



Complete Summary

GUIDELINE TITLE

General principles for the diagnosis and management of asthma.

BIBLIOGRAPHIC SOURCE(S)

Michigan Quality Improvement Consortium. General principles for the diagnosis and management of asthma. Southfield (MI): Michigan Quality Improvement Consortium; 2008 Jul. 1 p.

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Asthma

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Risk Assessment
Treatment

CLINICAL SPECIALTY

Allergy and Immunology
Family Practice
Internal Medicine
Pediatrics
Pulmonary Medicine

INTENDED USERS

Advanced Practice Nurses
Health Plans
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To achieve significant, measurable improvements in the management of asthma through the development and implementation of common evidence-based clinical practice guidelines
- To design concise guidelines that are focused on key management components of asthma to improve outcomes

TARGET POPULATION

Children and adults with the following:

- Wheezing
- History of cough (worse particularly at night), recurrent wheeze, recurrent difficulty in breathing, recurrent chest tightness
- Symptoms occur or worsen in the presence of exercise, viral infection, inhalant allergens, irritants, changes in weather, strong emotional expression (laughing or crying hard), stress, menstrual cycles
- Symptoms occur or worsen at night, awakening the patient

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Assessment

1. Detailed medical history, physical examination, and symptom assessment
2. Assessment of asthma severity and asthma control
3. Spirometry

Management/Treatment

1. Developing a written asthma action plan
2. Patient education regarding self-monitoring, using written asthma action plan, inhaler technique and use of devices, avoiding environmental and occupational hazards
3. Control of environmental factors
4. Treatment of comorbid conditions (e.g., obesity, obstructive sleep apnea, rhinitis and sinusitis)
5. Step-wise approach to pharmacotherapy

6. Inhaled corticosteroids
7. Omalizumab
8. Allergen immunotherapy
9. Inactivated influenza vaccine
10. Follow-up
11. Referral to asthma specialist

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The Michigan Quality Improvement Consortium (MQIC) project leader conducts a search of current literature in support of the guideline topic. Computer database searches are used to identify published studies, existing protocols and/or national guidelines on the selected topic developed by organizations such as the American Diabetes Association, American Heart Association, American Academy of Pediatrics, etc. If available, clinical practice guidelines from participating MQIC health plans and Michigan health systems are also used to develop a framework for the new guideline.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence for the Most Significant Recommendations

- A. Randomized controlled trials
- B. Controlled trials, no randomization
- C. Observational studies
- D. Opinion of expert panel

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Using information obtained from literature searches and available health plan guidelines on the designated topic, the Michigan Quality Improvement Consortium (MQIC) project leader prepares a draft guideline to be reviewed by the medical directors' committee at one of their scheduled meetings. Priority is given to recommendations with [A] and [B] levels of evidence (see "Rating Scheme for the Strength of the Evidence" field).

The initial draft guideline is reviewed, evaluated, and revised by the committee resulting in draft two of the guideline. Additionally, the Michigan Academy of Family Physicians participates in guideline development at the onset of the process and throughout the guideline development procedure. The MQIC guideline feedback form and draft two of the guideline are distributed to the medical directors, as well as the MQIC measurement and implementation group members, for review and comments. Feedback from members is collected by the MQIC project leader and prepared for review by the medical directors' committee at their next scheduled meeting. The review, evaluation, and revision process with several iterations of the guideline may be repeated over several meetings before consensus is reached on a final draft guideline.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

When consensus is reached on the final draft guideline, the medical directors approve the guideline for external distribution to practitioners with review and comments requested via the Michigan Quality Improvement Consortium (MQIC) health plans (project leader distributes final draft to medical directors' committee, measurement and implementation groups to solicit feedback).

The MQIC project leader also forwards the approved guideline draft to appropriate state medical specialty societies for their input. After all feedback is received from external reviews, it is presented for discussion at the next scheduled committee meeting. Based on feedback, subsequent guideline review, evaluation, and revision may be required prior to final guideline approval.

The MQIC Medical Directors approved this guideline in July 2008.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The level of evidence grades (A-D) are provided for the most significant recommendations and are defined at the end of the "Major Recommendations" field.

Diagnosis and Management Goals

- Detailed medical history and physical exam to determine that symptoms of recurrent episodes of airflow obstruction are present
- Use spirometry in all patients ≥ 5 years of age to determine that airway obstruction is at least partially reversible **[C]**.
- Consider alternative causes of airway obstruction.

Goals of therapy are to achieve control by **[A]**:

- Reducing impairment (prevent chronic symptoms, minimize need for rescue therapy with short-acting beta₂-agonists [SABA], maintain near-normal lung function and activity levels)
- Reducing risk (prevent exacerbations, minimize need for emergency care or hospitalization, prevent loss of lung function or prevent reduced lung growth in children, have minimal or no adverse effects of therapy)

Assessment and Monitoring

- Assess asthma severity to initiate therapy. (Use severity classification chart, assessing both domains of impairment **[B]** and risk **[C]** to determine initial treatment.)
- Assess asthma control to monitor and adjust therapy **[B]**. (Use asthma control chart, assessing both domains of impairment and risk to determine if therapy should be maintained or adjusted. [Step up if necessary; step down if possible.])
- Obtain lung function measures by spirometry at least every 1 to 2 years **[B]**, more frequently for not well-controlled asthma.
- Schedule follow-up care: In general, consider scheduling patients at 2- to 6-week intervals while gaining control **[D]**; at 1- to 6-month intervals, depending on step of care required or duration of control, to monitor if sufficient control is maintained; at 3-month intervals if a step-down in therapy is anticipated **[D]**.
- Assess asthma control, medication technique, written asthma action plan, patient adherence and concerns at every visit.

