

Clinical Performance Measures

Asthma

Tools Developed by Physicians for Physicians

Provided by:

Physician Consortium for Performance Improvement

Purpose

This measurement tool provides physicians with *evidence-based*¹ clinical performance measures, including a data collection flowsheet, that may be useful for quality improvement activities within physician practices. The ability to track changes over time is integral to the concept of continuous quality improvement in patient care. Evidence-based clinical performance measures have been identified as a means for tracking these changes.

These measures are provided for physicians by the **Physician Consortium for Performance Improvement™ (Consortium)**, a physician-led initiative that includes methodological experts, clinical experts representing more than 70 national medical specialty societies, state medical societies, the Agency for Healthcare Research and Quality, and the Centers for Medicare and Medicaid Services. The Consortium's vision is to fulfill the responsibility of physicians to patient care, public health, and safety by becoming the leading source organization for evidence-based clinical performance measures and outcomes reporting tools for physicians.

Performance measures must be designed based on their intended purpose.^{2,3} The measures presented here are intended to facilitate individual physician quality improvement. Therefore, there are no minimum sample size requirements, and the suggested feedback is sufficiently detailed to pinpoint areas of concern for the physician. The measures defined in this measurement tool are not intended, and should not be used, for physician comparison.⁴

Performance measures are not clinical guidelines; rather, measures are derived from evidence-based clinical guidelines and indicate whether or not or how often a process or outcome of care occurs.² Performance measures provide important information to a physician, allowing him or her to enhance the quality of care delivered to patients.

Physician Performance Measures (Measures) and related data specifications, developed by the Physician Consortium for Performance Improvement (the Consortium), are intended to facilitate quality improvement activities by physicians.

These Measures are intended to assist physicians in enhancing quality of care. Measures are designed for use by any physician who manages the care of a patient for a specific condition or for prevention. These performance Measures are not clinical guidelines and do not establish a standard of medical care. The Consortium has not tested its Measures for all potential applications. The Consortium encourages the testing and evaluation of its Measures.

Measures are subject to review and may be revised or rescinded at any time by the Consortium. The Measures may not be altered without the prior written approval of the Consortium. Measures developed by the Consortium, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the Measures require a license agreement between the user and American Medical Association, on behalf of the Consortium. Neither the Consortium nor its members shall be responsible for any use of these Measures.

THE MEASURES ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

Statistics on Asthma

Asthma is a chronic respiratory disease that places a considerable burden on those affected and results in substantial morbidity and health care utilization.

- More than 30 million individuals in the United States have been diagnosed with asthma during their lifetime.⁵
- In 2001, 12 million Americans had experienced an asthma attack in the previous year.⁵
- In 2000, asthma accounted for 10.4 million outpatient visits, 1.8 million emergency department visits, 465,000 hospitalizations, and 4,487 deaths nationally.^{5,6}
- The total direct and indirect costs of asthma in the United States are estimated at more than \$14 billion annually.⁷

Statistics on Current Practice

Despite potential risks and established clinical guidelines, recent data suggest that some patients are not being managed optimally for this disease. It has been reported that:

- In 2000, about 60% of children aged 5-9 years in HEDIS-participating managed care plans received appropriate asthma medication.⁸
- In 2000, about 59% of adolescents aged 10-17 years received appropriate asthma medication.⁸
- In 2000, about 65% of adults aged 18-56 years received appropriate asthma medication.⁸

Selected Evidence-Based Clinical Guidelines

Evidence-based clinical practice guidelines are available for the management of asthma. This measurement set is based on clinical guidelines from the following:^{*}

- National Asthma Education and Prevention Program Expert Panel Report 2 (NAEPP EPR-2)^{10,11}

The performance measures found in this document have been developed in agreement with these guidelines, enabling the physician to track his or her performance in individual patient care and per patient population. *Please note that treatment must be based on individual patient needs and professional judgment.*

For more information and updates, including a list of practicing physicians and other experts who developed this measurement set, please visit the Consortium's Web site

www.physicianconsortium.org

Relevant Physician Specialties, Patient Population, and Settings of Care

These performance measures are designed for:

- Use by any physician who manages the ongoing care of patients with diagnosed asthma, aged 5 to 40 years.

