Cognitive Impairment - Guideline Presentation

Speaker deck

OVERVIEW

We will review the following:

1. Background on Cognitive Impairment
2. Methods of the CTFPHC
3. Recommendations and Key Findings
4. Implementation of Recommendations
5. Conclusions
6. Questions and Answers

CTFPHC BACKGROUND

CTFPHC Working Group Members:

The Cognitive Impairment Working Group included members from the Canadian Task Force on Preventive Health Care (CTFPHC), the Public Health Agency of Canada (PHAC) and the Evidence Review Synthesis Centre (ERSC) at McMaster University.
Task Force Members:

- Kevin Pottie (Chair)
- Richard Birtwhistle
- Marcello Tonelli
- Maria Bacchus
- Neil Bell
- Brett Thombs

Public Health Agency of Canada:

- Alejandra Jaramillo *

Evidence Review and Synthesis Centre:

- Donna Fitzpatrick-Lewis *
- Rachel Warren *

*non-voting member

COGNITIVE IMPAIRMENT: OVERVIEW

Background

Cognitive impairment occurs on a continuum that includes aging related cognitive decline, mild cognitive impairment (MCI), and dementia. Studies from the United States have reported prevalence of MCI ranging from 9.9% to 35.2% for adults aged 70 or older. The incidence of dementia in Canadian adults aged 65 to 79 years is 43 per 1000 persons and rises with age (to 212 per 1000 in Canadians aged 85 and older). Available treatments for cognitive impairment include medications (e.g., cholinesterase inhibitors), dietary supplements/vitamins and non-pharmacological interventions.

SCREENING TOOLS FOR COGNITIVE IMPAIRMENT

The CTFPHC examined three different screening tools for assessing cognitive impairment. The Mini Mental State Examination (MMSE) is a 30-point questionnaire scored out of 30, with cut points varying based on age and education level (cognitive impairment = below 23). This questionnaire is available only with a fee ($68.00 US for 50 test forms).

The Montreal Cognitive Assessment (MoCA) is a quick test that assesses different cognitive domains free for charge. The test is scored out of 30 and provides interpretive guideline for scores between 18-26 (mild cognitive impairment), 10-17 (moderate cognitive impairment), and less than 10 (severe impairment).

The Alzheimer's disease Assessment Scale cognitive subscale (ADAS-Cog) is a test that takes 45 minutes to administer and is often used in clinical trials. It consists of 11 tasks measuring disturbances of memory, language, praxis, attention and other cognitive abilities.

COGNITIVE IMPAIRMENT 2015 GUIDELINES

This guideline provides recommendations for practitioners on preventative health screening in a primary care setting. This guideline applies to screening asymptomatic community dwelling adults ≥65 years for cognitive impairment. This guideline does not apply to men and women, who are concerned about their cognitive performance, are suspected of having cognitive impairment by clinicians, family or friends, or who have symptoms suggestive of cognitive impairment (e.g., loss of memory, language, attention, visuospatial, or executive functioning, or behavioural or psychological symptoms).

Screening for Cognitive Impairment

METHODS OF THE CTFPHC

The CTFPHC is an independent panel of clinicians and methodologists with expertise in prevention, primary care, literature synthesis, and critical appraisal. The mandate of the CTFPHC is to apply the latest evidence in preventive health care research to primary care practice and policy across Canada.
The Cognitive Impairment Working Group is composed of 6 CTFPHC members who work with PHAC science officers to establish the guidelines research questions and analytical framework.

The Evidence Review and Synthesis Centre (ERSC) at McMaster University independently undertakes a systematic review of literature based on this analytical framework, and prepares a systematic review of the evidence with GRADE tables. The ERSC may consult with field experts during this process and participates in working group and CTFPHC meetings.

CTFPHC Review Process

The CTFPHC review process is composed of an (i) internal review process and an (ii) external review process. The internal review process involves the guideline working group, the full CTFPHC, PHAC science officers and ERSC staff.

The external review process involves review of the guidelines by key stakeholders from generalist and disease specific organizations, federal, provincial and territorial stakeholders. The Canadian Medical Association Journal (CMAJ), where most of the CTFPHC guidelines are published, undertakes its own independent peer review journal process.

