

Successful Implementation of the
National *Guidelines for the Diagnosis and
Management of Asthma, 2007*
in Nine (9) Suffolk County (New York)
Operated Health Centers

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Suffolk County, New York

- Suffolk County occupies the eastern two-thirds of Long Island



Suffolk County, New York

- 912 square miles of rural, suburban and small urban areas
- The 2000 US Census estimates the population to be 1,468,037 (2008 estimate = 1,504,947)
 - 84.6% White
 - 6.9% African-American
 - 10.5% Hispanic or Latino
 - (11.2% foreign-born)

The Suffolk County, New York Department of Health Services (SCDHS)

- The department operates a network of seven (7) community health centers (SCHCs) and 2 satellite health centers
- These SCHCs provide ambulatory primary health care services to uninsured and medically underserved persons who are residents of Suffolk County

The Suffolk County, New York Department of Health Services (SCDHS)

- In 2009, there were 311,744 patient visits to the SCHCs
- 6,132 of these visits were for asthma

The *Guidelines*

**National Heart, Lung,
and Blood Institute**

**National Asthma Education
and Prevention Program**

**Expert Panel Report 3:
Guidelines for the Diagnosis and
Management of Asthma**

Full Report 2007



The *Guidelines*-their complexity

- Evaluation and treatment are divided into three age groups:
 - 0-4 years
 - 5-11 years
 - 12-adult

The *Guidelines*-their complexity

- For persons not on long-term controller medication asthma is classified into four degrees of severity:
 - Intermittent
 - Mild Persistent
 - Moderate Persistent
 - Severe Persistent

The *Guidelines*-their complexity

- For persons on long-term controller medication asthma is classified into three levels of control:
 - Well-controlled
 - Not well-controlled
 - Very poorly controlled

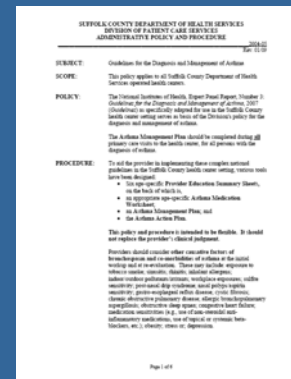
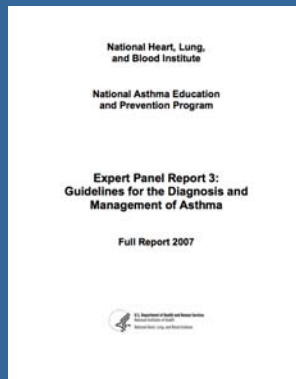
The *Guidelines*-their complexity

- Six therapy steps are provided based on age and classification of severity or level of control
- Each therapy step has:
 - Preferred medications and
 - Alternative medications

The *Guidelines*-their complexity

- Thus, more than 432 combinations of evaluation and therapy possible

Suffolk County Policy Development, Implementation Tools and Provider Asthma Education



- In 2008, a broad-based task force consisting of end-users:
 - updated the a local asthma policy (440 pages became 6 pages)
 - developed and field-tested implementation tools to embed the *Guidelines* into health center clinical practice
 - provided asthma education using three hours of Physician Asthma Care Education (PACE) training and a one hour training session on using the implementation tools

Suffolk County Implementation Tools Provider Education Summary Sheets and Asthma Medication Worksheets

Suffolk County Department of Health Services - Division of Patient Care Services
Provider Education Summary Sheet
Classifying Asthma SEVERITY

