

Developing an Asthma Action Plan

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Asthma Education

- **Expert Panel Report (EPR 3) renewed emphasis on patient education**
- **Encourage patient-asthma care provider partnership**
- **Recommend asthma self management education as an ongoing process with every encounter**
- **Recognize opportunities for care outside of office setting such as school, camps, pharmacists, respiratory therapists, community based interventions, home based interventions**
- **Written Asthma Action Plan recommended**



Key Components of an Asthma Action Plan

- All patients, particularly patients with moderate to severe asthma or a history of poorly controlled asthma should have a written asthma action
- Action Plans should help patient to:
 - Recognize symptoms of an asthma exacerbation
 - Assess the severity of the exacerbation
 - Initiate treatment
 - Access medical intervention



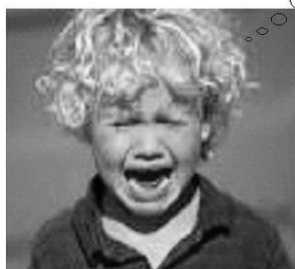
Where is the Plan? There is work to be done!

- Multi-center study of written action plans in ED patients with asthma was 32%. ⁽¹⁾
- Asthma Action Plans improve patient/asthma care provider communications and tracking of asthma status ⁽²⁾
- Pediatric clinical trials using an action plan, symptom based were superior to PEFR based ⁽³⁾
- Limited literacy plans are difficult to find



Common Sense Rationale

- Caregivers and patients have poor recall of instructions
- Recall diminishes over time
- Written asthma action plan serves as a resource
- Helps identify change in asthma control with descriptions of symptoms and/or PEFr
- Allows for increase in therapy
- Provides information on contacting asthma care provider
- Visits with children are often chaotic



**Mom Mom Mommy, I wanna
go home!**

Asthma Educator's Role

Written Asthma Action Plan is culmination of asthma education

- **Asthma pathophysiology and symptoms**
- **Asthma severity level information**
- **Allergen avoidance strategies**
- **Asthma medications**
 - **Asthma medication delivery technique**
 - **Rational for medication-quick relief, long term controllers**
 - **Medication side effects**
- **Communication with asthma care provider**



Changes in 2007 NAEPP Guidelines

Intermittent Asthma (Step 1)

- **SABA use sufficient if symptoms controlled and pulmonary function normal**
- **If significant symptoms occur or using >2 times per week step-up to persistent asthma therapy**
- **During viral respiratory illness may use SABA every 4 hours for 24 hours to control symptoms. If exacerbation occurs every 6 weeks, step-up therapy**
- **For moderate to severe exacerbation a short course of systemic oral corticosteroids should be initiated**



Changes in 2007 NAEPP Guidelines

Persistent Asthma (Steps 2-6)

- **Daily long term control medication-ICS at minimum**
- **SABA available (Use of more than twice per week step-up therapy)**
- **Seasonal asthma may be treated as persistent during the season and intermittent the remainder if symptoms permit**
- **Patients who have required 2 or more bursts of oral steroids may be considered to have persistent asthma despite not meeting other criteria for persistent asthma**

Changes in Managing Exacerbations

- **Action plan to include early recognition of worsening asthma**
- **Increase short acting beta agonist use**
- **Remove or mitigate triggers contributing to exacerbation**
- **Communicate with asthma care provider regarding increased symptoms, decreased peak flow, inadequate response to SABA**
- **Oral corticosteroids**



Major Change in Home Management of Exacerbation!

- **NAEPP no longer recommends doubling the dose of inhaled corticosteroids**
- **May need step-up to next level with additional therapies**
- **Initial treatment of exacerbation:**
 - Albuterol up to 2 treatments 20 mins apart of 2-6 puffs MDI or nebulizer treatments
- **Lower threshold for use of oral steroid**



Written Action Plans

- **Massachusetts Asthma Action Plan**
- **University of Michigan-downloadable**
- **Massachusetts General Hospital Pediatric Action Plan**
- **National Asthma Education and Prevention Program plans (separate section for exercise under the green zone)**
- **PBS Kids Arthur**
- **Alaska Asthma Coalition-downloadable program**
- **Asthma and Allergy Foundation Of America**
- **American Lung Association**



