Complete Summary

GUIDELINE TITLE

Evaluation of patients with pulmonary nodules: when is it lung cancer?: ACCP evidence-based clinical practice guidelines. (2nd Edition)

BIBLIOGRAPHIC SOURCE(S)

Gould MK, Fletcher J, Iannettoni MD, Lynch WR, Midthun DE, Naidich DP, Ost DE, American College of Chest Physicians. Evaluation of patients with pulmonary nodules: when is it lung cancer?: ACCP evidence-based clinical practice guidelines (2nd edition). Chest 2007 Sep;132(3 Suppl):108S-30S. [211 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Tan BB, Flaherty KR, Kazerooni EA, Iannettoni MD. The solitary pulmonary nodule. Chest 2003 Jan;123(1 Suppl):89S-96S.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Solitary pulmonary nodule (SPN)

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management

CLINICAL SPECIALTY

Family Practice
Oncology
Pulmonary Medicine
Thoracic Surgery

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Nurses
Patients
Physicians
Psychologists/Non-physician Behavioral Health Clinicians
Social Workers

GUIDELINE OBJECTIVE(S)

To provide clinically relevant, evidence-based guidelines for appropriate imaging modalities and diagnostic testing, and indications for obtaining preoperative tissue diagnosis for patients with a solitary pulmonary nodule

TARGET POPULATION

Patients with a solitary pulmonary nodule (SPN)

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnostic Interventions

1. Chest x-ray (CXR)
2. Tissue Diagnosis
3. Chest computed tomography (CT)
4. Magnetic resonance imaging (MRI) (considered but not recommended routinely)
5. Fluorodeoxyglucose (FDG)-positron emission tomography (PET)
6. Bronchoscopy
7. Transthoracic needle biopsy

Management

Therapeutic Surgical Procedures

1. Lobectomy
2. Wedge resection/segmentectomy
3. Systemic lymph node dissection for all pulmonary resections
4. External beam radiation
5. Experimental treatment such as stereotactic radiosurgery and radiofrequency ablation

6. Pulmonary metastasectomy
7. Follow-up

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic tests
- Diagnostic yield

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Overview

The American College of Chest Physicians (ACCP) chose the Duke University Center for Clinical Health Policy Research to perform formal systematic reviews of the current evidence in the five new non-small cell lung cancer (NSCLC) topic areas, as well as to provide a search for the existing guidelines, systematic reviews, and meta-analyses in all of the topics areas. In addition, the Agency for Healthcare Quality and Research) AHRQ agreed to fund the BlueCross BlueShield Association Technology Evaluation Center to perform the formal systematic review of literature on small cell lung cancer (SCLC). The Health Outcomes Research Group of the Department of Epidemiology and Biostatistics at Memorial Sloan-Kettering Cancer Center conducted a full-scale review of the literature since the first set of guidelines in the area of screening for lung cancer to assist that particular writing group.

The formal systematic reviews of the five new topic areas were guided by the appropriate chapter editors and their writing committees, in concert with the Executive Committee of the panel.

The two EPC research teams conducted a variety of systematic computerized bibliographic database searches including the following: (1) a search for systematic reviews, guidelines, and meta-analyses published since the last ACCP lung cancer guideline (MEDLINE, The Cochrane Library, National Guidelines Clearinghouse); (2) targeted searches for reviews in each of five selected treatment sections (solitary pulmonary nodules, stage I and II, stage IIIA, stage IIIB, stage IV); these searches, run in OVID version of MEDLINE, were performed in July and August 2005 and were limited to publication years since 1995, English language, and human subjects; and (3) searches related to SCLC are described in the evidence chapter on SCLC.

Search terms included the medical subject heading terms lung neoplasms (exploded) and bronchial neoplasms for the lung cancer concept. Each topic search utilized key words specific to the key questions of interest (complete search strategies are available on request from the authors).