Children > 12 years old and Adults-Initial Visit

Classification of Asthma Severity-Initial Visit					
Classification of Severity:	Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent	
Symptoms	< or = 2 days/week	> 2 days/week but not daily	Daily	Throughout the day	
Nighttime awakenings	< or = 2 per month	3-4 per month	> 1 night per week, but not nightly	Nightly	
Impairment					
Use of SABAs for symptom control	< or = 2 days/week	> 2 days/week but not daily	Daily	Several times per day	
Normal FEV1/FVC					
Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited	
Spirometry	Normal FEV1 between exacerbations FEV1 > 80% predicted FEV1/FVC normal	FEV1 < or = 80% predicted FEV1/FVC normal	FEV1 > 80 but < 80% predicted FEV1/FVC reduced < 5%	FEV1 < 60% predicted FEV1/FVC reduced > 5%	
Risk	Lowest risk (up to 1 year)		> 2 year		
Recommended Therapy Step for INITIATING ASTHMA TREATMENT:	Step 1	Step 2	Step 3	Step 4 or 5	
When asthma clinically stable re-classify severity based on current Therapy Step:	Step 1	Step 2	Step 3 or 4	Step 5 or 6	
Step Therapy: Include SABA with all steps.					
Step 1 Preferred: SABA PRN	Step 2 Preferred: Low dose ICS Alternative: LTRA or C/N or Theophylline	Step 3 Preferred: Medium dose ICS or LABA/ Low Dose ICS Combination Alternative: Low dose ICS and either: LTRA or Theophylline	Step 4 Preferred: LABA/ Medium dose ICS Combination Alternative: Medium dose ICS and either: LTRA or Theophylline	Step 5 Preferred: LABA/ High dose ICS Combination	Step 6 Preferred: LABA/ High dose ICS Combination and oral corticosteroids
Consult specialist and refer to Public Health Nursing if step 4 care or higher is required. Consider consultation and Public Health Nursing referral at step 3.					

ICS = Inhaled corticosteroid; LABA = Long-acting beta-2-agonist; SABA = Inhaled short-acting beta-2-agonist; C/N = Cromolyn/Nedocromil; LTRA = Leukotriene Receptor Antagonists.
Revised 1/2009

Suffolk County Department of Health Services - Division of Patient Care Services
ASTHMA MEDICATION WORKSHEET
Age 12 or Older