Traffic-Light Model
Peak Flow:
Green, Yellow, Red Zone

- **Green zone:** PEFr 80 – 100%
- **Yellow zone:** PEFr 50 – 80%
- **Red zone:** PEFr <50%

20% variability indicates inadequately controlled asthma

Traffic-Light Model
Symptom Based
Green, Yellow, Red Zones

- **Green zone:** breathing well, no cough, wheeze, absence of nocturnal cough, participating in activities of childhood
- **Yellow zone:** cold symptoms, cough, wheeze, chest tightness, nocturnal cough, decreased exercise tolerance
- **Red zone:** difficulty breathing, actively wheezing, quick relief medication ineffective, unable to talk in sentences, unable to walk, cyanosis

Massachusetts Asthma Action Plan

The colors of a traffic light will help you use your asthma medicine.

Name: _____ Date: _____

Birth Date: _____ Doctor/Nurse Name: _____ Doctor/Nurse Phone #: _____

Patient Goal: _____ Parent/Guardian Name & Phone: _____

Important! Avoid things that make your asthma worse: _____

Personal Best Peak Flow: _____

Green means Go Zone!
Use controller medicine.

Yellow means Caution Zone!
Add quick-relief medicine.

Red means Danger Zone!
Get help from a doctor.

GO – You're Doing Well! → Use these daily controller medicines:

MEDICINE/ROUTE	HOW MUCH	HOW OFTEN/WHEN

You have ALL of these:

- Breathing is good
- No cough or wheeze
- Sleep through the night
- Can go to school and play

Peak flow from _____ to _____

CAUTION – Slow Down! → Continue with green zone medicine and add:

MEDICINE/ROUTE	HOW MUCH	HOW OFTEN/WHEN

You have ALL of these:

- First signs of a cold
- Cough
- Mild wheeze
- Tight Chest
- Coughing, wheezing, or trouble breathing at night

Peak flow from _____ to _____

CALL YOUR DOCTOR/ NURSE: _____

DANGER – Get Help! → Take these medicines and call your doctor now.

MEDICINE/ROUTE	HOW MUCH	HOW OFTEN/WHEN

Your asthma is getting worse fast:

- Medicine is not helping
- Breathing is hard and fast
- Nose opens wide
- Ribs show
- Can't talk well

Peak flow from _____ to _____

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

Doctor (NP/PA) Signature: _____ Date: _____

I give permission to the school nurse, my child's doctor/NP/PA or _____ to share information about my child's asthma

Parent/Guardian Signature: _____ Date: _____

"SEE BACK OF SCHOOL COPY FOR STUDENT MEDICATION ADMINISTRATION AUTHORIZATION"

ADAPTED FROM NH PUBLICATION (7/2005)

www.mhqp.org/guidelines/actionPlan.html

University of Michigan Hospitals & Health Centers Asthma Action Plan for Patients 0 – 4 Years

Name: _____

Reg #: _____ Date: _____

DOB: _____ Age: _____

GREEN ZONE (Doing Well)

- Breathing is good (no coughing, wheezing, chest tightness, or shortness of breath during the day or night), and
- Able to do usual activities (work, play, and exercise)

Controller Medications
Give these medication(s) to your child EVERY DAY.

Medication	Directions

Rescue Medications
Continue giving the controller medication(s) as prescribed.

Give: Albuterol 2 puffs with chamber or 1 nebulizer treatment

And: • If your child is GETTING WORSE or is NOT IMPROVING after the treatment(s), go to the Red Zone

• If your child is BETTER, continue treatments every 4 to 6 hours as needed for 24 to 48 hours

And: If your child still has symptoms after 24 hours, CALL YOUR CHILD'S DOCTOR and if approved:

Start: _____

Other: _____

If rescue medication is needed more than 2 times a week, call your child's doctor at _____

Emergency Treatment
Give these medication(s) AND seek medical help NOW.

