

Asthma education: **5** key messages

Teaching your patients about asthma is important for reducing disparities, but it's complicated and your time is limited. We help you simplify the information and provide tips on how to use cultural humility when working with children and families.

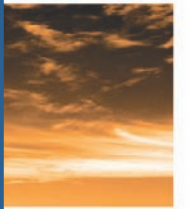
By Robin Evans-Agnew, PhD, RN, AE-C, and Cindy Cooper, RN, AE-C

Pablo is an 8-year-old patient with severe, persistent asthma. He lives with his mother and sister in low-income housing in the inner city. Pablo has had several ED/hospital admissions over the past year. We're meeting with Pablo and his family in a scheduled outpatient visit 2 weeks after his most recent exacerbation.

If managing asthma were easy, it would be easy to teach. But it turns out that the more you learn about asthma, the more complicated it gets. Helping Pablo stay healthy, happy, and out of the hospital takes more than just prescribing the right medications; it entails ensuring that parents, siblings, grandparents, and other caregivers all know how to help, a solid education plan, and skills in building trust and advocating for a family who may be feeling overwhelmed by the challenges in front of them. That's the purpose of this article:

to simplify complex information fast in a way that everyone can understand.

Pablo's family is low-income and because he had multiple hospital admissions in the last year, he's at risk for more exacerbations in the future. More often than not, kids in Pablo's situation don't get the right care and education to help them stay healthy. Asthma rates reached an all-time high in the United States in 2012 and the disparities are startling. White or wealthy kids may experience asthma half as much as those like Pablo who are low-income or who come from Puerto-Rican, African American, or American Indian backgrounds. What's worse is that kids like Pablo are often more than three times as likely to end up in your ED or hospital and, in rare instances, are four times more likely to die from an asthma exacerbation than White or high-income children.



Questions and actions for cultural humility

Goals	Suggested questions and actions
Knowledge	<ul style="list-style-type: none">• “Tell me what you think caused the asthma or is making the asthma worse at this time?”• “What results do you hope to achieve with this visit?”• “How serious do you think your asthma is?”• “What do you fear most about having asthma?”• “Tell me what you’ve learned from our meeting today?”
Mutual respect	<ul style="list-style-type: none">• When speaking with a family, consider to whom you should be speaking and how best to position yourself when speaking with them.• Make a note of your own reactions to others’ beliefs.• Acknowledging the validity of others’ belief systems (such as prayer) helps to build trust.
Negotiation	<ul style="list-style-type: none">• “What might get in the way of you carrying out this asthma action plan and how can we fix it?”• “How will your beliefs help you carry out this asthma action plan?”

In this article, we’ll give you five important messages to convey to your patient and his family: 1) take control; 2) get a plan; 3) fight your triggers; 4) ride your breathing curve; and 5) step up medication management. Each of these messages should begin with making sure Pablo and his family can understand the basics of asthma pathophysiology. Nurses and other healthcare providers who are educating patients about asthma can use these simple messages, which are designed to overcome barriers to asthma management and improve the social support of the person with asthma.

The goal of asthma education is to empower Pablo and his family to improve his lung function and prevent future exacerbations. In nursing, we do this by helping Pablo believe he can improve control of his asthma and encouraging his family to provide him with the social support needed to accomplish this. Convincing Pablo that he can control his asthma requires that he and his family understand how susceptible he is to having an attack, how dangerous his condition is, and what the benefits will be for him. We want to increase their confidence in