* The 1995 Joint Task Force on Practice Parameters⁹ (JTFPP) guideline was also consulted during development of this measurement set. Due to inconsistencies with the more recent National Asthma Education and Prevention Program guideline, clinical recommendations from the JTFPP guideline are not cited pending release of a guideline update (in progress).

Physician Consortium for Performance Improvement Asthma Physician Performance Measurement Set^a

	Clinical Recommendations ^{10,11}	Clinical Performance Measures Per Reporting Year	
Asthma Assessment	<p>To determine whether the goals of therapy are being met, monitoring is recommended in the 6 areas listed below:</p> <ul style="list-style-type: none"> • Signs and symptoms (daytime; nocturnal awakening) of asthma • Pulmonary function (spirometry; peak flow monitoring) • Quality of life/functional status • History of asthma exacerbations • Pharmacotherapy (as-needed use of inhaled short-acting beta₂-agonist, adherence to regimen of long-term-control medications) • Patient-provider communication and patient satisfaction (NAEPP EPR-2 recommendations are based on the opinion of the Expert Panel) 	<p>Percentage of patients who were evaluated during at least one office visit during the reporting year for the frequency (numeric) of daytime and nocturnal asthma symptoms^b</p> <p>Numerator = Patients who were evaluated during at least one office visit during the reporting year for the frequency (numeric) of daytime and nocturnal asthma symptoms^b</p> <p>Denominator = All patients aged 5-40 years with asthma</p>	
		<p><i>Per Patient:</i></p> <p>Whether or not patient was evaluated during at least one office visit during the reporting year for the frequency (numeric) of daytime and nocturnal asthma symptoms^b</p>	<p><i>Per Patient Population:</i></p> <p>Percentage of patients who were evaluated during at least one office visit during the reporting year for the frequency (numeric) of daytime and nocturnal asthma symptoms^b</p>
<p>Pharmacologic Therapy</p> <p><i>Denominator Exclusion:</i></p> <p>Documentation of patient reason(s)^c for not prescribing either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment</p>	<p>A stepwise approach to therapy is recommended to maintain long-term control:^{4,e}</p> <p>Step 1: Mild Intermittent Asthma No daily medication needed</p> <p>Step 2: Mild Persistent Asthma <i>Preferred treatment:</i> Low-dose inhaled corticosteroids (ICS) <i>Alternative treatment:</i> Cromolyn, leukotriene modifier, nedocromil, OR sustained-release theophylline</p> <p>Step 3: Moderate Persistent Asthma <i>Preferred treatment:</i> Low-medium dose ICS + long-acting inhaled beta₂-agonists (LABA)* <i>Alternative treatment:</i> Increase medium-dose ICS OR low-medium dose ICS and either leukotriene modifier or theophylline (If needed, may increase ICS within medium-dose range in either treatment)</p> <p>Step 4: Severe Persistent Asthma <i>Preferred treatment:</i> High-dose ICS + LABA* AND, if needed, corticosteroid tablets or syrup long term</p> <p>Studies comparing ICS to cromolyn, nedocromil, theophylline, or leukotriene receptor antagonists are limited, but available evidence shows that none of these long-term control medications appear to be as effective as ICS in improving asthma outcomes.</p> <p>For quick relief for all patients, a short-acting bronchodilator is recommended as needed for symptoms.^{4,f}</p> <p>(NAEPP EPR-2 recommendations are based on strong evidence from clinical trials and the opinion of the Expert Panel)</p>	<p>Percentage of patients with mild, moderate, or severe <i>persistent</i> asthma who were prescribed <i>either</i> the preferred long-term control medication (inhaled corticosteroid)* or an acceptable alternative treatment</p> <p>Numerator = Patients who were prescribed <i>either</i> the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment</p> <p>Denominator = All patients aged 5-40 years with mild, moderate, or severe <i>persistent</i> asthma</p>	
		<p><i>Per Patient:</i></p> <p>Whether or not patient with mild, moderate, or severe <i>persistent</i> asthma was prescribed <i>either</i> the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment</p>	<p><i>Per Patient Population:</i></p> <p>Percentage of all patients with mild, moderate, or severe <i>persistent</i> asthma who were prescribed <i>either</i> the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment</p> <p>Percentage of patients with mild, moderate, or severe <i>persistent</i> asthma who were prescribed <i>either</i> the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment, with denominator exclusion applied</p> <p>Distribution of long-term control therapy by category of medication, severity classification, and age range</p>
	<p>* In patients with moderate or severe persistent asthma, strong evidence indicates that use of LABA <i>in combination with</i> ICS leads to improvements in lung function and symptoms, and reduced supplemental bronchodilator use. LABA is not recommended for use as monotherapy.</p>		