First: CALL YOUR CHILD'S DOCTOR or 9-1-1, then:

Give: Albuterol 4 puffs with chamber OR 2 nebulizer treatments (one after another)

And: Start: _____

Other: _____

And: • If your child is GETTING WORSE or is NOT IMPROVING, go to the hospital or call 9-1-1

• If your child is BETTER, continue treatments every 4 to 6 hours and call your doctor – say your child is having an asthma attack and needs to be seen TODAY

Plan developed by: _____ Date/Time: _____

Signature: _____

POD-0241	REV: 11/08 HIM: 11/08	Medical Records	
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Asthma Action Plan
Patients 0 – 4 Years

Template

Test Ignore (PG) (08/09/2008 (12 mos) M 0000000 (MGH) [Select] [Desktop] [Patient Chart] [Oncology] [Custom] [Reports: Pedi AAP] [Admin] [Sign ?] [Resource] [PopUp] SAJTB MGH EVERETT

Date: 10/26/207 Date of last AAP: 8/30/2007 Creating a Symptom Based Pediatric Asthma Action Plan

Provider: Johnson, Sarah Ayes, RHP

Triggers: Dust Grasses Mold Pets Other

Use the patient's: Symptoms Predicted peak flow Personal best peak flow

Weight: 150 lbs (10/26/2007)

Select Medications	Name	Directions
<input type="checkbox"/>	Albuterol INHALER	2 PUFF (80MCG HFA AER AD) inhaled by mouth every 4 hours as needed
<input type="checkbox"/>	Albuterol INHALER	2 PUFF inhaled by mouth every 4 hours
<input type="checkbox"/>	Ibuprofen (NAPROXEN SODIUM (ALIEVE))	440 MG (220MG TABLET take 2) by mouth twice a day
<input type="checkbox"/>	Ibuprofen (NAPROXEN SODIUM (ALIEVE))	200 MG (220MG TABLET take 1) by mouth every 12 hours
<input type="checkbox"/>	Amoxicillin ZOLPIDEM TARTRATE EXTENDED-RELEASE	12.5 MG (12.5MG TAB MPHASE take 1) by mouth every night
<input type="checkbox"/>	Amoxicillin ZOLPIDEM TARTRATE EXTENDED-RELEASE	10MG TABLET by mouth every night
<input type="checkbox"/>	Amoxicillin ZOLPIDEM TARTRATE EXTENDED-RELEASE	500-125MG TABLET by mouth twice a day
<input type="checkbox"/>	Asmanex	take 1 inhaled by mouth twice a day
<input type="checkbox"/>	Bactrim DS	D by mouth twice a day
<input type="checkbox"/>	Centihaline	by mouth
<input type="checkbox"/>	Celebra (CITALOPRAM)	40 MG (40MG TABLET take 1) by mouth every day
<input type="checkbox"/>	Clonazepam (PROCHLORPERAZINE MALEATE)	10 MG (10MG TABLET take 1) by mouth every 5 hours
<input type="checkbox"/>	Diazepam	10 mg by mouth twice a day
<input type="checkbox"/>	Furosemide	

Include patient and practice information
 Asthma information
 Billing information
 Peak Flow Meter information

Print Student Self-Administration Form Generate Report

Additional Information: [Select] [Desktop] [Patient Chart] [Oncology] [Custom] [Reports: Pedi AAP] [Admin] [Sign ?] [Resource] [PopUp]

Weight: 150 lbs (10/26/2007)

Select Medications	Name	Directions
<input type="checkbox"/>	Advair	1 Puff twice a day
<input type="checkbox"/>	Albuterol MDI	2-4 Puffs every 4 hours
<input type="checkbox"/>	Albuterol Nebulizer	0.5 ml every 4 hours
<input type="checkbox"/>	Albuterol (albuterol) MDI	0.25 ml every 4 hours
<input type="checkbox"/>	Alronet (pirarolipum) MDI	1-2 Puffs four times daily
<input type="checkbox"/>	Alronet (pirarolipum) Nebulizer	0.5 mg four times daily
<input type="checkbox"/>	Cromolyn MDI	2 Puffs four times daily
<input type="checkbox"/>	Cromolyn Nebulizer	20 mg four times daily
<input type="checkbox"/>	Flovent (fluticasone)	1-2 Puffs twice a day
<input type="checkbox"/>	Orapred (prednisolone sodium phosphate)	5 mg by mouth twice a day
<input type="checkbox"/>	Prednisone	20 mg by mouth every day
<input type="checkbox"/>	Proair HFA (albuterol)	2-4 Puffs every 4 hours
<input type="checkbox"/>	Pulmicort (budesonide) MDI	1 Puff twice a day
<input type="checkbox"/>	Pulmicort (budesonide) Nebulizer	2 ml twice a day
<input type="checkbox"/>	Singulair (montelukast)	4 mg by mouth every day