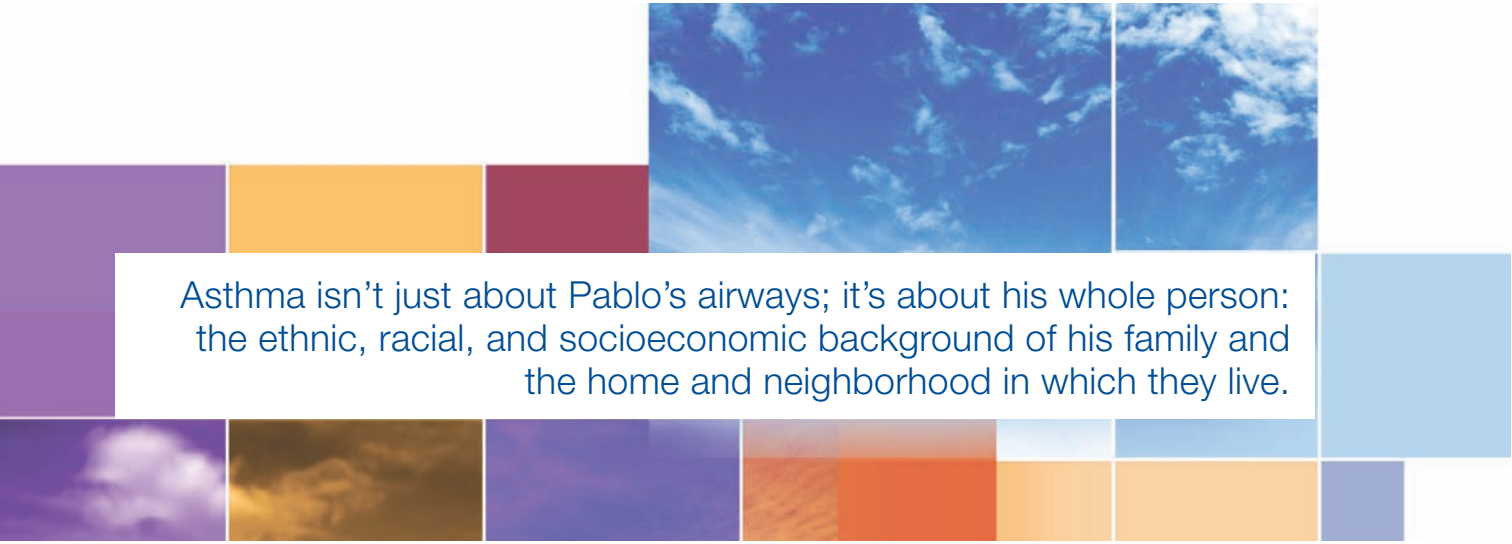
recognizing and responding to symptoms, managing medications, and making changes to the environment to reduce triggers.

Helping Pablo make this change requires what’s known as cultural humility—the process of bringing into check the power imbalances between you and his family. These power imbalances may be differences in race, ethnicity, income, or education level between the nurse and patient. A culturally humble process involves questions and actions you can take to gaining knowledge, achieving mutual respect, and being willing to negotiate care plans (see *Questions and actions for cultural humility*). You’ll need to learn new things from Pablo and his family, and even about yourself. Cultural humility requires that you’re open to new ways of understanding asthma and have a respect for other belief systems. It also requires you to tailor your education to not just the patient, but also the family. For example, several generations may be involved in Pablo’s care. If you practice cultural humility, you’ll be able to negotiate a care plan for Pablo and his family that supports their beliefs in a way that encourages asthma control.

Start by emphasizing inflammation

We sit down opposite Pablo and his family and ask them to tell us about his asthma. In the conversation, we listen for the ways he and his family describe the asthma symptoms. We review simple asthma pathophysiology with the family using our hands to show how an airway can get tight and a simple drawing displaying a picture of a family standing next to a child with the whole respiratory tract indicated.

Photos and models of airways are useful tools for teaching Pablo and his family about the asthma management process, but we also like to make a quick drawing that includes the sinuses, airways, lungs, and family to indicate a holistic understanding of lung function. Asthma symptoms may be experienced in more places than the airways, especially in children. Patients



Asthma isn't just about Pablo's airways; it's about his whole person: the ethnic, racial, and socioeconomic background of his family and the home and neighborhood in which they live.

experience asthma symptoms from the head and nasal sinuses all the way down to the stomach. We use an image that allows Pablo and his family to visualize all that can and often does go on with asthma.

We define asthma in simple words using the most up-to-date guidelines issued by the Global Initiative for Asthma as our template. For example: "Asthma is a chronic disease of the airways that lead to your lungs. These airways get inflamed or swollen and can stay swollen. There are many different types of asthma, but they all look generally the same, causing wheezing, shortness of breath, chest tightness, a cough, and varying amounts of difficulty in blowing out your breath." The key words and phrases in this definition are "inflamed" and "varying amounts of difficulty in blowing out your breath."

