

# Development, Implementation & Evaluation of an Asthma Management Plan

AE-C Preparatory AIR Course

2017

# Objectives

- Identify elements of a management plan
- Identify barriers of adherence to management plan
- Analyze cultural differences and beliefs

# Successful Asthma Management

The National Heart, Lung, and Blood Institute's (NHLBI) National Asthma Education and Prevention Program (NAEPP) identified four key components for effective asthma management:

- Assessment and Monitoring
  - Controlling Factors that Contribute to Asthma Severity
  - Pharmacologic Therapy
  - Patient Education
- All of these components must be incorporated into an ***individualized*** asthma management plan (AMP), more commonly known as Asthma Action Plan (AAP)

## ROLE OF WRITTEN ASTHMA ACTION PLANS FOR PATIENTS WHO HAVE ASTHMA – NHLBI - EPR3 2007

- All patients with asthma should have a written asthma action plan that includes instructions for daily management and recognizing and handling worsening asthma, including adjustment of dose of medications
- Particularly recommended for patients who have moderate or severe persistent asthma, a history of severe exacerbations, or poorly controlled asthma
- May be **based on PEF measurements or symptoms or both**, depending on the preference of the patient and clinician

## Asthma Management Plans

- Whether peak flow monitoring, symptom monitoring, or a combination of approaches is used, self-monitoring is important to the effective self-management of asthma
- Regardless of the type of monitoring used, patients should be given a written action plan and be instructed to use it
  - This is especially important for patients with moderate-to-severe persistent asthma or a history of severe exacerbations

# Asthma Management Plans

Develop an asthma action plan based on individual and specific management goals

- Create in partnership with the patient and family
  - Find out patient's goals first
- Give them a written copy and provide copies to schools, workplaces, childcare centers, etc.
- Tailor it to fit patient's needs
  - Based on symptoms and response to medications
  - Fit the daily medication regimen into the patient's and family's daily routines
  - In language and level of their understanding

## Asthma Management Plan

- Identify and address obstacles and concerns
- Ask for agreement/plans to act
- Encourage or enlist family involvement
- Follow up. At each visit, review the performance of the agreed-upon actions
- Assess the influence of the patient's cultural beliefs and practices that might affect asthma care

# Asthma Management Plan

A good self-management plan:

- Is simple
  - ensures adherence
- Convenient
  - fits in with normal daily routines
- Encourages self-reliance
  - The person knows what to do
- Is understood by the patient (readability)
- Is seen as effective
- Culturally appropriate

**Asthma Action Plan**

The colors of a traffic light will help you use your asthma medicines. Also pay attention to symptoms.

|               |   |
|---------------|---|
| <b>Green</b>  | Green means <b>GO GOOD</b> Use preventive medicines     |
| <b>Yellow</b> | Yellow means <b>CAUTION</b> Start or increase medicines |
| <b>Red</b>    | Red means <b>DANGER ZONE</b> Get help from a doctor     |

**GO (GREEN)** Use these medicines every day.

You have **ALL** of these:

- Breathing is good
- No cough or wheeze
- Sleep through the night
- Can work or play

| Medicine | How Much to Take | When to Take It |
|----------|------------------|-----------------|
|          |                  |                 |
|          |                  |                 |
|          |                  |                 |
|          |                  |                 |

For asthma with inhalers, take \_\_\_\_\_

**CAUTION (YELLOW)** Continue with green zone medicine and **ADD**:

You have **ANY** of these:

- First sign of a cold
- Expiration is slower trigger
- Cough
- Wheezy chest
- Tight chest
- Coughing at night

| Medicine    | How Much to Take | When to Take It |
|-------------|------------------|-----------------|
| First _____ |                  |                 |
| Next _____  |                  |                 |

→ If BRICK RED OR YELLOW ZONE MEDICINE IS NEEDED MORE THAN 2 TO 3 TIMES A WEEK, THEN CALL YOUR DOCTOR.