Include patient and practice information
 Asthma information
 Billing information
 Peak Flow Meter information

Print Student Self-Administration Form Generate Report

Patient: Elisabeth S Stieb, RN Status: Final
 Visit Date: 08/26/2008

PEDI PULMONARY
 275 CAMBRIDGE STREET POB 101, BOSTON, MA 02114
 617-724-0704

Patient Name: MRN:
 Address: DOB:

Asthma Action Plan
 Date: 08/26/2008
 Provider Name: Stieb, Elisabeth S, RN
 Triggers: Dust, Pollen, Upper Respiratory Infection

GREEN GO You're Doing Well! Use these daily controller medicines:

You have all of these:
 • Breathing is good
 • No cough or wheeze
 • Sleep through the night
 • Can't go to school and play

Albuterol INHALER HFA 2 PUFF inhaled by mouth every 4-6 hours as needed
 Flovent HFA (FLUTICASONE PROPIONATE 44 MCG ORAL INHALER) 2 PUFF inhaled by mouth twice a day

YELLOW CAUTION Slow Down! Continue with green zone medicine and add:

You have any of these:
 • First signs of a cold
 • Cough
 • Mild wheeze
 • Tight Chest
 • Coughing, wheezing, or trouble breathing at night

Albuterol MDI 2-4 Puffs every 4 hours
 Flovent HFA (FLUTICASONE PROPIONATE 44 MCG ORAL INHALER) 2 PUFF inhaled by mouth twice a day

Additional Information:
 If using albuterol MDI more than two times per week, except for exercise, increase Flovent dose to 4 puff twice daily
 Continue the dose for 5 days and then call the office before stopping the medicines if symptoms have not returned to the green zone.

RED DANGER GET HELP! Take these medicines and call your doctor now.

Your asthma is getting worse fast:
 • Medicine is not helping
 • Breathing is hard and fast
 • Nose opens wide
 • Ribs show
 • Can't talk well

Albuterol MDI 2-4 Puffs every 4 hours
 Orapred (prednisolone sodium phosphate) Call clinic for dose

GET HELP FROM A DOCTOR NOW! Do not be afraid of causing a fuss. Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room and bring this form with you. DO NOT WAIT. Make an appointment with your doctor / nurse within two days of an ER visit or hospitalization.

Provider Signature: _____ MD/DO/PA/NP/RN/LPN Date: _____
 I give permission for the school nurse, my child's doctor/nurse or to share information about my child's asthma.
 Parent/Guardian Signature: _____ Date: _____

Asthma Action Plan

For: _____ Date: _____
 Doctor: _____ Doctor's Phone Number: _____
 Hospital/Emergency Department Phone Number: _____

Green Zone: Doing Well

- No cough, wheeze, chest tightness, or shortness of breath during the day or night
- Can do usual activities

And, if a peak flow meter is used,

Peak flow: more than _____
 (80 percent or more of my best peak flow)

My best peak flow is: _____

Take these long-term control medicines each day (include an anti-inflammatory).

Medicine	How much to take	When to take it

Take these medicines before exercise if your asthma is exercise-induced

Medicine	How much to take 2 or 4 puffs	When to take it 5 to 60 minutes before

Case1: College Student

Jack is a 21 year-old college student is seen at the University Health Services for asthma. He uses albuterol as needed. His last asthma exacerbation occurred when he was a freshman in high school. He is aware that he is allergic to cats. He does not own one and avoids being indoors with a cat.



Case 1: College Student

NAEPP Step 1: Intermittent Asthma

- **Evaluation for Exercise-Induced Asthma**
- **Does he have contact with PCP, Pulmonologist, Allergist?**
- **Pulmonary Function Testing**
- **Documentation of asthma diagnosis communicated with college**
- **Updated prescriptions and valved holding chamber**
- **How often is he around a cat?**
- **Is he a poor perceiver?**
- **How much albuterol is he using?**

Green Zone: PEFr 80-100%

- **Pre-medication 15-30 min. before exercise**
- **Slow warm-up with exercise**
- **Cover mouth in cold weather exercise**
- **If known cat exposure planned, may use Intal 2 puffs 15-30 mins prior to exposure**

