Canadian Task Force on Preventive Health Care

McMaster University FAMILY MEDICINE

Task Force Round Up 2020:

Preventive screening for breast cancer, lung cancer and thyroid dysfunction

CFPC Webinar Feb 18, 2020

Ainsley Moore MD, CCFP, MSc,

Putting Prevention into Practice

Meet the Task Force

Presenter Disclosure

Dr. Ainsley Moore

Associate Clinical Professor
of Family Medicine
McMaster University

Vice Chair CTFPHC

- **Relationships with financial sponsors:**
  - **Has not received any funding or in-kind payment.**

Disclosure of Financial Support

The Canadian Task Force on Preventive Health Care - Funded by the Public Health Agency of Canada

<u>Potential for conflict of interest</u>:

Dr. Ainsley Moore serves as an unpaid volunteer (vice chair) of the Canadian Task Force on Preventive Health Care whose guidelines are being presented in this webinar (Practical Talks for Docs)

Mitigating Potential Bias

Transparency:
GRADE process is used to develop the strength and direction of recommendations

Rigor:
Independent systematic reviews of the literature developed by Canadian evidence review centres (Alberta and Ottawa) based on analytical frameworks developed by TF members

Independence:
Independent body of up to 15 clinicians and methodologists

Canadian Task Force
on Preventive Health Care

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Objectives

Understand: Evidence-based preventive screening strategies

Apply: Practical tools to support screening discussions with patients

Engage: Questions comments on rationale for recommendations

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Mandate: Develop evidence-based clinical practice guidelines that support primary care providers in the delivery of preventive healthcare.

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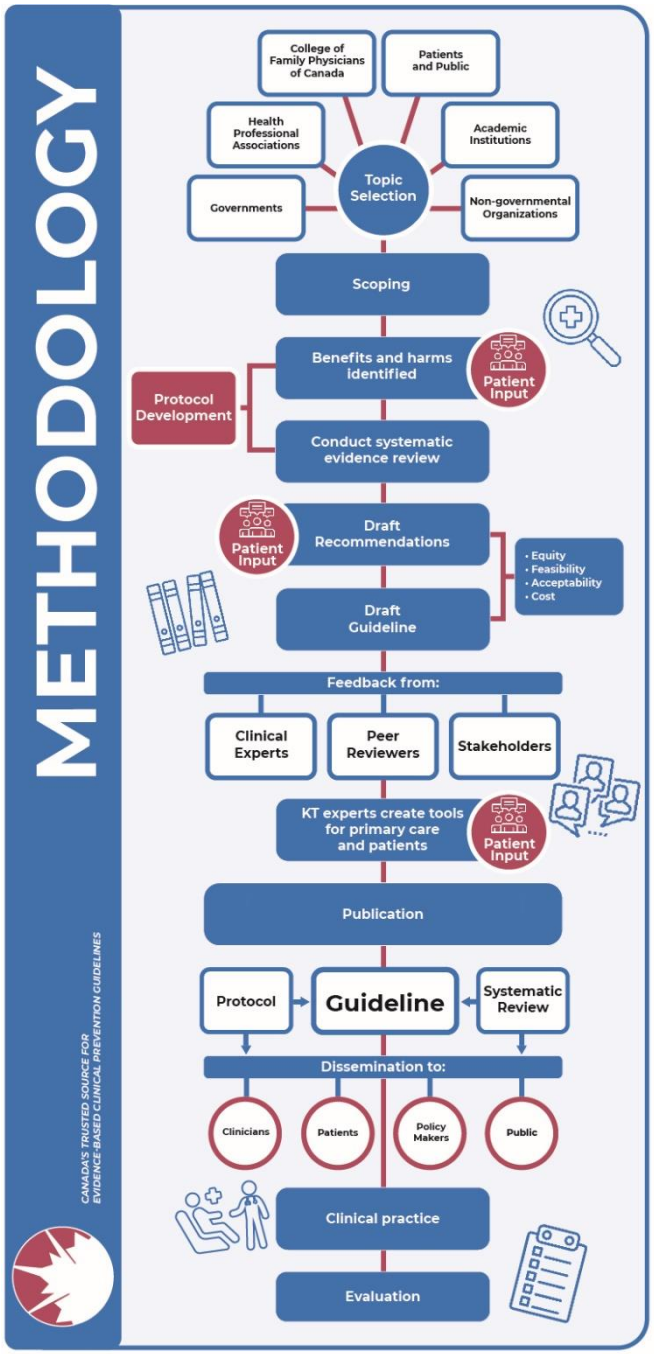
3 years



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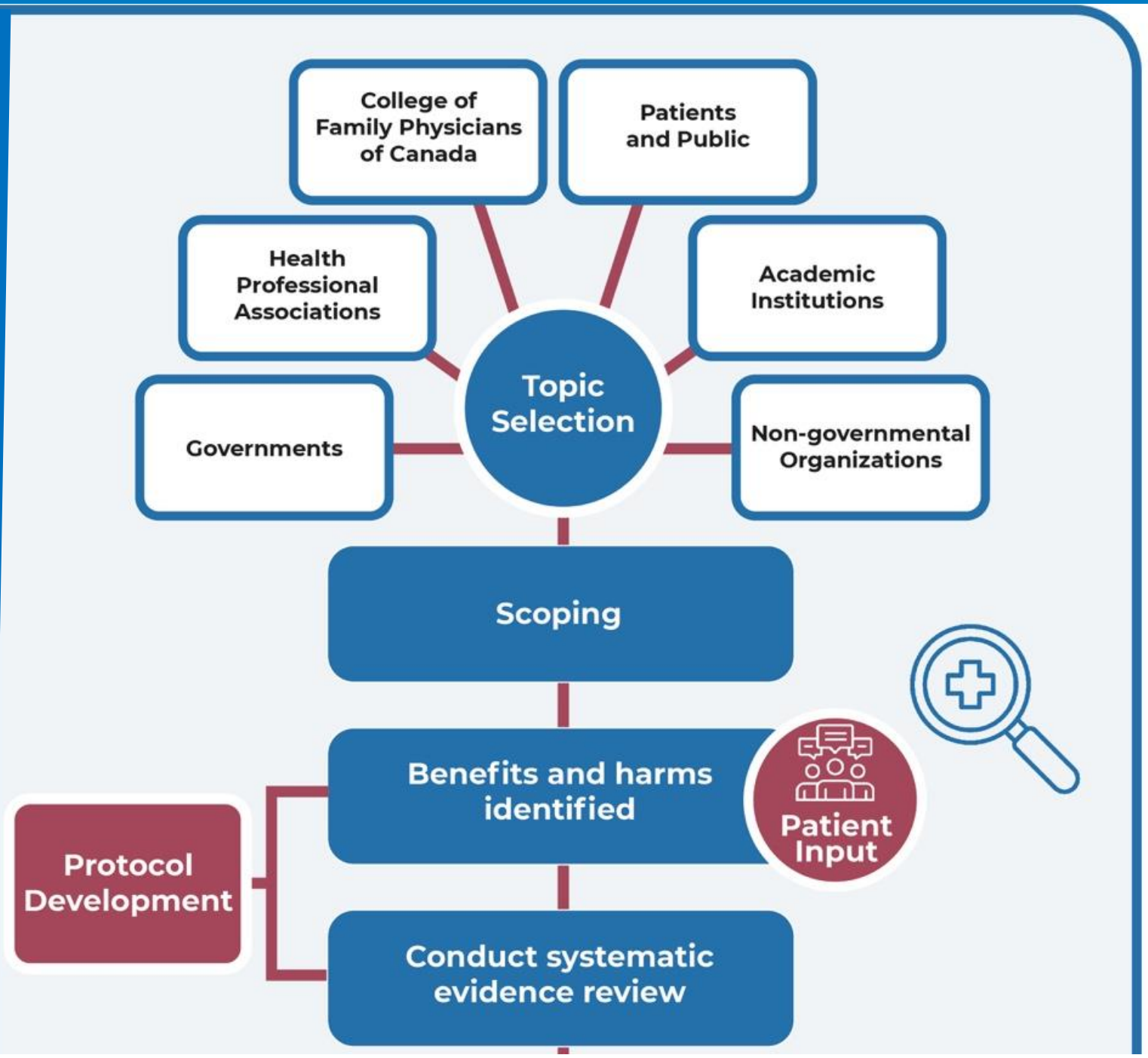
Early Stage