- a Refers to all patients aged 5-40 years with diagnosed asthma.
- b To be counted in calculations of this measure, symptom frequency must be numerically quantified. Measure may also be met by physician documentation or patient completion of an asthma assessment tool/survey/questionnaire. Assessment tool may include the QualityMetric¹² Asthma Control TestTM; NAEPP Asthma Symptoms and Peak Flow Diary.¹³
- c Patient reasons for not prescribing either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment: economic, social, and/or religious, etc.

- d See table of treatment recommendations on reverse side of Prospective Data Collection Flowsheet for recommended dosages and other information.
- e If optimal control of asthma is not achieved and sustained at any step of care, several actions may be considered, including: assessment of patient adherence and technique in using medications correctly; step up to the next higher step of care; consultation with an asthma specialist.¹⁰
- f Although quick-relief inhaled medications are not considered an acceptable alternative for long-term control of asthma, this information is being collected to further inform the Work Group.

**Physician Consortium for Performance Improvement
Asthma Physician Performance Measurement Set
Data Collection Flowsheet**

Provider No. _____

Patient Name or Code _____ Birth Date ____ / ____ / ____ Gender M F
(mm / dd / yyyy)

Monitoring — Asthma Vital Signs	Date of Initial Visit (mm / dd / yyyy):	Initial visit <input type="checkbox"/> Yes <input type="checkbox"/> No ____/____/____	____/____/____	____/____/____	____/____/____
	Patient completed an asthma assessment tool ^a	<input type="checkbox"/> Yes (if Yes, skip to Classification section)	<input type="checkbox"/> Yes (if Yes, skip to Classification section)	<input type="checkbox"/> Yes (if Yes, skip to Classification section)	<input type="checkbox"/> Yes (if Yes, skip to Classification section)
	Daytime asthma signs/symptoms (numeric frequency — over past 2-4 weeks, not just with acute attacks)	_____ (#) Per: (circle one) day week month	_____ (#) Per: (circle one) day week month	_____ (#) Per: (circle one) day week month	_____ (#) Per: (circle one) day week month
	Nocturnal asthma signs/symptoms (numeric frequency — over past 2-4 weeks, not just with acute attacks)	_____ (#) Per: (circle one) night week month	_____ (#) Per: (circle one) night week month	_____ (#) Per: (circle one) night week month	_____ (#) Per: (circle one) night week month
	Short-acting beta ₂ -agonists	# of puffs used/day: ____	# of puffs used/day: ____	# of puffs used/day: ____	# of puffs used/day: ____
	Frequency of acute attacks/exacerbations	_____ (#) Per: (circle one) day week month year	_____ (#) Per: (circle one) day week month year	_____ (#) Per: (circle one) day week month year	_____ (#) Per: (circle one) day week month year
Classification	Classification of Asthma Severity^{b,c} (check one) <input type="checkbox"/> Mild intermittent <input type="checkbox"/> Mild persistent <input type="checkbox"/> Moderate persistent <input type="checkbox"/> Severe persistent				
Medications	Check all medication types prescribed (see table of treatment recommendations on reverse side)				
	Quick-Relief Medications				
	Short-acting beta ₂ -agonists				
	Anticholinergics				
	Long-Term-Control Medications	<input type="checkbox"/> Not prescribed (patient reasons*)	<input type="checkbox"/> Not prescribed (patient reasons*)	<input type="checkbox"/> Not prescribed (patient reasons*)	<input type="checkbox"/> Not prescribed (patient reasons*)
	Inhaled corticosteroids				
	Leukotriene modifiers				
	Cromolyn sodium				
	Nedocromil sodium				
	Sustained-release Methylxanthines				
Long-acting beta ₂ -agonists					
*Specify patient reasons (eg, economic, social, religious) for not prescribing therapy:					
Other Medications					

a Assessment tool may include the QualityMetric¹² Asthma Control TestTM; NAEPP Asthma Symptoms and Peak Flow Diary.¹³

b Classification should be based on clinical features before treatment.

