

---

## Appendix D. Sample Draft Clinical Guidelines

The sample guideline “Asthma Chronic Care” was drafted by Ronald M. Shansky, M.D., M.P.H., and is presented here in draft form. Once adopted by the National Commission on Correctional Health Care, it will become part of the NCCHC Clinical Guideline Series. The Clinical Guideline Series is spearheaded by a panel of correctional health physicians representing the NCCHC and The Society of Correctional Physicians (SCP), including Glenn Johnson, M.D., CCHP–A (chair); Lannette Linthicum, M.D.,

CCHP; James McAuley, M.D., M.P.H.; Joseph Paris, M.D., Ph.D., CCHP; Michael Puisis, D.O.; John Robertson, M.D.; and Ronald Shansky, M.D.

The sample guideline “Minimum Standards for Care of Chronic Disease in Prison” was prepared by Robert B. Greifinger, M.D., for this project and is currently under consideration for adoption by the NCCHC and the SCP.

# National Commission on Correctional Health Care

## Recommended Correctional Clinical Guideline

### Asthma Chronic Care

Ronald M. Shansky, M.D., M.P.H.

March 12, 2000

#### Introduction

Correctional settings tend to house large numbers of patients with asthma, and the phenomenon can lead to serious problems with morbidity and mortality. This Recommended Correctional Clinical Guideline on Asthma Chronic Care is the result of modifications to *The Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma, National Asthma Education Program*. The modifications were designed to simplify and be more cautious due to the special challenges of providing services in the correctional setting.

#### Background

Over the last two decades, much has been learned about asthma. In particular, health professionals have come to understand that asthma is primarily an inflammatory process that results in susceptible individuals having recurrent episodes of coughing, wheezing, chest tightness, and difficulty in breathing. Inflammation is thought to sensitize the airways to a variety of stimuli, such as tobacco smoke, allergens, chemical irritants, cold air, and exercise.

In treating patients, asthma specialists have learned of the critical need to form a partnership with their patients. Such a partnership, based on imparting to the patient an understanding of the disease process, better enables the patient to become aware of those things that trigger attacks, record the use of medications and the frequency of attacks, learn proper technique for inhaler use, learn proper use of a peak flow meter, and learn when to consult a physician regarding management concerns. The result has been a significant improvement in long-term morbidity and mortality.

#### Diagnosis

Asthma is defined as a disease process manifested by reversible airway obstruction. The elements used to make the diagnosis include history, symptomatic

episodes such as wheezing or coughing, physical examination with findings of obstruction on auscultation, and abnormal diagnostic results such as from peak flow meter readings, pulmonary function tests, or chest x-rays.

#### Management Overview

To successfully manage this illness in the corrections environment, NCCCHC recommends categorizing patients according to the severity of their illness. In general, out of 100 patients with asthma, about 80–85 percent will have **mild** asthma. These individuals may occasionally use a beta-agonist inhaler on an as-needed basis or may have symptoms only during a particular allergy season, but in general do not require a great deal of attention. On the other hand, 15–20 percent of patients can be categorized as having **moderate** or **severe** disease, and it is these patients on whom the correctional health care programs should focus their energies and attention. By educating these patients and working carefully with them, correctional settings can also achieve much improved clinical outcomes.

It is critical that all patients be categorized on entry to the system, and be reassessed on an ongoing basis. The patient's problem list should contain not just the diagnosis of asthma, but the categorization of the disease with regard to severity. Further, correctional health care professionals should understand the need to educate and work with patients in a therapeutic partnership as vital to successful outcomes.

#### Treatment Goals

The object in working with a patient who has asthma is to assist him or her in diminishing the frequency of symptoms. This includes:

- decreasing the frequency and severity of asthma episodes,
- minimizing medication use and side effects,

- preventing emergency visits and hospitalization,
- normalizing exercise capacity,
- minimizing nocturnal symptoms, including wheezing, and
- preventing progression to acute respiratory failure and death.

Success in minimizing symptoms requires provider-patient teamwork in understanding what is needed regarding medications, patient education, monitoring with peak flow meters, and environmental controls (e.g., smoking cessation, smoke-free environments, etc.).