College of Family Physicians of Canada
Patients and Public
Health Professional Associations
Academic Institutions
Topic Selection
Governments
Non-governmental Organizations
Scoping
Benefits and harms identified
Patient Input
Protocol Development
Conduct systematic evidence review

Mid Stage

Patient Input

Draft Recommendations

- Equity
- Feasibility
- Acceptability
- Cost

Draft Guideline

Feedback from:

Clinical Experts

Peer Reviewers

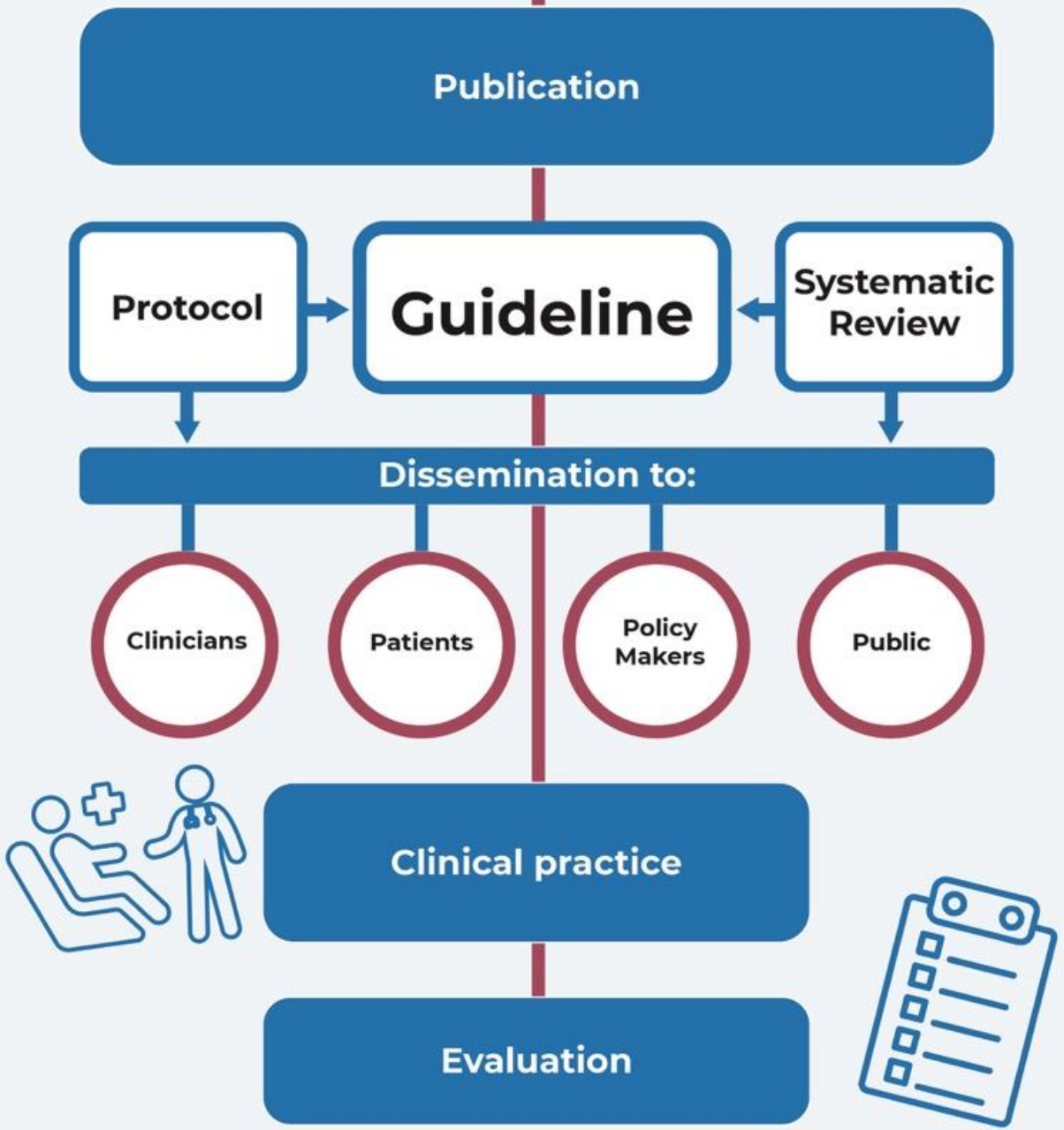
Stakeholders

KT experts create tools for primary care and patients

Patient Input

Publication

Final Stage


Publication
Protocol
Guideline
Systematic Review
Dissemination to:
Clinicians
Patients
Policy Makers
Public
Clinical practice
Evaluation

Breast Cancer Screening Update (2018)

GUIDELINE HEALTH SERVICES CPD

Recommendations on screening for breast cancer in women aged 40–74 years who are not at increased risk for breast cancer

Scott Klarenbach MD MSc, Nicki Sims-Jones RN MScN, Gabriela Lewin MD, Harminder Singh MD MPH, Guylène Thériault MD, Marcello Tonelli MD SM, Marion Doull PhD, Susan Courage RN BScN, Alejandra Jaramillo Garcia MSc, Brett D. Thombs PhD; for the Canadian Task Force on Preventive Health Care

Cite as: *CMAJ* 2018 December 10;190:E1441-51. doi: 10.1503/cmaj.180463

cmaj
BEST EVIDENCE • BEST PRACTICE • BEST HEALTH

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Scope

Update 2011

For primary care providers on screening asymtpomatic women aged 40 to 74 years not at increased risk of breast cancer

Does not apply to women at increased risk:

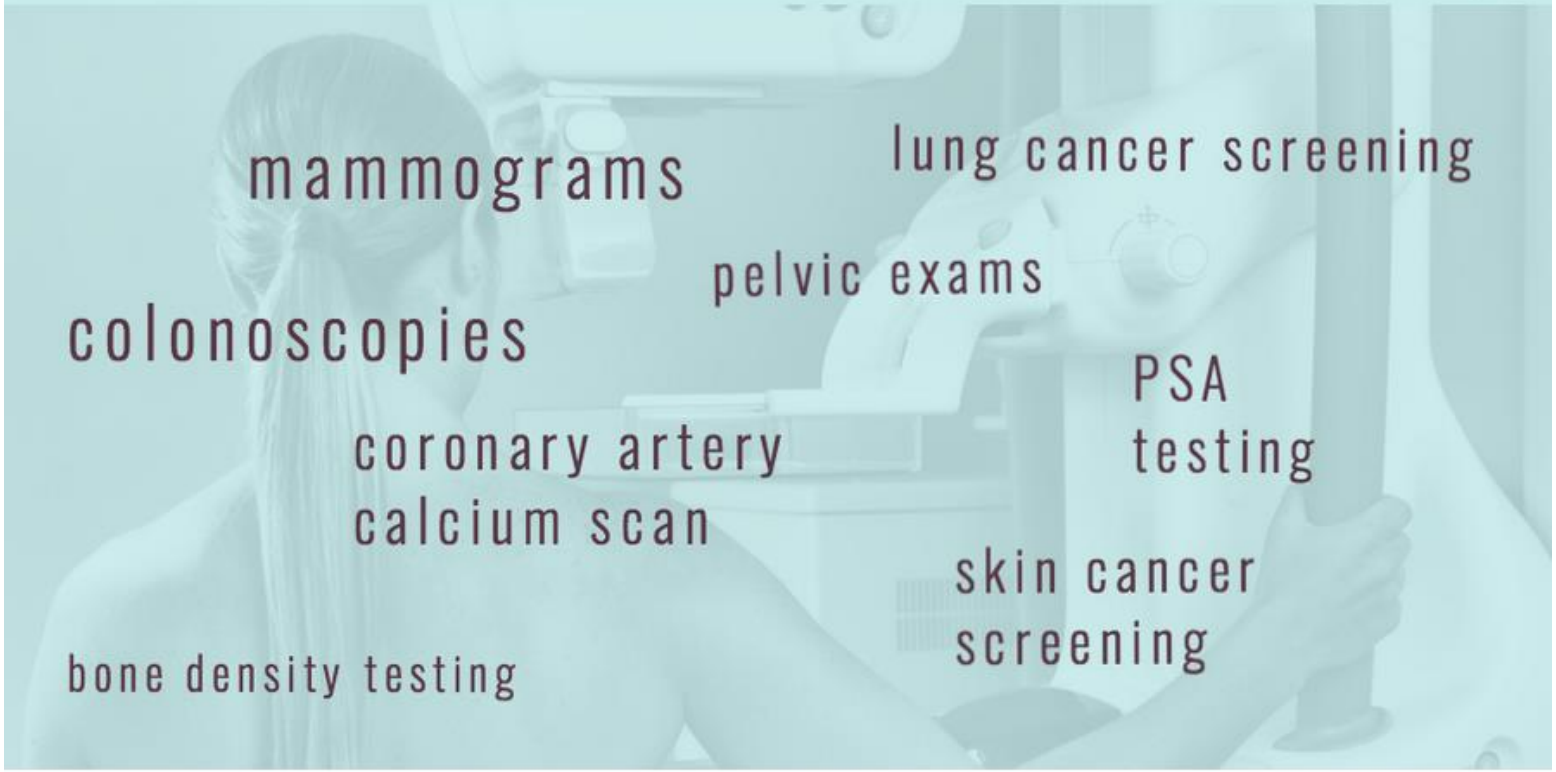
- personal or family history of breast cancer;
- carriers of gene mutations such as BRCA1 or BRCA2 or who have a first-degree relative with these gene mutations;
- chest radiation therapy before 30 years of age or within the past eight years.

What's new ?

- Harms of Screening (Overdiagnosis)
  - *C. Baines, To T, Miller A. 2016*
- Women's values and preferences for screening
- Conditional versus weak recommendations
- Emphasis on Shared-decision making (SDM)

"All screening programs do harm...
... some do good as well."

-Sir Muir Gray

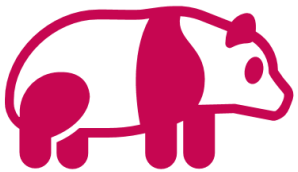


Overdiagnosis leading to overtreatment: important harm of medicine

Not all cancers behave the same

Turtles move too slowly to ever be dangerous and don’t need treatment

Birds are so fast, you’ll never catch them. Too late to try treatment



Bears are dangerous, but move slowly enough that you can catch them

Overdiagnosis and breast cancer screening

- Cancer that would not have been noticed or caused harm if not detected through screening
- Unnecessary over/treatment: surgery, chemotherapy, radiation, lifetime Dx cancer
- 25-year update CNBSS (2016) proportion of overdiagnosed cancers higher among younger women 40-49 years (48% of cancer diagnoses) versus 50-59 years (5% of cancer diagnoses)

Overdiagnosis occurs when …

Screening mammogram is positive for breast cancer, but no cancer is actually present

Death from breast cancer occurs despite screening detection and management

Breast cancer is detected by screening that would not have caused symptoms or harms over a woman's lifetime

All of the above.

Women's values and preferences VARY

40-49 years: When informed (harms benefits for age) Many would choose not to screen but some would choose screening

50-69 years: When informed (harms benefits for age) Most would choose screening (but some would not)

Benefits and Harms (Low Certainty)

Benefits

- Reduced Breast Cancer Mortality
- Modest benefit women 50 to 74 yrs
- Absolute benefit lowest for younger women 40-49 yrs

Harms

- Overdiagnosis and false-positives more common in younger women (40-49 yrs)

Net balance:

Less favourable for women 40 to 49 yrs

Recommendations: breast cancer screening

Women aged 40 to 49 years

Conditional *Recommendation against mammography screening*

Women aged 50 to 74 years

Conditional *Recommendation in favour of mammography screening ever 2-3 years*

Conditional recommendations

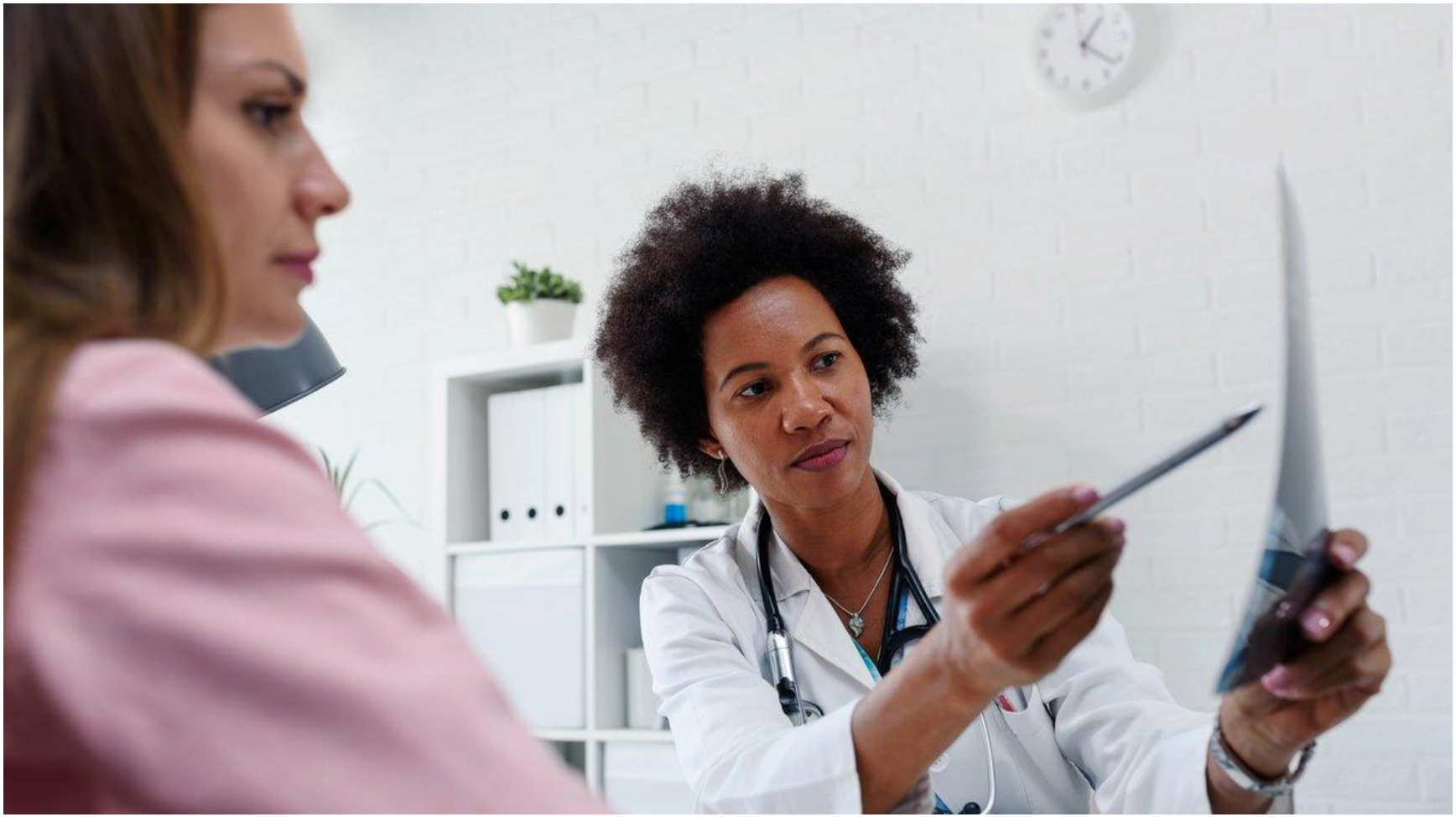
Why Conditional?