**DANGER (RED)** Take these medicines and call your doctor.

Your asthma is getting worse fast:

- Medicine is not helping within 15-30 minutes
- Breathing is hard and fast
- Lips turn blue
- Lips and/or fingernails blue
- Trouble walking and talking

| Medicine | How Much to Take | When to Take It |
|----------|------------------|-----------------|
|          |                  |                 |
|          |                  |                 |
|          |                  |                 |

Get help from a doctor now! Do not be afraid of calling a taxi. Your doctor will want to see you right away. It is IMPORTANT! If you cannot contact your doctor, go directly to the emergency room. DO NOT WAIT. Make an appointment with your primary care provider within two days of an ER visit or hospitalization.

Check all items that trigger your asthma and things that could make your asthma worse:

|  |  |  |
|--|--|--|
| <input type="checkbox"/> Chalk dust                                | <input type="checkbox"/> Damp, moldy areas                         | <input type="checkbox"/> Foods                                     |
| <input type="checkbox"/> Cigarette smoke and second hand smoke     | <input type="checkbox"/> Dust mites, dust, stuffed animals, carpet | <input type="checkbox"/> Fragrances and odors                      |
| <input type="checkbox"/> Cold/flu                                  | <input type="checkbox"/> Exercise                                  | <input type="checkbox"/> Pets, animals, dander                     |
| <input type="checkbox"/> Sudden temperature change                 | <input type="checkbox"/> Mold                                      | <input type="checkbox"/> Plants, flowers, cut grass, pollen        |
| <input type="checkbox"/> Strong odors, perfumes, cleaning products |  | <input type="checkbox"/> Strong odors, perfumes, cleaning products |
| <input type="checkbox"/> Blood                                     |  | <input type="checkbox"/> Blood                                     |

**Asthma Triggers**

www.GetAsthmaHelp.org

Adapted from the original design by the Pediatric Asthma Coalition of New Jersey

WHITE-PATIENT COPY



# Asthma Management Plan

➤ **Written asthma action plans include two important elements:**

**1. Daily management**

- What medicine to take daily, including the specific names of the medications
- What actions to take to control environmental factors that worsen the patient's asthma

➤ **Written asthma action plans include two important elements:**

2. How to recognize and handle worsening asthma

- What signs, symptoms, and PEF measurements (if peak flow monitoring is used) indicate worsening asthma
- What medications to take in response to these signs
- What symptoms and PEF measurements indicate the need for urgent medical attention
- Emergency telephone numbers for the physician, ED, and person or service to transport the patient rapidly for medical care

# ASTHMA ACTION PLAN

Trigger and environmental control are important adjuncts to any asthma action plan

## Asthma Action Plan

|                             |                  |
|-----------------------------|------------------|
| Name                        | Date             |
| Doctor                      | Medical Record # |
| Doctor's Office Phone # Day | Night/Weekend    |
| Emergency Contact           |                  |
| Doctor's Signature          |                  |



The Colors of a traffic light will help you use your asthma medicines.

**Green means Go Zone!**  
Use preventive medicines.

**Yellow Means Caution Zone!**  
Add quick-relief medicines.

**Red means Danger Zone!**  
Get help from a doctor.

Personal Best Peak Flow \_\_\_\_\_

### GO

- You have **all** of these:
- Breathing is good
  - No cough or wheeze
  - Sleep through the night
  - Can work and play



### CAUTION

- You have **any** of these:
- First signs of a cold
  - Exposure to known trigger
  - Cough
  - Tight chest
  - Wheeze
  - Coughing at night



### DANGER

- Your asthma is getting worse and:
- Medicine is not helping
  - Breathing is hard and fast
  - Noise comes with
  - Ribs ache
  - Can't talk



### Use these daily preventive anti-inflammatory medicines:

| MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
|----------|----------|----------------|
|          |          |                |
|          |          |                |
|          |          |                |

For asthma with exercise, take:

|  |  |
|--|--|
|  |  |
|  |  |

### Continue with green zone medicine and add:

| MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
|----------|----------|----------------|
|          |          |                |
|          |          |                |
|          |          |                |

CALL YOUR PRIMARY CARE PROVIDER.

