Mild Cognitive Impairment Resource Pathway

Last Revised: Feb 2011

The following pathway was developed by the Okanagan Dementia Sub Working Group (2009/2010) as part of ongoing development work on the IHA Dementia Pathway. This resource addresses the Mild Cognitive Impairment phase of the larger Dementia Pathway.

What is MCI? (Mild Cognitive Impairment)

Mild cognitive impairment (MCI) is frequently described as a "transition phase" of cognitive decline that can occur in some individuals between the cognitive changes associated with normal aging and cognitive losses identified in the early stages of various dementia.

MCI is a clinical construct used to identify "*evidence of a cognitive decline that is not normal for age and not fulfilling diagnostic criteria for dementia, which includes essentially normal functional activities (preserved basic activities of daily living and minimal impairment in complex instrumental activities of daily living)*".

The cognitive decline is evidenced by either self and/or informant (e.g., family, caregiver) report along with deficits on objective cognitive tasks, and/or evidence of decline over time detected by neuropsychological testing.

Purpose:

The purpose of this pathway is to provide physicians and other health care professionals with a simple and comprehensive one-stop resource access to evidence-based tools, clinical references and related local services to assist them with the identification, screening, assessment and care planning for their patients/families with and affected by MCI. Embedded within the pathway are links to key references, tools and related service program contacts.

This tool is NOT intended to function as a clinical algorithm, but rather a guiding pathway to help physicians and other health care professionals navigate the course of care for their patients and families with suspected or confirmed MCI.

It should also be noted that this tool should only be used in conjunction with appropriate clinical education, training and support. While intended to function as a resource suitable for any physician or health care professional, which aspects of the pathway are used by specific individual physicians or clinical staff will ultimately depend on that individual's training, professional role and own clinical confidence and competence. For example, some individuals may only ever use the "Index of Suspicion" part of this pathway, where others may use the full set of resources as they move from "Index of Suspicion" and see the course of care through to "Strategies and Actions".

If there are any questions regarding this tool, please contact:

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Interior Health

IHA Mild Cognitive Impairment – Resource Pathway

FINAL DRAFT
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Opportunistic Recognition "Index of Suspicion"

May Hear: *(often self-recognized)*

- "I have trouble finding the words."
- "I just don't seem to be able to think the same or as clearly."
- "My memory seems to be worse these days"
- "I can't seem to solve complex problems like I used to."
- "I'm having trouble developing a plan for myself and seeing it through."
- "I just don't really feel like myself. "
- "I've been feeling a bit low lately."

May Observe:

- Difficulty finding words; word-searching
- Needing things repeated or having to re-read information several times
- Fleeting glitches in short-term memory & delay in recall
- Trend of losing train of thought
- Normal alertness, attention, & orientation
- Visuospatial appears normal
- No apparent or reported functional impairments
- Loss of interest in usual activities

May Ask:

1.) Have you noticed any recent changes in your thinking or memory?
For example, have there been any recent times when you have missed an event or forgotten to do something?

2.) Do you have any concerns about those changes? *(Probe further with open-ended questions)*

3) Have you been feeling low or blue, or have you had a loss of interest in things?

Helpful Resources:
Physician Screening Q's | Patient Self Screening Q's | IHA Ethical Screener | Early Recognition of Cognitive Changes Recommendations | MCI Clinical Toolkit | Dementia vs. Delirium vs. Depression | GPAC Cognitive Impairment Guidelines | GPAC Summary | Article: Chertkow, H et al. Diagnosis and Treatment of Dementia: MCI and CIND

Observations, & Conversation Positive for 'Index of Suspicion'?
NO

Yes or Unsure

Client Agrees to Further Screening?
NO

Document: Tracking Indicators of Change Over Time

Yes

Further Assessment "Affirmation of Suspicion"

If within clinical role & responsibilities and confident with skills, proceed with further Cognition Screening / Assessment OR Report & Follow-up with Most Responsible Physician to complete

Select Cognitive Screener*

If Concerns of Cognitive Changes Only

If Concerns of Cognitive AND Functional Changes OR Unsure

MOCA
≥ 26 → Suggests Normal Cognition. Consider Health Promotion Activities
AND
Document: Tracking Indicators of Change Over Time
< 26

MMSE
≥ 26 **(proceed with MOCA)**
< 26

**** NOTE: Cognition to be screened and assessed with consideration of individual's context & circumstance (i.e. language, culture, education level, etc)***

If within clinical role & responsibilities and confident with skills, proceed with further Comprehensive History Assessment to Rule Out Reversible or Other Cause, OR Report & Follow-up with Most Responsible Physician to complete

Rule out Reversible or Other Cause

(i.e. physical illness, delirium, depression, anxiety, medications, etc.)

- Evidence of Med Interactions? — Beer's Criteria
- Evidence of Depression? — PHQ-9 (<65 years) / GDS (65+ years)
- Evidence of Delirium? — CAM / CAMTraining & Scoring
- Evidence of Anxiety? — GAI
- Social Connections / Isolation?

And Consider
Phys Health & Lifestyle Risk Factors?

NO

YES

Strategies and Actions

Document: Tracking Indicators of Change Over Time
GPAC Flowsheet

- Report and follow-up with Most Resp. Physician (if not previously done)
- Proceed with MCI Management Practice Recommendations

GPAC Cognitive Impairment Guidelines
3rd Canadian Consensus Guidelines

Appropriate Clinical Follow-up & Treatment / Care Plan
Consider GPAC CDM Guidelines
Consider Health Promotion Activities

Ethical & Supportive Key Messaging

- Practice Recommendations: Providing Client & Caregiver Support
- Practice Recommendations: Understanding Clinical & Ethical Challenges
- Principles for a Dignified Diagnosis
- Importance of Early Diagnosis
- IHA Cognitive Impairment Ethical Screener

Client Self-Directed Learning & Info Resources

- Alzheimer Society: Learn About MCI Webpage
- Alzheimer Society: Understanding Risk Factors
- Alzheimer Society: Healthy Brain Webpage
- Interior Health: Healthy Brain & Risk Factors Info
- Alzheimer Society: Healthy Brain Worksheet
- Heart & Stroke
- Quit Now
- Alzheimer Society: Memory Problems Booklet
- Act Now BC
- CDA

MCI & Health Promotion Services ~ Consider Referral

- List of Related Programs IHA WEST
- List of Related Programs IHA CENTRAL
- List of Related Programs IHA EAST

Return to the Resource Pathway

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Cognitive Impairment Ethical Screener[1]

Background:

Normal aging is associated with changes in cognitive function and decline in various organ systems. However increasing age is not automatically associated with the loss of all intellectual and memory abilities. A reduction in processing speed and sensory-perceptual abilities appear to be most common as we age. However memory problems that fall between the changes of 'normal aging' and 'dementia' are common in older adults.

The term currently used to characterize this group is 'mild cognitive impairment' (MCI). The intent behind the concept of MCI was to capture and classify people who seem to have a cognitive problem that one would hesitate to label as 'normal' but not severe enough to qualify as dementia. This clinical label includes elderly with short-term or long-term memory impairment (they complain of memory troubles) but have no significant daily functional disability. This group should be further screened and assessed by their family physician to determine underlying causes, e.g., diabetes, poly-pharmacy, depression, side-effects of medication etc. They should also be monitored regularly over time as they may have an increased risk of developing dementia. Dementia is defined by impaired memory as well as impairment in one or more brain function(s) and in their functional abilities.

Clinical staff may encounter individuals who present with such observed or reported (self or other) symptoms of MCI. They may also encounter individuals who are at high risk for MCI due to multiple risk factors and who may benefit from a baseline cognitive screen. Cognitive screening is not recommended for general populations. Providing targeted screening for cognitive decline is acceptable when ethical considerations (e.g., the person's right to self determine) are respected. Ethical principles of good practice (beneficence and non-malificence - "do no harm") require clinicians to carefully inquire whether the person is agreeable and provides consent for further screening. This short tool can assist the ethical inquiry of this process.

Directions:

Explain to the individual that "good practice" requires you seek their permission before going ahead with further health questions about their memory or changes in thinking. Ask the person the following questions:

Insight:

Questions	Yes	No
1. Have you noticed any changes in your memory or thinking?		
2. Have you ever been told by family or friends that you have changes in your memory or thinking?		
3. Have you ever been told by your doctor that you have changes in your memory?		
4. (If yes, to any of the above) Do you have any concerns about those changes?		

Screening Acceptance: Please let me know if you agree or disagree with any of the following statements:

Questions	Agree	I don't know	Disagree
1. I would like to know if I am at increased risk to develop memory problems.			
2. I would like to be checked for any changes in my memory on a regular basis (every 6 months to a year) with a short questionnaire.			
3. I would like to know if I develop a problem with my memory.			

Results and Outcomes:

If the person indicates that they don't know or disagree with any of the screening statements, then do not pursue any further questioning at this time. If the person indicates a willingness to pursue screening, it is good ethical practice at this time to inform the person what you wish to do (e.g., use a questionnaire to screen for memory loss[2]) and what you plan to do with the information obtained, (e.g., refer to family doctor for further investigation or share this information with other health care professionals to plan care).

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[1] Adapted from the study by Boustani et al, 2008. This short ethical screener is intended for use by frontline clinicians when there is an index of suspicion for mild cognitive impairment. With grateful acknowledgement to Dr. Carol Ward for assistance on writing the background description of mild cognitive impairment.

[2] Recommended cognitive screening tool is SMMSE for all persons with cognitive concerns. If they score >26, it is to be followed with the MoCA test.

Return to the Resource Pathway

Interior Health

Phased Dementia Pathway – Mild Cognitive Impairment

Clinical Practice Recommendations
Early Recognition of Cognitive-Related Changes

The following Clinical Practice Recommendations were created as part of the IH Phased Dementia Pathway. These recommendations are evidence-informed or "best practice", and were created by the process described in the IH Dementia Care website*. Clinical Practice Recommendations for the Mild Cognitive Impairment phase of the pathway highlight the need for interdisciplinary health professionals to recognize cognitive-related changes in the early stages, understand the clinical and ethical challenges related to early diagnosis and disclosure, and be able to meet the support needs of the client and caregiver throughout the uncertainty of this phase.

Levels of Evidence and Strength of Recommendations

The SORT research grading tool† emphasizes client-oriented outcomes – outcomes that matter to clients and help them live longer or better lives, including reduced morbidity, mortality or symptoms, improved quality of life and lower cost of health care services. Levels of evidence are ranked "**1, 2, 3"** based on the validity (quality) of the study design. Where existing relevant guidelines were found, they are cited as **"G"** in the level of evidence. Strengths of recommendations (**A, B, C**) are based on grading the quantity and consistency of the body of evidence. Ratings are listed following each recommendation or group of recommendations as needed.

Levels of Evidence and Strength of Recommendations Taxonomy

Levels of Evidence are ranked 1-3 based on the validity (quality) of the study design.
1 = Good quality client-oriented evidence
2 = Limited quality client-oriented evidence
3 = Other evidence

Evidence-based Recommendations are rated as follows:
A = consistent and good quality client-oriented evidence;
B = inconsistent or limited-quality client-oriented evidence;
C= evidence lacking, more research needed; based on expert consensus/usual practice

Qualitative Evidence

No comparable grading tool was found for qualitative research, however the well established criteria of *credibility, applicability (or fittingness), auditability and confirmability* are used. All four criteria must be met in order to be considered suitable evidence for practice recommendations. A designation of "Q" is given under level of evidence and source cited.