- Narrow margin between harms and benefits
- Varied values and preferences

Shared Decision Making (2 steps)

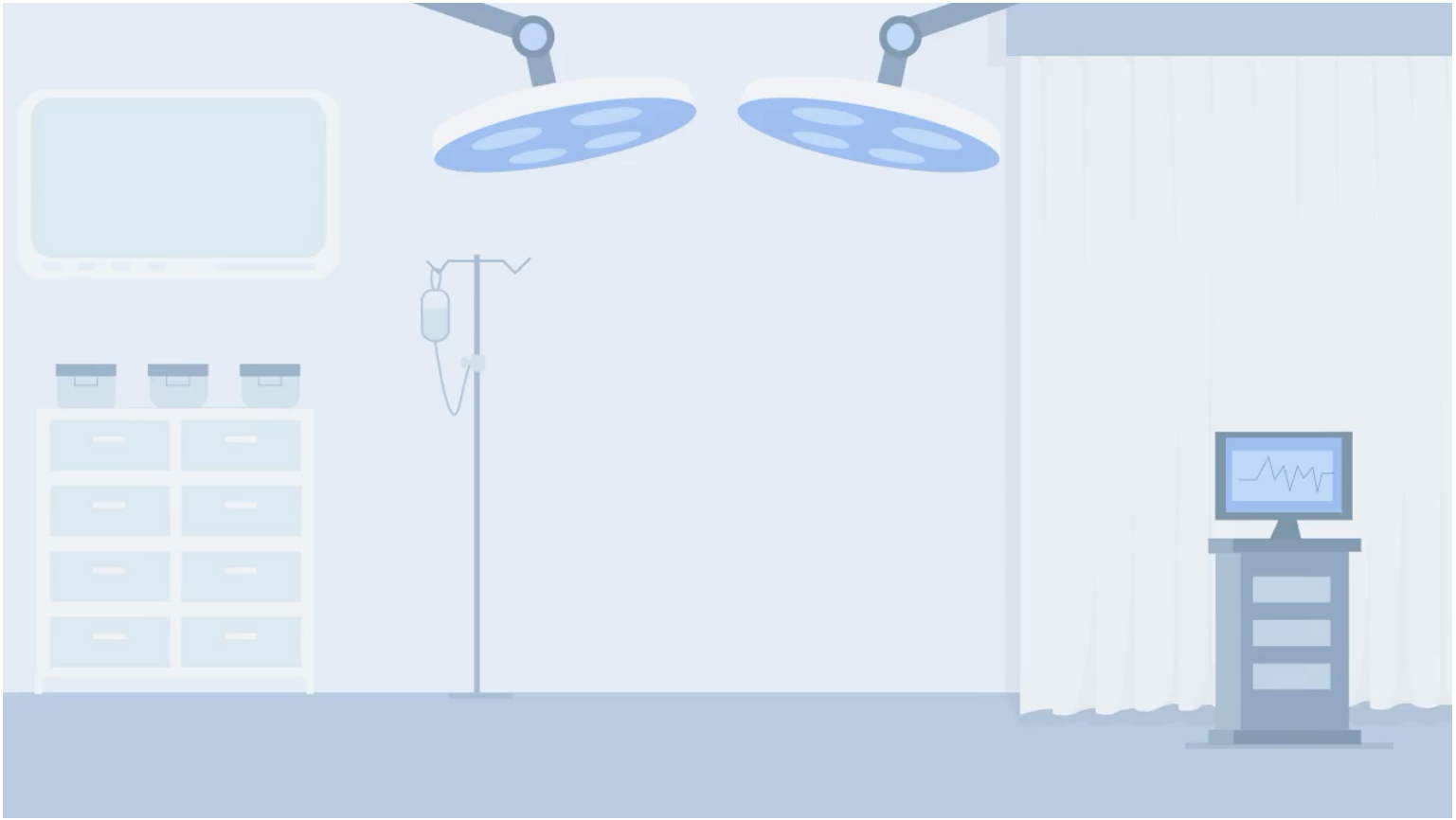
1) Inform harms and benefits
2) Understand priorities (harms relative to benefits) impact on decision to screen

Shared-decision making



Tools for shared decision making

French and **English** tools: http://canadiantaskforce.ca



Screening for lung cancer in smokers (2016)

CMAJ GUIDELINES CME

Recommendations on screening for lung cancer

Gabriela Lewin, Kate Morissette, James Dickinson, Neil Bell, Maria Bacchus, Harminder Singh, Marcello Tonelli, Alejandra Jaramillo Garcia

Canadian Task Force on Preventive Health Care*

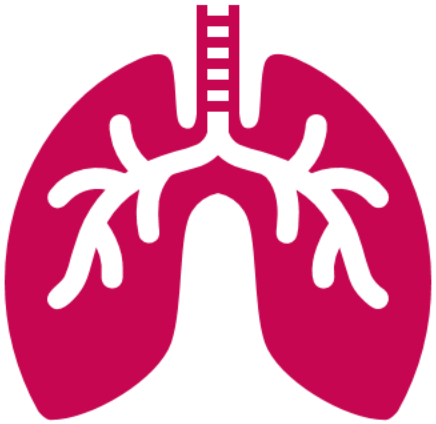
CMAJ Podcasts: author interview at https://soundcloud.com/cmajpodcasts/151421-guide

Lung cancer is the most common cause of cancer-related deaths and the most commonly diagnosed cancer among Canadians — an estimated 26 600 Canadians were diagradiography.[6] Ongoing trials of screening with low-dose CT[7–10] are expected to provide more evidence on the effectiveness of screening for lung cancer with low-dose CT. The current recommendations

Competing interests: None declared.

This article has been peer reviewed.

Background: lung cancer



- Most common cause of cancer mortality in Canada
- Incidence of lung cancer currently higher in men than women
- More than 85% of incident cases related to smoking tobacco. Greatest risk for those with heavy smoke history
- About 44% of Canadians are current or former smokers.

Canadian Tobacco Use Monitoring Survey 2012 Health Canada
Canadian Cancer Society Advisory Committee Statistics 2015

Scope

For primary care providers on screening adults between 55 and 74 yrs of age who have at least a 30 pack-year smoking

Applies to current smokers or those who quit smoking within the past 15 yrs

Benefits and Harms (Low Certainty)

Benefits

- 3 fewer lung cancer deaths per 1000 screened (3 annual scans over 6.5 years)

Harms of LDCT

- High rate of false positives (36%), major complications/ death from invasive follow up testing (0.3% and 0.06%), and overdiagnosis (11-26%).

Recommendation: LDCT

- Annual screening adults 55 to 74 yrs LDCT up to three consecutive times
- **Screening should ONLY be done in health care settings with access to expertise in early diagnosis and treatment of lung cancer.**

Weak (Conditional) recommendation:
low certainty evidence.

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Recommendation: CXR

- We recommend chest x-ray (with or without sputum cytology) **not** be used to screen for lung cancer**.**

Strong recommendation:
low certainty evidence.