### Take these medicines and call your doctor now.

| MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
|----------|----------|----------------|
|          |          |                |
|          |          |                |
|          |          |                |

**GET HELP FROM A DOCTOR NOW!** Do not be afraid of calling a taxi. Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room. **DO NOT WAIT.**  
Make an appointment with your primary care provider within two days of an ER visit or hospitalization.

# Pulmonary Function Measurement

- **Peak expiratory Flow (PEF)** can provide a simple, quantitative, and reproducible measure of the existence and severity of airflow obstruction
- PEF can be measured with inexpensive and portable peak flow meters
- The measurement of PEF is dependent on effort and technique, so patients need instructions, demonstrations, and frequent reviews of technique



# Using Peak Flow

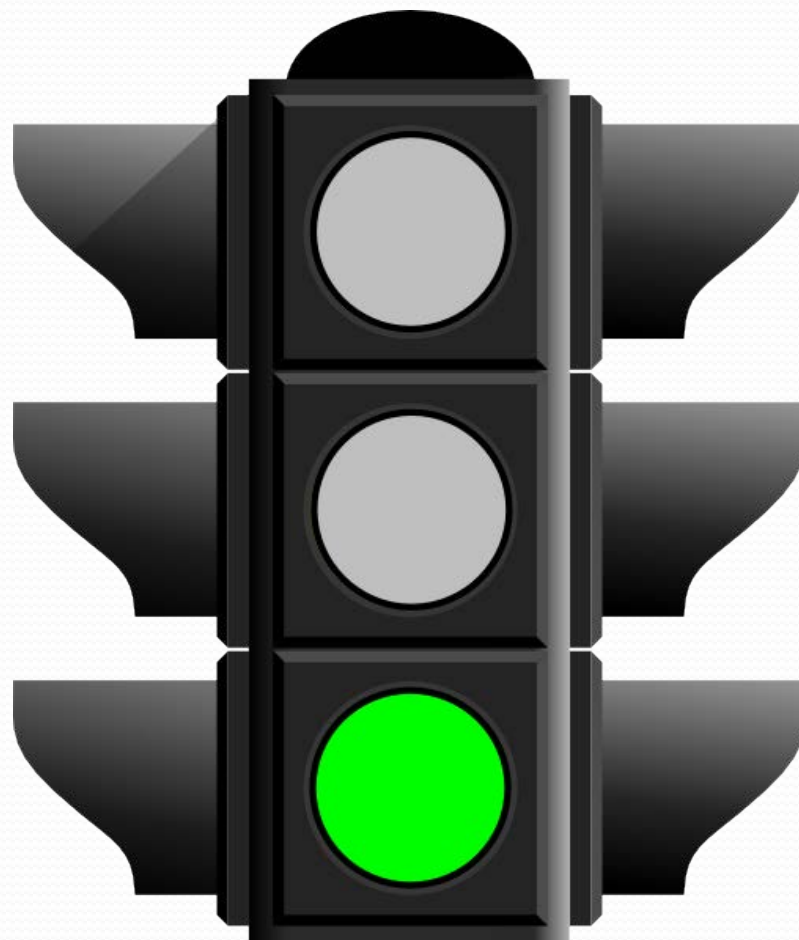
- The Expert Panel does not recommend long-term daily peak flow monitoring for patients with mild intermittent or mild persistent asthma unless the patient/family and/or clinician find it useful in guiding therapeutic decisions
- Any patient who develops severe exacerbations may benefit from peak flow monitoring
- There is conflicting data on efficacy of PFM for improving asthma outcome. Most studies have shown a benefit when PFM is linked to a comprehensive program, combined with symptom diaries and patient education

# Peak Flow Monitoring

- A peak flow meter is most helpful for patients who must take asthma medicine daily
- Patients age 5 and older are usually able to use a peak flow meter
- When patients replace their peak flow meter, have them reestablish their personal best PEF with the new meter, regardless of whether the replacement meter is the same brand as the original
- Once personal best is established, daily reading should be done on waking in the morning before taking a bronchodilator