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† Ebell MH, Siwek J, Weiss BD, Woolf SH, Susman J, Ewigman B, & Bowman M. Simplifying the language of evidence to improve patient care: Strength of Recommendation Taxonomy (SORT): A patient-centered approach to grading evidence in the medical literature. *The Journal of Family Practice* 2004;53(2):111-120, available in the public domain from http://www.aafp.org/afp/20040201/548.pdf

Clinical Practice Recommendations

The Dementia Clinical Practice Working Group advises the following clinical practice recommendations concerning **early recognition of cognitive-related changes:**

1. **Education/Training**:

Provide interdisciplinary education regarding:	Level of Evidence (sources cited)	SOR‡
• the continuum of cognitive-related changes from normal aging to MCI to dementing disorders	Working Group Reports[1,2];Review[3]	C
• the use of "opportunistic recognition" of cognitive loss (as opposed to population screening) as a means to promote early detection and referral for follow-up investigation	Q[4]	C
• the challenges of assessing cognitive function in MCI such as: ○ the variability of specificity and sensitivity of traditional standardized measures of cognition (e.g., MMSE, Clock Drawing test) when used to detect MCI. ○ the appropriate decision and approach to using a standardized, validated assessment tool for MCI in clinical assessment practices. ○ the importance of referring clients to their physician for further (serial) assessment and possible neuropsychiatric evaluation when there is clinical evidence of early cognitive changes.	1[5,6]; 2[6,7] Guidelines[17,18]	A C A
• the use of clinical data such as observed declines over time in cognition, function (***complex*** ADL and IADL), behaviour, or mood as key clinical indicators of cognitive related change.	2[8,9,10,11,12,13] 3[14	B
• the need to listen and assess client and caregiver reports of cognitive, functional, behavioral and/or emotional changes as first line evidence towards developing an index of suspicion for cognitive change.	1[8,15,16] Guidelines[17,18,24,]	A
• the importance of monitoring reported changes or difficulties over time to assess trends.	Working Group Reports[1,2], Review[20], Guidelines[17, 18,]	A

‡ Strength of Recommendation

2. **Information**:

a) Communicate the following key information about Mild Cognitive Impairment to relevant clinical managers and front-line interdisciplinary professional staff:	Level of Evidence (sources cited)	SOR‡
• Mild Cognitive Impairment describes the cognitive changes between normal healthy aging and clinically recognizable early dementia. Current research indicates that the early cognitive changes that precede dementias are very subtle and heterogeneous in presentation. This area of knowledge is dynamic and requires frequent review of current research literature to ensure clinical currency;	Meta Analysis[19]	C
• Mild Cognitive Impairment does not yet have a consensus of diagnostic criteria, and reported presentation is often variable, cryptic, and difficult to distinguish from early dementia, or cognitive losses associated with major depression, etc. This can lead to diagnostic uncertainty by physicians. The diagnostic process involves a detailed history and physical examination and is best monitored by serial assessment over time to further evaluate observed or reported changes in thinking, function (complex ADL, IADL), mood, and behaviours. Interdisciplinary health professionals have a role in recognizing and reporting clinical changes in cognition, function, behaviour and mood over time to assist physicians in initial and ongoing investigation.	2[(1,2,19,20)]	C
• Early recognition of cognitive-related changes can be detected clinically by assessment and investigation of cognitive, functional, behavioural and mood changes over time. Such cognitive-related changes may have multiple etiologies, some of which are reversible. Reporting such changes may aid earlier detection and improve brain health and quality of life (reversal of cognitive losses) for clients with MCI and their caregivers.	Meta-analysis[(19)]; Guidelines[(18,24)]	A
• It is important to not presume or equate any cognitive loss with a dementing disorder, as many other conditions such a physical illness, delirium, depression, anxiety and medications may result in similar losses.	Guideline[21]	A
• Cognitive impairment or loss should always be presumed to be due to a reversible cause until ruled out otherwise by physician. Reporting and referral of concerns by non-physician professional staff is a critical role in early detection and diagnosis.	Guideline[17]	B
b) Communicate the following key information about Mild Cognitive Impairment to the general public to increase awareness and decrease stigma regarding the importance of cognitive changes in mid and later life:		
• Provide public information that individuals should take identifiable changes in memory, thinking, mood, or ability to problem solve/ function in everyday life seriously and seek medical advise for further investigation.	Working Report[1]; Meta-analysis[19]	C
• Provide public information that it is never too late to make lifestyle changes that reduce known dementia risk and promote healthy brains and healthy aging, even when memory loss is evident.	3[(22, 23)]	C

3. Program Planning:

It is recommended that the following information about Mild Cognitive Impairment is used for clinical program planning across disciplines and sectors:	Level of Evidence (sources cited)	SOR‡
• Incorporate basic knowledge of MCI, its risk factors, and the importance of early recognition of cognitive-related changes into routine cognitive assessment in all sectors.	3[22,23]	C
• Utilize knowledge of primary dementia prevention strategies (see Pre-clinical Phase modules from the Phased Dementia Pathway) as opportunities for secondary prevention in MCI (slow or delay the rate of cognitive decline by mitigating lifestyle risk factors)	Guideline[18]	C

4. Provision of Care:

Interdisciplinary professionals in all sectors are encouraged to use the following practice recommendations to guide assessment, problem-solving, decision-making and all aspects of direct care related to clients with Mild Cognitive Impairment and their family/caregivers.	Level of Evidence (sources cited)	SOR‡
• While there is insufficient evidence to recommend for or against routine screening for cognitive losses in older adults, it is recommended that interdisciplinary professionals use "opportunistic recognition" of cognitive loss during routine care assessments as a means of promoting early detection and referral for follow-up investigation	Q[4]	C
• Given the increased risk for MCI to convert to dementia, and given the seriousness of the burden of dementia for clients and caregivers, it is important for interdisciplinary health professionals to assist family physicians in early detection efforts by maintaining a high index of suspicion for cognitive-related changes such as:	Guideline[24]	A
○ reported or observed functional decline in *complex* ADL/IADL;	2[8,9,10,16]	B
○ reported or observed cognitive changes such as memory loss, loss of attention or self-awareness, language or visuo-spatial losses (e.g., haphazard driving);	2[11,15,16, 25]	B
○ reported or observed mood changes (e.g., apathy, irritability, depression);	1[26, 27]; 2[11,15,16]	B
○ reported or observed behavioural changes (e.g., changes in sleep, weight, social patterns, gross vs fine motor changes. gait changes, etc.)	1[26]; 2[16,28,29,30]	B
• Assessment of cognitive function requires interdisciplinary professionals to:		
○ use knowledge about the continuum of cognitive-related changes from normal aging to MCI to dementing disorders to guide appropriate cognitive assessment.	Working Group Reports[1,2], Review[3]	C
○ evaluate clinical data such as observed declines over time in cognition, function (complex ADL and IADL), behaviour, or mood as key clinical indicators of cognitive- related change.	2[8,9,10,11]	B

○ listen carefully to client and caregiver reports of cognitive, functional, behavioral and/or emotional changes as first line evidence towards developing an index of suspicion for cognitive change;	1[15,16]; Guidelines[31,18,21,24]; Q[32]	A
○ make decisions regarding the appropriate selection of, and approach to, using a standardized, validated assessment tool for MCI in clinical assessment practices.	2[6,7]	C
○ recognize the importance of referring clients to their physician for further (serial) assessment and possible neuropsychiatric evaluation when there is clinical evidence of early cognitive changes.	Guidelines[17,18]	A
○ understand the importance of monitoring reported changes or difficulties over time to assess trends. Interdisciplinary professionals are advised to utilize regular annual or semi-regular client re-evaluations as opportunities to assess for patterns of cognitive-related change over time (e.g., primary care nurses, community case managers, mental health counsellors).	Working Group Reports[1,2], Review[20], Guidelines[17, 33]	B
• Suggested selection, approach and use of assessment techniques and tools appropriate for MCI: ○ The use of tools such as MMSE and CDT in general cognitive assessment remain the accepted standard to reliably detect cognitive losses associated with early to mid-stage dementias. However, the MMSE and CDT are *not* reliable clinical tools to detect MCI due to variable sensitivity and specificity depending on subtype presentation.	1[5,6]	A
○ If the results of an MMSE are within normal range, but other presenting clinical data is suggestive of cognitive loss, it is appropriate to consider the use of an alternate tool to assist in further multi-domain assessment.	1[19], Guideline[17]	B
○ The purpose for using additional multi-domain screens or tests is to supplement routine clinical assessment to confirm a suspicion of cognitive loss based on other presenting (often subtle) clinical evidence (e.g., positive history of risk factors, client or informant report, observed deficit). Upon confirmation of suspicion it is essential that a referral be made to the physician for diagnostic evaluation.	1[19]; Guidelines[17]	A
○ A standardized, validated screening tool for MCI that meets these requirements is the Montreal Cognitive Assessment (MoCA)[34], fully available for clinical use and available in the public domain at: http://www.mocatest.org/. Interdisciplinary staff who choose to access this tool are urged to fully read the accompanying instructions.	1[34]	A
○ An alternative approach is to use a *composite* of existing validated screening tools rather than any single screening instrument in isolation. Examples of single screening tools that can be combined together[7] include the following: ▪ Working memory and concentration such as the Letter Sorting Test (e.g., spelling 5 digit words forwards, backwards and in alphabetical order in less than a minute)	2[6,7]	C

▪ Delayed free and cued recall of four items such as the Memory Impairment Screen (see screen for original scoring) ▪ Cognitive flexibility and speed of access to semantic information such as Verbal Fluency tests (e.g., generate as many categorical words (e.g., animal, colour) as possible within 1 minute, impairment cutpoint = 20) ▪ Visuo-constructional abilities such as the Clock Drawing Test (this test however also requires language comprehension, numerical knowledge, strategy planning and memory) (see screen for original scoring).		
• Cognitive-related changes as outlined above may have multiple etiologies, some of which are reversible. Changes should be presumed reversible until ruled-out otherwise.	Guideline[17]	B
• Subjective (client) memory complaints should be taken seriously, assessed and reported to physician or referred to specialist team (e.g., mental health) for further investigation and follow-up as required.	Guidelines[18,21,24]	A
• Family and/or caregiver reports of changes in cognition, behaviour, mood or function should be taken seriously, assessed and reported to physician or referred to specialist team (e.g., mental health) for further investigation and follow-up as required	Guidelines[18,21,24] Q[32]	A
• When known dementia life-style risk factors are identified (cardiovascular risk factors and co-morbidities, alcohol, tobacco and activity – See Pre-clinical phase of Dementia Pathway), health professionals are encouraged to provide counselling, support or referral services to assist in secondary prevention for MCI and dementia.	Guideline[18]	C

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[32] Streams ME, Wackerbarth SB, Maxwell A. (2003). Diagnosis-seeking at subspecialty memory clinics: trigger events.*Int J Geriatr Psychiatry,* 18(10):915-24
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Mild Cognitive Impairment Clinical Toolkit

Assessment Tools for Mild Cognitive Impairment

- If the results of an MMSE are within normal range, but other presenting clinical data (e.g., reported or observed behaviours, mood changes and/or functional losses, particularly in complex IADL/ADL) is suggestive of cognitive loss, it is appropriate to consider the use of an alternate tool to assist in further multi-domain assessment.
- A standardized, validated screening tool for MCI that meets this requirement is the Montreal Cognitive Assessment (MoCA)[1]
- Interdisciplinary staff who choose to access this tool are advised to fully read the accompanying administrative and scoring instructions before use.

