scared. I think I should call 911.

Comadre: I think that's a good idea. This could be serious.

Mother: *Calls 911 and speaks to dispatcher (facilitator)*. Hello? I'm calling because my baby is having trouble breathing.

911 dispatcher: Can you describe the symptoms to me?

Mother: *Describes symptoms*.

911 dispatcher: It sounds like she might be having an asthma attack. Has she been diagnosed with asthma? If so, you should give the baby her asthma medications.

Mother: No, she hasn't been diagnosed with asthma and I don't have any medicines for her.

911 dispatcher: In that case, I'll send an ambulance to your house right away.

Explain that special care is needed to care for infants with asthma. The lungs of an infant do not function as efficiently as the lungs of an older child. As a result, a severe episode of asthma can quickly result in lung failure. If an infant does have asthma symptoms, the parent or guardian needs to act quickly. One of the main reasons a child dies of asthma is because the physician or the parent does not appreciate the severity of asthma and the danger of any delay in getting appropriate medical care. Another reason is inadequate patient and family compliance with recommended regimens and treatments.

The infant needs to be watched closely for the following signs: breathing rate increases (over 40 breaths per minute while the baby is sleeping), suckling or feeding stops, skin between the infant's ribs pulled tight, chest enlargement, coloring changes (pale or red face), changes in quality of crying (becoming softer and shorter), nostrils opening wider, and grunting.

During an asthma episode it is important not to give the infant large volumes of liquids to drink. The infant should not breathe warm, moist air. The infant should not re-breathe into a bag held tightly over his or her nose and mouth, and the infant should not be given



over-the-counter antihistamines or cold remedies. Parents should also avoid using vaporizers since they are not effective and can contribute to mold growth.

Distribute Handout 7: Special Care for Babies.

VI. Who is Affected by Asthma?

Group Discussion

Time: 30 minutes

Materials: Flip chart and markers

Remind the group that when they first started talking about asthma almost everyone in the room said that they knew someone with asthma (or that several people said they knew someone with asthma etc.). Explain that asthma is very common and that approximately 6 million children (under 18 years old) and 14 million adults have asthma. National survey data indicate that the number of children with asthma in the United States has nearly tripled in the past 20 years. In 1980, 2.3 million American children had asthma. By 2002, the number of affected children had risen to 6.1 million.

? Why does asthma affect children more than adults?

- Children have narrower airways than do adults, so they become blocked or clogged more easily.
- Children breathe more (pound per pound) than adults and, thus, take in more pollutants and irritants in the air.
- Children play more on the floor where there is dust and outside where there is air pollution.

Asthma is the most common chronic illness in childhood.

More children miss school and go to a hospital emergency room or are hospitalized due to asthma than for any other chronic illness. Uncontrolled asthma can cause children to do poorly in school. Having a child with uncontrolled asthma may cause parents economic or psychological distress from missed work, high medical bills and anxiety over their child's condition. Untreated asthma can also lead to permanent reductions in lung function, damage to lung tissue, severe breathing discomfort, and lower resistance to infection.

Asthma and farmworker children

Asthma rates are very high among Latino and African-American children in inner-city neighborhoods, due largely to poverty and poor living conditions. Children living in rural agricultural areas also

have high asthma rates. Farmworker children are exposed to many air pollutants, including pesticides and dust, which can trigger severe reactions among children with asthma. A recent study of children in Southern California found that infants exposed before the age of 1 to pesticides (especially herbicides), farm animals, farm crops or dust were more likely to develop early persistent asthma than other children.

VII. Review

Game Show

Time: 45 minutes

Materials: 25 pieces of paper, with game categories or dollar amounts written or printed on them, tape

Tape pieces of paper or cardboard on a bare wall, each with one of the following categories or dollar amounts printed on it, arranged in the following order:

Myths and Legends	Asthma Triggers	Clearing the Air	Healthy Hints
\$100	\$100	\$100	\$100
\$200	\$200	\$200	\$200
\$300	\$300	\$300	\$300
\$400	\$400	\$400	\$400

Explain to the group that they are going to play a game to review what they've learned. Ask for eight volunteers to step forward and divide them into two teams of four. Taking turns, each team chooses a category and the amount of money they want to play for. The facilitator takes the chosen amount from the wall and reads the corresponding question. Team members can confer with each other on their response. Each team gets (fake) money for each correct question (questions are worth \$100, \$200, \$300, and \$400). The team with the most money at the end of the game wins a small prize or applause.