Values and preferences:
Lung cancer screening

Most high risk patient groups (smokers) high willingness to screen

Potential barriers: Inconvenience, negative prior experiences with health care workers or settings

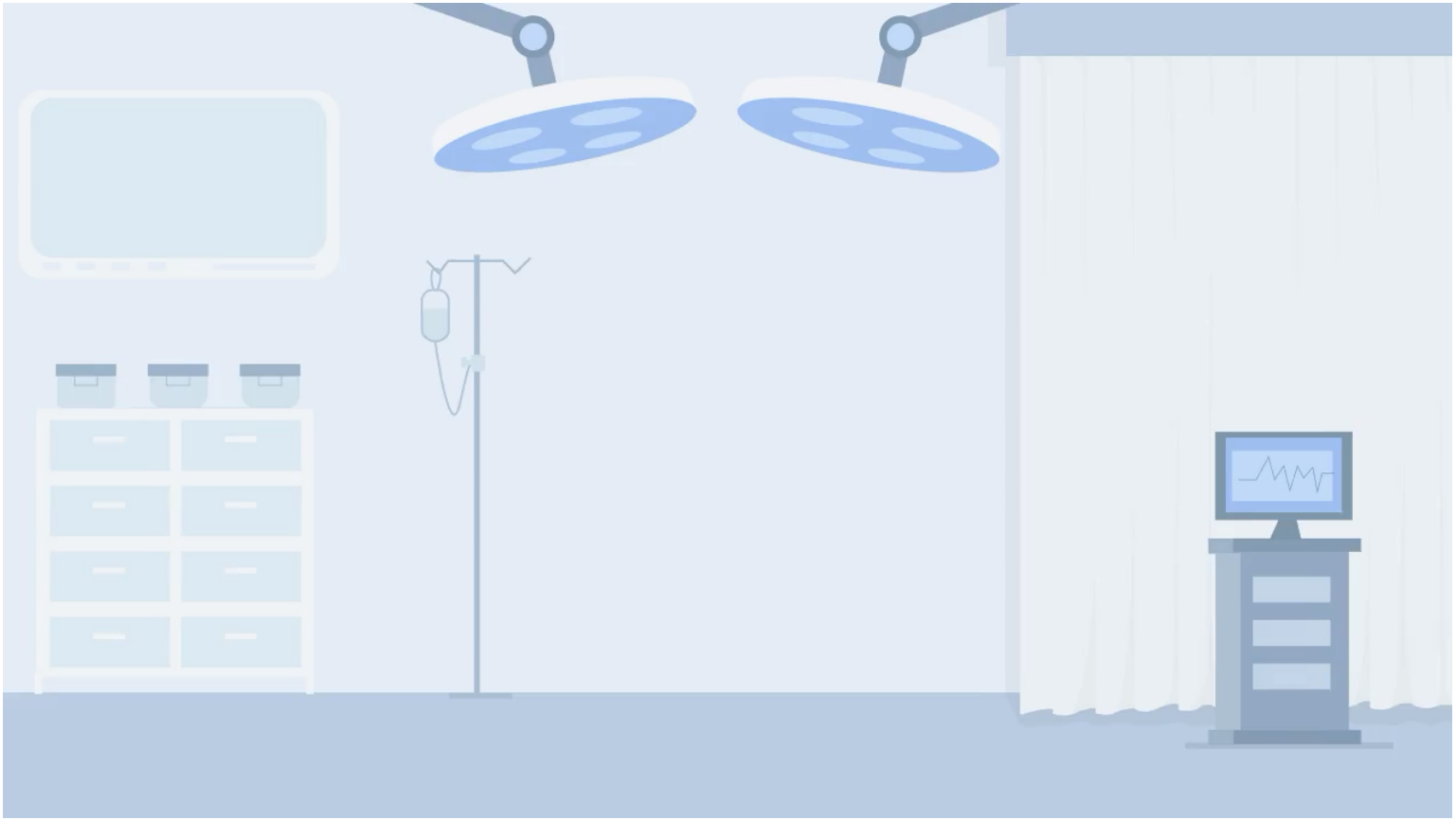
Focus group (n=12) participants agreed with the recommendations, some concerns with access to LDCT scans across Canada.

Key Points: Lung Cancer

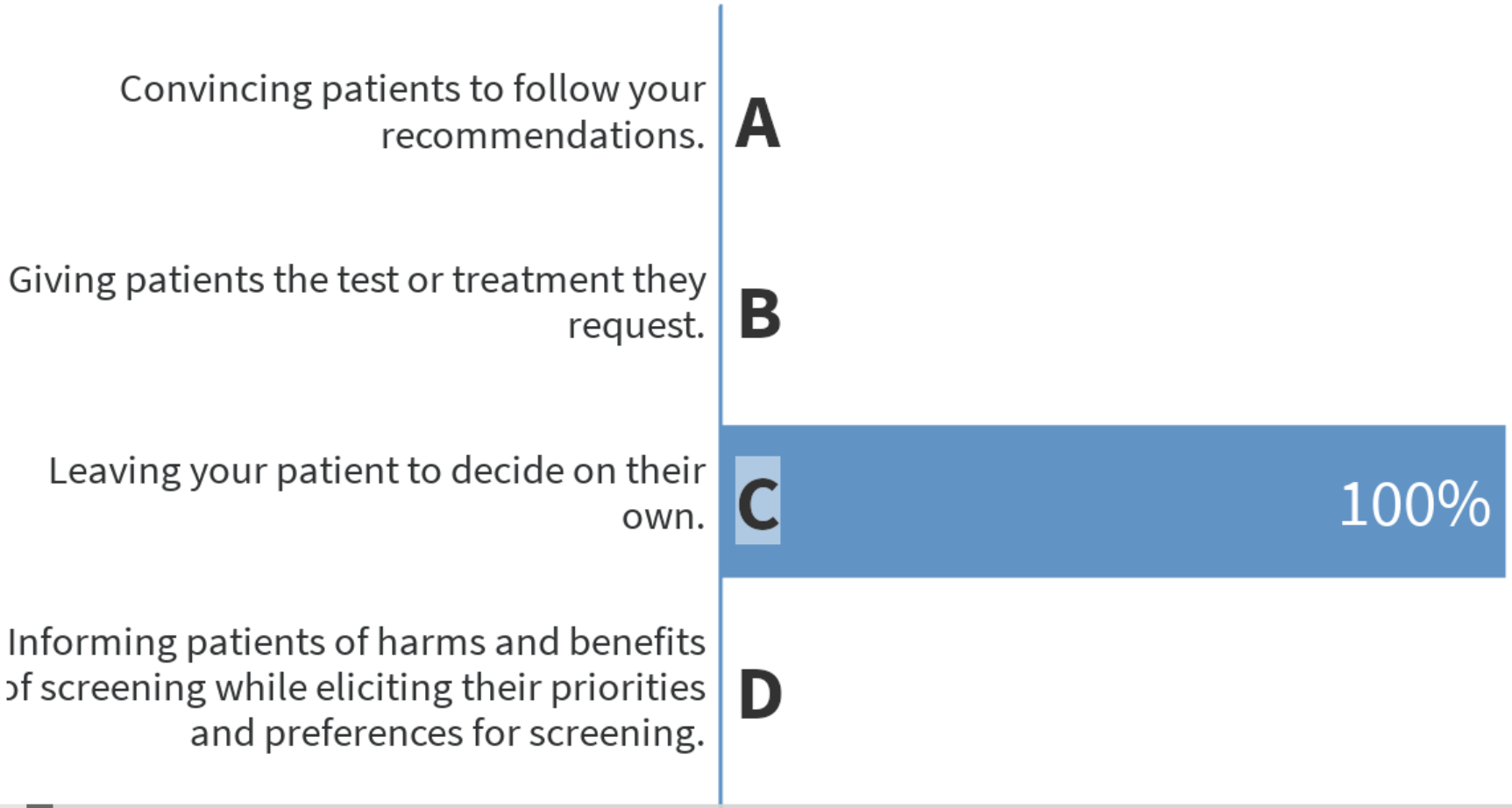
- **A weak (conditional) recommendation (Shared Decision Making)**

  MDs should discuss *benefits and harms* of screening for lung cancer with LCDT (including false positives, side effects of invasive follow up testing, and overdiagnosis)

Support for Shared Decision Making: Lung Cancer



What is shared decision making in preventive screening?