Physician Guidelines for Mild Cognitive Impairment (3rd Canadian Consensus guidelines)

Useful Reading for Mild Cognitive Impairment

- Blieszner R, Roberto KA. (2009). Care Partner Responses to the Onset of Mild Cognitive Impairment. Gerontologist. (June 2, 2009) nd
- McIlvane JM, Popa MA, Robinson B, Houseweart K, Haley WE (2008). Perceptions of Illness, coping, and well-being in persons with mild cognitive impairment and their care partners. Alzheimer Dis Assoc Disord. ;22(3):284-92.
- Levey A, Lah J, Goldstein F, Steenland K, Bliwise D (2006). Mild cognitive impairment: an opportunity to identify patients at high risk for progression to Alzheimer's disease. Clin Ther.;28(7):991-1001
- Frank L, Flynn HA, Kleinman L, Matza LS, Margolis MK, Bowman L, Bullock R. (2006) Impact of cognitive impairment on mild dementia patients and mild cognitive impairment patients and their informants. International Psychogeriatrics, 11:1-12.

Client Education and Support Materials

- This is an important time to assess individual brain health risks and lifestyle behaviours. See the Pre-Clinical Phase Toolkit for professional and client support materials.
- Mayo Clinic: Mild Cognitive Impairment: This website contains up to date information suitable for client teaching, including definition, symptoms, risk factors and intervention.
- Memory Problems? This short 16 page booklet is an excellent resource for both MCI and early dementia clients. It was written by the Early Stage Support Groups in the North/Central Okanagan region of the Alzheimer Society of B.C. It was created by people with memory problems for people with memory problems.

Footnotes, references from content

[1] Nasreddine ZS, Phillips NA, Bedirian V, Charbonneau S, Whitehead V, Collin I, Cummings JL and Chetkow, H. (2005). The Montreal Cognitive Assessment, MoCA: a brief screening tool for mild cognitive impairment. J Am Geriatr Soc, 53(4):695-9.

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BEERS CRITERIA

2002 Criteria for Potentially Inappropriate Medication Use in Older Adults: Independent of Diagnoses or Conditions

Drug	Concern	Severity Rating (High or Low)
Propoxyphene (**642**) and combination products (**Darvon with ASA**, **Darvon-N**)	Offers few analgesic advantages over acetaminophen, yet has the adverse effects of other narcotic drugs.	Low
Indomethacin (**Indocid**)	Of all available nonsteroidal anti-inflammatory drugs, this drug produces the most CNS adverse effects.	High
Pentazocine (**Talwin**)	Narcotic analgesic that causes more CNS adverse effects, including confusion and hallucinations, more commonly than other narcotic drugs. Additionally, it is a mixed agonist and antagonist.	High
Muscle relaxants and antispasmodics: methocarbamol (**Robaxin**), chlorzoxazone (**Parafon Forte**), cyclobenzaprine (**Flexeril**), and oxybutynin (**Ditropan**). Do not consider the extended-release **Ditropan XL**.	Most muscle relaxants and antispasmodic drugs are poorly tolerated by elderly patients, since these cause anticholinergic adverse effects, sedation, and weakness. Additionally, their effectiveness at doses tolerated by elderly patients is questionable.	High
Flurazepam (**Dalmane**)	This benzodiazepine hypnotic has an extremely long half-life in elderly patients (often days), producing prolonged sedation and increasing the incidence of falls and fracture. Medium- or short-acting benzodiazepines are preferable.	High
Amitriptyline (**Elavil** and **Novo-Triptyn**)	Because of its strong anticholinergic and sedation properties, amitriptyline is rarely the antidepressant of choice for elderly patients.	High
Doxepin (**Sinequan**)	Because of its strong anticholinergic and sedating properties, doxepin is rarely the antidepressant of choice for elderly patients.	High
Doses of short-acting benzodiazepines: doses greater than lorazepam (**Ativan**), 3 mg; oxazepam (**Serax** and **Apo-Oxazepam**), 60 mg; alprazolam (**Xanax**), 2 mg; temazepam (**Restoril**), 15 mg; and triazolam (**Halcion**), 0.25 mg	Because of increased sensitivity to benzodiazepines in elderly patients, smaller doses may be effective as well as safer. Total daily doses should rarely exceed the suggested maximums.	High
Long-acting benzodiazepines: chlordiazepoxide (**Librium** and **Apo-Chlordiazepoxide**), clidinium-chlordiazepoxide (**Librax**), and diazepam (**Valium**)	These drugs have a long half-life in elderly patients (often several days), producing prolonged sedation and increasing the risk of falls and fractures. Short- and intermediate-acting benzodiazepines are preferred if a benzodiazepine is required.	High
Disopyramide (**Rythmodan**)	Of all antiarrhythmic drugs, this is the most potent negative inotrope and therefore may induce heart failure in elderly patients. It is also strongly anticholinergic. Other antiarrhythmic drugs should be used.	High

Digoxin (**Lanoxin**) (should not exceed 0.125 mg/d except when treating atrial arrhythmias)	Decreased renal clearance may lead to increased risk of toxic effects.	Low
Short-acting dipyridamole (**Persantine**).	Do not consider the long-acting dipyridamole (which has better properties than the short-acting in older adults) except with patients with artificial heart valves. May cause orthostatic hypotension.	Low
Methyldopa (**Aldomet** and **Apo-Methyldopa**) and methyldopa-hydrochlorothiazide (**Aldoril** and **Apo-Methazide**)	May cause bradycardia and exacerbate depression in elderly patients.	High
Chlorpropamide (**Apo-chlorpropamide** and **Novo-Propamide**)	It has a prolonged half-life in elderly patients and could cause prolonged hypoglycemia. Additionally, it is the only oral hypoglycemic agent that causes SIADH.	High
Gastrointestinal antispasmodic drugs: dicyclomine (**Bentylol**), belladonna alkaloids (**Donnatal** and others), and clidinium-chlordiazepoxide (**Librax**)	GI antispasmodic drugs are highly anticholinergic and have uncertain effectiveness. These drugs should be avoided (especially for long-term use).	High
Anticholinergics and antihistamines: chlorpheniramine (**Novo-Pheniram**), diphenhydramine (**Benadryl**), hydroxyzine (**Atarax**)	All nonprescription and many prescription antihistamines may have potent anticholinergic properties. Nonanticholinergic antihistamines are preferred in elderly patients when treating allergic reactions.	High
Diphenhydramine (**Benadryl**)	May cause confusion and sedation. Should not be used as a hypnotic, and when used to treat emergency allergic reactions, it should be used in the smallest possible dose.	High
Ergoloid mesylates (**Hydergine**)	Have not been shown to be effective in the doses studied.	Low
Ferrous sulfate 325 mg/d	Doses 325 mg/d do not dramatically increase the amount absorbed but greatly increase the incidence of constipation.	Low
All barbiturates (except phenobarbital) except when used to control seizures	Are highly addictive and cause more adverse effects than most sedative or hypnotic drugs in elderly patients.	High
Meperidine (**Demerol**)	Not an effective oral analgesic in doses commonly used. May cause confusion and has many disadvantages to other narcotic drugs.	High
Ticlopidine (**Ticlid**)	Has been shown to be no better than aspirin in preventing clotting and may be considerably more toxic. Safer, more effective alternatives exist.	High
Ketorolac (**Toradol**)	Immediate and long-term use should be avoided in older persons, since a significant number have asymptomatic GI pathologic conditions.	High
Amphetamines and anorexic agents	These drugs have potential for causing dependence, hypertension, angina, and myocardial infarction.	High
Long-term use of full-dosage, longer half-life, non–COX-selective NSAIDs: naproxen (**Naprosyn**), and piroxicam (**Apo-Piroxicam**)	Have the potential to produce GI bleeding, renal failure, high blood pressure, and heart failure.	High

Daily fluoxetine (**Prozac**)	Long half-life of drug and risk of producing excessive CNS stimulation, sleep disturbances, and increasing agitation. Safer alternatives exist.	High
Long-term use of stimulant laxatives: bisacodyl (**Dulcolax**), cascara sagrada except in the presence of opiate analgesic use	May exacerbate bowel dysfunction.	High
Amiodarone (**Cordarone**)	Associated with QT interval problems and risk of provoking torsades de pointes. Lack of efficacy in older adults.	High
Orphenadrine (**Norflex**)	Causes more sedation and anticholinergic adverse effects than safer alternatives.	High
Nitrofurantoin (**Apo-Nitrofurantoin** and **Novo-Furantoin**)	Potential for renal impairment. Safer alternatives available.	High
Doxazosin (**Cardura**)	Potential for hypotension, dry mouth, and urinary problems.	Low
Short acting nifedipine (**Adalat**)	Potential for hypotension and constipation.	High
Clonidine (**Catapres**)	Potential for orthostatic hypotension and CNS adverse effects.	Low
Mineral oil	Potential for aspiration and adverse effects. Safer alternatives available.	High
Cimetidine (**Tagamet**, **Apo-Cimetidine** and **Novo-Cemetine**)	CNS adverse effects including confusion.	Low
Ethacrynic acid (**Edecrin**)	Potential for hypertension and fluid imbalances. Safer alternatives available.	Low
Desiccated thyroid	Concerns about cardiac effects. Safer alternatives available.	High
Amphetamines (excluding methylphenidate hydrochloride and anorexics)	CNS stimulant adverse effects.	High
Estrogens only (oral)	Evidence of the carcinogenic (breast and endometrial cancer) potential of these agents and lack of cardioprotective effect in older women.	Low

Abbreviations: CNS, central nervous system; COX, cyclooxygenase; GI, gastrointestinal; NSAIDs, nonsteroidal anti-inflammatory drugs; SIADH, syndrome of inappropriate antidiuretic hormone secretion.

Reference: Fick DM, Cooper JW, Wade WE, Waller JL, Maclean JR, and Beers MH. Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Arch Intern Med 2003 Dec 8; 163(22):2716-24. (including correction note published in Arch Intern Med 2004 Feb 9; 164(3):298.)

2002 Criteria for Potentially Inappropriate Medication Use in Older Adults: Considering Diagnoses or Conditions

Disease or Condition	Drug	Concern	Severity Rating (High or Low)
Heart Failure	Disopyramide (**Rythmodan**), and high sodium content drugs (sodium and sodium salts [alginate bicarbonate, biphosphate, citrate, phosphate, salicylate, and sulfate])	Negative inotropic effect. Potential to promote fluid retention and exacerbation of heart failure.	High
Hypertension	Pseudophedrine; diet pills, and amphetamines	May produce elevation of blood pressure secondary to sympathomimetic activity.	High
Gastric or duodenal ulcers	NSAIDs and aspirin (>325mg) (coxibs excluded)	May exacerbate existing ulcers or produce new/additional ulcers.	High
Seizures or epilepsy	Clozapine (**Clozaril**), chlorpromazine (**Largactil**), and thiothixene (**Navane**)	May lower seizure thresholds.	High
Blood clotting disorders or receiving anticoagulant therapy	Aspirin, NSAIDs, dipyridamole (**Persantine**), ticlopidine (**Ticlid**), and clopidogrel (**Plavix**)	May prolong clotting time and elevate INR values or inhibit platelet aggregation, resulting in an increased potential for bleeding.	High
Bladder outflow obstruction	Anticholinergics and antihistamines, gastrointestinal antispasmodics, muscle relaxants, oxybutynin (**Ditropan**), flavoxate (**Urispas** and **Apo-Flavoxate**), anticholinergics, antidepressants, decongestants, and tolterodine (**Detrol**)	May decrease urinary flow, leading to urinary retention.	High
Stress incontinence	α-Blockers (**Prazosin** and **Terazosin**), anticholinergics, tricyclic antidepressants (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride), and long-acting benzodiazepines	May produce polyuria and worsening of incontinence.	High
Arrhythmias	Tricyclic antidepressants (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride)	Concern due to proarrhythmic effects and ability to produce QT interval changes.	High
Insomnia	Decongestants, theophylline (**Theolair** and **Uniphyl**), methylphenidate (**Ritalin**), MAOIs, and amphetamines	Concern due to CNS stimulant effects.	High
Parkinson disease	Metoclopramide (**Reglan** and **Apo-Metoclop**), and conventional antipsychotics	Concern due to their antidopaminergic/cholinergic effects.	High
Cognitive impairment	Barbiturates, anticholinergic, antispasmodics, and muscle relaxants. CNS stimulants: dextroAmphetamine (**Adderall** and **Dexedrine**), methylphenidate (**Ritalin**)	Concern due to CNS-altering effects.	High
Depression	Long-term benzodiazepine use. Sympatholytic agents: methyldopa (**Aldomet** and **Apo-Methyldopa**)	May produce or exacerbate depression.	High