Short-Acting Inhaled Beta-2-Agonists (SABAs) Metered Dose Inhalers (MDIs)	<input type="checkbox"/> Xopenex® (levalbuterol) HFA -MDI (45mcg/puff): 2 puffs every 4-6 hours as needed. <input type="checkbox"/> Albuterol HFA-MDI (90mcg/puff): 2 puffs every 4-6 hours as needed. <input type="checkbox"/> <input type="checkbox"/>
Short-Acting Inhaled Beta-2-Agonists (SABAs) Nebulizer Solutions	<input type="checkbox"/> Xopenex® (levalbuterol) Soln: 0.63-1.25 mg every 6 hours as needed. <input type="checkbox"/> Albuterol Soln: 1.25-5 mg in 3 mL of saline every 4-6 hours as needed. <input type="checkbox"/> Singulair® (montelukast) age 6-14 years: 5 mg at bedtime. Age 15 and older: 10 mg at bedtime. <input type="checkbox"/> Accolate® (zafirlukast): 20 mg every 12 hours. <input type="checkbox"/>
Leukotriene Receptor Antagonists (LTRA)	<input type="checkbox"/>
Cromolyn and Nedocromil (C/N)	<input type="checkbox"/> Intal® (cromolyn) Nebulizer (20 mg/ampule): 1 ampule every 6 hours. <input type="checkbox"/> Intal® (cromolyn) MDI (8.8 mg/puff): 2 puffs every 6 hours. <input type="checkbox"/> Tiasec® (nedocromil) MDI (1.75 mg/puff): 2 puffs every 6 hours. <input type="checkbox"/>
Inhaled Corticosteroids (ICS)	<input type="checkbox"/> Beclomethasone HFA 100 or 80 mcg/puff <input type="checkbox"/> Total Daily Dose: H= > 400 mcg; M= > 240-480 mcg; L= 80-240 mcg. <input type="checkbox"/> Pulmicort® (budesonide) DPI (90, 180 or 300 mcg/inhalation) <input type="checkbox"/> Total Daily Dose: H= > 1,200 mcg; M= > 600-1,200 mcg; L= 180-600 mcg. <input type="checkbox"/> Azmacort® (triamcinolone) MDI (75 mcg/puff) <input type="checkbox"/> Total Daily Dose: H= > 1,500 mcg; M= > 750-1,500 mcg; L= 300-750 mcg. <input type="checkbox"/> Aerolide® (fluticasone) MDI (250 mcg/puff) <input type="checkbox"/> Total Daily Dose: H= > 2,000 mcg; M= > 1,000-2,000 mcg; L= 500-1,000. <input type="checkbox"/> Flovent® (fluticasone) HFA-MDI (44, 110 or 220 mcg/puff) <input type="checkbox"/> Total Daily Dose: H= > 440 mcg; M= > 264-440 mcg; L= 88-264 mcg. <input type="checkbox"/> Hovone® (fluticasone) DPI (50, 100, 250 mcg/inhalation) <input type="checkbox"/> Total Daily Dose: H= > 500 mcg; M= 300-500 mcg; L= 100-300 mcg. <input type="checkbox"/>
Combined Medications: Inhaled Corticosteroids (ICS) and Long-Acting Beta2-Adrenergic agonists (LABA)	<input type="checkbox"/> Symbicort® HFA/MDI (80 mcg budesonide/4.5 mcg formoterol) <input type="checkbox"/> 2 inhalations every 12 hours. <input type="checkbox"/> Symbicort® HFA/MDI (160 mcg budesonide/4.5 mcg formoterol) <input type="checkbox"/> 2 inhalations every 12 hours. <input type="checkbox"/> Advair® DPI (100 mcg fluticasone /50 mcg salmeterol) 1 inhalation every 12 hours. <input type="checkbox"/> Advair® DPI (250 mcg fluticasone /50 mcg salmeterol) 1 inhalation every 12 hours. <input type="checkbox"/> Advair® DPI (500 mcg fluticasone /50 mcg salmeterol) 1 inhalation every 12 hours. <input type="checkbox"/> Advair® HFA (45 mcg fluticasone /21 mcg salmeterol) 1 inhalation every 12 hours. <input type="checkbox"/> Advair® HFA (115 mcg fluticasone /21 mcg salmeterol) 1 inhalation every 12 hours. <input type="checkbox"/> Advair® HFA (220 mcg fluticasone /21 mcg salmeterol) 1 inhalation every 12 hours. <input type="checkbox"/>
Other Medications	<input type="checkbox"/> <input type="checkbox"/>

WARNING: Healthcare professionals are reminded that to ensure the safe use of long-acting beta2-adrenergic agonists (LABAs):
1. Single-inhalent LABAs should only be used in combination with an asthma controller medication; they should not be used alone.
2. LABAs should only be used long-term in patients whose asthma cannot be adequately controlled on asthma controller medications.
3. LABAs should be used for the shortest duration of time required to achieve control of asthma symptoms and discontinued, if possible, once asthma control is achieved. Patients should then be maintained on an asthma controller medication.
4. Pediatric and adolescent patients who require the addition of a LABA to an inhaled corticosteroid should use a combination product containing both an inhaled corticosteroid and a LABA, to ensure compliance with both medications.

Key: HFA = hydrofluoroalkane; DPI = dry powder inhaler; MDI = metered-dose inhaler
Revised 3/2010