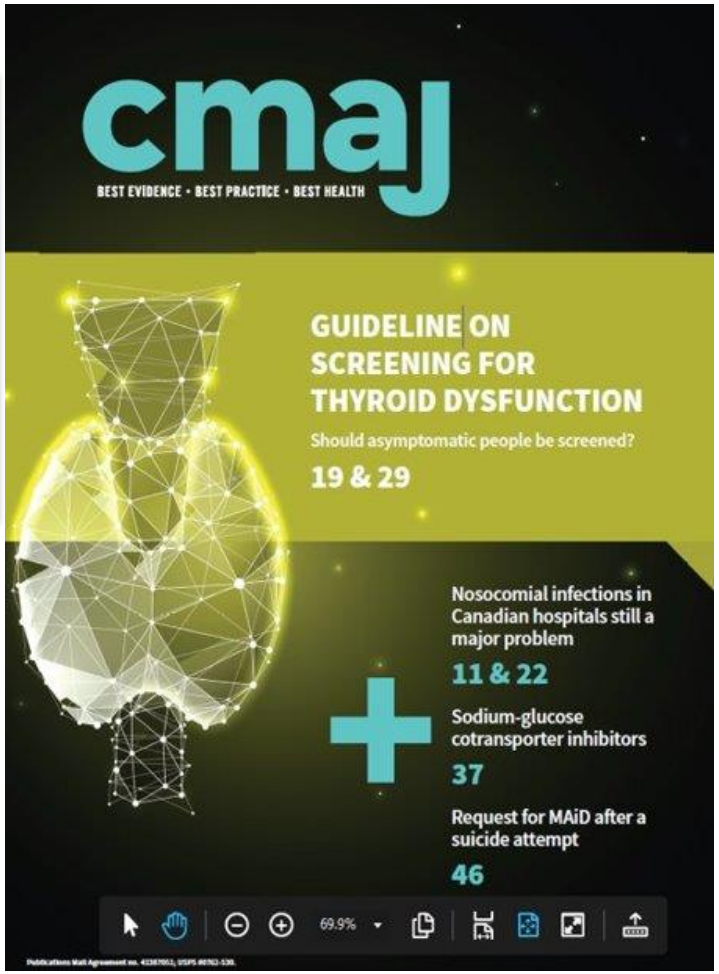
Screening for thyroid dysfunction

GUIDELINE HEALTH SERVICES CPD

Recommendation on screening adults for asymptomatic thyroid dysfunction in primary care

Richard Birtwhistle MD MSc, Kate Morissette MSc, James A. Dickinson MBBS, Donna L. Reynolds MD MSc, Marc T. Avey PhD, Francesca Reyes Domingo MHSc, Rachel Rodin MD, Brett D. Thombs PhD; for the Canadian Task Force on Preventive Health Care

Cite as: *CMAJ* 2019 November 18;191:E1274-80. doi: 10.1503/cmaj.190395



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Background

- About 10% of Canadians aged 45 years and older have thyroid dysfunction
- 37-62% of initially low TSH reverts to normal (no Rx)
- Higher prevalence in women (16%) than men (4%)

Diez et al. 2004 *J Clin Endocrinol Metab*

Stats Can: Healthy indicators by age group

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Scope

For primary care providers: screening for thyroid dysfunction in asymptomatic non-pregnant adults.

Not for people:

- Previously diagnosed thyroid disease or surgery
  - Exposure to thyroid medications or medications affecting thyroid function
  - Exposure to thyroid radioiodine head/neck radiotherapy
  - Pituitary of hypothalamic disease

Benefits (Low Certainty)

Benefits

- No Screening Studies
  - Mortality all-cause or CVD,
  - cognitive function
  - fractures
  - QoLBMD
  - Weight change
  - Cholesterol

Harms (Low Certainty)

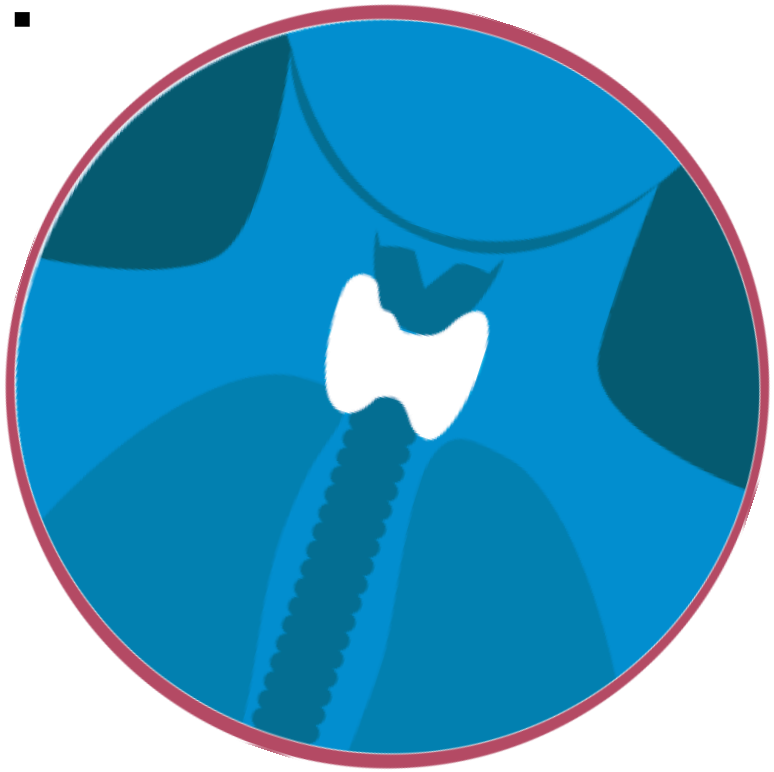
Harms

- Harms of Treatment (No difference):
  - Adverse events, affects, symptoms

- Potential harms
  - Diagnosis of transient thyroid dysfunction (over detection)
  - Unnecessary treatment
  - Resource consumption:
    - Follow-up testing
    - Long-term monitoring
    - Treatment

Recommendation:

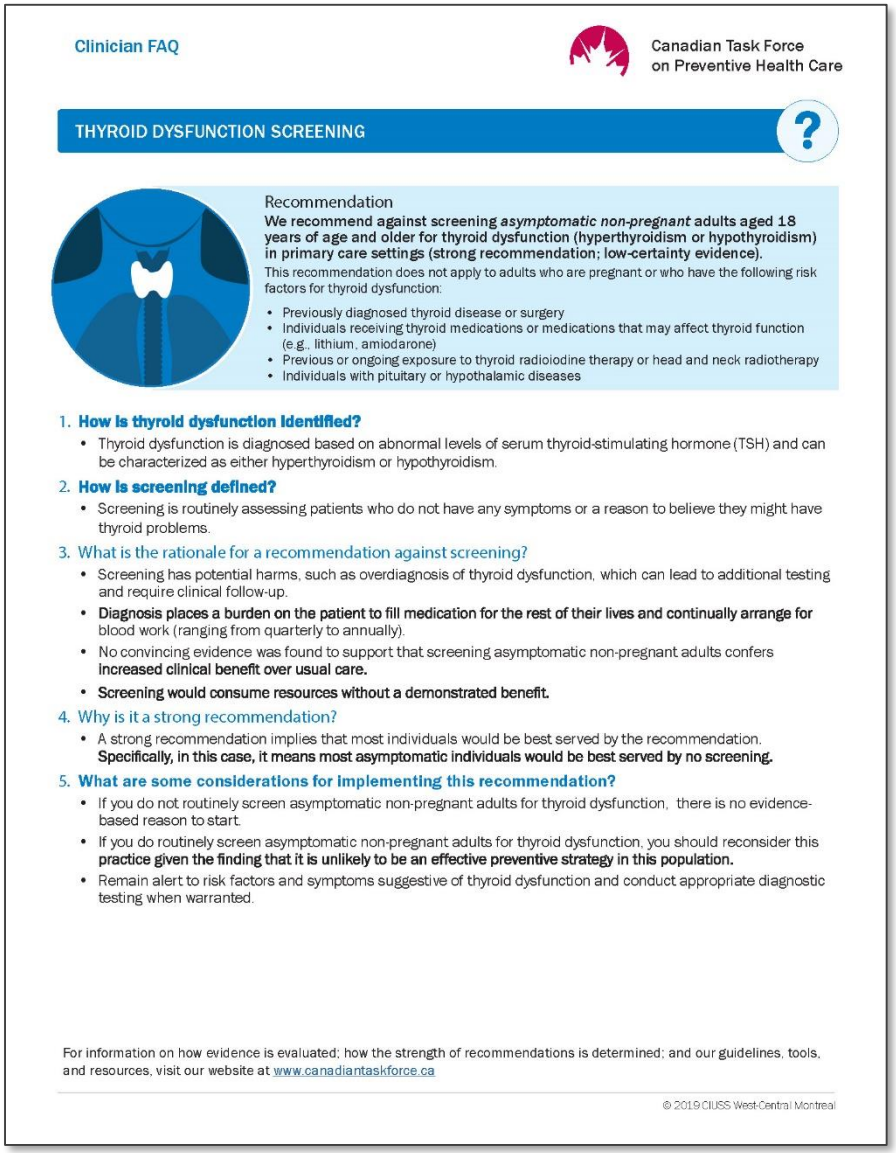
- We recommend ***against*** screening for thyroid dysfunction among asymptomatic non-pregnant adults aged 18 years and older