Anorexia and malnutrition	CNS stimulants: DextroAmphetamin (**Adderall** and **Dexedrine**), methylphenidate (**Ritalin**), and fluoxetine (**Prozac**)	Concern due to appetite-suppressing effects.	High
Syncope or falls	Short- to intermediate-acting benzodiazepine and tricyclic antidepressants (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride)	May produce ataxia, impaired psychomotor function, syncope, and additional falls.	High
SIADH/hyponatremia	SSRIs: fluoxetine (**Prozac**), citalopram (**Celexa**), fluvoxamine (**Luvox**), paroxetine (**Paxil**), and sertraline (**Zoloft**)	May exacerbate or cause SIADH.	Low
Seizure disorder	Bupropion (**Wellbutrin**)	May lower seizure threshold.	High
Obesity	Olanzapine (**Zyprexa**)	May stimulate appetite and increase weight gain.	Low
COPD	Long-acing benzodiazepines: chlordiazepoxide (**Librium** and **Apo-Chlordiazepoxide**), clidinium-chlordiazepoxide (**Librax**), and diazepam (**Valium**). β-Blockers: propranolol	CNS adverse effects. May induce respiratory depression. May exacerbate or cause respiratory depression.	High
Chronic constipation	Calcium channel blockers, anticholinergics, and tricyclic antidepressant (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride)	May exacerbate constipation.	Low

Abbreviations: CNS, central nervous system; COPD, chronic obstructive pulmonary disease; INR, international normalized ratio; MAOIs, monoamine oxidase inhibitors; NSAIDs, nonsteroidal anti-inflammatory drugs; SIADH, syndrome of inappropriate antidiuretic hormone secretion; SSRIs, selective serotonin reuptake inhibitors.

Reference: Fick DM, Cooper JW, Wade WE, Waller JL, Maclean JR, and Beers MH. Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Arch Intern Med 2003 Dec; 163:2716-24. (including correction note published in Arch Intern Med 2004 Feb 9; 164(3):298.)

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The Confusion Assessment Method (CAM)

Training Manual and Coding Guide

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REFERENCE: Inouye SK, VanDyck CH, Alessi CA et al. Clarifying confusion: The Confusion Assessment Method. A new method for detecting delirium. Ann Intern Med. 1990; 113:941-8.

Date developed: February 25, 1991
Last revised: June 30, 2003

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References:

- Inouye SK, Van Dyck CH, Alessi CA, Balkin S, Siegal AP, Horwitz RI. Clarifying confusion: The Confusion Assessment Method. A new method for detection of delirium. Ann Intern Med. 1990; 113: 941-8.
- Inouye SK, Foreman MD, Mion LC, Katz KH, Cooney LM. Nurses' recognition of delirium and its symptoms: comparison of nurse and researcher ratings. Arch Intern Med. 2001;161:2467-2473.

BACKGROUND

Delirium (acute confusional state) is a common, serious, and potentially preventable source of morbidity and mortality for older hospitalized patients. Delirium has assumed particular importance because patients over 65 years currently account for more than 48% of all days of hospital care. Currently, delirium occurs in 25-60% of older hospitalized patients, with associated mortality rates of 25-33%. Based on 1994 U.S. vital health statistics, each year delirium complicates hospital stays for over 2.3 million older persons, involving over 17.5 million inpatient days, and accounting for 8 billion dollars of Medicare expenditures. Substantial additional costs accrue following hospital discharge because of the increased need for institutionalization, rehabilitation, and home care.

The Confusion Assessment Method (CAM) was originally developed in 1988-1990, to improve the identification and recognition of delirium. CAM was intended to provide a new standardized method to enable non-psychiatrically trained clinicians to identify delirium quickly and accurately in both clinical and research settings.

Since its development, the Confusion Assessment Method has become the most widely used instrument for detection of delirium world-wide, because of both its strong validation results as well as its ease of use. The CAM instrument has been used in over 100 original articles to date, as either a process or outcome measure, and has been translated into over six languages world-wide. When validated against the reference standard ratings of geriatric psychiatrists based on comprehensive psychiatric assessment, the CAM had a sensitivity of 94-100%, specificity of 90-95%, and high inter-observer reliability.

The CAM is usually rated by a clinical or trained lay interviewer on the basis of an interview with the patient that includes at least a brief cognitive assessment. The Mini-Mental State Examination has been used for this cognitive assessment, but more brief assessments have also been used. Generally, the rating takes 5-10 minutes to complete.

The attached CAM training manual has been designed to assist with the administration and coding of the CAM, and to provide supplementary information for interested clinical investigators.

CONFUSION ASSESSMENT METHOD (CAM) QUESTIONNAIRE

OBSERVATIONS BY INTERVIEWER

Interviewer: Immediately after completing the interview, please answer the following questions based on what you observed during the interview, Mini-Mental State Examination, and Digit Span Test.

ACUTE ONSET

1. a. Is there evidence of an acute change in mental status from the patient's baseline?

Yes	- 1
No	- 2
Uncertain	- 8

b. (IF YES) Please describe change and source of information:

_____

_____

INATTENTION

2. a. Did the patient have difficulty focusing attention, for example being easily distractible, or having difficulty keeping track of what was being said?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
Not Applicable (NA)	- 9

c. (IF PRESENT) Please describe this behavior:

_____

_____

_____

DISORGANIZED THINKING

3. a. Was the patient's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow or of ideas, unpredictable switching from subject to subject?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase or decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF PRESENT) Please describe this behavior:

_____

_____

_____

ALTERED LEVEL OF CONSCIOUSNESS

4. a. Overall, how would you rate this patient's level of consciousness?

GO TO Q5 ←	Alert (Normal)	- 1
	Vigilant (Hyperalert, overly sensitive to environmental stimuli, startled very easily	- 2
	Lethargic (Drowsy, easily aroused)	- 3
	Stupor (Difficult to arouse)	- 4
	Coma (Unarousable)	- 5
	Uncertain	- 8

b. (IF OTHER THAN ALERT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF OTHER THAN ALERT) Please describe this behavior:

_____

_____

_____

DISORIENTATION

5. a. Was the patient disoriented at any time during the interview, such as thinking he/she was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF PRESENT) Please describe this behavior:

_____

_____

_____

MEMORY IMPAIRMENT

6. a. Did the patient demonstrate any memory problems during the interview, such as inability to remember events in the hospital or difficulty remembering instructions?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF PRESENT) Please describe this behavior:

_____

_____

_____

PERCEPTUAL DISTURBANCES

7. a. Did the patient have any evidence of perceptual disturbances, for example, hallucinations, illusions, or misinterpretations (such as thinking something was moving when it was not)?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF PRESENT) Please describe these perceptual changes:

_____

_____

PSYCHOMOTOR AGITATION

8. a. (Part 1) At any time during the interview, did the patient have an unusually increased level of motor activity, such as restlessness, picking at bedclothes, tapping fingers, or making frequent sudden changes of position?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF PRESENT) Please describe this behavior:

_____

_____

_____

PSYCHOMOTOR RETARDATION

8. a. (Part 2) At any time during the interview, did the patient have an unusually decreased level of motor activity, such as sluggishness, staring into space, staying in one position for a long time, or moving very slowly?

Not present at any time during interview	- 1
Present at some time during interview, but in mild form	- 2
Present at some time during interview, in marked form	- 3
Uncertain	- 8

b. (IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?

Yes	- 1
No	- 2
Uncertain	- 8
NA	- 9

c. (IF PRESENT) Please describe this behavior:

_____

_____

_____

ALTERED SLEEP-WAKE CYCLE

9. a. Did the patient have evidence of disturbance of the sleep-wake cycle, such as excessive daytime sleepiness with insomnia at night?

Yes	- 1
No	- 2
Uncertain	- 8

b. (IF YES) Please describe the disturbance:

_____

_____

CONFUSION ASSESSMENT METHOD (CAM) SHORTENED VERSION WORKSHEET

EVALUATOR: DATE:

I. ACUTE ONSET AND FLUCTUATING COURSE

BOX 1

a) Is there evidence of an acute change in mental status from the patient's baseline? No ____ Yes _____

b) Did the (abnormal) behavior fluctuate during the day, that is tend to come and go or increase and decrease in severity? No _____ Yes _____

II. INATTENTION

Did the patient have difficulty focusing attention, for example, being easily distractible or having difficulty keeping track of what was being said? No _____ Yes _____

III. DISORGANIZED THINKING

BOX 2

Was the patient 's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject? No _____ Yes _____

IV. ALTERED LEVEL OF CONSCIOUSNESS

Overall, how would you rate the patient's level of consciousness?

-- Alert (normal)

-- Vigilant (hyperalert)
-- Lethargic (drowsy, easily aroused)
-- Stupor (difficult to arouse)
-- Coma (unarousable)

Do any checks appear in this box? No _____ Yes _____

If all items in Box 1 are checked and at least one item in Box 2 is checked a diagnosis of delirium is suggested.

Adapted from Inouye SK et al, Clarifying Confusion: The Confusion Assessment Method. A New Method for Detection of Delirium. Ann Intern Med. 1990; 113:941-8.

CONFUSION ASSESSMENT METHOD (CAM)
TRAINING INSTRUCTIONS

General Explanation

CAM has been validated for use based on observations made during a brief, structured interview that included the Mini-Mental State Examination (Reference: Folstein MF et al; J Psychiatr Res. 1975; 12:189-98) and Digit Span Test. Currently, some formal cognitive assessment is recommended, since the validity of using CAM for unstandardized observations (e.g., routine clinical care) is poor (Reference: Inouye SK, et. al; Arch Int Med. 2001; 161: 2467-73).

This section is intended to evaluate for evidence of delirium (acute confusional state) based on observations you made before, during, or after the interview. This section must be completed immediately after completing the interview to assure accurate information. Your answers should be based on observations of the respondent's behavior or statements during any part of your contact with the respondent (e.g., consent, conversation, interview) that day, and need not be limited to the interview period alone.

General Guidelines

In general, each question has three parts (a, b, c). Note that questions 1 (acute onset) and 9 (sleep-wake cycle) may require information from an outside observer and follow a slightly different format. Specific details on Parts a-c for each question will be presented below. General scoring is as below:

a.--"Not present at any time during interview" - means the behavior was absent or not observed during the interview process.
--"Present at some time during the interview, but in mild form" - means the behavior was present or observed during the interview process, but did not significantly interfere with the interview process.
--"Present at some time during the interview, in marked form" - means the behavior was present or observed during the interview process, and did significantly interfere with the interview process.
-- Score as "Uncertain" when cannot assess behavior, for example, due to incomplete interview, intubation, coma, etc.

b. --"(IF PRESENT) Did this behavior fluctuate during the interview, that is, tend to come and go or increase and decrease in severity?"

If observed, note whether there were times when the respondent was clear, while other times were abnormal (come and go); or did the behaviors tend to get worse and better at times (increase and decrease in severity). Not applicable (9) should be circled if the behavior was not present (skip question).

Specific examples of fluctuation:

INATTENTION -- At times, respondent is able to focus on questions and keep track of what is being said; at other times, interviewer cannot engage respondent, who perseverates answers or answers inappropriately.