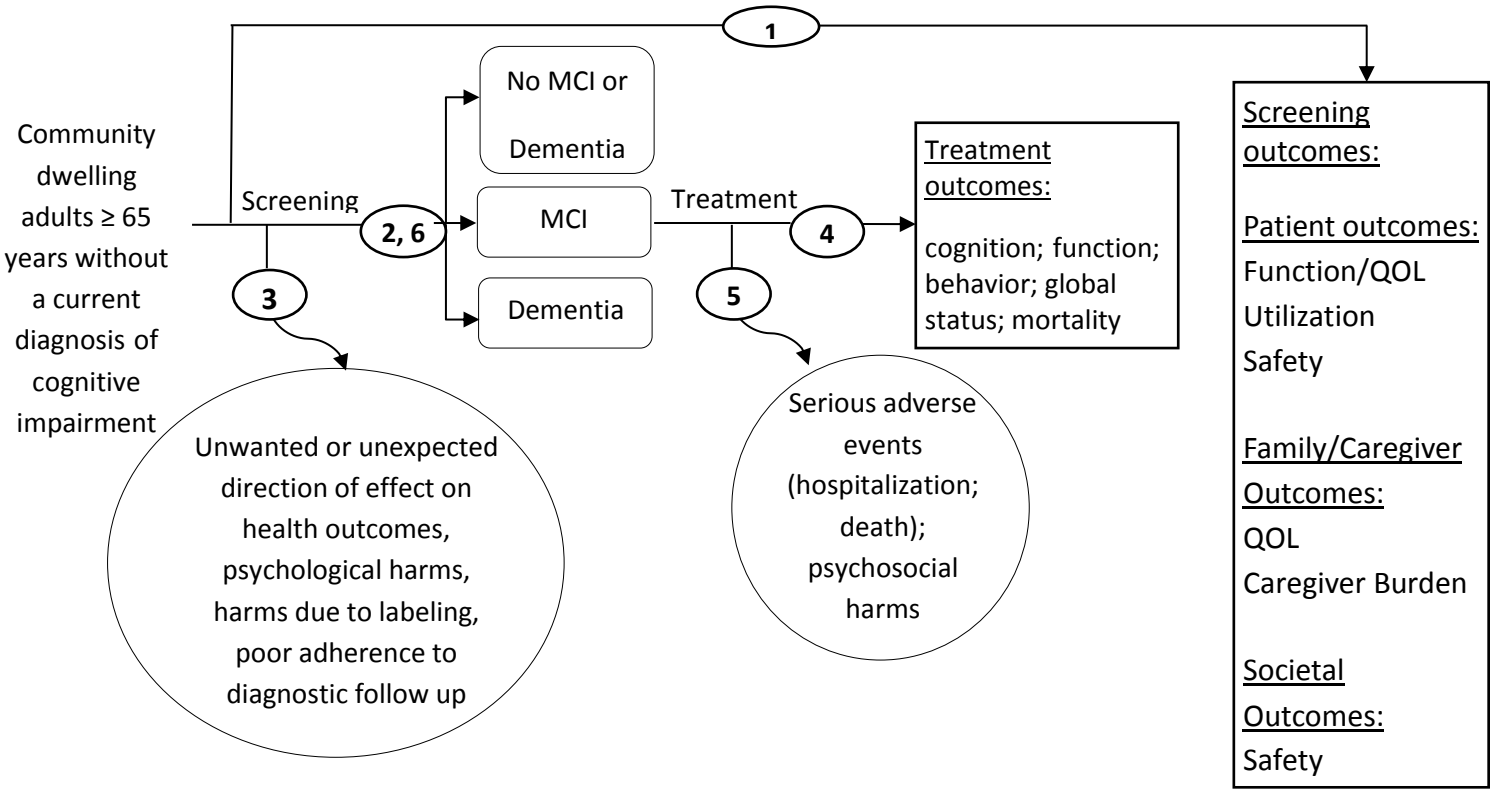
Research Questions

The systematic review for screening for cognitive impairment included 2 key research questions (no sub-questions) and 4 supplemental or contextual questions.

The systematic review for the treatment of mild cognitive impairment included 6 key research questions with 4 sub-questions and 6 supplemental or contextual questions.

For more detailed information please access the systematic review
www.canadiantaskforce.ca

ANALYTICAL FRAMEWORK: SCREENING



The analytical framework outlines the scope of the evidence review and guideline recommendations. The purpose of the analytical framework is to show practicing physicians what the guideline includes and does not include and to visually display the relationship between the key concepts.