Yellow Zone: PEFr 50-80%

- **Symptom recognition**
- **Peak flow monitoring**
- **Albuterol MDI 2 puffs q4 hours prn via spacer (or Pirbuterol, Levalbuterol)**
- **Low dose inhaled corticosteroid**
- **Leukotriene modifier could be added**

Red Zone: PEFr <50%

- **Inhaled Short-Acting Bronchodilator two treatments 20 mins. apart of 2-6 puff SABA MDI, or nebulizer treatments**
- **Peak Flow measurement**
- **Oral Steroids prescribed by asthma care provider**
- **Contact with asthma care provider**
- **Call 911 if symptoms warrant**

Case 2: 18 Month Old in Daycare

Zach is an 18 month old male with asthma and eczema attends day care 5 days per week. Requires albuterol nebulizer treatment 2-4 times per week. Mother concerned about returning to work because he may require albuterol treatments during the day.



Case 2: 18 Month Old in Daycare

NAEPP Step 2 Classification: Mild Persistent Asthma vs. Reactive Airways Disease (RAD)

- **EPR3 recommends referral to asthma specialist for 0-4 year old Step 2 and above**
- **History of eczema risk factor in asthma development**
- **How often is albuterol administered?**
- **Controller medications?**
- **How many bursts of oral steroids have been prescribed**
- **Nebulizer with mask vs. MDI with valved holding chamber and appropriate size mask**
- **Who at daycare center administering medications?**

Green Zone: breathing well, no cough, wheeze, absence of nocturnal cough, participating in activities of childhood

- Low dose inhaled corticosteroids via valved holding chamber with a mask or nebulizer with a mask twice daily
- Clean mouth following dose, wash face
- Hand washing: viral trigger most common cause of exacerbation
- Flu vaccine

Yellow Zone: cold symptoms, cough, wheeze, chest tightness, nocturnal cough, decreased exercise tolerance

- Short acting beta agonist (albuterol, Xopenex) MDI every four hours via spacer and appropriate sized mask or nebulizer and appropriate sized mask
- Step up therapy to Moderate Persistent
- Medium dose ICS
- Consider leukotriene modifier
- Consider referral to asthma specialist

Red Zone: difficulty breathing, actively wheezing, quick relief medication ineffective, unable to talk in sentences, unable to walk, cyanosis

- Inhaled Short-Acting Bronchodilator two treatments 20 mins via nebulizer with mask or MDI with valved holding chamber and mask
- Contact with asthma care provider
- Oral Steroid
- Call 911 or go to ED or PCP urgently scheduled visit if symptoms warrant

Case 3: Adolescent Athlete

Suzy is a 16 year old female playing high school field hockey. Practices are intense lasting several hours. Games are highly competitive. Suzy and her parents do not think she is playing up to her potential due to her asthma. Suzy has had a history of frequent exacerbations which can limit her playing time. She awakens with cough three times per month.



School aged students

- **Every student with asthma should have individualized health care plan (IHCP)**
- **Every student should have access to their quick relief medication**
- **Medication authorization should be on file**
- **Asthma action plan copy at school**
- **Medication and spacer with pharmacy identifying information provided by family to school**
- **If student/family are not satisfied, family may request a 504 Plan, as part of ADA Act**

School Management of Asthma Exacerbations

Expert Panel 3 Report offers suggested protocol information for schools

- **Management of asthma exacerbation in school for students who do not have an asthma action plan**
- **Management of an exacerbation in school when there is no school nurse present. Designed for non-nursing staff**

Case 3: Adolescent Athlete

- Coaching staff should be notified
- Case by case basis whether parent needs to address the issue with the coach
- Asthma medications should never be locked
- MA state regulations allow students to carry MDI (up to discretion of school nurse)
- Varies state by state
- Student should have access to asthma medication while on school campus
- Coach or trainers should be trained to administer medication.
- As part of IHCP or 504 Plan an emergency plan should be in place

Case 3: Adolescent Athlete

- NAEPF Step 3 Classification: Moderate Persistent Asthma
- Exercise-Induced Asthma
- Candidate if immunotherapy
- Documentation of asthma diagnosis provided to high school
- Updated prescriptions and valved holding chamber
- Is she a poor perceiver?
- How much albuterol is she using?
- Peak flow instruction and recording
- Consider issues with conditioning
- High school sports often highly competitive