SPEECH -- At times, respondent gives lucid, coherent answers, and at other times, gives nonsensical, incoherent answers.

LEVEL OF CONSCIOUSNESS -- At times, respondent is alert and responsive to all questions, while at other times respondent is lethargic, unresponsive, and difficult to arouse.

Note: fluctuation requires that the patient switch back and forth between states at least twice (a full cycle).

c.--"(IF PRESENT) Please describe the behavior."

Describe the actual observed behavior (s) or statement (s) by respondent that led you to rate the behavior as present. Describe the behaviors in detail. For observed behavior, DO NOT GIVE YOUR IMPRESSION OR INTERPRETATION OF THE BEHAVIOR, RECORD THE ACTUAL BEHAVIOR OBSERVED.

Examples:

(i) Incorrect - "Respondent disoriented to place."

Correct - "Respondent thought she was on a ship in Hawaii."

(ii) Incorrect - "Respondent seemed inattentive."

Correct - "Respondent's attention darted around to every noise or voice in the environment. Eye contact was never made, and each question needed to be repeated 3-4 times."

For statements, DO NOT GIVE YOUR INTERPRETATION OF THE STATEMENT, GIVE RESPONDENT'S ACTUAL WORDS, VERBATIM.

Examples:

(i) Incorrect - "Respondent's speech incoherent."

Correct - "In response to 'what is the date?', respondent replied, 'Time. Time to go. Get the sailor suits. Be good boys and girls."

(ii) Incorrect - "Respondent repeated answers."

Correct - "Respondent answered '1913' to each of the orientation questions on cognitive function testing."

Note: Although answers to Cognitive Function tests may be used as supporting evidence, do not rely on these alone. Examples of other observed behaviors should be given here.

Specific Instructions

Q1a. ACUTE ONSET

(i) Question: Is there evidence of an acute change in mental status from the patient's baseline?

(ii) Definition: Alteration in mental status (e.g., attention, orientation, cognition) that was new or worse for this patient, usually over hours to days.

(iii) Examples:

-- Family reports patient has been lethargic and incoherent for two days prior to admission

-- Nurse reports that a patient with poor short-term memory and disorientation to time alone, suddenly became agitated, calling out to her dead husband, tearing off her clothes, and completely disoriented to time, place and person.

(iv) Note: This information must usually be obtained from a family member, caretaker, or nurse, who knows the patient's baseline mental status and has observed the patient over time.

Q2a. INATTENTION

(i) Question: Did the patient have difficulty focusing attention, for example being easily distractible, or having difficulty keeping track of what was being said?

(ii) Definition: Reduced ability to maintain attention to external stimuli and to appropriately shift attention to new external stimuli. Respondent seems unaware or out-of-touch with environment (e.g., dazed, fixated, or darting attention).

(iii) Examples:

-- Questions must be frequently repeated because attention wanders, NOT because of decreased hearing.

-- Unable to gain respondent's attention or to make any prolonged eye contact. Respondent's focus seems to be darting about room.

-- Respondent keeps repeating answer to previous question (perseveration).

-- Respondent is dazedly staring at the TV. When you ask a question, he looks at you momentarily but does not answer. He then continues to stare at the TV.

(iv) Cognitive function tests: errors on digit spans, Folstein Mini-Mental State Examination attention tasks, or other attention tests.

Note: Should be assessed separately from level of consciousness. A subject who is lethargic or stuporous may still have intact attention during periods of arousal.

Q3a. DISORGANIZED THINKING

(i) Question: Was the patient's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

(ii) Definition: Disorganized thinking, as indicated by rambling, irrelevant or incoherent speech.

(iii) Examples:

-- (Irrelevant or nonsense answer) You ask the respondent if they needed help with eating, and the response is: "Let's go get the sailor suits!"

-- (Illogical flow of ideas) You ask the respondent, "How tall are you?" The reply is: "Tall? I need to get to the yellow brick road out there. Where's the party? My, oh no…."

(iv) Note: Patient must be able to speak or write (e.g., not comatose, intubated) to assess this item.

Q4a. ALTERED LEVEL OF CONSCIOUSNESS

(i) Question: Overall, how would you rate this patient's level of consciousness?

Alert (Normal)	- 1
Vigilant (Hyperalert, overly sensitive to environmental stimuli, startled easily)	- 2
Lethargic (Drowsy, easily aroused)	- 3
Stupor (Difficult to arouse)	- 4
Coma (Unarousable)	- 5
Uncertain	- 8

(ii) Definition: Defined above.

(iii) Examples:

-- Vigilant: The respondent startles easily to any sound or touch. Her eyes are wide open.

-- Lethargic: The respondent repeatedly dozes off while you are asking questions. Difficult to keep respondent awake for interview, but does respond to voice or touch.

-- Stupor: The respondent is very difficult to arouse and keep aroused for the interview, requiring shaking and/or repeated shouting.

-- Coma: The respondent cannot be aroused despite shaking and shouting.

Q5a. DISORIENTATION

(i) Question: Was the patient disoriented at any time during the interview, such as thinking he/she was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?

(ii) Definition: Impaired ability to locate oneself in one's environment, in reference to time, place or person.

(iii) Examples:

-- During the interview in the hospital, respondent thinks she is at home.

-- Respondent thinks it is night-time, during the day.

-- Respondent repeatedly thinks you are her grand-daughter (NOT due to vision problems).

(iv) Cognitive function tests: errors on orientation items.

Q6a. MEMORY IMPAIRMENT

(i) Question: Did the patient demonstrate any memory problems during the interview, such as inability to remember events in the hospital or difficulty remembering instructions?

(ii) Definition: Inability to learn new material or to remember past or recent events.

(iii) Examples:

-- During the interview, respondent cannot recall how many children she has, nor her height and weight.

-- Although respondent is alert and attentive, with intact vision and hearing, he cannot follow the instructions on the performance tasks.

-- Respondent cannot state why or for how long he has been in the hospital.

(iv) Cognitive function tests: errors on memory or recall items.

Q7a. PERCEPTUAL DISTURBANCES

(i) Question: Did the patient have any evidence of perceptual disturbances, for example, hallucinations, illusions, or misinterpretations (such as thinking something was moving when it was not)?

(ii) Definition: Visual or auditory misinterpretations, illusions, or hallucinations.

(iii) Examples:

-- (Auditory hallucinations) Respondent heard spouse and children speaking to him. No one was there.

-- (Visual hallucination) Respondent saw wife in room. No one was there.

-- (Auditory misinterpretation) Respondent hears beeper in hall, and thinks it is a siren.

-- (Visual misinterpretation) Respondent sees pile of laundry next to bed and thinks it is someone sitting there.

(iv) Note: Illusions and misinterpretations arise from a false impression of an actual stimulus. With hallucinations, no stimulus is actually present.

Q8a. (Part 1) PSYCHOMOTOR AGITATION

(i) Question: At any time during the interview, did the patient have an unusually increased level of motor activity, such as restlessness, picking at bedclothes, tapping fingers, or making frequent sudden changes or position?

(ii) Definition: Greatly increased level of activity as compared with the norm. These behaviors would indicate restlessness or agitation. Cardinal features include: repeated or constant shifting of position, increased speed of motor responses, repetitive movements (e.g., grasping/picking behaviors). May be voluntary or involuntary.

(iii) Examples:

-- The respondent appears “antsy”, and is constantly shifting his position in bed.

-- The respondent is repeatedly pulling at her sheets and IV tubing (NB: behavior appears inappropriate and purposeless).

-- The respondent is pacing about the room during the interview.

(iv) Note: Should be assessed separately from level of consciousness. Psychomotor agitation may be present even in the face of stupor.

Q8b. (Part 2) PSYCHOMOTOR RETARDATION

(i) Question: At any time during the interview, did the patient have an unusually decreased level of motor activity, such as sluggishness, staring into space, staying in one position for a long time, or moving very slowly?

(ii) Definition: Greatly reduced or slowed level of activity as compared with the norm. These behaviors indicate sluggishness, slowing. Cardinal features include: decreased movement, slowness of motor responses, staring (but still aware of environment). May be voluntary or involuntary.

(iii) Examples:

-- Prolonged delay between when interviewer asks question and respondent begins to answer.
-- Respondent moves body very slowly to pick up a glass.

-- Respondent stares into space, but is still aware of the environment.

(iv) Note: Respondent need not be lethargic (altered level of consciousness) to have slowness of response. Should be assessed separately from level of consciousness. Psychomotor retardation may be present with normal level of consciousness; also, patients with lethargy, stupor do NOT necessarily have psychomotor retardation.

Q9a. ALTERED SLEEP-WAKE CYCLE

(i) Question: Did the patient have evidence of disturbance of the sleep-wake cycle, such as excessive daytime sleepiness with insomnia at night?

(ii) Definition: Alteration in the patient's usual sleep-wake cycle, ranging from hypersomolence to insomnia to reversal of the sleep-wake cycle (e.g., frequent napping during the day and insomnia at night.)

(iii) Examples: as per definition.

(iv) Note: Information must sometimes be obtained from nurse or caretaker.

CAM PRETEST

Classify each behavior in the following categories. Choose one category that best describes the behavior:

INATTENTION
DISORGANIZED THINKING
ALTERED LEVEL OF CONSCIOUSNESS
DISORIENTATION
MEMORY IMPAIRMENT
PERCEPTUAL DISTURBANCE
PSYCHOMOTOR RETARDATION (DECREASED LEVEL OF ACTIVITY)
PSYCHOMOTOR AGITATION (INCREASED LEVEL OF ACTIVITY)

Examples of observed behaviors

		Classification
1.	You ask the respondent for his phone number. After probing, it is clear he doesn't know.	_____
2.	During the interview, the respondent dozes off while you are asking questions.	_____
3.	As you ask the respondent a question, she keeps repeating the answer to the previous question. You repeat the question clearly, yet she continues to repeat the previous answer; you ask AGAIN - same result.	_____
4.	The respondent's breakfast tray comes in. She says angrily, "why are they bringing me eggs for dinner?"	_____
5.	The respondent startles easily at any sound or touch. His eyes are wide open.	_____
6.	You ask the respondent to tell you the reason he is admitted to the hospital. He responds, "I've gotta get to the Yellow Brick road."	_____
7.	As you interview the respondent, she keeps looking over at the bedside. Suddenly, she blurts out, "What is that man doing there?" (There's no one there.)	_____
8.	As you begin the interview, the respondent's eyes are roving around the room. You call the respondent's name and touch her arm. She looks at you momentarily, but does not acknowledge your presence. You repeat a question several times without response. Her eyes continue to rove around the room.	_____

9. You introduce yourself to the respondent, and he asks, “What are you doing in my home?” _____

10. The respondent complains about all the birds flying around in the room. _____

11. You walk in to meet a new respondent, the respondent says, “Lucy, where have you been? You said you’d be right back!” (She thinks you’re her daughter who is at least 30 years older than you.) _____

12. The respondent angrily states that she has not received her insulin shots for the last three days. You check the Med. Sheets and see she has received one each day. _____

13. During the interview, the respondent is continuously rolling over in bed, sitting up, covering/uncovering himself. _____

14. Between questions, the respondent seems to be carrying on a conversation with her husband (who is not present). _____

15. You ask the respondent if she is able to feed herself. She replies, “It depends what kind of party I’m at; I need a batsram.” _____

16. The respondent states she has been in the hospital for two days, and you know she’s been in for three weeks. _____

17. The respondent remains in bed motionless throughout the interview. He moves very slowly to do the performance tasks. _____

CAM PRETEST: KEY

Key - Observed Behaviors *

1. Memory impairment
2. Altered level of consciousness (lethargic)
3. Inattention
4. Disorientation
5. Altered level of consciousness (vigilant)
6. Disorganized thinking
7. Perceptual disturbance (visual hallucinations)
8. Inattention
9. Disorientation
10. Perceptual disturbance (visual hallucinations)
11. Disorientation
12. Memory impairment
13. Psychomotor agitation
14. Perceptual disturbance (auditory hallucinations)
15. Disorganized thinking
16. Memory impairment
17. Psychomotor retardation

* One category is chosen for each item for standardization purposes, although some of these behaviors may well fit into other categories as well.

