Complete Summary

GUIDELINE TITLE

Screening for lung cancer: updated recommendations from the Canadian Task Force on Preventive Health Care.

BIBLIOGRAPHIC SOURCE(S)

Palda VA, Van Spall HGC. Screening for lung cancer: updated recommendations from the Canadian Task Force on Preventive Health Care. London (ON): Canadian Task Force on Preventive Health Care (CTFPHC); 2003 Aug. 22 p. [28 references]

GUIDELINE STATUS

This is the current release of the guideline.

A complete list of planned reviews, updates, and revisions is available under the What's New section at the Canadian Task Force on Preventive Health Care (CTFPHC) Web site.

COMPLETE SUMMARY CONTENT

SCOPE
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RECOMMENDATIONS
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BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Lung cancer

GUIDELINE CATEGORY

Prevention
Screening

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Oncology
Preventive Medicine
Pulmonary Medicine
Radiology

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To update the 1994 recommendations of the Canadian Task Force of Preventive Health care for lung cancer screening
- To make recommendations on the effectiveness of chest radiographic examination and spiral computed tomography (CT) for lung cancer screening in asymptomatic patients

TARGET POPULATION

Asymptomatic adults with a history of smoking with no previous history of lung cancer

INTERVENTIONS AND PRACTICES CONSIDERED

Screening for Lung Cancer

1. Chest x-ray
2. Spiral computed tomography (CT) scan

MAJOR OUTCOMES CONSIDERED

- Mortality from lung cancer (primary outcome)
- Rate of lung cancer detection
- Rate of false positive and false negative screening results

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The MEDLINE and Cochrane databases were searched for articles indexed under the Medical Subject Headings "lung neoplasms", "mass screening", "case-control

studies", "tomography, x-ray computed", and/or "diagnosis". The text words "helical CT", "low-dose CT", or "spiral CT" were also used as to identify relevant publications. The search was limited to controlled trials or diagnostic studies involving adult human subjects and published in the English language between the years 1990 and July 2002.

The two principal authors independently reviewed all articles. Publications that were not relevant to lung cancer screening or diagnosis were excluded from further consideration. Also excluded were review articles, case-cohort studies, retrospective autopsy-based studies, and cost-effective analyses. Radiologic studies that were done for purposes other than screening for or diagnosing lung cancer were excluded. Finally, studies that investigated the technical aspects of computed tomography as they relate to lung cancer screening were excluded.

NUMBER OF SOURCE DOCUMENTS

The Cochrane database search generated one relevant article for review. The MEDLINE search identified 2 updates of randomized controlled trials not captured by the Cochrane review as well as 5 case-control studies of lung cancer screening, all from Japan. Lastly, 3 studies of computed tomography scanning as a screening test were identified. Some of these were serial publications of the same subjects. All studies retrieved are summarized in Table 1 of the original guideline document.

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

Research Design Rating

I: Evidence from randomized controlled trials (RCT)

II-1: Evidence from controlled trials without randomization

II-2: Evidence from cohort or case-control analytic studies, preferably from more than 1 centre or research group

II-3: Evidence from comparisons between times or places with or without the intervention; dramatic results in uncontrolled experiments could also be included here

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

Quality (Internal Validity) Rating

Good: A study that meets all design-specific criteria* well

Fair: A study that does not meet (or it is not clear that it meets) at least one design-specific criterion* but has no known "fatal flaw"

Poor: A study that has at least one design-specific* "fatal flaw," or an accumulation of lesser flaws to the extent that the results of the study are not deemed able to inform recommendations

*General design-specific criteria are outlined in Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow CD, Teutsch SM, Atkins D. Current Methods of the U.S. Preventive Services Task Force: A Review of the Process. Am J Prev Med 2001;20(suppl 3):21-35.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

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

Critical Appraisal

Members of the Canadian Task Force reviewed 1) the initial analytic framework and key questions for the proposed review; 2) the subsequent draft(s) of the complete manuscript providing critical appraisal of the evidence prepared by the lead author(s), including identification and critical appraisal of key studies, and ratings of the quality of this evidence using the task force's established methodological hierarchy, and 3) a summary of the evidence and proposed recommendations.

Consensus Development

Evidence for this topic was presented by the lead author(s) and deliberated upon during a task force meeting in October 2002. Expert panelists addressed critical issues, clarified ambiguous concepts, and analyzed the synthesis of the evidence. At the end of this process, the specific clinical recommendations proposed by the lead author were discussed, as were issues related to clarification of the recommendations for clinical application and any gaps in evidence. The results of this process are reflected in the description of the decision criteria presented with the specific recommendations. The group and lead author(s) arrived at final decisions on recommendations unanimously.

Procedures to achieve adequate documentation, consistency, comprehensiveness, objectivity, and adherence to the task force methodology were maintained at all

stages during review development, the consensus process, and beyond to ensure uniformity and impartiality throughout.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Recommendations Grades for Specific Clinical Preventive Actions

A: The Canadian Task Force (CTF) concludes that there is **good** evidence to recommend the clinical preventive action.

B: The CTF concludes that there is **fair** evidence to recommend the clinical preventive action.

C: The CTF concludes that the existing evidence is **conflicting** and does not allow making a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making.

D: The CTF concludes that there is **fair** evidence to recommend against the clinical preventive action.

E: The CTF concludes that there is **good** evidence to recommend against the clinical preventive action.