Strong recommendation:
low certainty evidence.

Thyroid Recommendation in practice

- **Clinician FAQ: Freely available** to download in **French** and **English** at: www.canadiantaskforce.ca



Clinician FAQ

Canadian Task Force on Preventive Health Care

THYROID DYSFUNCTION SCREENING

Recommendation

We recommend against screening *asymptomatic non-pregnant* adults aged 18 years of age and older for thyroid dysfunction (hyperthyroidism or hypothyroidism) in primary care settings (strong recommendation; low-certainty evidence).

This recommendation does not apply to adults who are pregnant or who have the following risk factors for thyroid dysfunction:

- Previously diagnosed thyroid disease or surgery
- Individuals receiving thyroid medications or medications that may affect thyroid function (e.g., lithium, amiodarone)
- Previous or ongoing exposure to thyroid radioiodine therapy or head and neck radiotherapy
- Individuals with pituitary or hypothalamic diseases

1. **How is thyroid dysfunction identified?**
   - Thyroid dysfunction is diagnosed based on abnormal levels of serum thyroid-stimulating hormone (TSH) and can be characterized as either hyperthyroidism or hypothyroidism.
2. **How is screening defined?**
   - Screening is routinely assessing patients who do not have any symptoms or a reason to believe they might have thyroid problems.
3. What is the rationale for a recommendation against screening?
   - Screening has potential harms, such as overdiagnosis of thyroid dysfunction, which can lead to additional testing and require clinical follow-up.
   - **Diagnosis places a burden on the patient to fill medication for the rest of their lives and continually arrange for** blood work (ranging from quarterly to annually).
   - No convincing evidence was found to support that screening asymptomatic non-pregnant adults confers **increased clinical benefit over usual care.**
   - **Screening would consume resources without a demonstrated benefit.**
4. Why is it a strong recommendation?
   - A strong recommendation implies that most individuals would be best served by the recommendation. **Specifically, in this case, it means most asymptomatic individuals would be best served by no screening.**
5. **What are some considerations for implementing this recommendation?**
   - If you do not routinely screen asymptomatic non-pregnant adults for thyroid dysfunction, there is no evidence-based reason to start.
   - If you do routinely screen asymptomatic non-pregnant adults for thyroid dysfunction, you should reconsider this **practice given the finding that it is unlikely to be an effective preventive strategy in this population.**
   - Remain alert to risk factors and symptoms suggestive of thyroid dysfunction and conduct appropriate diagnostic testing when warranted.

For information on how evidence is evaluated; how the strength of recommendations is determined; and our guidelines, tools, and resources, visit our website at www.canadiantaskforce.ca

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Social Media

CTFPHC | GECSSP @cantaskforce · Nov 20

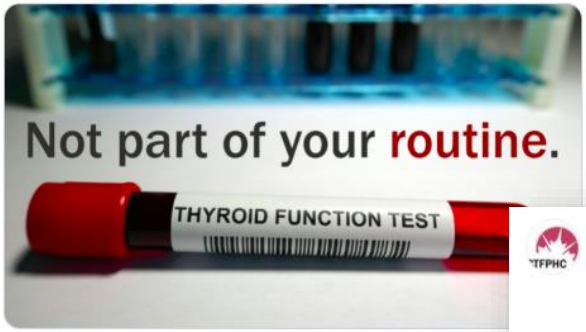
Clinicians

Do not routinely order TSH in all patients.

See why in the latest guideline for #thyroid #screening asymptomatic adults:

ow.ly/VDpM50xcjul

#endocrinology #CMAJ #overdiagnosis #primarycare #overtreatment @CMAJ



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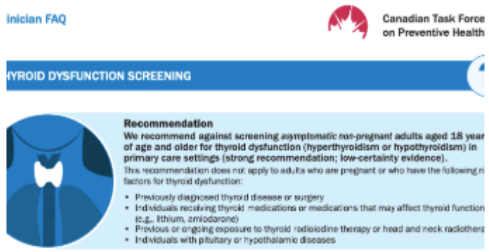
Nov 28, 2019

If you:
✖ Have no symptoms
✔ Are over 18 years old
✖ Have no history of thyroid disorder or risk factors

Routine #thyroid #screening is not needed.

See the FAQ and Tools ow.ly/h5Br50xmNjg

#endocrinology #overdiagnosis #overtreatment



CTFPHC | GECSSP @cantaskforce · Nov 25

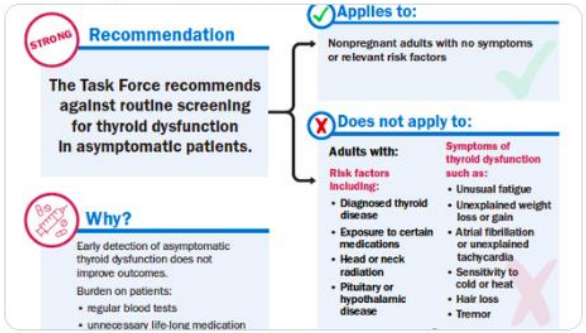
You have questions?

We've got answers.

Here is a helpful infographic for #clinicians and #primarycare providers on #thyroid #screening.

ow.ly/o66p50xjq0T

#endocrinology #overdiagnosis #prevention



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CTFPHC | GECSSP
@cantaskforce

#Overtreatment & #overdiagnosis place unfair burdens on patients such as:
regular blood tests
unnecessary life-long medication

Clinicians:
Do not routinely order TSH in all patients

#primarycare #screening #Thyroid

@UCalgaryFamMed @UCalgary

Dr. James Dickinson
MBBS, CCFP, PhD, FRACGP, FAFPHM(RACP)
Task Force Alumnus
Faculty of the University of Calgary

"Screening only benefits patients if early diagnosis changes important outcomes such as an irreversible disease. In the case of thyroid dysfunction, we should treat problems when they occur, not medicalize otherwise healthy people."

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Resources

- Canadian Task Force for Preventive Health Care
  http://canadiantaskforce.ca
- Patient education video overdiagnosis
  https://www.youtube.com/watch?v=IKbynLn__r4
- Follow us on Twitter @cantaskforce
- Shared-decision making tools
  https://decisionaid.ohri.ca/implement.html
- Questions?
  amoore@mcmaster.ca

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Fini, Merci

Putting Prevention into Practice

Question 4:

Which of the following strategies would not support discussions when a patient requests a test that is strongly recommended against?

A) Aligning and understanding their rationale

B) Assessing for risk factors that would warrant unadvised testing

C) Explain why the test is not warranted (no benefit, possible harm)

D) Engage in Shared Decision Making

Dense Breasts – Screening for Cancer

Prevalence: Women with dense breast tissue form a significant proportion of women - this means it is reasonable to conclude findings from the RCTs apply to women with dense breasts.

Definition: Women's breast density changes over time and from one assessor to the next.