Pablo's inflammation may be influenced by not only the effectiveness of his medication, but also other conditions, such as gastroesophageal reflux disease and depression, and especially the environment. Pablo's family may or may not have control over some of these influences, such as the ability to exercise or prevent tobacco use inside their apartment. Others may be more tricky, such as convincing a landlord to clean up mold or avoiding stressful environments in which Pablo and his family may be experiencing air pollution, violence, racism, or discrimination.

Therefore, it's important for us to emphasize that asthma isn't just about Pablo's airways; rather, it relates to his whole person: the ethnic, racial, and socioeconomic background of his family and the home and neighborhood in which they live. The reason Pablo's airflow is variable is that the airways aren't permanently stiffened in asthma. We like to use our hands to show

the difference between a relaxed, partially, or completely constricted airway.

Current asthma guidelines recommend four strategies to good asthma control: 1) appropriate medications, 2) frequent visits to the healthcare provider (at least twice a year), 3) avoiding triggers in the environment, and 4) education for a partnership in care.

Message 1: Take control

We find out that Pablo has been waking up coughing at least three times in the last month, this is the third rescue inhaler he's received since January, and in the last week since leaving the hospital he's already had to use it four times to breathe. We ask Pablo to tell us what it feels like when he gets sick with asthma and we ask the family what they think his symptoms and his asthma mean. We learn that Pablo always gets a stomachache before an attack and then his mother tells us that Pablo's cousin died from asthma 2 years ago. She starts to cry saying, "I get so worried sometimes when he's sick."

The objectives of this message are for the family to be able to describe inflammation and identify warning signs of poor control. Asthma control is the most important idea to convey to Pablo and his family. We use

The Rules of Two checklist

Question	Check*
Daytime symptoms more than two times a week?	
Nighttime awakenings more than two times a month?	
Refill quick-relief inhaler more than two times a year?	
Hospital or ED/urgent care visits more than two times a year?	

*Any checked row may indicate that asthma isn't well controlled.

Source: Millard M, Hart M, Barnes S. Validation of Rules of Two™ as a paradigm for assessing asthma control. *Proc (Bayl Univ Med Cent)*. 2014;27(2):79-82.

our hand shapes to emphasize that staying in control means staying on top of keeping the inflammation down. We use the “Rules of Two” to help the family recognize the warning signs of losing control (see *The Rules of Two checklist*). Evidence shows that monitoring the number of times Pablo experienced daytime symptoms in the last week, woke up in the middle of the night coughing in the last month, or the number of times the family had to replace his rescue inhaler in the last year is an accurate indicator of how well controlled his asthma is. Pablo’s symptoms place him in the “not well controlled” category based on his recent hospitalization, along with the nighttime awakenings and rescue inhaler use.

with his typical symptoms and have a plan to recognize and treat symptoms early.

Message 2: Get a plan

We find out that Pablo’s mother works in the afternoon and evenings cleaning banks in the downtown business district, so he usually goes with his sister to stay with an aunt after school. We review a simple asthma action plan with steps to take based on Pablo’s symptoms and teach him how to use a peak flow meter for those times he feels his asthma is coming, which for him is whenever he gets a stomachache. We ask his mother to repeat back the instructions and make her extra copies of the action plan for the aunt who Pablo stays with in the evenings. His mother seems to understand the instructions and is grateful for the plans, yet she still seems overwhelmed. We ask her about what she believes will help them stick to the plan and she says, “God will help me and he’s looking out for my child, I know it.”



By understanding your patient’s and his family’s goals, you can build trust and solidarity for solving some of the more difficult problems of asthma self-management for diverse populations.

Daytime shortness of breath and nighttime awakenings from coughing are also important indicators of an asthma diagnosis.

In addition to staying in control, every patient and family are fearful of experiencing another asthma exacerbation and knowing what to do. An exacerbation can look different for everyone, such as coughing, throat clearing, chest tightness, and expiratory wheezing one time and the next time, chest tightness or the inability to speak in complete sentences. To avoid exacerbations, Pablo and his family need to be familiar

The objective of this message is for the family to design a communication plan for the management of Pablo’s asthma. Action plans are an evidence-based way to improve self-management for asthma patients. In children, these plans guide the parent or caregiver to recognize when symptoms are getting worse, know which medications to take, and understand when to seek medical help. There are many sample plans available on the Internet and we like the ones that use a stoplight to guide decision making: Green means Pablo is well controlled, yellow

Simple asthma action plan

Well controlled	Not well controlled	Very poorly controlled
80% or more of my best peak flow	51% to 79% or more of my best peak flow	50% or less of my best peak flow
1. No changes in therapy needed.	1. Use rescue medication. AND	1. Visit provider. OR 2. Get to urgent care/ED.
	2. Contact provider.	3. Start nebulizer treatments.
	Note: Intercept early!	4. Possibly take oral prednisone.