## Assessment on Entry to the System

There are three aspects of assessment upon a patient's entry into the correctional system.

1. **Initial History.** The history with regard to asthma should include age of onset, hospitalizations, intubations, frequency of emergency room visits, prior use of inhaled steroids, prior use of systemic steroids, current medication use including the number of canisters of beta-agonist inhalers per month and the number of puffs of inhaled steroids per day, as well as the personal best peak flow measure at home. The history should also include questions regarding sinus infections, allergies, seasonal attacks, smoking history, and a history of gastrointestinal reflux.
2. **Physical Exam.** The physical exam should include a complete set of vital signs, a full physical exam with a focus on the respiratory exam, and a peak expiratory flow measurement.
3. **Diagnostic Studies.** A baseline chest x-ray is recommended.

## Categorization of Severity of Disease

Using the information collected from the intake history, physical exam, and chest x-ray, the patient's severity of disease should be documented. NCHC recommends the use of three categories as defined below.

1. **Mild asthma.** Mild asthma is characterized by use of a beta-agonist inhaler no more than 2–3 days per week on average, and use of no more than one beta-agonist canister every 4–6 weeks.

2. **Moderate asthma.** A patient can be categorized as moderate if any of the following are true:
  - a. use of 1–1.5 canisters of beta-agonist inhaler per month,
  - b. use of inhaled steroids, or
  - c. the observation of peak flow decrease during an acute attack to 40 percent or less of personal best.
3. **Severe asthma.** A patient should be categorized as severe if any of the following are true:
  - a. history of intubation or ICU admission,
  - b. more than two hospitalizations in previous year,
  - c. use of systemic steroids for greater than a 2-week period of time,
  - d. decrease of peak flow to less than 30 percent of personal best during acute attack, or
  - e. use of more than two canisters of beta-agonist inhalers per month.

Over time, the severity categorization of a given patient may be upgraded or downgraded based on the degree of symptoms and disease control that the patient manifests.

## Frequency of Followup Visits

Based upon the patient's category of illness as defined above, the following frequency for followup visits is recommended.

1. **Mild asthma**—The frequency of followup visits should be based on the categorization of the severity of the disease. Patients with mild disease who are controlled should initially be seen every 3–4 months. If their control persists, this may decrease to twice per year.
2. **Moderate asthma**—Patients should be seen at least every 2–3 months, if they are controlled.
3. **Severe asthma**—Patients should be seen at least every 1–2 months, if they are controlled.

For all of these, if the disease process is not adequately controlled, the patients should be seen more frequently.

## Content of Followup Visits

1. **History.** During followup visits, the patient's recent history should be obtained and documented. The history should focus on whether or not the patient knows how and when to effectively use medications, i.e., inhaler technique, frequency of use of each type of canister, such as PRN use for beta-agonist and fixed regimes for inhaled steroids. For patients who by history appear to be inadequately controlled, they should be encouraged to record the frequency, time of day of attacks, and beta-agonist use in a diary.
2. **Objective Data.** At each followup visit, vitals should be taken, peak flow meter results should be documented, and a lung exam should be recorded.
3. **Assessment.** At each followup visit, the doctor should record:
  - a. the degree of control as being *good, fair, or poor*; and
  - b. the status in relationship to the previous visit as *improved, unchanged, or worsened*.
4. **Vaccination.** Pneumococcal vaccine should be offered once, and influenza vaccine should be offered in the flu season.

## Definitions of Control

*Good control.* No more than one beta-agonist canister used per month. No visits to onsite ER. No nighttime coughing or awakening from asthma symptoms.

*Fair control.* No more than one beta-agonist canister inhaler used per month. No more than once per week awakening with asthma symptoms. No more than one onsite ER visit in the past month.

*Poor control.* Use of more than one canister of beta-agonist inhaler per month. More than one onsite ER visit per month. More than three awakenings with asthma symptoms per week.

## Definitions of Status

*Improved status.* Less use of beta-agonist inhalers and less frequent symptom presentation.