- A review conducted for the USPSTF:
- One in five women would be re-categorized into a different density category by the same radiologist at the next screening
- One in three would be categorized differently if it were read by a different radiologist.

Adjunctive Screening: There is no evidence that adjunctive screening for women with dense breasts has a positive impact on their health outcomes.

ORIGINAL ARTICLE

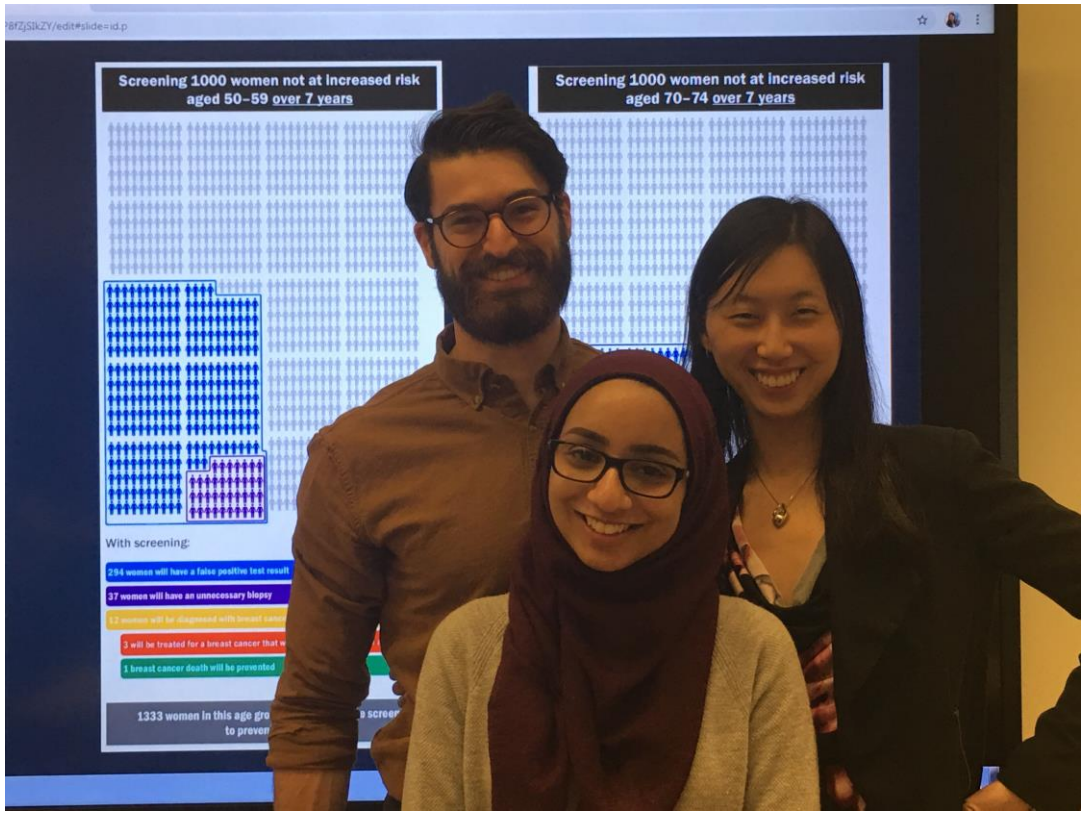
Supplemental MRI Screening for Women with Extremely Dense Breast Tissue

Marije F. Bakker, Ph.D., Stéphanie V. de Lange, M.D., Ruud M. Pijnappel, M.D., Ph.D., Ritse M. Mann, M.D., Ph.D., Petra H.M. Peeters, M.D., Ph.D., Evelyn M. Monninkhof, Ph.D., Marleen J. Emaus, Ph.D., Claudette E. Loo, M.D., Ph.D., Robertus H.C. Bisschops, M.D., Ph.D., Marc B.I. Lobbes, M.D., Ph.D., Matthijn D.F. de Jong, M.D., Katya M. Duvivier, M.D., et al., for the DENSE Trial Study Group*

November 28, 2019
N Engl J Med 2019; 381:2091-2102

The dilemma remains will we be putting women with very dense breasts at increased risk of procedures without contributing to their eventual survival?

Peer to Peer: Family Medicine residents teaching SDM



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ANSWERS TO ADDITIONAL QUESTIONS

Screening for Breast Cancer

Putting Prevention into Practice

Why don’t you have recommendations for women with dense breast tissue?

- Women with dense breast tissue form a significant proportion of women - this means it is reasonable to conclude findings from the RCTs apply to women with dense breasts.
- Women’s breast density changes over time and from one assessor to the next.
  - A review conducted for the USPSTF
  - One in five women would be re-categorized into a different density category by the same radiologist at the next screening
  - One in three would be categorized differently if it were read by a different radiologist.
- There is no evidence that adjunctive screening for women with dense breasts has a positive impact on their health outcomes.

Screening women with dense breast tissue

Summary of information from USPSTF guideline (2016):

- Approximately 43% of women aged 40 to 74 years in the US classified as having dense breasts.
- Compared with women with average breast density these women have an RR of 1.23 to 1.30 of developing breast cancer depending on age.
- Women with dense breast tissue do not have an increased risk of dying following diagnosis of breast cancer according to data from the US.
- Reclassification of breast density status from year to year complicates a woman's assessment of her underlying breast cancer risk.
- Adjunctive screening following a negative mammogram results in:
  - Unknown health benefits
  - Most positive results are false positives leading to increased recalls and biopsy rates
  - Unknown effects on overdiagnosis rates

No screening guidelines from other jurisdictions recommend adjunctive screening of women with dense breast tissue following a negative screening mammogram.

Recommendations on other screening modalities, apart from mammography, for breast cancer screening:

- *We recommend not using MRI, tomosynthesis or ultrasound to screen for breast cancer in women not at increased risk. (**Strong** recommendation; no evidence)*
- *We recommend not performing clinical breast examinations to screen for breast cancer. (**Conditional** recommendation; no evidence)*
- *We recommend not advising women to practice breast self-examination to screen for breast cancer. (**Conditional** recommendation; low-certainty evidence)*

Evidence on Other Breast Cancer Screening Modalities (Barbeau et al 2017)

- Breast self examination
  - No difference in breast cancer mortality
- Clinical breast examination
  - No evidence meeting criteria of effectiveness for breast cancer screening
- Other screening modalities (including tomosynthesis, MRI and ultrasound)
  - No evidence meeting criteria of effectiveness for breast cancer screening

Why are you using the RCTs conducted many years ago rather than more recent observational evidence?

- From a GRADE perspective RCTs provide greater certainty of evidence - this means observational studies are not included when RCTs are available.
- Observational studies are subject to important biases that limit their use in determining effectiveness of an intervention; most importantly, they lack comparability of groups that is only attainable through randomization
- Inclusion of observational studies in evidence is unlikely to substantively modify the evidence base or conclusions drawn.

Isn’t overdiagnosis an issue of pathology rather than screening?

- Overdiagnosis from a screening perspective is the identification and subsequent treatment of asymptomatic women for breast cancer that may never have caused them any problem in their lifetime.
- In this situation, finding a cancer that is never going to cause a problem is harmful as it leads to unnecessary treatment with significant sequelae including unnecessary surgery, radiotherapy, chemotherapy, pain, disfigurement, distress and other adverse outcomes.
- We know overdiagnosis occurs as the rate of breast cancer among screened populations remains higher than unscreened over decades (the two numbers should become closer over time in the absence of overdiagnosis)
- We also know that screening results in higher numbers of women with breast cancer without decreasing the diagnoses of advanced breast cancers in screened populations.

Evidence Screening Benefit Breast Cancer Mortality

- Women 50 to 69 yrs modest reduction (0.75 fewer/1000 screened, NNS=1333
- Women 70 to 74 yrs modest reduction (1.55 fewer/1000 sceened, NNS= 1389
- Women 40 to 49 yrs lowest absolute benefit (0.58 fewer/1000 screned, NNS = 1726