c If optimal control of asthma is not achieved and sustained at any step of care, several actions may be considered, including: assessment of patient adherence and technique in using medications correctly; step up to the next higher step of care; consultation with an asthma specialist.¹⁰

Classification of Asthma Severity (NAEPP EPR-2, p. 83-85; Update on selected topics, 2002) ^{10,11}

Clinical Feature Before Treatment^a

	Symptoms ^b	Nighttime Symptoms	Lung Function	Recommended Treatment
Step 4: Severe Persistent^c	Continual symptoms Limited physical activity Frequent exacerbations	Frequent	FEV ₁ or PEF ≤60% predicted PEF variability >30%	Preferred treatment: <ul style="list-style-type: none"> High-dose inhaled corticosteroids and Long-acting inhaled beta₂-agonists And, if needed, <ul style="list-style-type: none"> Corticosteroid tablets or syrup long term (2 mg/kg/day; generally do not exceed 60 mg per day). (Make repeated attempts to reduce systemic corticosteroids and maintain control with high-dose inhaled corticosteroids.)
Step 3: Moderate Persistent^c	Daily symptoms Daily use of inhaled short-acting beta ₂ -agonist Exacerbations affect activity Exacerbations ≥2 times a week; may last days	>1 time a week	FEV ₁ or PEF >60%-<80% predicted PEF variability >30%	Preferred treatment: <ul style="list-style-type: none"> Low-to-medium dose inhaled corticosteroids and long-acting inhaled beta₂-agonists Alternative treatment (listed alphabetically): <ul style="list-style-type: none"> Increase inhaled corticosteroids within medium-dose range or Low-to-medium dose inhaled corticosteroids and either leukotriene modifier or theophylline If needed (particularly in patients with recurring severe exacerbations): Preferred treatment: <ul style="list-style-type: none"> Increase inhaled corticosteroids within medium-dose range, and add long-acting inhaled beta₂-agonists Alternative treatment (listed alphabetically): <ul style="list-style-type: none"> Increase inhaled corticosteroids in medium-dose range, and add either leukotriene modifier or theophylline
Step 2: Mild Persistent	Symptoms >2 times a week but <1 time a day Exacerbations may affect activity	>2 times a month	FEV ₁ or PEF ≥80% predicted PEF variability 20-30%	Preferred treatment: <ul style="list-style-type: none"> Low-dose inhaled corticosteroids Alternative treatment (listed alphabetically): cromolyn, leukotriene modifier, nedocromil, or sustained release theophylline to serum concentrations of 5-15 mcg/mL
Step 1: Mild Intermittent	Symptoms ≤2 times a week Asymptomatic and normal PEF between exacerbations Exacerbations brief (from a few hours to a few days); intensity may vary	≤2 times a month	FEV ₁ or PEF ≥80% predicted PEF variability <20%	No daily medication needed Severe exacerbations may occur, separated by long periods of normal lung function and no symptoms. A course of systemic corticosteroids is recommended

Quick Relief for Patients in All Severity Classifications:

- Short-acting bronchodilator: 2-4 puffs short-acting inhaled beta₂-agonists as needed for symptoms.
- Intensity of treatment will depend on severity of exacerbation; up to 3 treatments at 20-minute intervals or a single nebulizer treatment as needed. Course of systemic corticosteroids may be needed.
- Use of short-acting inhaled beta₂-agonists on a daily basis, or increasing use, indicates the need to initiate or increase long-term control therapy.

Step down

Review treatment every 1 to 6 months; a gradual stepwise reduction in treatment may be possible.

Step up

If control is not maintained, consider step up. First review patient medication technique, adherence, and environmental control.

^a The presence of one of the features of severity is sufficient to place a patient in that category. An individual should be assigned to the most severe grade in which any feature occurs. The characteristics noted in this figure are general and may overlap because asthma is highly variable. Furthermore, an individual's classification may change over time.

^b Patients at any level of severity can have mild, moderate, or severe exacerbations. Some patients with intermittent asthma experience severe and life-threatening exacerbations separated by long periods of normal lung function and no symptoms.

^c Referral to an asthma specialist is recommended if there are difficulties achieving or maintaining control of asthma or if the patient requires step 4 care. Referral may be considered if the patient requires step 3 care.

References

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