Category 1: Myths and Legends

1. Asthma is a psychological problem. (false)
2. What type of dog do some people think will cure asthma? (Chihuahua)
3. What racial/ethnic group has the highest rate of asthma? (Latino)
4. Can children outgrow asthma? (no; asthma may diminish in time but it never disappears)



Category 2: Asthma Triggers

1. Tobacco smoke will always trigger an asthma attack for everyone who has asthma. (false)
2. Name 2 things in a child's bedroom that might provoke an asthma attack. (pillow, carpet, stuffed animals, dog)
3. Name 3 outdoor things that can provoke an asthma attack. (pollen, pollution, pesticides, cold air, mold, dust)
4. Name a medication that could cause an asthma attack. (e.g., aspirin, ibuprofen, heart medication)

Category 3: Clearing the Air

1. How can you reduce the amount of dust mites on your bed? (wash the sheets and pillowcases in hot water every week)
2. What should you do if your asthmatic child is playing outside when pesticides are being sprayed in a nearby field? (bring her in and close doors and windows).
3. What are 3 places in your home where dust can accumulate. (floors, carpets, stuffed animals, furniture)
4. What are 2 ways to eliminate mold from your house? (fix leaky plumbing, install vents or fans in the bathroom, use a dehumidifier, clean mold with water & bleach, open windows when cooking or washing)

Category 4: Healthy Hints

1. Children with asthma should never exercise. (false)
2. Name 2 signs that a baby is having an asthma attack (faster breathing rate, suckling or feeding stops, skin between the infant's ribs pulled tight, chest enlargement, coloring changes, changes in quality of crying (becoming softer and shorter), nostrils opening wider, grunting)
3. Name two things you should do if your child has an asthma attack. (Remain calm, get the child comfortable and seated, administer medication, call doctor, go to the emergency room if the medication isn't working)
4. What are 3 things you can do to control your asthma (see a doctor, take your medications as directed, avoid your asthma triggers)

VIII. Promoting Asthma Awareness in the Community

Directed Role Plays

Time: 45 minutes

Divide participants into groups of four. Give each group about 10 minutes to prepare one of the following role plays. Remind the participants that the most effective way to educate the community is to engage individuals in a dialogue. Encourage participants to ask many questions of the community member during their roles as *promotores* to facilitate this exchange of ideas. Note that simply lecturing to the community members is likely to turn them off. Tell them that they are welcome to use any of the materials and props that were used during the workshop. Visit each group as they are preparing to see if they have any questions. Have each group present their role play to the rest of the participants. After each group presents their role play, be sure to provide feedback. Ask the other participants to help you provide comments that are both positive and useful.

- *Promotores* visit a mother with a baby and discuss what asthma is, common symptoms, and how to care for a baby with asthma.
- *Promotores* visit parents of an asthmatic child and help them prepare an action plan for the next asthma attack.
- *Promotores* visit the home of a family that tells them their child sometimes wheezes and coughs. *Promotores* should advise them to see a doctor because the child might have asthma. They explain briefly what asthma is and why the child needs medical attention.
- *Promotores* give a presentation to the group about 5 common asthma triggers (dust/dust mites, tobacco smoke, pets, mold, and roaches) and practical ways to reduce or eliminate exposure to them.

IX. Conclusion and Evaluation

Time: 15 minutes

Materials: Asthma Post-tests, Evaluation forms

Ask the group if there are any questions or comments. Distribute any materials that they will be giving to members of the community, including referral information to nearby health clinics, governmental agencies, legal services organizations and community-based organizations.

Distribute the post-test and workshop evaluation forms. Review the correct answers for the pre- and post-tests.

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