*Unchanged status.* Both the use of beta-agonists and frequency of symptoms have not changed.

*Worsened status.* Greater use of beta-agonist, more acute symptoms, or an increase in emergency room visits.

## Use of the Assessment to Guide Treatment Efforts

If the assessment of the patient is either fair or poor or if the status of the patient is worsened, the clinician's plan should reflect new efforts to work with the patient to improve these outcome measures.

### A. Treatment Strategies

1. **Mild asthma.** Patients with mild disease should require no more than beta-agonist inhalers on an "as-needed" basis. Ordinarily, the treatment would be two puffs of beta-agonist inhaler as needed.
2. **Moderate asthma.** Patients with moderate disease should be using beta-agonist inhalers, two puffs as needed. In addition, these patients require inhaled steroids, and inflammation is best controlled by starting at a high routine dose, e.g., Aerobid, 4 puffs b.i.d., and then decreasing the dose as the patient's clinical presentation warrants. If the patient is known to take his or her medications as prescribed and is not well controlled with high-dose inhaled steroids, he or she should be reclassified as having severe disease.
3. **Severe asthma.** These patients should use beta-agonist inhalers as needed, as well as inhaled steroids to be used as described above. If they are still not controlled, they should be started on systemic steroids, e.g., prednisone 40 mg daily times 2 weeks. This regimen is used to gain control of the inflammation. After achieving control as measured by reduced symptoms and improved peak flow measurements, attempts should be made to reduce the systemic steroids while adequately controlling the patient with inhaled steroids and beta-agonist regimens. The addition of further medication such as long-acting Theophylline, Leukotriene inhibitors or long-acting beta-agonist inhalers is presently unsettled. There are not yet good data available to recommend one strategy over another. Most patients can be controlled without their use. If it is thought that a patient needs one of those

third-line drugs, an asthma specialist should be consulted.

#### B. Immunizations

1. Pneumococcal vaccine should be offered once, and
2. influenza vaccine should be offered in the flu season.

#### C. Environmental controls

1. For patients who smoke, smoking cessation programs can be an effective way of reducing symptoms of asthma.
2. Smoke-free environments in housing, eating areas, and work or recreation areas can eliminate a common cause of asthma irritation.
3. Work-related chemical irritants can be a major contributor to inflammatory episodes, and should be eliminated or the patient should be reassigned to work projects not involved with such irritants.

## Understanding the Therapeutic Process

Any decrease in control of the disease as manifested by the use of two canisters of beta-agonist inhalers in a month or a visit to an emergency room setting is cause for review of previous care and implementation of appropriate corrective measures. Particularly for newer patients in the system, an attack or emergency room visit usually exists against a background of relatively easily correctable problems. The most common of these problems are:

- a. underassessment of prior degree of control,
- b. inadequate strategies to encourage adherence to medication use,
- c. underestimation of frequency of beta-agonist use,
- d. delay in increasing inhaled steroid dosage or in the use of early systemic steroids, and
- e. problems like sinus infections, seasonal allergies, gastroesophageal reflux disease, or irritant exposures.

## Correctional Barriers

Impediments commonly found in the correctional environment to treating asthma include the following.

- lack of smoke-free housing
- inadequate ventilation systems
- restrictions on “keep-on-person” medication programs
- lack of timely urgent care access
- lack of adequate system to ensure medication continuity
- lack of followup assessment and treatment modification by the primary care physician following emergency room visit

## Simple Quality Improvement Monitors

The following quality improvement monitors are suggested, but are not intended to be an exhaustive list of steps that could be taken to assure a successful chronic asthma disease management program.

1. The ratio of beta-agonist inhalers issued by the pharmacy to the patient in comparison to the number of inhaled steroid canisters issued to the patient over a month. This ratio of beta-agonist to inhaled steroid inhaler should not exceed 1:1.
2. If under the assessment part of the note, control is categorized as *fair* or *poor*, or the status of the patient is listed as *worsened*, the plan should include a strategy for gaining control by working with the patient.
3. Immunizations offered.