Suffolk County Implementation Tools Asthma Management Plan

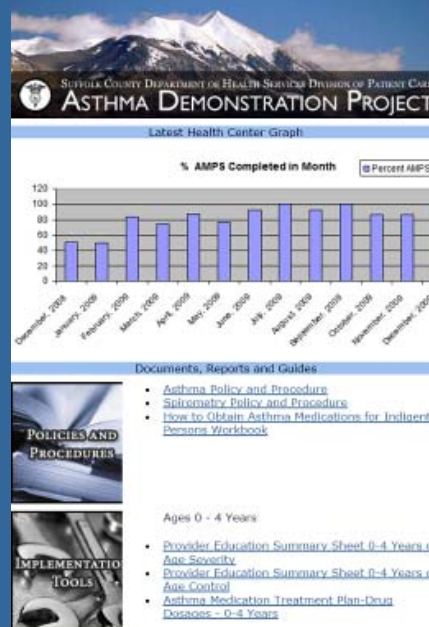
Suffolk County Department of Health Services, Division of Patient Care Services								
Asthma Management Plan								
Date of Visit: _____	Health Center: _____							
<input type="checkbox"/> 0-4 years	<input type="checkbox"/> 5-11 years <input type="checkbox"/> 12-Adult							
Asthma Severity: <input type="checkbox"/> Intermittent	Frequency: <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Severe							
Current Therapy Step: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6								
History								
Physical Examination								
Vital Signs: BP: _____/_____/_____ P: _____ Resp: _____ Temp: _____ Peak Flow: _____ Oxygen Saturation: _____ Weight: _____ lbs.								
<input type="checkbox"/> Spirometry Done This Visit (See Print Out) Patient Controls: <input type="checkbox"/> Well-Controlled <input type="checkbox"/> Not Well-Controlled <input type="checkbox"/> Very Poorly Controlled								
Change To Therapy Step: <input type="checkbox"/> No Change <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6								
Medications								
Short Acting Inhaled β_2 -agonist	<input type="checkbox"/>							
Inhaled Corticosteroid	<input type="checkbox"/>							
Combination Medication	<input type="checkbox"/>							
Leukotriene Modifier	<input type="checkbox"/>							
Relaxant Inhaled Corticosteroid	<input type="checkbox"/>							
Relaxant β_2 -agonist	<input type="checkbox"/>							
Oral Corticosteroid	<input type="checkbox"/>							
Other	<input type="checkbox"/>							
Other	<input type="checkbox"/>							
Other	<input type="checkbox"/>							
Patient Education								
<input type="checkbox"/> Discussed basic facts about asthma including: <input type="checkbox"/> The role of inflammation. <input type="checkbox"/> What happens during an asthma attack.								
<input type="checkbox"/> Discussed patient skills: <input type="checkbox"/> Correct inhaler technique. <input type="checkbox"/> Correct use of devices (e.g., spacer, nebulizer, etc.)								
<input type="checkbox"/> Discussed using Asthma Action Plan to know when and how to take daily medications and how to adjust medications for worsening asthma.								
<input type="checkbox"/> Discussed role of medications: difference between quick-relief and long-term control medications.								
<input type="checkbox"/> Discussed identifying and avoiding environmental exposures that worsen asthma (e.g., tobacco smoke, allergens, etc.).								
<input type="checkbox"/> Discussed if anybody in the home smokes. <input type="checkbox"/> Other (e.g., home peak flow monitoring, etc.): _____								
Referrals, Additional Testing and Treatments								
<input type="checkbox"/> Smoking cessation <input type="checkbox"/> Behavioral Health <input type="checkbox"/> Specialist								
<input type="checkbox"/> Radiograph Ordered (type): _____ <input type="checkbox"/> Asthma Blood Panel for Allergens								
<input type="checkbox"/> Other: _____ <input type="checkbox"/> Influenza Vaccination								
<input type="checkbox"/> Spirometry (0.3 mg/min or 0.5 mg/min on 1.25 mg/inh) or Allergen β_2 -agonist on 1.25 mg/inh or 2.5 mg/inh (via nebulizer)								
<input type="checkbox"/> Public Health Warning when a <u>hospitalized or seen in ED</u> for asthma since last visit, for persons with a <u>or more</u> visits for asthma in past year, for persons up to 1 year since a <u>hospitalized or seen in ED</u> for asthma since last visit, for persons with a <u>or more</u> visits for asthma in past year.								
Assessment and Plan								
Date of Return Visit								
Simple	Shortness of Breath	<input type="checkbox"/> Wheezing	<input type="checkbox"/> Cough	<input type="checkbox"/> Chest Pain, tightness	<input type="checkbox"/> Asthma with Active Infection	<input type="checkbox"/> Asthma, Exacerbation	<input type="checkbox"/> Asthma, Exacerbation	<input type="checkbox"/> Severe Asthma
Simple	Exacerbation	Exacerbation	Exacerbation	Exacerbation	Exacerbation	Exacerbation	Exacerbation	
Simple	Exacerbation	Exacerbation	Exacerbation	Exacerbation	Exacerbation	Exacerbation	Exacerbation	