SCORING THE CAM INSTRUMENT

a. Scoring: Delirium scored as 'present' (1) or 'absent' (0), based on the following criteria. These definitions are based on the validated Confusion Assessment Method (CAM) criteria. [Reference: Inouye SK et al; Annals of Internal Medicine. 1990; 113:941-8].

Score delirium as present (1) if meets the following criteria:

(i) Acute onset
CAM 1a = 1 (Yes)

-OR-

Fluctuating course
CAM 2b OR 3b OR 4b = 1 (Yes)

-AND-

(ii) Inattention
CAM 2a = 2, 3

-AND EITHER-

(iii) Disorganized thinking
CAM 3a = 2, 3

-OR-

(iv) Altered level of consciousness
CAM 4a = 2, 3, 4, 5

b. Calculation Notes:

1. For CAM 1a, set 8 to missing. For CAM 2b, 3b, 4b -- set 8 to missing. 'Not applicable' (9) is equivalent to 'No' (2) (since this would be a skip question). If any one of these items has a non-missing value, can still rate 'acute onset/fluctuating course'. If all are missing, cannot rate 'acute onset/fluctuating course and delirium score is missing.

2. For CAM 2a, set 8 to missing. If this item is missing, delirium score is missing.

3. For CAM 3a and 4a, set 8 to missing. Can score delirium as long as one of these items has a non-missing value.

OBTAINING COPYRIGHT CLEARANCE

You are welcome to use the CAM instrument and criteria for clinical or research purposes. However, if you need to publish or reproduce the CAM for a paper, book chapter, or article, you must obtain copyright clearance from our office. In order to do this, please write to our office at the address indicated below regarding how you will use the instrument, where it will be published, etc. Permission will be granted without a fee.

Your publication should cite the original article in the Annals of Internal Medicine (Inouye SK, van Dyck CH, Alessi CA, et al. Clarifying Confusion: The Confusion Assessment Method. A new method for detection of delirium. Ann Intern Med. 1990; 112: 941-8).

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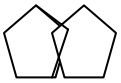
ADAPTATIONS OF THE CAM

The CAM has been adapted for use in the ICU and ER settings, for measurement of severity, and for use by telephone. References for these adaptations below:

i) Ely EW. Delirium in mechanically ventilated patients; validity and reliability of the Confusion Assessment Method for the intensive care unit (CAM-ICU). JAMA. 2001;286:2703-10.
ii) Lewis LM et al. Unrecognized delirium in ED geriatric patients. Am J Emerg Med. 1995;13:142-45.
iii) McCusker J et al. Reliability and validity of a new measure of severity of delirium. International Psychogeriatrics. 1998;10:421-33.
iv) Marcantonio ER et al. Diagnosing delirium by telephone. J Gen Intern Med. 1998;13:621-23.

Mini-Mental State Examination

Maximum score		
	Orientation	
5	*What is the (year), (season) (date) (day) (month)?*	
5	*Where are we (city) (state) (county) (hospital) (floor)?*	
	Registration	
3	*Name three objects: one second to say each. Ask the patient for all three after you have said them. Give one point for each correct answer. Repeat them until all three are learned. Count trials and record number.*	
	Attention and Calculation	
5	*Serial sevens backwards from 100 (stop after five answers). Alternatively, spell WORLD backward.*	
	Recall	
3	*Ask for the three objects repeated above. Give one point for each correct answer.*	
	Language and Praxis	
2	*Show a pencil and watch, and ask subject to name them both.*	
1	*Ask the patient to repeat the following: "No ifs, ands, or buts."*	
3	*(Three-stage command): "Take this paper in your right hand, fold it in half, and put it on the floor."*	
1	*"Read and obey the following: Close your eyes."*	
1	*"Write a sentence."*	
1	*"Copy this design" (interlocking pentagons)*	

_____ **= Total/30**

Ref: Folstein MR et al. J Psychiatr Res. 1975;12:189-98.

The Confusion Assessment Method (CAM)

(1) ACUTE ONSET AND FLUCTUATING COURSE
Is there evidence of an acute change in mental status from the patient's baseline? Did this behavior fluctuate during the past day, that is, tend to come and go or increase and decrease in severity?

(2) INATTENTION
Does the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?

(3) DISORGANIZED THINKING
Is the patient's speech disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

(4) ALTERED LEVEL OF CONSCIOUSNESS
Overall, how would you rate this patient's level of consciousness?

Alert (normal)
Vigilant (hyperalert)
Lethargic (drowsy, easily aroused)
Stupor (difficult to arouse)
Coma (unarousable)

THE DIAGNOSIS OF DELIRIUM REQUIRES A PRESENT/ABNORMAL RATING FOR CRITERIA:
(1) AND (2) AND EITHER (3 OR 4)

Ref: Inouye SK, et al. Ann Intern Med. 1990;113:941-8

It is recommended that you print this page out, place back to back and laminate for use as a reference tool.

FREQUENTLY ASKED QUESTIONS ABOUT THE CAM

I. Regarding the "Acute onset/fluctuating course" criterion:

The criterion was stated as "acute onset and fluctuating course" in the initial CAM validation study. However, during early studies applying this instrument, we found that the assessment of fluctuating course was often very difficult during a 10 - 20 minute interview at the bedside. In addition, we felt that using this criterion as "acute onset or fluctuating course" allowed increased sensitivity for detection for all possible delirium cases (although some specificity may have been sacrificed). In light of our desire for the CAM instrument to serve as a screening instrument with maximal sensitivity, we opted to changed this criteria on the shortened version of the CAM to an "or" specification.

In recommending to others what to do with this criterion, we recommend that the choice depend on the goals of the instrument in their study:

1. If maximal sensitivity is desired, i.e., to detect as many cases as possible using CAM as a screening instrument, we advise using the "or" criterion in order to improve sensitivity. In these cases, it may be useful to indicate that the delirium outcome falls into the category of "possible or probable delirium".

2. If maximal specificity is desired, with increased certainty of a pure diagnosis of delirium, then we advise using the "and" criterion. This will increase specificity, but may sacrifice missing some cases of delirium. In this case, the delirium outcome may be indicated as "probable or definite delirium".

II. Should we ask and score questions 5-9?

Questions 5-9 were included in the original validation study (and many investigators use them to fulfill the entire DSM-III-R definition), thus they were included in the instrument. In our studies, we still use the entire instrument for this reason (referred to as the “long CAM”).

However, it is perfectly justified to just use questions 1-4 (referred to as the “short CAM”), as this definitional portion has been fully validated. Many studies are using the shortened form.

III. How changes in DSM-IV criteria relate to the CAM:

The CAM criteria agree more closely with the current DSM-IV criteria than they did with the previous DSM-III-R criteria. Thus, I would recommend continuing to use the CAM criteria. In DSM-IV, Criterion B "Changes in cognition, that are not better accounted for by a pre-existing dementia" is somewhat vague, and disorganization of thought is most likely the key element here.

However, for investigators who feel uncomfortable using the CAM criteria, the longer form of the CAM instrument will facilitate collection of all information needed to rate both DSM-IV and DSM-III-R criteria.

IV. Can the CAM be scored based on routine clinical observations or a brief conversation with the patient?

The CAM was designed and validated to be scored based on observations made during brief but formal cognitive testing, such as the Mini-Mental State Examination (or other brief mental status evaluations). Our previous work, as well as the work of others, that the diagnostic accuracy of the CAM is directly influenced by the quality of the observations made. Based on observations made solely during routine clinical care, nursing staff missed delirium in nearly 80% of observations and 70% of cases (Reference: Inouye SK et al, Arch Intern Med 2001;161:2467-2473, see attached). Thus, we strongly recommend that the CAM be scored based on formal cognitive evaluation.

V. Can the CAM be used to rate severity of delirium?

The CAM severity score has been created to rate the severity of delirium based on the shortened version of the CAM. The description of creating this score is provided in Inouye SK et al, N Engl J Med 1999;340:669-76. The severity of delirium was measured by an additive score for the four designated symptoms (acute onset/fluctuation, inattention, disorganized thinking, and altered level of consciousness). Each symptom of delirium except acute onset/fluctuation was rated as absent (0 points), mild (1 point) or marked (2 points); acute onset and fluctuation was rated as absent (0 points) or present (1 point). The sum of these ratings yielded a delirium-severity score, ranging from 0 to 7, with higher scores indicating increased severity. The scores have been shown to correlate with persistence and duration of delirium, but have not been separately validated to date.

REFERENCES ATTACHED

Inouye SK, Van Dyck CH, Alessi CA, Balkin S, Siegal AP, Horwitz RI. Clarifying confusion: The Confusion Assessment Method. A new method for detection of delirium. Ann Intern Med. 1990; 113: 941-8.

Inouye SK, Foreman MD, Mion LC, Katz KH, Cooney LM. Nurses' recognition of delirium and its symptoms: comparison of nurse and researcher ratings. Arch Intern Med. 2001;161:2467-2473.

Return to the Resource Pathway

GAI: Please answer the items according to how you've felt in the last week. Tick the circle under AGREE if you mostly agree that the item describes you; tick the circle under DISAGREE if you mostly disagree that the item describes you.

		AGREE	DISAGREE
1	I worry a lot of the time.	O	O
2	I find it difficult to make a decision.	O	O
3	I often feel jumpy.	O	O
4	I find it hard to relax.	O	O
5	I often cannot enjoy things because of my worries.	O	O
6	Little things bother me a lot.	O	O
7	I often feel like I have butterflies in my stomach.	O	O
8	I think of myself as a worrier.	O	O
9	I can't help worrying about even trivial things.	O	O
10	I often feel nervous.	O	O
11	My own thoughts often make me anxious.	O	O
12	I get an upset stomach due to my worrying.	O	O
13	I think of myself as a nervous person.	O	O
14	I always anticipate the worst will happen.	O	O
15	I often feel shaky inside.	O	O
16	I think that my worries interfere with my life.	O	O
17	My worries often overwhelm me.	O	O
18	I sometimes feel a great knot in my stomach.	O	O
19	I miss out on things because I worry too much.	O	O
20	I often feel upset.	O	O

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Development and validation of the Geriatric Anxiety Inventory

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ABSTRACT

Background: Anxiety symptoms and anxiety disorders are highly prevalent among elderly people, although infrequently the subject of systematic research in this age group. One important limitation is the lack of a widely accepted instrument to measure dimensional anxiety in both normal old people and old people with mental health problems seen in various settings. Accordingly, we developed and tested of a short scale to measure anxiety in older people.

Methods: We generated a large number of potential items *de novo* and by reference to existing anxiety scales, and then reduced the number of items to 60 through consultation with a reference group consisting of psychologists, psychiatrists and normal elderly people. We then tested the psychometric properties of these 60 items in 452 normal old people and 46 patients attending a psychogeriatric service. We were able to reduce the number of items to 20. We chose a 1-week perspective and a dichotomous response scale.

Results: Cronbach's α for the 20-item Geriatric Anxiety Inventory (GAI) was 0.91 among normal elderly people and 0.93 in the psychogeriatric sample. Concurrent validity with a variety of other measures was demonstrated in both the normal sample and the psychogeriatric sample. Inter-rater and test–retest reliability were found to be excellent. Receiver operating characteristic analysis indicated a cut-point of 10/11 for the detection of DSM-IV Generalized Anxiety Disorder (GAD) in the psychogeriatric sample, with 83% of patients correctly classified with a specificity of 84% and a sensitivity of 75%.