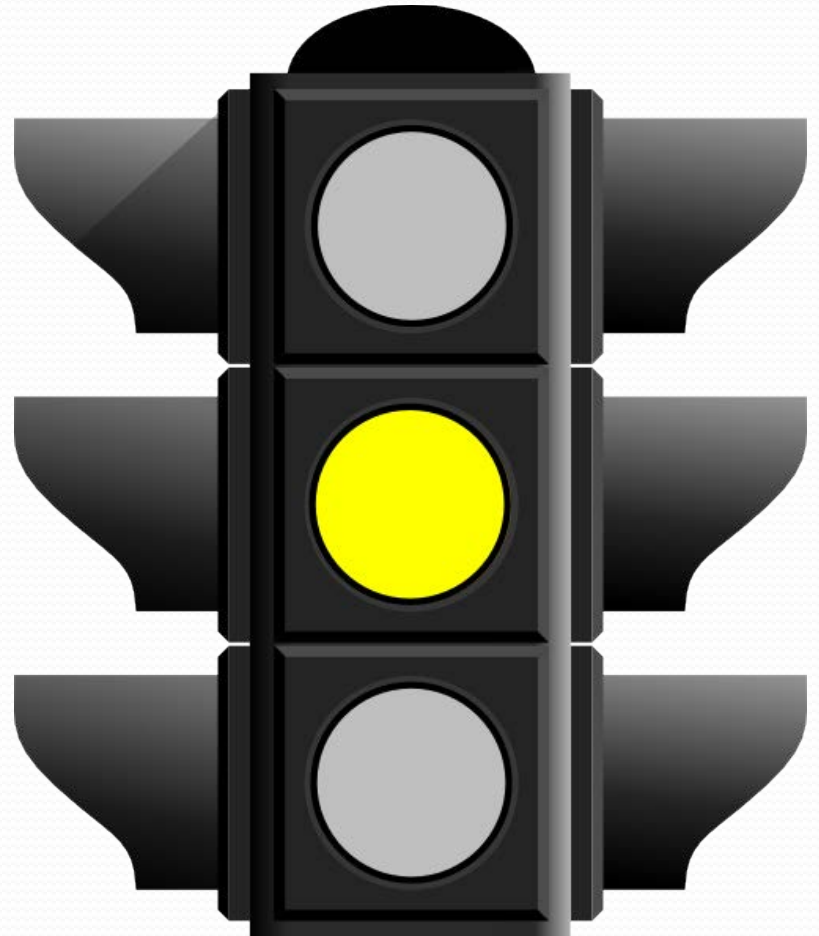
# Green Zone - Go

- Green zone is  $\geq 80$ -100% of personal best
- Breathing is good with no cough, wheeze, or chest tightness day or night
- Follow asthma action plan
- Use daily long-term-control medications
- May use inhaled bronchodilator 10-30 minutes prior to exercise  
ALONG WITH 10 minute warm-up



# Yellow Zone - Caution

- Yellow zone  $\geq 50$  -  $< 80\%$  of personal best
- Asthma symptoms: cough, wheeze, chest tightness may be present
- Follow asthma action plan
- There may be an increased need for inhaled quick relief medication & this medication may not relieve symptoms for a full 4 hours
- There may be awakening at night with asthma symptoms
- Use inhaled quick relief medication
- Avoid triggers
- Treat to get back into Green Zone asap