Strategy Specific for the Treatment of Patients with Pulmonary Nodules

To update previous recommendations on the evaluation of patients with pulmonary nodules, guidelines on lung cancer diagnosis and management that were published between 2002 and May 2005 were identified by a systematic review of the literature (see the "Availability of Companion Documents" field in this summary for "Methodology for Lung Cancer Evidence Review and Guidelines Development"). Those guidelines, which include recommendations that are specific to the treatment of patients with pulmonary nodules, were identified for inclusion in this chapter. Supplemental material that is appropriate to this topic was obtained by literature search of a computerized database (MEDLINE), as described in the chapter of these guidelines by Wahidi et al. In addition, we identified articles by searching our own files and by reviewing reference lists provided by the Thoracic Oncology NetWork of the American College of Chest Physicians (ACCP). A multidisciplinary writing committee composed of three pulmonologists, two thoracic surgeons, and two radiologists developed the recommendations and graded the strength of the recommendations and the quality of the supporting evidence by using a standardized method (see "Methodology for Lung Cancer Evidence Review and Guideline Development").

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

High Randomized controlled trials (RCTs) without important limitations or overwhelming evidence from observational studies*

Moderate RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies*

Low or very low Observational studies or case series

*Although the determination of magnitude of the effect based on observational studies is often a matter of judgment, the guideline developers offer the following suggested rule to assist this decision: a large effect would be a relative risk >2 (risk ratio < 0.5) [which would justify moving from weak to moderate], and a very large effect is a relative risk > 5 (risk ratio < 0.2) [which would justify moving from weak to strong]. There is some theoretical justification in the statistical literature for these thresholds (the magnitude of effect that is unlikely or very unlikely to be due to residual confounding after adjusted analysis). However, once the decision is made, authors should be explicit in justifying their decisions.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Quality of evidence is scored in three categories with high-quality evidence obtained from randomized controlled trials (RCTs) without important methodologic limitations based on the study design, the consistency of the results, and the directness of the evidence. In extraordinary circumstances, significant and consistent evidence from observational studies could also be ranked as high quality. RCTs with important methodologic limitations or flaws, inconsistent results, or indirect or imprecise results would be scored as medium quality, as well as exceptionally strong evidence from observational studies. Other observational studies or case-series data would fall into the low quality of evidence category. It is the interface of the quality of the evidence and the balance of benefits to harms or burdens that determines the strength of the recommendation, with a 1A recommendation being the strongest and 2C the weakest.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus
Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Writing committees studied the evidence and summary tables or reviewed the literature for their assigned topics, developing their arguments for the recommendations and suggested grading of those recommendations that were put forth for early drafts. The Executive Committee of the panel, composed of the Chair, Vice-Chair, methodologist, and both project managers, reviewed drafts of each chapter of the manuscript during the writing process. Sections that were determined to be potentially overlapping were shared among the appropriate chapter editors, and conference calls were organized to coordinate the placement of these sections and to confirm that there would be no conflicting information or recommendations.

A conference of the panel was convened in July 2006, prior to which time all panelists, including representatives from the invited organizations, were requested to review the complete manuscript and identify recommendations for which the proposal, wording, or grading were determined to be controversial or could be interpreted as controversial by others, incorrectly evolved from the evidence, disagreement existed with regard to the proposal or the grading, or required full panel discussion and further review for any reason. When the panelists who were present were not in unanimous agreement with the proposed recommendations or the grading of the recommendations, informal group consensus techniques were employed. After the meeting, a series of conference calls were convened to finish the discussions and finalize the recommendations. There were a few chapters for which there was insufficient time for full dialogue during the meeting; in the interest of ensuring that the recommendations followed

the evidence, the conference calls were necessary. This process ensured the "buy-in" of the panelists and was deemed to be a worthwhile effort.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grade of Recommendations Scale

Grade	Recommendation
1A	Strong
1B	Strong
1C	Strong
2A	Weak
2B	Weak
2C	Weak

Relationship of Strength of the Supporting Evidence to the Balance of Benefits to Risks and Burdens

Balance of Benefits to Risks and Burdens				
Quality of Evidence	**Benefits Outweigh Risks/Burdens**	**Risks/Burdens Outweigh Benefits**	**Evenly Balanced**	**Uncertain**
High	1A	1A	2A	
Moderate	1B	1B	2B	
Low or very low	1C	1C	2C	2C

COST ANALYSIS

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

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Following final chapter revisions and incorporation of these ultimate recommendations and grading, a concluding review was conducted by the guideline panel Executive Committee. The guidelines were then submitted for review and approval to the American College of Chest Physicians Health and Science Policy Committee (ACCP HSP) Committee, as well as the Thoracic Oncology Network of the college.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the strength of evidence and recommendation grades (1A-2C) follow the recommendations.