Conclusions: The GAI is a new 20-item self-report or nurse-administered scale that measures dimensional anxiety in elderly people. It has sound psychometric properties. Initial clinical testing indicates that it is able to discriminate between

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those with and without any anxiety disorder and between those with and without DSM-IV GAD.

Key words: anxiety, anxiety disorder, aged, aged 80 and over, generalized anxiety disorder, psychological test

Introduction

The prevalence of anxiety symptoms and anxiety disorders has been reported to decline with advancing age (Flint, 1994; Henderson *et al.*, 1998). Despite this decline, anxiety remains one of the most common psychiatric problems experienced by elderly people (Australian Bureau of Statistics, 1998). Yet anxiety symptoms and anxiety disorders in elderly adults remain both under-recognized and under-treated by health professionals (Scogin, 1998), despite their contribution to significant morbidity, loss of functioning, and poorer quality of life (Blazer *et al.*, 1991).

Anxiety disorders are more prevalent in older adults with chronic general medical conditions and are also highly co-morbid with depressive disorders (Beekman *et al.*, 2000; Lenze *et al.*, 2001). Anxiety disorders, however, remain less well studied in elderly adults than other disorders such as depression and dementia. An accurate picture of the true prevalence and incidence of anxiety disorders remains elusive (Krasucki *et al.*, 1998). This may be due in part to methodological factors, such as the use of diagnostic criteria and instruments not validated for use with this group (Fuentes and Cox, 1997), and to response bias during epidemiological surveys (Jorm, 2000). Diagnostic difficulties, including problems of recognizing age-specific symptoms, distinguishing symptoms of chronic physical disorders from the symptoms of anxiety, and the influence of age-related psychosocial issues on presentations of anxiety symptoms in later life have been increasingly discussed in the literature (Palmer *et al.*, 1997). Accurate screening for anxiety symptoms in elderly populations becomes a crucial first step in identifying patients in need of further diagnostic work-up and treatment.

Many screening instruments have been developed to measure the symptoms, distress levels and characteristics of anxiety symptoms; the vast majority of these have been developed in and for young adult populations. Yet the importance of instruments specifically designed for older adults (Yesavage *et al.*, 1983) as well as age-congruent norms (Owens *et al.*, 2000) cannot be underestimated. Some anxiety scales, such as the Beck Anxiety Inventory (BAI; Beck *et al.*, 1988), have normative data for elderly populations. Others, such as the Adult Manifest Anxiety Scale – Elderly Version (Lowe and Reynolds, 2000), have been modified for use with older adults, and a very few anxiety measures, such as the Short Anxiety Screening Test (SAST; Sinoff *et al.*, 1999), have

been specifically designed for use with older adult populations. Instruments to measure anxiety levels can be constructed as clinician-rated or observational in nature (e.g. the Hamilton Anxiety Scale; Hamilton, 1959; Maier *et al.*, 1988) or can be designed as self-report measures [e.g. the State-Trait Anxiety Inventory (STAI); Spielberger *et al.*, 1970; and the Padua Inventory; Sanavio, 1988].

However, many of these instruments, even those designed specifically for elderly populations, have shortcomings in terms of clinical and/or psychometric utility. These deficiencies fall into three main categories: (1) many inventories (e.g. the Hospital Anxiety and Depression Scale; Zigmond and Snaith, 1983) are found to be poor in detecting anxiety in older samples (Davies *et al.*, 1993); (2) many inventories (e.g. BAI) are less suitable for elderly adults with mild cognitive deficits (e.g. wording of items and/or response sets too long or complex; Pachana *et al.*, 1994); and (3) somatic items in some inventories [e.g. the Goldberg Anxiety and Depression Scale (GADS); Goldberg *et al.*, 1988] fail to reflect the somatic nature of some old adults' manifestations of anxiety disorders (Turnbull, 1989) while resulting in too great an overlap with somatic symptoms of normal aging, co-morbid medical conditions or medication side-effects (e.g. shortness of breath in chronic obstructive pulmonary disorder or cardiac failure, conditions that are relatively prevalent in later life).

In an attempt to overcome the deficiencies of available anxiety self-report measures for this group, a new instrument was designed specifically for use with older people in a range of settings. To maximize clinical utility, the new instrument was designed with the following features: (1) relative brevity (20 items) to minimize fatigue; (2) dichotomous response format for ease of use in the context of poor education or mild cognitive impairment; and (3) minimal somatic symptoms to limit overlap with the symptoms of general medical conditions. The instrument was specifically designed to measure common symptoms of anxiety in the elderly. It was not designed to diagnose specific anxiety disorders, but rather to assess anxiety symptom endorsement across a range of anxiety presentations. We report initial psychometric properties of the scale, data from testing in normal older samples, and pilot data from a small psychogeriatric cohort.

Method

Stage 1 – Development of items

Candidate items were either formulated *de novo* or adapted from existing items and compared with similar items that achieved high sensitivity for detecting anxiety, had the highest correlations with anxiety factors, or were most commonly endorsed by anxious patients in the adult anxiety literature (e.g. Gillis *et al.*, 1995). During this process of selecting item content, a large number of instruments designed to measure anxiety were examined (see Table 1 for a

Table 1. Extant anxiety questionnaires used in item development

State-Trait Anxiety Inventory (STAI, Speilberger *et al.*, 1970)
Padua Inventory (Sanavio, 1988)
Short Anxiety Screening Test (SAST; Sinoff *et al.*, 1999)
Penn State Worry Questionnaire (PSWQ; Meyer *et al.*, 1990)
Beck Anxiety Inventory (BAI, Beck *et al.*, 1988)
Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983)
Anxiety Screening Questionnaire (ASQ-15; Wittchen and Boyer, 1998).
Adult Manifest Anxiety Scale – Elderly Version (AMAS-E; Lowe and Reynolds, 2000).
Anxiety Control Questionnaire (ACQ; Rapee *et al.*, 1996)
Anxiety Disorders Interview Schedule (DiNardo *et al.*, 1983)
Anxiety Sensitivity Index (ASI; Reiss *et al.*, 1986)
Anxiety Status Inventory (ASI; Zung 1971)
Anxious Thoughts Inventory (ATI; Wells, 1994)
Clinical Anxiety Scale (CAS; Snaith *et al.*, 1982)
FEAR (Krasucki *et al.*, 1999)
Fear Questionnaire (FQ; Marks and Mathews, 1979)
Goldberg Anxiety and Depression Scale (GADS; Goldberg *et al.*, 1988)
Hamilton Anxiety (Rating) Scale (Hamilton, 1959)
Hopkins Symptom Checklist (SCL-90; Derogatis *et al.*, 1973)
Manifest Anxiety Scale (MAS; Taylor, 1953)
Profile of Mood States (POMS; McNair *et al.*, 1971)
Rating Anxiety in Dementia (RAID; Shankar *et al.*, 1999)
Worry Domains Questionnaire (WDQ; Tallis *et al.*, 1994, more widely used version: Tallis *et al.*, 1992)
Worry Scale (Wisocki, 1988)
COPE (Carver *et al.*, 1989)

complete list). From this wide range of instruments, 60 sample items were formulated. These items were chosen to reflect the primary domains covered in existing inventories: fearfulness, worry, metaworry (i.e. worry about worry), cognitions about anxiety, somatic symptoms of anxiety, anxious mood and anxiety sensitivity. These types of items were common across all or almost all extant scales, and broadly reflect anxiety symptomatology without being overly specific to any one type of anxiety disorder. A small number of the chosen items were reverse-scored.

These 60 items were given to a small sample of healthy elderly, and to clinical psychologists and psychiatrists for comment on ease of understanding, age appropriateness of language, and redundancy. The reference group also commented on such dimensions as face and content validity. The final response format, "agree/disagree," was chosen so as to appear less semantically categorical than the "yes/no" format favored in instruments such as the Geriatric Depression Scale (Yesavage *et al.*, 1983). The reference group also favored use of the "agree/disagree" item response format. The item pool was refined and a few items reworded or substituted based on recommendations from this reference

group. These 60 items were then piloted on two main samples: a large group of healthy community-dwelling elderly enlisted from two different sources and a small outpatient sample of psychogeriatric patients, many of whom had DSM-IV anxiety and depressive disorders. Following this pilot work, a 20-item version of the scale was developed.

Stage 2 – Selection of final items of the Geriatric Anxiety Inventory (GAI) scale and their validation

ITEM TOTAL CORRELATIONS

Responses on the GAI were collected from two samples of older community-dwelling healthy adults drawn from the greater Brisbane metropolitan area: 263 participants (age range 60–90 years; mean age 72.0 years) in a large survey of driving habits and 189 participants (age range 60–88 years; mean age 71.4 years) participating in a study of worry. The samples did not differ on demographics or response characteristics and so were combined to assess the internal consistency of the instrument. The final sample of 452 older adults was 64.4% female with 70% completing high school and/or further education; 56.2% of the sample were married.

Cronbach's α coefficient of the original 60 items was calculated at 0.90. Each item was then correlated with the total scores to identify those 30 items that were most highly correlated with the total score. The final 10 items were discarded to reduce the redundancy of constructs measured, to eliminate long items or those that were potentially problematic across a variety of settings and populations (e.g. those with mild cognitive impairment), and to eliminate the few remaining reverse scored items; items with lower item total correlations were discarded if a choice between two similar items was made. There is a methodological literature (e.g. Green *et al.*, 1993) suggesting that, in factor analyses with questionnaires given to older populations, reverse-scored items often form their own factor, labelled by one author as the "confusion factor." Therefore, we chose to eliminate any reverse scored items to minimize this effect in our target population.

The 20 items that comprise the final version of the GAI are depicted in Table 2. All 20 items had corrected item-total correlations of 0.39 or above, with most above 0.50. The resulting α coefficient for the GAI was 0.91. The GAI total score for this combined initial community sample had a mean of 2.3 (S.D. = 3.8).

Missing data did not affect the initial large community sample, nor did non-response to particular items; it appeared that even the larger and necessarily more redundant 60 items were quite tolerable for elderly adults to complete. The 20-item final scale is well within the recommended minimum number of items for a scale with a single construct (Loewenthal, 2001). Item means for each of the 20 items are also given in Table 2.

Table 2. Item total correlations

GAI QUESTION		CORRECTED ITEM TOTAL (60)	ITEM MEANS (20)
GAI 1	I worry a lot of the time	0.61	0.16
GAI 4	I find it difficult to make a decision	0.42	0.20
GAI 8	I often feel jumpy	0.48	0.18
GAI 10	I find it hard to relax	0.53	0.13
GAI 11	I often cannot enjoy things because of my worries	0.50	0.07
GAI 12	Little things bother me a lot	0.57	0.21
GAI 17	I often feel like I have butterflies in my stomach	0.59	0.17
GAI 27	I think of myself as a worrier	0.48	0.05
GAI 28	I can't help worrying about even trivial things	0.53	0.11
GAI 29	I often feel nervous	0.38	0.05
GAI 30	My own thoughts often make me anxious	0.57	0.17
GAI 33	I get an upset stomach due to my worrying	0.55	0.14
GAI 34	I think of myself as a nervous person	0.54	0.08
GAI 35	I always anticipate the worst will happen	0.49	0.08
GAI 38	I often feel shaky inside	0.48	0.04
GAI 39	I think that my worries interfere with my life	0.59	0.07
GAI 45	My worries often overwhelm me	0.66	0.12
GAI 47	I sometimes feel a great knot in my stomach	0.49	0.06
GAI 48	I miss out on things because I worry too much	0.46	0.07
GAI 60	I often feel upset	0.51	0.09

GAI, Geriatric Anxiety Inventory.