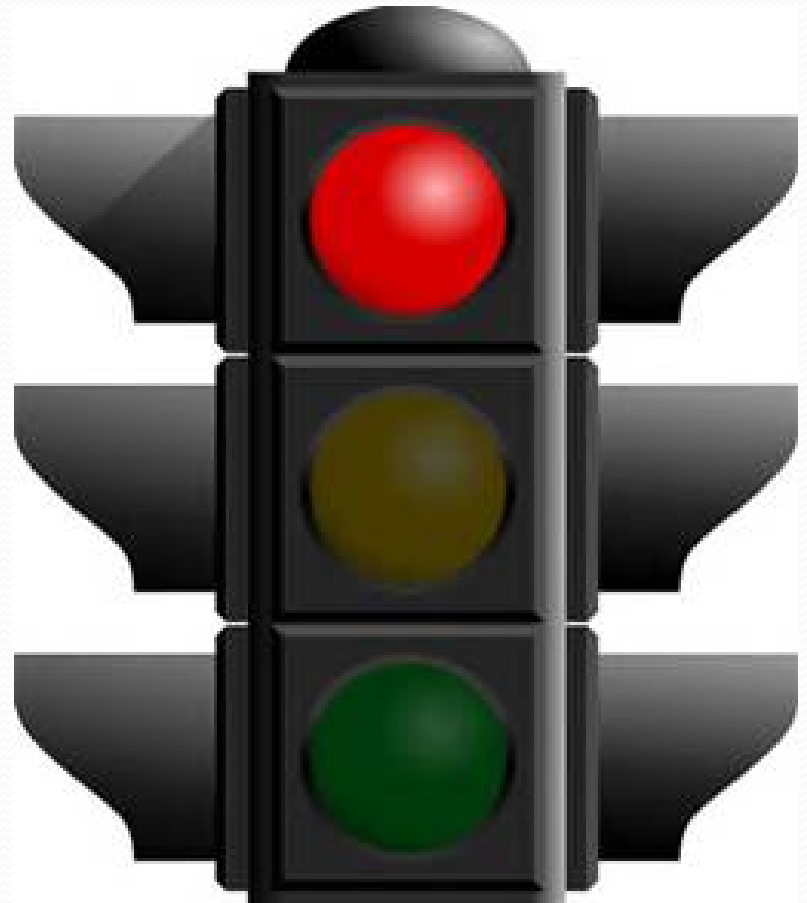


## Early Warning Signs - moving from Green to Yellow

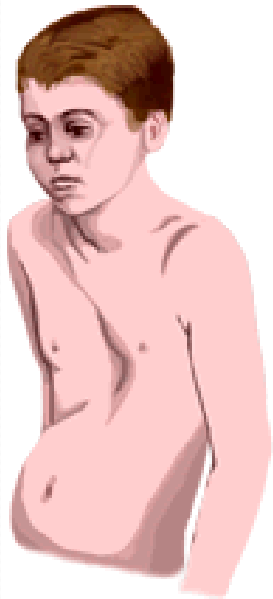
- cough
- wheeze
- chest tightness
- shortness of breath
- runny or stuffy nose
- sneeze
- Headache
- Dark circles under eyes
- funny feeling in chest
- stomach ache
- poor appetite
- itchy throat or chin
- glassy eyes
- feeling tired
- coughing or waking at night
- Mood changes
- Eczema flare-ups

# RED Zone – Stop!

- Red zone is 50% or less of personal best – DANGER!!
- Follow asthma action plan
- Severe limitation on breathing and activities
- Use inhaled quick relief medications
- Quick Reliever use several times/day without adequate response
- Contact your asthma care provider or go to the emergency room!



# Recognizing Emergency/Late Signs



- No improvement 15 – 20 minutes after initial treatment
- Retractions - Chest and neck pulled in with breathing
- Stops playing and is unable to start again
- Infants unable to feed
- Trouble walking or talking
- Quick-relief medicines don't help
- Blue or gray lips or fingernails

***Get emergency help now!***

## **Action Plans Must Be Shared!**

- **A copy of a patient's asthma action plan should be:**
  - Carried with the patient
  - Kept in the patient's medical chart
  - Provided to the patient's day care, school, or work site
  - Provided to the patient's coach/physical education teacher
  - Provided to other contacts of the patient as needed

# Revise Asthma Management Plan

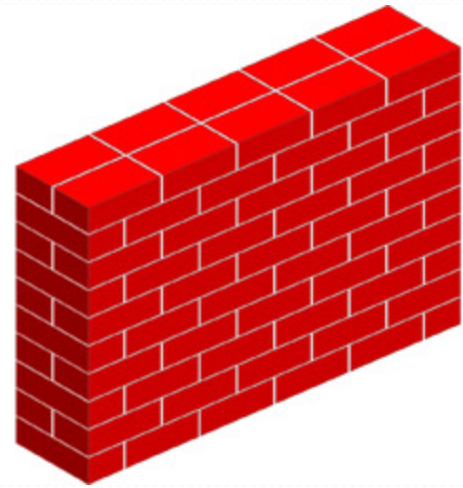
- At each visit check the patient's compliance with, and concerns about, the management plan, including:
  - Use of medicines;
  - Skill in using the inhaler, spacer, peak flow meter, or other devices; and
  - Avoidance of triggers
- Once control is established, regular follow-up visits (at 1- to 6-month intervals as appropriate) are essential to review together whether the management plan is meeting expected goals

