



Guideline for Disease Management in Correctional Settings

ASTHMA

Recommended Resources to Support Evidence-Based Practice and Quality Improvement

NCCHC issues guidelines to assist correctional health care clinicians in evidence-based decision making. For specific clinical practice guidelines and recommendations, please see the resources listed on page 3.

Introduction

Although clinical guidelines are important decision support for evidence-based practice, to leverage the potential of guidelines to improve patient outcomes and resource use, NCCHC recommends that health care delivery systems also have components including primary care teams, other decision support at the point of care (such as reminders), disease registries, and patient self-management support. These components have been shown to improve outcomes for patients with chronic conditions. In addition, we recommend establishment of a strategic quality management program that supports ongoing evaluation and improvement activities focused on a set of measures that emphasize outcomes as well as process and practice. For information on the chronic care model, model for improvement, and outcomes measures, see the resources listed on page 3.

Asthma Care in Corrections

The general approach to the management of asthma is organized into four components:

- Assessment and monitoring of disease severity and control to reduce impairment and risk
- Patient education and self-management about the disease process, appropriate use of medications and spacers, and use of an action plan, especially for patients with moderate and severe asthma
- Attention to environmental triggers and comorbidities such as tobacco smoke, allergens, and coexistence of (and confusion with) chronic obstructive pulmonary disease
- Medications including the daily use of inhaled corticosteroids (ICS) in the vast majority of patients with persistent asthma, with the goal of reducing the need for and overuse of short-acting beta₂-agonists (SABA)

The diagnosis of asthma is based on information gathered from the clinical history, physical examination, and spirometry results performed before and after use of albuterol to check for reversibility greater than 12%. Assessment of disease severity is most important prior to a patient starting long-term ICS. Because the new inmate-patient usually is already taking medications, the clinician should focus on assessment of degree of control as well as severity classification to reduce impairment and risk. Impairment is determined by the presence of certain symptoms and functional status (see Table 1). Risk of morbidity and mortality is based on disease exacerbations and medication side effects (see Table 2). One of the validated assessment instruments noted in the Expert Panel Report 3 of the National Asthma Education and Prevention Program (NAEPP; see Recommended Resources) should be used to assist in determining severity and control.

As with all chronic conditions, self-management is paramount to improve outcomes and reduce morbidity and mortality. Patients with asthma should avoid smoking and other triggers. Many correctional facilities are now smoke-free. In addition, it is highly recommended that these patients be allowed to keep inhalers and spacers in their cells, and if possible, for a select group of patients to also keep a peak flow meter to monitor airway flow as part of an action plan.

Because asthma is a chronic inflammatory disease rather than one characterized solely by “reactive airways,” the use of ICS is an important cornerstone of treatment. Historically, in correctional settings as well as other health care settings, the overprescribing and overuse of SABA agents has been a problem both in the stable setting when ICS should be prescribed and in the urgent care setting when a 5- to 10-day course of burst (rather than taper) oral steroids should be prescribed.

Currently there is no standard benchmark for the comparison of SABA prescribing to ICS prescribing. However, the ratio between SABA and ICS is recommended as one quality measure to monitor at a population level over time. This ratio typically should not exceed 2 SABA to 1 ICS at an institution and provider or team level.

Table 1. Severity
The clinician should assess disease severity to initiate treatment for patients who are not currently taking long-term control medications.

Components of Control	Degree of Severity			
	Intermittent	Persistent		
		Mild	Moderate	Severe
Short-acting beta-agonist inhaler use	< 2 days a week	> 2 days a week but not daily	Daily	Several times a day
Symptoms	≤ 2 days a week	> 2 days a week but not daily	Daily	Throughout the day
Nighttime awakenings	≤ 2 times a month	3-4 times a month	> 1 time a week but not nightly	Often, 7 times a weeks
Interference with normal activity	No limitation	Minor limitation	Some limitation	Extreme limitation
Lung function/ FEV ₁	> 80% predicted	> 80% predicted	60%–80% predicted	< 60% predicted

Source: Summary Report of the Expert Panel Report 3, p. 44
<http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.pdf>

Table 2. Control
At each follow-up visit, the clinician should record the degree of control as good, fair, or poor (the NAEPP uses “well controlled,” “not well controlled,” and “very poorly controlled”).

Components of Control	Good Control (Well Controlled)	Fair Control (Not Well Controlled)	Poor Control (Very Poorly Controlled)
Beta-agonist inhaler use	No more than one canister per month	No more than one canister per month	More than one canister per month
Visits to an on-site urgent care center or community emergency department or hospital	None	No more than one in past month	More than one per month
Nighttime awakenings from asthma symptoms	None	No more than once a week	More than three times a week

Quality Improvement Measures

The following quality improvement measures are suggested, but they are not intended to be a complete list necessary to ensure a successful asthma management program in a correctional setting. We recommend that the improvement measures for a patient population be reported at a facility level and at a provider or team level. These indicators should be compared over time to correlate improvement.

- Percentage of patients with asthma whose severity classification and degree of control are assessed appropriately based on the NAEPP guidelines
- Percentage of patients with asthma evaluated by the primary care provider within the designated follow-up time frames based on their classification of severity and degree of control
- Percentage of patients with asthma who are well-controlled for 3 months or more who are evaluated for step-down therapy
- Percentage of patients with asthma whose degree of control is categorized as fair or poor who have a plan that includes a strategy for improving control
- Percentage of patients with asthma who have demonstrated good techniques in use of inhalers and spacers
- Percentage of patients classified as severe persistent asthma who have an asthma action plan
- Percentage of patients seen in an urgent or emergent care setting for an asthma exacerbation who were prescribed a burst of oral steroids (40-60 mg per day) for 5 to 10 days
- Percentage of patients prescribed SABA inhaler only compared to those prescribed ICS in addition to SABA; the ratio likely should be less than 2 to 1
- Percentage of patients with asthma who were offered influenza immunizations

Recommended Resources to Support Evidence-Based Practice and Quality Improvement

RESOURCE Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma (2007)

SOURCE National Asthma Education and Prevention Program; National Heart, Lung, and Blood Institute; National Institutes of Health

URL <http://www.nhlbi.nih.gov/guidelines/asthma>

RESOURCE Tools: Asthma

SOURCE Institute for Healthcare Improvement

URL <http://www.ihl.org/IHI/Topics/ChronicConditions/Asthma/Tools>

RESOURCE National Guideline Clearinghouse

SOURCE Agency for Healthcare Research and Quality

URL <http://www.guideline.gov>

RESOURCE Chronic Care Model (1998)

SOURCE Developed by Ed Wagner MD, MPH, MacColl Institute for Healthcare Innovation, Group Health Cooperative of Puget Sound, and the Improving Chronic Illness Care program; available from the Institute for Healthcare Improvement

URL <http://www.ihl.org/IHI/Topics/ChronicConditions/AllConditions/Changes>

RESOURCE Model for Improvement (1997)

SOURCE Associates in Process Improvement; available from the Institute for Healthcare Improvement

URL <http://www.ihl.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove>

RESOURCE Measures

SOURCE Institute for Healthcare Improvement

URL <http://www.ihl.org/IHI/Topics/Improvement/ImprovementMethods/Measures>

RESOURCE HEDIS & Quality Measurement
SOURCE National Committee for Quality Assurance
URL <http://www.ncqa.org/tabid/59/Default.aspx>

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For the latest version, go to <http://www.ncchc.org/resources>