**Minimum Standards for Care of Chronic Disease in Prison (evidence based on current, nationally accepted guidelines—January 25, 2000)**

**Robert B. Greifinger, MD**

| Parameter  | Diabetes Type 1 & 2 <sup>1,2</sup>  | Asthma <sup>3</sup>   | Hypertension <sup>4</sup>   | HIV <sup>5,6</sup>   |
|--|---|---|---|--|
| Definition   | untreated preprandial blood glucose >110 mg/dL                                  | on or should be on medication; ≥1β-agonist inhaler/month          | systolic >140 or diastolic >90 mm Hg or on Rx (130/85 for diabetics)              | known infection  |
| Applies  | all diabetics, both insulin & non-insulin dependent                             | limited to moderate persistent, and severe persistent             | all risk groups   | all; asymptomatic and symptomatic  |
| Initial history  | complete, including nutrition, medications, monitoring, known complications     | complete, including triggers, medications, use of PEFR            | complete, including nutrition, medications, known complications, smoking, alcohol | complete, including nutrition, medications, TB infection status, STD status, known complications |
| Admission physical examination   | complete, including BP, EKG, cardiovascular, dilated retinal referral, and foot | complete, including peak flow                                     | complete, including BP, weight, EKG fundoscopy                                    | complete, all systems  |
| Physician, NP or PA visits (controlled disease)                                    | At least quarterly until controlled, then at least every 6 months               | At least quarterly until controlled, then at least every 6 months | At least quarterly until controlled, then at least every 6 months                 | 3 mos CD4+ <500<br>6 mos CD4+ >500   |
| Office procedure each visit  | foot exam, including monofilament testing, weight, annual EKG                   | peak flow measure (PEFR)  | blood pressure weight annual EKG  | system review weight   |
| Laboratory, initial every 3 months, until controlled, then at least every 6 months | glycated hemoglobin fasting glucose   | theophylline level (if on)  |   | CD4+ & RNA viral load  |
| Laboratory, initial and annual for controlled disease                              | fasting lipid, urinary microalbumin   |   | fasting lipid, urine protein  | RPR <sup>?</sup> GC & Chlamydia screen, Pap (6 months)   |
| Vaccine  | annual influenza 1 pneumococcal   | annual influenza 1 pneumococcal                                   |   | annual influenza 1 pneumococcal  |
| Medication as appropriate  | insulin, oral hypoglycemics, aspirin  | inhaled steroid if on ≥1β-agonist inhaler/month                   | b-blocker, diuretic add appropriate ACE inhibitor, Ca+ blocker, aspirin, etc.     | with symptomatic disease; as appropriate for viral load & trend; OI prophylaxis <500 CD4+        |
| Routine referral   | annual dilated retinal exam by eye care specialist                              |   |   | HIV knowledgeable physician  |
| Special needs  | daily access to glucose monitor, exercise, diet, insulin timed with meals       | daily access to peak flow monitoring, environmental control       | exercise, diet  | diet, exercise, appropriately timed medications  |

1. Standards of Medical Care for Patients with Diabetes Mellitus, Clinical Practice Recommendations 2000, Diabetes Care, American Diabetes Association 2000; vol 23 supp 1: pp 1–23.  
 2. Management of Diabetes in Correctional Institutions, Clinical Practice Recommendations 2000, Diabetes Care, American Diabetes Association 2000; vol 21 supp 1: pp 1–3.  
 3. National Asthma Education and Prevention Program, Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma, National Heart, Lung, and Blood Institute, NIH, February 1997.  
 4. The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, National Heart, Lung, and Blood Institute, NIH, November 1997, NIH 98–4080.  
 5. Report of the NIH Panel to Define Principles of Therapy of HIV Infection and Guidelines for the Use of Antiretroviral Agents in HIV-Infected Adults and Adolescents, May 5, 1999, update.  
 6. Centers for Disease Control, 1999 USPHS/IDSA Guidelines for the Prevention of Opportunistic Infections in Persons Infected with Human Immunodeficiency Virus, Morbidity and Mortality Weekly Report 48 (RR–10), August 20, 1999.