1. In every patient with a solitary pulmonary nodule (SPN), we recommend that clinicians estimate the pretest probability of malignancy either qualitatively by using their clinical judgment or quantitatively by using a validated model. **Grade of recommendation, 1C**
2. In every patient with an SPN that is visible on chest radiography (CXR), we recommend that previous CXRs and other relevant imaging tests be reviewed. **Grade of recommendation, 1C**
3. In patients who have an SPN that shows clear evidence of growth on imaging tests, we recommend that tissue diagnosis should be obtained unless specifically contraindicated. **Grade of recommendation, 1C**
4. In a patient with an SPN that is stable on imaging tests for at least 2 years, we suggest that no additional diagnostic evaluation be performed, except for patients with pure ground-glass opacities on CT, for whom a longer duration of annual follow-up should be considered. **Grade of recommendation, 2C**
5. In a patient with an SPN that is calcified in a clearly benign pattern, we recommend no additional diagnostic evaluation. **Grade of recommendation, 1C**
6. In every patient with an indeterminate SPN that is visible on CXR, we recommend that CT of the chest should be performed, preferably with thin sections through the nodule. **Grade of recommendation, 1C**
7. In every patient with an indeterminate SPN that is visible on chest CT, we recommend that previous imaging tests should be reviewed. **Grade of recommendation, 1C**
8. In a patient with normal renal function and an indeterminate SPN on CXR or chest CT, we recommend that CT with dynamic contrast enhancement be considered in centers with experience performing this technique. **Grade of recommendation, 1B**
9. In patients with low-to-moderate pretest probability of malignancy (5 to 60%) and an indeterminate SPN that measures at least 8 to 10 mm in diameter, we recommend that F-18 fluorodeoxyglucose (FDG)-positron emission tomography (PET) imaging should be performed to characterize the nodule. **Grade of recommendation, 1B**
10. In patients with an SPN that has a high pretest probability of malignancy (> 60%), or patients with a subcentimeter nodule that measures < 8 to 10 mm in diameter, we suggest that FDG-PET not be performed to characterize the nodule. **Grade of recommendation, 2C**
11. In every patient with a SPN, we recommend that clinicians discuss the risks and benefits of alternative management strategies and elicit patient preferences. **Grade of recommendation, 1C**
12. In patients with an indeterminate SPN that measures at least 8 to 10 mm in diameter and who are candidates for curative treatment, observation with serial CT scans is an acceptable management strategy in the following circumstances:
    - When the clinical probability of malignancy is very low (< 5%)

- When clinical probability is low (< 30 to 40%) and the lesion is not hypermetabolic by FDG-PET or does not enhance > 15 Hounsfield units (HU) on dynamic contrast CT
- When needle biopsy is nondiagnostic and the lesion is not hypermetabolic by FDG-PET
- When a fully informed patient prefers this nonaggressive management approach

Grade of recommendation, 2C

13. In patients who have an indeterminate SPN that measures at least 8 to 10 mm in diameter and undergo observation, we suggest that serial CT scans be repeated at least at 3, 6, 12, and 24 months. **Grade of recommendation, 2C**
14. In patients who have an indeterminate SPN that measures at least 8 to 10 mm in diameter and are candidates for curative treatment, it is appropriate to perform a transthoracic needle biopsy or bronchoscopy in the following circumstances:
    - When clinical pretest probability and findings on imaging tests are discordant; for example, when the pretest probability of malignancy is high and the lesion is not hypermetabolic by FDG-PET
    - When a benign diagnosis requiring specific medical treatment is suspected
    - When a fully informed patient desires proof of a malignant diagnosis before surgery, especially when the risk of surgical complications is high

    In general, we suggest that transthoracic needle biopsy be the first choice for patients with peripheral nodules unless the procedure is contraindicated or the nodule is inaccessible. We suggest that bronchoscopy be performed when an air bronchogram is present or in centers with expertise in newer guided techniques.