Green Zone: breathing well, no cough,
wheeze, absence of nocturnal cough,
participating in activities of childhood
or PEFR 80-100%

- Short acting beta agonist (albuterol, Xopenex, Pirbuterol) MDI 15-30 minutes prior to exercise via spacer
- Medium Dose ICS and LABA combination
Peak flow meter measurements
- Peak flow measurements before and after exercise

Yellow Zone: cold symptoms, cough,
wheeze, chest tightness, nocturnal cough,
decreased exercise tolerance
PEFR 50-80%

- Symptom recognition
- Peak flow monitoring
- Albuterol q 4 hours prn via valved holding chamber
- Continue ICS/LABA
- Short Course Oral Steroids

Red Zone: difficulty breathing, actively wheezing, quick relief medication ineffective, unable to talk in sentences, unable to walk, cyanosis
PEFR <50%

- Inhaled Short-Acting Bronchodilator two treatments 20 mins. apart of 2-6 puff SABA MDI, or nebulizer treatments
Peak Flow measurement
- Contact with asthma care provider
- Oral Steroid
- Call 911 if symptoms warrant

Case 4: A 50 year old lawyer

A 50 year old lawyer has asthma with associated aspirin sensitivity. Her medications include Advair 500/50, montelukast, omalizumab, and xopenex.

She experiencing symptoms throughout the day. Seasonally experiences severe asthma exacerbations requiring emergency room treatment and or hospitalization.



Case 4: A 50 year old lawyer

- **NAEPP Step 5: Severe Persistent Asthma**
- **History of aspirin sensitivity=high-risk asthma. Total avoidance of aspirin products and NSAIDs**
- **Consider medication interactions such as beta blockers and ace inhibitors**
- **Evaluation by ENT for nasal polyps**
- **PEFR monitoring**
- **Occupational stress**
- **Age of compressor and nebulizer equipment.**

Green Zone: PEFr 80-100%

- **Long term controller medications as prescribed**
 - Advair 500/50 mcg
 - Singulair 10 mg
 - Omalizumab (based on wt, Total IgE, perennial aeroallergen)
- **Albuterol via nebulizer or MDI (engage school nurse in monitoring patient)**
- **Monitor PEFr**
- **Medic alert bracelet**
- **Flu vaccine**
- **Avoidance of perennial and seasonal allergens**

Yellow Zone: PEFr 50-80%

- **Symptom recognition**
- **Peak flow monitoring**
- **Contact with Asthma Care Provider**
- **Oral Steroid Course and Taper**

Red Zone: PEFr 50%

- **Inhaled Short-Acting Bronchodilator two treatments 20 mins. apart of 2-6 puff SABA MDI, or nebulizer treatments**
- **Peak Flow measurement**
- **Oral Steroid Course and Taper**
- **Contact with asthma care provider**
- **Epi-Pen or Twinject auto-injectable epinephrine**
(must go to ED if used)
- **Call 911 or go to ED if symptoms warrant**

General Strategies

- **Use your quick-relief bronchodilator more frequently than usual with exacerbation**
- **Communicate with asthma care provider**
- **For severe attack, begin or increase dose of oral steroids**
- **Communicate with asthma care provider**



Bibliography

- Expert Panel 3 Report: Guidelines for the Diagnosis and Management of Asthma, NHLBI, 2007
- Carmago C. "A prospective multicenter study of written action plans among emergency department patients with acute asthma." *Journal of Asthma*, Sept 2008;45(7):532-8
- Stoloff SW "Asthma management and prevention: Current perspectives." *Clinical Cornerstone* 2008(8):26-43
- Ducharme FM. "The role of written action plans in childhood asthma" *Curr Opin in Allergy and Clinical Immunology*, 2008 Apr;8(2):177-88

Downloadable Asthma Action Plans

- [http://www.dcasthma.org/dc_asthmaactionplan_form_\(English\).pdf](http://www.dcasthma.org/dc_asthmaactionplan_form_(English).pdf)
- <http://www.nyc.gov/html/doh/downloads/pdf/asthma/plan1-instructions-print.pdf>
- <http://www.healthcaresouth.com/pages/asthmaaction2002.pdf>
- <http://www.med.umich.edu/1info/fhp/practiceguides/asthma.html>
- <http://www.noattacks.org/AsthmaActionCardStudent.pdf>