Suffolk County Asthma Management Plan Design and Use

- The Asthma Management Plan (AMP) is a single-page patient encounter form that is completed during all primary care visits for all persons with asthma

Suffolk County Asthma Management Plan Compliance Measure

- Each month the AMPs are collected and analyzed
- Results are disseminated at monthly departmental meetings and on the county's asthma intranet site.



Suffolk County Asthma Demonstration Project Results

Monthly Totals	# 493.XX Seen	# AMPs Completed (%)	# Age Recorded (%)	# Severity Recorded (%)	# Current Therapy Step (%)	# Patient Control (%)	# Change to Therapy Step (%)	# on SABA (%)	# on Controller Medications (%)	# Asthma Action Plan (%)	# PHN Referral
Total 2009	6,132	5229/6132 85%	5091/5229 97%	4591/5229 88%	4251/5229 81%	4306/5229 82%	4624/5229 88%	4931/5229 94%	3539/5229 68%	2809/5229 54%	163
Jan. 2010	505	468/505 93%	460/468 98%	422/468 90%	391/468 84%	397/468 85%	439/468 94%	448/468 96%	312/468 67%	242/468 52%	3
Feb. 2010	451	428/451 95%	409/428 96%	377/428 88%	351/428 82%	352/428 82%	357/428 83%	366/428 86%	242/428 57%	187/428 44%	4
March 2010	547	529/547 97%	520/529 98%	475/529 90%	444/529 84%	444/529 84%	460/529 87%	461/529 87%	328/529 62%	320/529 61%	3
April 2010	524	487/524 93%	476/487 98%	449/487 92%	418/487 86%	433/487 89%	439/487 90%	441/487 91%	298/487 61%	360/487 74%	3
May 2010	456	431/456 95%	426/431 99%	394/431 91%	365/431 85%	385/431 98%	391/431 91%	451/431 96%	294/431 68%	298/431 69%	1
June 2010	448	430/448 96%	420/430 98%	369/430 88%	347/430 83%	373/430 89%	382/430 91%	387/430 92%	266/430 63%	287/430 68%	3
July 2010	353	347/353 98%	336/347 97%	305/347 88%	289/347 83%	300/347 86%	297/347 86%	319/347 92%	219/347 63%	237/347 68%	3
August 2010											
September 2010											
October 2010											
November 2010											
December 2010											
Total 2010	3284	3120/3284 95%	3047/3120 98%	2791/3120 90%	2605/3120 84%	2684/3120 86%	2765/3120 89%	2873/3120 92%	1958/3120 63%	1931/3120 61%	20
Project Total	12,347	11122/12347 90%	10849/11122 98%	9868/11122 89%	9172/11122 83%	9374/11122 84%	9857/11122 88%	10358/11122 93%	7238/11122 65%	6434/11122 58%	183

Suffolk County Asthma Demonstration Project Conclusions

- Successful embedding of new and complex national asthma guidelines into clinical practice in a large and diverse health-care delivery system is achievable through broad end-user input into policy design, development and field-testing of effective implementation tools, provider education and on-going collection and dissemination of results

Suffolk County Asthma Demonstration Project



The End