    Grade of recommendation, 2C

15. In surgical candidates with an indeterminate SPN that measures at least 8 to 10 mm in diameter, surgical diagnosis is preferred in most circumstances, including:
    - When the clinical probability of malignancy is moderate to high (> 60%)
    - When the nodule is hypermetabolic by FDG-PET imaging
    - When a fully informed patient prefers undergoing a definitive diagnostic procedure

    Grade of recommendation, 1C

16. In patients with an indeterminate SPN in the peripheral third of the lung and chose surgery, we recommend that thoracoscopy be performed to obtain a diagnostic wedge resection. **Grade of recommendation, 1C**
17. In a patient who chooses surgery with an indeterminate SPN that is not accessible by thoracoscopy, bronchoscopy, or transthoracic needle aspiration

(TTNA), we recommend that a diagnostic thoracotomy be performed. **Grade of recommendation, 1C**

18. In patients who undergo thoracoscopic wedge resection for an SPN that is found to be cancer by frozen section, we recommend that anatomic resection with systematic mediastinal lymph node sampling or dissection be performed during the same anesthetic. **Grade of recommendation, 1C**
19. In patients who have an SPN who are judged to be marginal candidates for lobectomy, we recommend definitive treatment by wedge resection/segmentectomy (with systematic lymph node sampling or dissection). **Grade of recommendation, 1B**
20. For the patient who has an SPN and is not a surgical candidate and prefers treatment, we recommend that the diagnosis of lung cancer be confirmed by biopsy, unless contraindicated. **Grade of recommendation, 1C**
21. For the patient who has a malignant SPN and is not a surgical candidate and prefers treatment, we recommend referral for external-beam radiation or to a clinical trial of an experimental treatment such as stereotactic radiosurgery or radiofrequency ablation. **Grade of recommendation, 2C**
22. For surgical candidates who have subcentimeter nodules and no risk factors for lung cancer, the frequency and duration of follow-up (preferably with low-dose CT) should depend on the size of the nodule. We suggest the following:
    - Nodules that measure up to 4 mm in diameter not be followed up, but the patient must be fully informed of the risks and benefits of this approach
    - Nodules that measure > 4 to 6 mm be re-evaluated at 12 months without additional follow-up if unchanged
    - Nodules that measure > 6 to 8 mm be followed up sometime between 6 and 12 months, and then again between 18 and 24 months if unchanged

    Grade of recommendation, 2C

23. For surgical candidates who have subcentimeter nodules and one or more risk factors for lung cancer, the frequency and duration of follow-up (preferably with low-dose CT) should depend on the size of the nodule. We suggest the following:
    - Nodules that measure up to 4 mm in diameter be re-evaluated at 12 months without additional follow-up if unchanged
    - Nodules that measure > 4 to 6 mm should be followed up sometime between 6 and 12 months and then again between 18 and 24 months if unchanged
    - Nodules that measure > 6 to 8 mm be followed up initially sometime between 3 months and 6 months, then subsequently between 9 and 12 months, and again at 24 months if unchanged.

    Grade of recommendation, 2C

24. For surgical candidates with subcentimeter nodules that display unequivocal evidence of growth during follow-up, we recommend that definitive tissue diagnosis be obtained by surgical resection, transthoracic needle biopsy, or bronchoscopy. **Grade of recommendation, 1C**

25. For individuals who have subcentimeter nodules and are not candidates for curative treatment, we recommend limited follow-up (in 12 months) or follow-up when symptoms develop. **Grade of recommendation, 1C**
26. In patients who are candidates for curative treatment with a dominant SPN and one or more additional small nodules, we recommend that each nodule be evaluated individually, as necessary and curative treatment should not be denied unless there is histopathologic confirmation of metastasis. **Grade of recommendation, 1C**
27. In surgical candidates with a solitary pulmonary metastasis, we recommend that pulmonary metastasectomy be performed if there is no evidence of extrapulmonary malignancy and there is no better available treatment. **Grade of recommendation, 1C**
28. In surgical candidates with an SPN that has been diagnosed as small cell lung cancer (SCLC), we recommend surgical resection with adjuvant chemotherapy, provided that noninvasive and invasive staging exclude the presence of regional or distant metastasis. **Grade of recommendation, 1C**
29. In patients who have an SPN and in whom SCLC is diagnosed intraoperatively, we recommend anatomic resection (with systematic mediastinal lymph node sampling or dissection) under the same anesthesia when there is no evidence of nodal involvement and when the patient will tolerate resection. Surgery should be followed by adjuvant chemotherapy. **Grade of recommendation, 1C**

Definitions:

Quality of Evidence Scale

High - Randomized controlled trials (RCTs) without important limitations or overwhelming evidence from observational studies*

Moderate - RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies*

Low or very low - Observational studies or case series

*Although the determination of magnitude of the effect based on observational studies is often a matter of judgment, the guideline developers offer the following suggested rule to assist this decision: a large effect would be a relative risk > 2 (risk ratio < 0.5) [which would justify moving from weak to moderate], and a very large effect is a relative risk > 5 (risk ratio < 0.2) [which would justify moving from weak to strong]. There is some theoretical justification in the statistical literature for these thresholds (the magnitude of effect that is unlikely or very unlikely to be due to residual confounding after adjusted analysis). However, once the decision is made, authors should be explicit in justifying their decisions.