I: The CTF concludes that there is **insufficient** evidence (in quantity and/or quality) to make a recommendation; however, other factors may influence decision-making.

COST ANALYSIS

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

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups

Recommendations from the following organizations regarding lung cancer screening in asymptomatic people were reviewed:

- The US Preventive Services Task Force (USPSTF)
- The American College of Chest Physicians
- The American Cancer Society

External Peer Review

After final revision, the manuscript was sent by the Task Force to 2 experts in the field (identified by Task Force members at the meeting). Feedback from these experts was incorporated into a subsequent draft of the manuscript.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Recommendation grade **[A, B, C, D, E]** and level of evidence **[I, II-1, II-2, II-3, III, good, fair, poor]** are indicated after each recommendation. Definitions for these grades and levels are repeated following the recommendations.

The Canadian Task Force on Preventive Health Care (CTFPHC) concludes that there is fair evidence to recommend against screening asymptomatic people for lung cancer using chest radiographic examination. **(D recommendation)** (Manser et al., 2002 **[I, fair]**; Kubik, Parkin, & Zatloukal, 2000 **[I, fair]**; Marcus et al., 2000 **[I, fair]**; Nishii et al., 2001 **[II-2, fair]**; Okamoto et al., 1999 **[II-2, fair]**; Sagawa et al., 2001 **[II-2, fair]**; Sobue, 2000 **[II-2, fair]**; Tsukada et al., 2001 **[II-2, fair]**).

The CTFPHC concludes that there is insufficient evidence (in quantity and/or quality) to make a recommendation as to whether spiral computed tomography (CT) scanning should be used for screening asymptomatic people for lung cancer. However, other factors may influence decision-making. **(I recommendation)**. (Henschke et al., 1999; Henschke et al., 2001; Sone et al., 1998; Sone et al., 2001; Diederich et al., 2000 **[II-2, III]**).

Despite the insufficient evidence to date regarding lung cancer screening, smoking cessation should be emphasized to the patient as the preferred modality for reducing lung cancer mortality.

Definitions:

Levels of Evidence - Research Design Rating

Research Design Rating

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D: The CTF concludes that there is **fair** evidence to recommend against the clinical preventive action.

E: The CTF concludes that there is **good** evidence to recommend against the clinical preventive action.

I: The CTF concludes that there is **insufficient** evidence (in quantity and/or quality) to make a recommendation; however, other factors may influence decision-making.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Maneuver: Annual chest radiographic examination (CXR) of asymptomatic people

Level of Evidence:
I, fair (One systematic review of randomized controlled trials and two randomized trial updates); II-2, fair (five case-control studies)

Maneuver: Spiral computed tomography (CT) scanning (CT scan versus CXR) of asymptomatic people

Level of Evidence:
II, III (five diagnostic studies)

Refer to the "Major Recommendations" field.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate use of lung cancer screening in asymptomatic people
- Decreased number of false-positives associated with screening tests
- Decreased risk of invasive diagnostic procedures to confirm suspicious or false-positive findings
- Prevention of exposure of the patient to unnecessary radiation
- Prevention of decreased motivation to stop smoking if a false-negative result is obtained

POTENTIAL HARMS

May miss detection of early stage lung cancer

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The Canadian Task Force on Preventive Health Care (CTFPHC) recognizes that in many cases, patient-specific factors need to be considered and discussed, such as the value the patient places on the clinical preventive action; its possible positive and negative outcomes; and the context and/or personal circumstances of the patient (medical and other). In certain circumstances where the evidence is complex, conflicting, or insufficient, a more detailed discussion may be required.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

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

DATE RELEASED

2003 Aug

GUIDELINE DEVELOPER(S)

Canadian Task Force on Preventive Health Care - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

The Canadian Task Force on Preventive Health Care (CTFPHC) is funded through a partnership between the Provincial and Territorial Ministries of Health and Health Canada.

GUIDELINE COMMITTEE

Canadian Task Force on Preventive Health Care (CTFPHC)

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available from the Canadian Task Force on Preventive Health Care (CTFPHC) Web site.

Print copies: Available from Canadian Task Force on Preventive Health Care, Clinical Skills Building, 2nd Floor, Department of Family Medicine, University of Western Ontario, London, Ontario N6A 5C1, Canada.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Stachenko S. Preventive guidelines: their role in clinical prevention and health promotion. Ottawa: Health Canada, 1994. Available from the Canadian Task Force on Preventive Health Care (CTFPHC) Web site.

- CTFPHC history/methodology. Ottawa: Health Canada, 1997. Available from the CTFPHC Web site.
- Quick tables of current recommendations. Ottawa: Health Canada, 2003. Available from the CTFPHC Web site.
- Palda VA, Van Spall HGC. Preventive health care, 2003 update: preventive health care, 2004 update: screening for lung cancer: updated recommendations from the Canadian Task Force on Preventive Health Care. Recommendation table, Ottawa: Health Canada, 2003 Jun. Available from the CTFPHC Web site.
- Palda VA, Van Spall HGC. Preventive health care, 2003 update: preventive health care, 2004 update: screening for lung cancer: updated recommendations from the Canadian Task Force on Preventive Health Care. Selected references, Ottawa: Health Canada, 2003 Jun. Available from the CTFPHC Web site.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 18, 2004. The information was verified by the guideline developer on November 2, 2004.

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Date Modified: 9/29/2008