Education

- Provide self-management education **[A]**. Teach and reinforce: self-monitoring to assess control and signs of worsening asthma (either symptom or peak flow monitoring) **[B]**; using written asthma action plan (review differences between long-term control and quick-relief medication); taking medication correctly (inhaler technique and use of devices); avoiding environmental and occupational factors that worsen asthma.
- Tailor education to literacy level of patient; integrate education into all points of care; appreciate potential role of patient's cultural beliefs and practices in asthma management **[C]**.
- Develop written action plan in partnership with patient **[B]**.

Control Environmental Factors and Comorbid Conditions

- Recommend measures to control exposures to allergens and pollutants or irritants that make asthma worse **[A]**.
- Consider allergen immunotherapy for patients with persistent asthma and when there is clear evidence of a relationship between symptoms and exposure to an allergen to which the patient is sensitive **[B]**.
- Treat comorbid conditions (e.g. allergic bronchopulmonary aspergillosis **[A]**, gastroesophageal reflux **[B]**, obesity **[B]**, obstructive sleep apnea **[D]**, rhinitis and sinusitis **[B]**, chronic stress or depression) **[D]**.
- Inactivated influenza vaccine for all patients over 6 months of age **[A]** unless contraindicated.

Medications

- Select medication and delivery devices to meet patient's needs.
- Use a stepwise approach to pharmacologic therapy to gain and maintain asthma control **[A]**. (See the National Guideline Clearinghouse [NGC] summaries of the Michigan Quality Improvement Consortium [MQIC] age-specific guidelines: [Management of Asthma in Children 0 to 4 Years](#), [Management of Asthma in Children 5 to 11 Years](#), and [Management of Asthma in Youth 12 Years and Older and Adults](#).)
- Inhaled corticosteroids (ICS) are the most effective long-term control therapy **[A]**. Optimize ICS use before advancing to other therapies. When choosing among treatment options, consider patient's impairment and risk, history of response to medication, willingness and ability to use medication.

Referral

- Refer to an asthma specialist for consultation or co-management if there are difficulties achieving or maintaining control (see age-specific guidelines); immunotherapy or omalizumab is considered; additional testing is indicated; or if the patient required 2 bursts of oral systemic corticosteroids in the past year or a hospitalization **[D]**.

Definitions:

Levels of Evidence for the Most Significant Recommendations

- A. Randomized controlled trials
- B. Controlled trials, no randomization
- C. Observational studies
- D. Opinion of expert panel

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence is provided for the most significant recommendations (See "Major Recommendations" field).

This guideline is based on the 2007 National Asthma Education and Prevention Program Expert Panel Report 3, Guidelines for the Diagnosis and Management of Asthma, National Heart, Lung and Blood Institute (www.nhlbi.nih.gov).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Through a collaborative approach to developing and implementing common clinical practice guidelines and performance measures for asthma, Michigan health plans will achieve consistent delivery of evidence-based services and better health outcomes. This approach also will augment the practice environment for physicians by reducing the administrative burdens imposed by compliance with diverse health plan guidelines and associated requirements.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline lists core management steps. Individual patient considerations and advances in medical science may supersede or modify these recommendations.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Approved Michigan Quality Improvement Consortium (MQIC) guidelines are disseminated through email, U.S. mail, and websites.

The MQIC project leader prepares approved guidelines for distribution. Portable Document Format (PDF) versions of the guidelines are used for distribution.

The MQIC project leader distributes approved guidelines to MQIC membership via email.

The MQIC project leader submits request to website vendor to post approved guidelines to MQIC website (www.mqic.org).

The MQIC project leader completes a statewide mailing of the comprehensive set of approved guidelines and educational tools annually. The guidelines and tools are distributed in February of each year to physicians in the following medical specialties:

- Family Practice
- General Practice
- Internal Medicine
- Other Specialists for which the guideline is applicable (e.g., endocrinologists, allergists, pediatricians, cardiologists, etc.)

The statewide mailing list is derived from the Blue Cross Blue Shield of Michigan (BCBSM) provider database. Approximately 95% of the state's M.D.'s and 96% of the state's D.O.'s are included in the database.

The MQIC project leader submits request to the National Guideline Clearinghouse (NGC) to post approved guidelines to NGC website (www.guideline.gov).

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

This guideline is based on the 2007 National Asthma Education and Prevention Program Expert Panel Report 3, Guidelines for the Diagnosis and Management of Asthma, National Heart, Lung and Blood Institute (www.nhlbi.nih.gov).

DATE RELEASED

2008 Jul

GUIDELINE DEVELOPER(S)

Michigan Quality Improvement Consortium - Professional Association

SOURCE(S) OF FUNDING

Michigan Quality Improvement Consortium

GUIDELINE COMMITTEE

Michigan Quality Improvement Consortium Medical Director's Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Physician representatives from participating Michigan Quality Improvement Consortium health plans, Michigan State Medical Society, Michigan Osteopathic Association, Michigan Association of Health Plans, Michigan Department of Community Health and Michigan Peer Review Organization

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Standard disclosure is requested from all individuals participating in the Michigan Quality Improvement Consortium (MQIC) guideline development process, including those parties who are solicited for guideline feedback (e.g., health plans, medical specialty societies). Additionally, members of the MQIC Medical Directors' Committee are asked to disclose all commercial relationships as well.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [Michigan Quality Improvement Consortium Web site](#).

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on November 24, 2008. The information was verified by the guideline developer on December 4, 2008.

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