# Barriers to Adherence

- Adherence may be defined as *“the extent to which the patient’s behavior (in terms of taking medications, following diets or executing other lifestyle changes) coincides with the clinical prescription.”*
- Asthma medication adherence rates may be 30% to 40%
- Only 48% of asthma patients follow advice on environment control

# Barriers

- Complex treatment regimes
- Lack of knowledge & skills
- Psychological factors
- Economic factors
- Chronic illness co-morbidities
- Unaware of symptoms
- Language & Cultural Issues



# Addressing Barriers

- Common concerns and beliefs that may undermine the asthma management plan

## **Patients/parents may not:**

- Believe the diagnosis
- Understand the level of asthma severity
- Understand the level of asthma control
- Trust that prescribed medicines are needed, safe and effective
- Trust that trigger remediation is needed and effective



# Health Literacy & Cultural Beliefs

- **The Expert Panel recommends that:**
  - Asthma education interventions be tailored as much as possible to an individual's underlying knowledge and beliefs about the disease
  - Health care professionals who develop asthma education programs consider the needs of patients who have limited literacy
  - Clinicians consider assessing cultural or ethnic beliefs or practices that may influence self-management activities, and modify educational approaches as needed

# Addressing Cultural Issues

- From NHLBI-EPR<sub>3</sub> GUIDELINES:
  - Using culturally sensitive patient education approach directed toward altering attitudes and beliefs, as well as toward physical management of the disease is a more successful approach to improving asthma health outcomes
  - Open-ended questions such as “In your community, what does having asthma mean?” can elicit informative responses
  - The culturally sensitive clinician should attempt to find ways to incorporate harmless or potentially beneficial remedies with the pharmacologic plan

# Addressing Cultural Issues

- Be aware of potential barriers posed by beliefs within racial/ethnic minority communities about the practice of traditional Western medicine
- If harmful home remedies are being used, discourage their use by suggesting a culturally acceptable alternative as a replacement or recommending a safer route of administration
- Discuss asthma care, especially the AAP, in the patient's native language so that educational messages are fully understood
- Research suggests that lack of language concordance between the clinician and the patient affects adherence and appropriate use of health care services

# STRATEGIES TO IMPROVE ADHERENCE

- Inaccurate fears and beliefs are best addressed over time by developing trusting relationships characterized by open communication and mutual respect
- Simplifying regimens
- Improving access to medications or care
- Providing tailored education
- Helping the patient develop routines

# Good Asthma Management is a TEAM Approach!

Encourage patients to communicate effectively with healthcare providers by:

- Writing down questions
- Thinking about symptoms prior to visit
- Keeping a written diary
  - Record all episodes and what triggered them
  - Skipped or added medications.
- Asking questions when he/she doesn't understand

# Asthma Management Plans

- Free, downloadable templates
- New: free online electronic version (currently under revision – available shortly)

Asthma Initiative of Michigan

<http://getastmahelp.org/action-plan-components.aspx>



**Plan de acción contra el asma en Massachusetts**

Los colores del semáforo te ayudarán a usar los medicamentos contra el asma.

**Verde significa ¡Adelante!**  
Toma el medicamento de control.

**Amarillo significa ¡Precaución!** Agrega un medicamento de alivio rápido.

**Rojo significa ¡Peligro!**  
Consulta a un médico.

Nombre: \_\_\_\_\_ Fecha: \_\_\_\_\_  
 Fecha de nacimiento: \_\_\_\_\_ Nombre del médico o enfermera: \_\_\_\_\_ N° de teléfono del médico o enfermera: \_\_\_\_\_  
 Objeto del paciente: \_\_\_\_\_ Nombre y n° de teléfono del padre o guardián: \_\_\_\_\_  
 ¡Importante! Evita las actividades que empeoran el asma.