This guideline applies to community dwelling adults aged 65 years or older without a current diagnosis of cognitive impairment. As outlined in the analytical framework, this guideline looks at the impact of both screening and treatment on primary outcomes (e.g., cognition, function, QOL) as well as associated adverse effects (e.g., psychosocial harms such as labeling, hospitalization or death).

ELIGIBLE STUDY TYPES

The primary population of interest for the cognitive impairment screening guideline was community dwelling older adults aged 65 years of older who do not have symptoms suggestive of cognitive impairment (such as loss of memory, language, attention, visuospatial, or executive functioning, or behavioural psychological symptoms) and who

are not suspected of having cognitive impairment by clinicians or non-clinicians such as family or friends.

The studies included were in English and in French.

Studies on the treatment of mild cognitive impairment were restricted to randomized control trials (RCTs) with at least 6 months of follow-up data from baseline. Patient important outcomes and the scales used to measure such outcomes were based on those selected and prioritized by Canadian clinicians and policymakers.

GRADE METHODOLOGY

The CTFPHC utilizes the GRADE system for providing clinical practice guideline recommendations based on a systematic review of the available evidence. The **GRADE** acronym stands for: **G**rading of **R**ecommendations, **A**ssessment, **D**evelopment and **E**valuation.

The GRADE system is composed of two main components:

1. **The quality of the evidence**: The quality of the evidence measures the degree of confidence that the available evidence correctly reflects the theoretical true effect of the intervention or service. It is graded as high, moderate, low or very low based on how likely further research is to change our confidence in the estimate of effect.
2. **The strength of recommendation:** The strength of the recommendation (strong/weak) is based on the quality of supporting evidence, the degree of uncertainty about the balance between desirable and undesirable effects, the degree of uncertainty or variability in values and preferences, and the degree of uncertainty about whether an intervention represents a wide use of resources.

GRADE: How is the strength of the recommendations graded?

The strength of the recommendations (strong or weak) is based on four factors:

1. The quality of the supporting evidence
2. The certainty about the balance between desirable and undesirable effects
3. The certainty or variability in the values and preferences of individuals
4. The certainty about whether the intervention represents a wise use of resources

Interpretation of Recommendations

Implications	Strong,Recommendation	Weak,Recommendations
For patients	Most individuals would want the recommended course of action; Only a small proportion would not.	The majority of individuals in this, situation would want the suggested course of action but many would not.
For clinicians	Most individuals should receive the intervention.	Recognize that different choices will be appropriate for individual patients; Clinicians must help patients make management decisions consistent with values and preferences.
For policy makers	The recommendation can be adapted as, policy in most situations.	Policy making will require substantial debate and involvement of various stakeholders.

This is a standard GRADE table which outlines how weak or strong recommendations should be interpreted and implemented by different groups or stakeholders. It is important to consider the strength of the recommendations when interpreting the Task Force guidelines for implementation in clinical practice, for policy, or for patients in decision making.

RECOMMENDATIONS & KEY FINDINGS

Screening for Cognitive Impairment

1. We recommend not screening asymptomatic adults **(≥** 65 years of age) for cognitive impairment (Strong recommendation; low quality evidence).

   Basis of the recommendation: The CTFPHC based this recommendation on the findings of the lack of high quality studies evaluating the benefits and harms of screening for cognitive impairment and the lack of effective treatment for mild cognitive impairment. When screening for cognitive impairment in asymptomatic populations most cases detected would likely be MCI therefore the task force focused on examining the effectiveness of treatment in this population. .

Efficacy of Screening Tools

Up to 1 out of 7 people screened with the MMSE will be falsely identified as having dementia and 1 out of 8 will be falsely identified as having MCI. One out of every four people screened with the MoCA will be incorrectly identified as having MCI. Diagnostic accuracy was not reported for the ADAS-Cog as this tool is typically used in research settings (not in primary care).

Benefits of Treatment for MCI on Cognition: Effect measured with ADAS-Cog

This table presents data on the impact of different types of treatment interventions for mild cognitive impairment on cognition (using the ADAS-Cog screening test). The mean difference, number of treatment participants vs. control participants, number of studies and quality of studies were tracked to determine the overall change in cognition (presented as a standard mean difference) between treatment and control participants for each treatment intervention. No statistically significant effects were found for any of the treatment interventions. It is important to note that negative and positive effects are outcome measure dependent and that a decrease in score (negative values) indicates improvement.