Source: Conti C, Bradwisch S, Donohue N. Like a fish out of water: asthma and children. *Nursing made Incredibly Easy!* 2014;12(3):30-38.

means Pablo isn't well controlled and adjustments need to be made, and red means Pablo is very poorly controlled (see *Simple asthma action plan*). These levels can be determined by using a peak flow meter and describing the symptoms that Pablo is exhibiting.

A peak flow meter is a hand-held plastic device that helps measure how well a person can forcefully breathe air out compared with a personal best. These devices help caregivers and patients recognize symptoms and the effects of triggers on lung function, according to their action plan. You can mark the device to indicate the stoplight signs for red (50% or less of personal best), yellow (51% to 79%), and green (80% or more).

Guidelines recommend using peak flow meters, especially post exacerbation and during a medication change. We make sure Pablo demonstrates how to use his peak flow meter by asking him to stand up, completely seal his lips around the tube, blow hard but not spit, and record his "personal best" of three blows.

Message 3: Fight your triggers

We use enlarged, simple pictures to discuss with the family common allergens and triggers, such as pollen, dust mites, cockroaches, animal dander, molds, tobacco smoke, and perfumes. On prompting, Pablo and his sister point to the pictures of tobacco smoke and mold. His sister says that there's a lot of mold in the apartment and her uncle "smokes

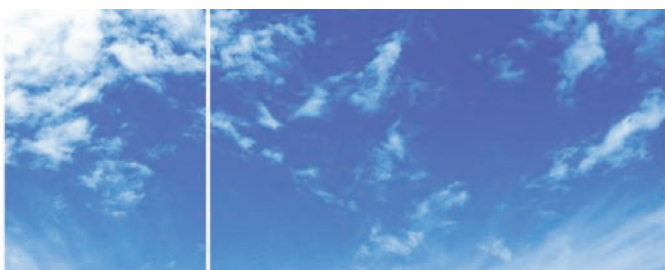
outside when he comes over, but we always smell it inside our bedroom." We discuss with the family the next steps they can take to get rid of or reduce these triggers, such as asking the uncle to wear a smoking jacket that he leaves outdoors. We agree to write a letter on clinic letterhead to the landlord asking that the mold be cleaned up.

The objectives of this message are to identify threats to asthma control in Pablo's home and neighborhood environment, and design a plan to eliminate or reduce these threats. Control of environmental factors is one of the most important evidence-based guidelines for asthma management. Exposures to factors such as mold, dampness, dust mites in bedding, cockroaches, animal dander, rodents, air pollution, dampness, tobacco smoke, and emotional and physical stress can cause airway inflammation. Most families are aware of common allergens such as mold, but they may not know about dust mites and the importance of allergen barriers for mattresses and pillow covers. Likewise, most families are aware of air pollution, but they may not know that this pollution can leak into homes, just the smell of tobacco smoke on someone's clothing can be an irritant, and some cleaning agents and air fresheners may be making asthma worse.

Most important for Pablo, the stress his family may be experiencing in their daily lives may be worsening his inflammation. There's increasing evidence that living

and working conditions; the discrimination Pablo's family may face; and their exposure to forms of violence, such as guns and domestic violence, can all lead to increased exacerbations and difficulties in managing asthma. Studies have shown that a simple letter written on clinic letterhead and signed by a health-care provider, or a legal aide working for your clinic, can be successful in motivating landlords to fix ventilation and mold problems.

flow meter, which only measures the force of expiratory flow, spirometry is a specialized technique that measures the dynamics of lung volume throughout one continuous exhalation and inhalation. Spirometry is considered the gold standard for both diagnosing asthma and assessing the reversibility (variability) of the airways to test for control. It's becoming more commonly used in primary care and healthcare systems. Cultural humility is important in explaining the flow-volume loop. Patients and families have a right to understand spirometry, but it's rarely shared with them, especially if they're low-income.



