



Complete Summary

GUIDELINE TITLE

Management and prevention of osteoporosis.

BIBLIOGRAPHIC SOURCE(S)

Michigan Quality Improvement Consortium. Management and prevention of osteoporosis. Southfield (MI): Michigan Quality Improvement Consortium; 2008 Jan. 1 p.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Management of osteoporosis. Southfield (MI): Michigan Quality Improvement Consortium; 2003 Oct. 1 p.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

- Osteopenia
- Osteoporosis

GUIDELINE CATEGORY

Evaluation
Management
Prevention
Risk Assessment
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Health Plans
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

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

TARGET POPULATION

- Patients at high risk for osteoporosis
- Patients requiring therapy to reduce high risk of fracture

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. Assessment of loss of height and back pain
2. Assessment of modifiable and non-modifiable risk factors
3. Bone mineral density (BMD) testing using dual energy x-ray absorptiometry (DEXA) spine and total hip

Note: Computed tomography (CT) scan for screening was considered but not recommended.

Management/Treatment/Prevention

1. Dietary calcium and vitamin D
2. Weight-bearing exercise
3. Addressing modifiable risk factors
4. Pharmacologic treatment (bisphosphonates)
5. Referral, if necessary

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 Recommendation

- 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 updated guideline in January 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.

Assessment

- Assess for loss of height (>1.5 inches) and back pain
- Assess other risk factors:

Modifiable:

- Current cigarette smoking
- Low body weight (<127 lbs or body mass index [BMI] ≤ 20)
- Endocrine disorders
 - Premature or surgical menopause
 - Chronic corticosteroid therapy
 - Estrogen or testosterone deficiency
 - Excessive thyroid hormone replacement
- Calcium or vitamin D deficiency
- Excessive alcohol intake (more than two drinks per day)
- Inadequate physical activity

Non-Modifiable:

- Family history of osteoporosis
- Caucasian or Asian race
- Advanced age (> age 65)
- Female gender
- History of atraumatic fracture
- Bone mineral density (BMD) testing using dual energy x-ray absorptiometry (DEXA) spine and total hip
- Computed tomography (CT) scan for screening is not recommended

Eligible Population

Patients at high risk for osteoporosis

Frequency

- Adult height assessments at periodic well exams
- BMD test for initial diagnosis **[D]**

Core Principles of Treatment and Prevention

Regardless of Risk Factors:

- Dietary calcium 1200 mg/d and 800 to 1000 international units (IU) vitamin D₃ **[B]**
- Weight-bearing exercise **[A]**
- Address modifiable risk factors above

Eligible Population

Patients at high risk for osteoporosis

Frequency

- BMD testing more often than every two years is generally not useful.
- Consider rechecking BMD after at least two years of pharmacologic treatment to monitor effectiveness **[D]**.

Patient Selection for Pharmacological Management Based on Dual Energy X-Ray Absorptiometry

- Treatment to prevent fractures in osteopenia (T-score between -1 and -2.0) without risk factors is not useful **[D]**
- Treat patients on corticosteroid therapy with a T-score \leq -1.0 **[A]**
- Treat patients with osteopenia and a T-score between -2.0 and -2.5 at increased risk **[D]**
- Patients with osteoporosis [T-score < -2.5] (Osteopenia associated with atraumatic fracture should be treated as osteoporosis **[D]**)

Eligible Population

Patients requiring therapy to reduce high risk of fracture

Pharmacological Management

- Consider oral bisphosphonate, generic if available¹
- Consider referral to endocrine or bone and mineral metabolism specialist if patient does not tolerate treatment or shows progression or recurrent fracture after 2 years on treatment

Eligible Population

- Patients requiring therapy to reduce high risk of fracture

¹Use caution in patients with active upper gastrointestinal (GI) disorders. Take medication on an empty stomach with water, remain upright, no food or beverage for 30 minutes, (60 minutes for ibandronate).

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 several sources, including the *Guide to Clinical Preventive Services 2007, Recommendations of the U.S. Preventive Services Task Force* (www.preventiveservices.ahrq.gov), and the *Diagnosis and Treatment of Osteoporosis Guideline*, Institute for Clinical Systems Improvement, 2006 (www.icsi.org).

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 osteoporosis, 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

Bisphosphonates should be used with caution in patients with active upper gastrointestinal disorders.

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
Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

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DATE RELEASED

2003 Oct (revised 2008 Jan)

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.

GUIDELINE STATUS

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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 on April 14, 2004. The information was verified by the guideline developer on July 27, 2004. This NGC summary was updated by ECRI on October 13, 2006. The updated information was verified by the guideline developer on November 3, 2006. This summary was updated by ECRI Institute on April 14, 2008. The updated information was verified by the guideline developer on April 18, 2008.

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