Treatment Intervention	**Effect** Mean Difference (95% CI)	**No. Participants Treatment**	**No. Participants Control**	**No. Studies**	**Quality**
AChEIs	-0.33 (-0.73 to 0.06)*	2078	2110	4	Low
Donepezil	-0.60 (-1.35 to 0.15)*	632	637	2	Low
Rivastigmine	0 (-0.7987 to 0.7987)*	508	510	1	Low
Galantamine	-0.21 (-0.80 to 0.38)*	938	963	1	Low
Dietary Supplements	0.85 (-0.32 to 2.02)*	257	259	1	Low
Non-pharma	-0.60 (-1.44 to 0.24)*	47	45	1	Moderate

*Not statistically significant

Benefits of Treatment for MCI on Cognition: Effect measured with MMSE

This table presents data on the impact of different types of treatment interventions for mild cognitive impairment on cognition (using the MMSE screening test). The mean difference, number of treatment participants vs. control participants, number of studies and quality of studies were tracked to determine the overall change in cognition

(presented as a standard mean difference) between treatment and control participants for each treatment intervention. No statistically significant effects were found for any of the treatment interventions, with the exception of a small effect for non-pharmacological treatments. It is important to note that negative and positive effects are outcome measure dependent and that a decrease in score (negative values) indicates improvement.

Treatment Intervention	Effect Mean Difference (95% CI)	No. Participants Treatment	No. Participants Control	No. Studies	Quality
AChEIs	0.17 (-0.13 to 0.47)*	1140	1147	3	Low
Donepezil	0.24 (-0.19 to 0.66)*	632	637	2	Low
Rivastigmine	0.10 (-0.32 to 0.52)*	508	510	1	Low
Dietary Supplements	0.20 (-0.04 to 0.43)*	511	519	4	Low
Non-pharma	1.01 (0.25 to 1.77)	221	187	1	Moderate

*Not statistically significant

Harms and Benefits for Screening and Treatment

The CTFPHC found no high quality studies evaluating the harms and benefits of screening for cognitive impairment or any evidence demonstrating clinically meaningful benefits of treatment for mild cognitive impairment. Some possible harms related to screening could include the possibility of false positive results from use of the MoCA or MMSE, the cost of conducting unnecessary medical care, and the opportunity cost lost as practitioners could be spending their time instead on interventions that may have been proven to be effective.

Comparison of Screening for Cognitive Impairment Recommendations

Our recommendations on screening are consistent with those of other international guideline groups who recommend to not screen for cognitive impairment in asymptomatic adults including NICE (2011), BC Ministry of Health (2014) and USPSTF (2014).

IMPLEMENTATION OF RECOMMENDATIONS

Values and Preferences

The CTFPHC found that there was limited evidence available on the values and preferences of patients related to screening for cognitive impairment. One international study examined the willingness to be screened among first-degree relatives of persons with Alzheimer's disease and found that 32% were willing to be screening within the next year, 42% during the next 5 years and that there was a general willingness to obtain help to prepare for the future. Factors that influenced a participants' willingness to be screened included the cost of evaluation and time, dealing with a problem if there was one and planning for future treatments and planning for their life.

KT TOOLS

The CTFPHC creates KT tools to support the implementation of guidelines into clinical practice. A clinician FAQ has been developed for the cognitive impairment guideline After the public release, these tools will be freely available for download in both French and English on the website: www.canadiantaskforce.ca

Update: CTFPHC Mobile App Now Available

The app contains guideline and recommendation summaries, knowledge translation tools, and links to additional resources.

Key features include the ability to bookmark sections for easy access, display content in either English or French, and change the font size of text.

Update: CTFPHC on Social Media

- The CTFPHC is venturing into social media!
- A Twitter policy and strategy is currently being developed
- CTFPHC Twitter is expected to be released sometime in 2016
- Please check the CTFPHC website for updates: http://canadiantaskforce.ca/

CONCLUSIONS

The CTFPHC recommends physicians to remain alert when patient, family members or caregivers express concern about possible cognitive impairment and undertake appropriate diagnostic inquiry as warranted. There is a lack of direct evidence concerning the benefits of screening for cognitive impairment in asymptomatic adults and there is an absence of effective treatments for mild cognitive impairment. Finally, improved screening tools for mild cognitive impairment are needed as available

screening tools for mild cognitive impairment may incorrectly classify individuals as positive.

More information

For more information on the details of this guideline or to access the KT tools please refer to the evidence review in the resources section of the website www.canadiantaskforce.ca.