Grade of Recommendations Scale

Grade	Recommendation
1A	Strong
1B	Strong
1C	Strong

Grade	Recommendation
2A	Weak
2B	Weak
2C	Weak

Relationship of Strength of the Supporting Evidence to the Balance of Benefits to Risks and Burdens

Balance of Benefits to Risks and Burdens				
Quality of Evidence	**Benefits Outweigh Risks/Burdens**	**Risks/Burdens Outweigh Benefits**	**Evenly Balanced**	**Uncertain**
High	1A	1A	2A	
Moderate	1B	1B	2B	
Low or very low	1C	1C	2C	2C

CLINICAL ALGORITHM(S)

The following clinical algorithms are provided in the original guideline document:

- Recommended management algorithm for patients with SPNs that measure 8 to 30 mm in diameter
- Recommended management algorithm for patients with subcentimeter pulmonary nodules that measure ≤ 8 mm in diameter

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate diagnosis and management of patients with pulmonary nodules

POTENTIAL HARMS

Diagnosis

Risks for false-positive and false-negative test results

Complications of Transthoracic Needle Aspiration

Complications include minor pneumothorax in approximately 25% of procedures and major pneumothorax that requires chest tube drainage in approximately 5% of procedures. Identified risk factors for pneumothorax include smaller lesion size, deeper location, proximity to fissures, the presence of emphysema, lateral pleural puncture site, and a smaller angle of entry between the needle and the pleura. Risk factors for chest tube drainage include emphysema, proximity to fissures, and the need to traverse aerated lung.

CONTRAINDICATIONS

CONTRAINDICATIONS

Transthoracic needle aspiration is contraindicated in the patient with a single lung. Relative contraindications to this procedure are the patient with pulmonary hypertension, coagulopathy or a bleeding diathesis, severe chronic obstructive pulmonary disease (COPD), or vascular malformations.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The publication of the *Diagnosis and Management of Lung Cancer: ACCP Evidence-Based Clinical Practice Guidelines; Second Edition* in *CHEST* is the first of two dissemination vehicles. The circulation of the journal is 23,000 subscribers and libraries, including six translations and distribution to 107 countries. All subscribers received a copy of this full-text guideline. The American College of Chest Physicians (ACCP) Clinical Resource on Lung Cancer is composed of a printed publication and an accompanying CD-ROM, containing a quick reference guide for physicians and other health-care providers, patient-targeted educational materials, and a set of slides for use in educational or clinical contexts. In addition, the recommendations and grading are personal digital assistant downloadable from the clinical resource. This product is available for purchase from the ACCP. The patient education materials are accessible free of charge on www.chestnet.org.

The implementation and translation of evidence-based clinical practice guidelines facilitates knowledge uptake, critical for practice change, and should ultimately lead to better patient-focused care. The HSP Subcommittee on Implementation has proposed to collaborate with the Governors, Thoracic Oncology Network, and other groups within the ACCP to disseminate and implement the guidelines in their local communities. Residency and specialty training programs are encouraged to use the guidelines in journal clubs and grand rounds. Other organizations that were invited to send representatives to the final conference and review the proposed drafts were also requested to endorse the guidelines and market them to their membership through their own communication channels.

IMPLEMENTATION TOOLS

Clinical Algorithm
Patient Resources
Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Gould MK, Fletcher J, Iannettoni MD, Lynch WR, Midthun DE, Naidich DP, Ost DE, American College of Chest Physicians. Evaluation of patients with pulmonary nodules: when is it lung cancer?: ACCP evidence-based clinical practice guidelines (2nd edition). Chest 2007 Sep;132(3 Suppl):108S-30S. [211 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 Jan (revised 2007 Sep)

GUIDELINE DEVELOPER(S)

American College of Chest Physicians - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Chest Physicians

GUIDELINE COMMITTEE

American College of Chest Physicians (ACCP) Expert Panel on Lung Cancer Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Michael K. Gould, MD, FCCP; James Fletcher, MD; Mark D. Iannettoni, MD, FCCP; William R. Lynch, MD; David E. Midthun, MD, FCCP; David P. Naidich, MD, FCCP; David E. Ost, MD, FCCP

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Funding for both the evidence review and guideline development was supported by educational grants from AstraZeneca LP, Bristol-Myers Squibb Company, Eli Lilly and Company, Genentech, and Sanofi-Aventis. Representatives from these companies were neither granted the right of review, nor were they allowed participation in any portion of the guideline development process. This precluded participation in either conference calls or conferences. No panel members or ACCP reviewers were paid any honoraria for their participation in the development and review of these guidelines.