**Mejor flujo máximo personal:** \_\_\_\_\_

**ADELANTE: ¡Te sientes bien!** → Toma estos medicamentos de control diario.

Tienes todo este:  
 • Respiración normal  
 • No hay tos ni jacosos  
 • Duermes toda la noche  
 • Puedes ir a la escuela y jugar

Flujo máximo óptimo hasta

| MEDICINA/VÍA | DOSIS | FRECUENCIA O CUÁNDO |
|--------------|-------|---------------------|
|              |       |                     |
|              |       |                     |
|              |       |                     |

**PRECAUCIÓN: ¡Cálmate!** → Continúa con el medicamento de la zona verde y agrega:

Tienes cualquiera de estos síntomas:  
 • Primeros signos de un resaca  
 • Tos  
 • Jacosos suaves  
 • Presión en el pecho  
 • Tos, jacosos o dificultad para respirar durante la noche

Flujo máximo óptimo hasta

| MEDICINA/VÍA | DOSIS | FRECUENCIA O CUÁNDO |
|--------------|-------|---------------------|
|              |       |                     |
|              |       |                     |
|              |       |                     |

LLAMA A TU MÉDICO O ENFERMERA: \_\_\_\_\_

**PELIGRO: ¡Pide ayuda!** → Toma estos medicamentos y llama de inmediato al médico.

El asma empeora rápidamente:  
 • El medicamento no te ayuda  
 • La respiración es difícil y agitada  
 • Los orificios de la nariz se abren  
 • Se te notan las costillas  
 • No puedes hablar bien

Flujo máximo óptimo hasta

| MEDICINA/VÍA | DOSIS | FRECUENCIA O CUÁNDO |
|--------------|-------|---------------------|
|              |       |                     |
|              |       |                     |
|              |       |                     |

**¡OBTÉN AYUDA MÉDICA DE INMEDIATO!** No tengas miedo de causar un alboroto. Tu médico querrá verte inmediatamente. ¡Es importante! Si no puedes localizar a tu médico, ve a una sala de urgencias y lleva este formulario. NO ESPERES. Solicita una cita con tu médico o enfermera en los dos días siguientes a una visita a sala de urgencias o una hospitalización.

Firma del médico, enfermera practicante o asistente médico: \_\_\_\_\_ Fecha: \_\_\_\_\_  
 Autorizo al enfermero de la escuela, médico, enfermera practicante o asistente médico de mi hijo y a divulgar información sobre el asma de mi hijo. \_\_\_\_\_ a \_\_\_\_\_  
 Firma del padre o guardián: \_\_\_\_\_ Fecha: \_\_\_\_\_

**¡TEN EL REVERSO DE LA COPIA PARA LA ESCUELA DE PRESENTA LA AUTORIZACIÓN PARA LA ADMINISTRACIÓN DE MEDICAMENTOS AL ALUMNO!**  
 ADAPTADO DE LA PUBLICACIÓN DE Neb (2007/01)

White Copy: Patient/Parent      Green Copy: Provider      Yellow Copy: School/Other  
 SPANISH

## Other Languages Downloadable:

- Chinese PDF
- English PDF
- English RTF
- Haitian Creole PDF
- Haitian Creole RTF
- Khmer PDF
- Portuguese PDF
- Portuguese RTF
- Russian PDF
- Spanish PDF
- Spanish RTF
- Vietnamese PDF

<https://massclearinghouse.ehs.state.ma.us/ASTHMAPROG/AS905.html>

# Resources

- Expert Panel Report 2: Guidelines for the Diagnoses and Management of Asthma, Expert Panel 3 (2007). US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung and Blood Institute (NIH) Publication No. 97-4053.
- Asthma Initiative of Michigan  
<http://getasthmahelp.org/action-plan-components.aspx>
- Asthma and Allergy Foundation of America, Asthma Management & Education Allied Health program



# Acknowledgements

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Asthma & Allergy Foundation of America – Michigan Chapter  
[www.aafamich.org](http://www.aafamich.org)