Ground your education plan by considering the beliefs that your patient and his family have about asthma and the course of treatment.

Message 4: Ride your breathing curve

We get out a blank piece of paper and draw a simplified flow-volume loop, setting Pablo's spirometry printout down next to it. We say, "This is your breathing curve," and we demonstrate how the goal of asthma control is to get as close to the diagonal line of 80% to 100% as possible. We place Pablo's specific medication between the curve and the diagonal line to visually emphasize that it's what helps open up the airways. We make a note to ourselves about how well we think the family received this message.

The objective of this message is for the family to describe the importance of medication management for airway flow. In comparison to using a peak

The results of the spirometry test usually come in the form of a printed flow-volume loop that shows the volume over time of expiration and inhalation. Although there are spirometry readings that are important for a thorough assessment of asthma, the most important curve to evaluate with Pablo is in the upper right-hand quadrant of the loop. This quadrant shows how constricted Pablo's airway is. In a person without asthma, it's typically a straight diagonal without any depression of the line. Instead of explaining the percentages of air volume shown on the chart, we focus instead on explaining the asthma curve and the goal of using long-term controller medication to bring the curve up to the diagonal line.

Message 5: Step up medication management

We introduce step therapy to Pablo and his family with a picture of the steps and by placing Pablo's medications onto the picture. We discuss how medications can "go up and down the steps" depending on how his asthma changes over time. We ask Pablo and his family about their opinions and concerns about the medications, noting particular beliefs they might have about strengths, duration, and adverse reactions. We also ask Pablo to demonstrate to us how he uses each medication.

The objective of this message is for the family to describe medication management as a continuous process. Explaining asthma medications and the devices that deliver them can be complicated both for the healthcare professional and Pablo's family.

Medications are basically divided into two types: those that bring quick-relief from airway tightening and those taken daily as long-term controllers to keep inflammation down. In addition to having Pablo demonstrate how he takes his medications, we think it's important for Pablo and his family to understand the role that these medications play in keeping his asthma under control and to be able to demonstrate the appropriate ways to work each device. The steps needed for using each medication can be complicated and technically demanding.

Evidence-based guidelines recommend step therapy as the standard of care for prescribing asthma medications. In step therapy, patients are started on the least amount of medication depending on how severe the provider has estimated their asthma to be. This is done through assessing for asthma control and spirometry. Depending on their response to these medications, patients are either stepped up (increasing the dosage or adding more controllers) or stepped down (decreasing the dosage or reducing controllers).

In delivering the "stepping up" message to Pablo and his family, you can build mutual respect through explaining why particular choices are being made about his care. We've found that the best way to do this is to place the patient's actual medications right on the piece of paper next to the step the patient is on. This creates an engaging visual for Pablo and his family, and encourages buy-in to the prescribed medication regimen.

Wrapping it up

In this article, we've presented a fresh approach to educating a pediatric patient and his family about asthma. Begin by introducing the practice of cultural humility as an essential component of asthma education, involving questions and actions we can take to gain knowledge, develop mutual respect, and negotiate a care plan.

Ground your education plan by considering the beliefs that your patient and his family have about asthma and the course of treatment. The two best ways to encourage a person's asthma management behavior are to build confidence and encourage the support of the whole family for successful asthma control. By understanding your patient's and his family's goals for self-management, you can build trust and solidarity for solving some of the more difficult problems of asthma self-management for diverse populations. Many of the families with asthma that most need our help with self-management live in chaotic situations made more stressful by the fear of asthma exacerbations.

Next, it only takes between 10 and 15 minutes to deliver some or all five of the key



on the web

National Association of School Nurses:
www.nasn.org/ToolsResources/Asthma

National Asthma Education and Prevention Program:
<https://www.nhlbi.nih.gov/about/org/naepp>

Environmental Protection Agency:
<https://www.epa.gov/asthma>

Minnesota Department of Health asthma educational tools:
www.health.state.mn.us/asthma/edtools.htm

Seattle Children's Hospital asthma educational tools:
www.seattlechildrens.org/medical-conditions/airway/

messages outlined here using simple visual aids recommended by the evidence-based guidelines for asthma care that you can quickly reproduce. Delivered with cultural humility, these messages will allow you to simplify education for this complicated disease. ■

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