The ACCP approach to the issue of potential or perceived conflicts of interest established clear firewalls to ensure that the guideline development process was not influenced by industry sources. This policy is published on the ACCP Web site at www.chestnet.org. All conflicts of interest within the preceding 5 years were required to be disclosed by all panelists, including those who did not have writing responsibilities, at all face-to-face meetings, the final conference, and prior to submission for publication. The most recent of these conflict of interests are documented in this guideline Supplement. Furthermore, the panel was instructed in this matter, verbally and in writing, prior to the deliberations of the final conference. Any disclosed memberships on speaker's bureaus, consultant fees, grants and other research monies, and any fiduciary responsibilities to industry were provided to the full panel in writing at the beginning of the conference and at submission for publication.

ENDORSER(S)

American Association for Bronchology - Disease Specific Society
American Association for Thoracic Surgery - Medical Specialty Society
American College of Surgeons - Medical Specialty Society
American Society for Therapeutic Radiology and Oncology
Asian Pacific Society of Respirology - Disease Specific Society
Oncology Nursing Society - Professional Association
Society of Thoracic Surgeons - Medical Specialty Society
World Association of Bronchology - Disease Specific Society

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Tan BB, Flaherty KR, Kazerooni EA, Iannettoni MD. The solitary pulmonary nodule. Chest 2003 Jan;123(1 Suppl):89S-96S.

GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers of Chest - The Cardiopulmonary and Critical Care Journal.

Print copies: Available from the American College of Chest Physicians, Products and Registration Division, 3300 Dundee Road, Northbrook IL 60062-2348.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

Executive Summary:

- Alberts MW. Diagnosis and management of lung cancer executive summary. Chest 2007 Sep;132(3 Suppl):1S-19.

Background Articles:

- Alberts WM. Introduction: diagnosis and management of lung cancer. Chest 2007 Sep;132(3 Suppl):20S-22.
- McCrory DC, Lewis SZ, Heitzer J, Colice GL, Alberts WM. Methodology for lung cancer evidence review and guideline development. Chest 2007 Sep;132(3 Suppl):23S-28.
- Alberg AJ, Ford JG, Samet JM. Epidemiology of lung cancer. Chest 2007 Sep;132(3 Suppl):29S-55.

Electronic copies: Available to subscribers of Chest - The Cardiopulmonary and Critical Care Journal.

Print copies: Available from the American College of Chest Physicians, Products and Registration Division, 3300 Dundee Road, Northbrook IL 60062-2348.

The following is also available:

- ACCP clinical resources: Diagnosis and management of lung cancer: ACCP evidence-based clinical practice guidelines (2nd edition).

Available from the American College of Chest Physicians Web site.

PATIENT RESOURCES

The following are available:

- Lung cancer guides: lung cancer...am I at risk? Patient education guide. Northbrook (IL): American College of Chest Physicians, 2004. 12 p.
- Lung cancer guides: What if I have a spot on my lung? Do I have cancer? Patient education guide. Northbrook (IL): American College of Chest Physicians, 2004. 16 p.
- Lung cancer guides: living with lung cancer. Patient education guide. Northbrook (IL): American College of Chest Physicians, 2004. 12 p.

- Lung cancer guides: advanced lung cancer: issues to consider. Patient education guide. Northbrook (IL): American College of Chest Physicians, 2004. 12 p.

Electronic copies: Available in Portable Document Format (PDF) from the American College of Chest Physicians (ACCP) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This NGC summary was completed by ECRI on June 30, 2003. The information was verified by the guideline developer on July 25, 2003. This NGC summary was updated by ECRI Institute on November 7, 2007. The updated information was verified by the guideline developer on December 21, 2007.

COPYRIGHT STATEMENT

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx .

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion

or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

Date Modified: 11/3/2008