CONCURRENT VALIDITY

This final 20-item version of the GAI was compared with other measures: the GADS, STAI, BAI, Penn State Worry Questionnaire (PSWQ; Meyer *et al.*, 1990), and the Positive and Negative Affect Schedule (PANAS; Watson *et al.*, 1988). These measures were chosen to provide relevant information on concurrent validity with the GAI. Sample 1 received the GADS and the STAI State Anxiety subscale; sample 2 received the BAI, the PSWQ and the PANAS. Correlations for these are given in Table 3. All these measures were significantly correlated with the GAI in the expected directions, suggesting that the GAI has good concurrent validity.

Stage 3 – Clinical testing of items: further validation

GERIATRIC PSYCHIATRY SAMPLE

The GAI was further tested on a clinical sample consisting of a consecutive series of 46 old people with a mean age of 78.8 years (SD 6.7; range 66–94) attending a community geriatric psychiatry service. Thirty-four (74%) participants were female and 36 (78%) lived in their own homes. The remainder lived in retirement

Table 3. Correlations of the 20-item Geriatric Anxiety Inventory (GAI) with related measures for two separate samples

SAMPLE	MEASURE	PEARSON CORRELATION COEFFICIENT	*p*-VALUE
Sample 1 ($n = 263$)	GADS-Anxiety	0.57	< 0.001
	STAI-Anxiety	−0.44	< 0.001
Sample 2 ($n = 189$)	BAI	0.63	< 0.001
	PSWQ	0.70	< 0.001
	PANAS-Negative	0.58	< 0.001
	PANAS-Positive	−0.34	< 0.001

GADS, Goldberg Anxiety and Depression Scale; STAI, State-Trait Anxiety Inventory; BAI, Beck Anxiety Inventory; PSWQ, Penn State Worry Questionnaire; PANAS, Positive and Negative Affect Schedule.

villages, aged hostels or nursing homes. All participants were white, English-speaking and free of clinically significant cognitive impairment. Their mean Mini-mental State Examination (MMSE; Folstein *et al.*, 1975) score was 28.1 (SD 1.6; range 25–30). Most participants were either married (28.3%) or widowed (43.5%). Their educational background was mixed, with 47.8% having had high school education or better. DSM-IV diagnoses were established using the Mini-International Neuropsychiatric Interview version 5.0.0 (Sheehan *et al.*, 1998). Eleven (23.9%) participants met diagnostic criteria for a current anxiety disorder, of whom eight (17.4%) had Generalized Anxiety Disorder (GAD). Ten participants met diagnostic criteria for current Major Depressive Disorder (MDD), of whom six had comorbid GAD. Concurrent measures administered included the state component of the STAI (Spielberger *et al.*, 1970) and the GADS (Goldberg *et al.*, 1988). Mean (S.D., range) scores on these scales were: STAI-State 36.3 (13.2, 20–70) and GADS 2.9 (3.4, 0–11).

The mean GAI score for this geriatric psychiatry patient sample ($N = 46$) was 5.22 (S.D. 5.83). Patients meeting DSM-IV criteria for any current anxiety disorder ($N = 11$) achieved a mean GAI score of 10.64 (S.D. 5.87) whereas patients meeting DSM-IV criteria for current GAD ($N = 8$) achieved a mean GAI score of 10.75 (S.D. 6.27). GAI score was not related to age ($r_p = -0.12$, $p = 0.42$), gender [$F(1, 44) = 0.59$, $p = 0.45$] or cognitive function ($r_p = 0.08$, $p = 0.61$). Test–retest reliability was assessed by asking participants to complete the scale again 1 week later ($r_p = 0.91$, $p < 0.0000$). Inter-rater reliability was assessed by having a second rater score the GAI on the basis of an audiotape of participant responses ($r_p = 0.99$, $p < 0.0000$). Concurrent validity was assessed using Pearson product-moment correlations between the GAI and the other two measures of anxiety: GAI × STAI-S ($r_p = 0.80$, $p < 0.0000$);

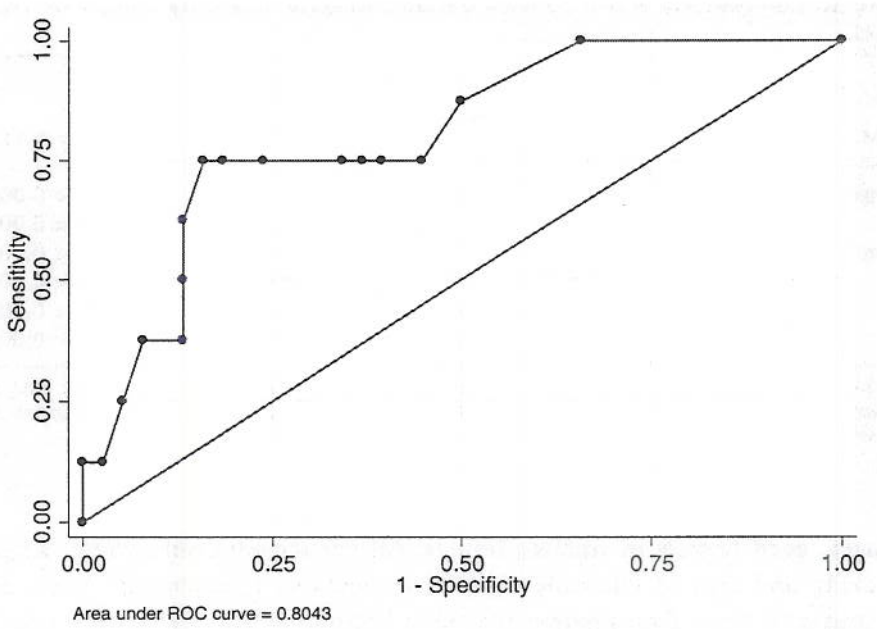

Fig. 1. Receiver operating characteristic (ROC) analysis: 20-item Geriatric Anxiety Inventory (GAI-20) × DSM-IV Generalized Anxiety Disorder (GAD) diagnosis.

GAI × GAS ($r_p = 0.70$, $p < 0.0000$). The ability of the GAI to discriminate between patients with and without any anxiety disorder [$F(1, 44) = 16.87$, $p = 0.0002$] and with and without GAD in particular [$F(1, 44) = 10.56$, $p = 0.0022$] was found to be good. However, there were insufficient participants with either MDD in the absence of GAD or GAD in the absence of MDD to perform a discriminant analysis between participants with only one of these disorders.

Stage 4 – Clinical cut-offs, sensitivity and specificity

We undertook a receiver operating characteristic (ROC) analysis to identify the optimum GAI-20 cut-point to distinguish geriatric psychiatry patients with GAD from those patients without GAD. The area under the ROC curve was 0.80 (95% confidence interval 0.64–0.97) and the optimum cut-point was 10/11 (see Fig. 1). This cut-point correctly classified 83% of patients with a sensitivity of 75% and specificity of 84%. A similar ROC analysis to identify the optimum GAI-20 cut-point to identify patients with any anxiety disorder (not shown) found an optimum cut-point of 8/9, which correctly classified 78% of patients with a sensitivity of 73% and a specificity of 80%.

Conclusions and recommendations

We have described the development and initial clinical testing of a new brief self-report scale to measure anxiety symptoms in elderly people. Our preliminary data indicate that the 20-item GAI has sound psychometric properties both in normal older people and in a sample of older patients of a geriatric psychiatry service. In developing the GAI, we had the specific intention that it would prove suitable for the measurement of the normal range of anxiety found in community-residing elderly people and also the pathological range of anxiety commonly seen in patients attending geriatric psychiatry services. We believe that the GAI is appropriate for these purposes.

Although GAI score is not significantly related to age or gender, the main limitations to the generalizability of our findings are the relatively small size of our clinical cohort and the ethnic homogeneity of all of our samples.

Further testing of the GAI on a larger sample of psychogeriatric patients, as well as patients in long-term care facilities, patients with dementia of mild severity, and also older people with general medical conditions commonly associated with anxiety symptoms, is required before the instrument can be more generally recommended for clinical practice. However, the promising psychometric properties of the scale and the positive pilot data in our clinical cohort suggest that the GAI could prove useful to mental health professionals working with a range of older people.

Conflict of interest

None.

Description of authors' roles

This paper was jointly conceived and written by N. A. Pachana and G. J. Byrne. All authors made an equal contribution to the statistical design of the studies, and to collecting and analyzing the data.

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Return to the Resource Pathway

Interior Health

Rule Out Reversible or Other Cause: Mild Cognitive Impairment

Key Physical Health Considerations:

- **Acute Illness (i.e. Urinary Tract Infection, etc)?**
- **Malnutrition and/or Dehydration?**
- **Diabetes or Pre-Diabetes?**
- **Hypertension?**
- **Cardiovascular Disease?**
- **Smoking / Tobacco?**
- **Alcohol?**
- **Physical Inactivity?**
- **Thyroid, B12 Deficiency?**
- **Normal Pressure Hydroencephalus?**
- **Etc.**

Return to the Resource Pathway

Interior Health

Phased Dementia Pathway – Mild Cognitive Impairment

Clinical Practice Recommendations

Providing Client and Caregiver Support in the MCI Phase

The following Clinical Practice Recommendations were created as part of the IH Phased Dementia Pathway. These recommendations are evidence-informed or "best practice", and were created by the process described in the IH Dementia Care website*. Clinical Practice Recommendations at the Mild Cognitive Impairment phase of the pathway highlight the need for interdisciplinary health professionals to recognize early cognitive changes, understand the clinical and ethical challenges related to early diagnosis and disclosure, and be able to meet the support and informational needs of the client and caregiver throughout the uncertainty of this phase.

Levels of Evidence and Strength of Recommendations

The SORT research grading tool† emphasizes client-oriented outcomes – outcomes that matter to clients and help them live longer or better lives, including reduced morbidity, mortality or symptoms, improved quality of life and lower cost of health care services. Levels of evidence are ranked "**1, 2, 3"** based on the validity (quality) of the study design. Where existing relevant guidelines were found, they are cited as **"G"** in the level of evidence. Strengths of recommendations (**A, B, C**) are based on grading the quantity and consistency of the body of evidence. Ratings are listed following each recommendation or group of recommendations as needed.

Levels of Evidence and Strength of Recommendations Taxonomy

Levels of Evidence are ranked 1-3 based on the validity (quality) of the study design.
1 = Good quality client-oriented evidence
2 = Limited quality client-oriented evidence
3 = Other evidence

Evidence-based Recommendations are rated as follows:
A = consistent and good quality client-oriented evidence;
B = inconsistent or limited-quality client-oriented evidence;
C= evidence lacking, more research needed; based on expert consensus/usual practice

Qualitative Evidence

No comparable grading tool was found for qualitative research, however the well established criteria of *credibility, applicability (or fittingness), auditability and confirmability* are used. All four criteria must be met in order to be considered suitable evidence for practice recommendations. A designation of "Q" is given under level of evidence and source cited.

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† Ebell MH, Siwek J, Weiss BD, Woolf SH, Susman J, Ewigman B, & Bowman M. Simplifying the language of evidence to improve patient care: Strength of Recommendation Taxonomy (SORT): A patient-centered approach to grading evidence in the medical literature. *The Journal of Family Practice* 2004;53(2):111-120, available in the public domain from http://www.aafp.org/afp/20040201/548.pdf

Clinical Practice Recommendations

The Dementia Clinical Practice Working Group advises the following clinical practice recommendations concerning the provision of client and caregiver support and information following the diagnosis of possible or probable mild cognitive impairment**:**

1. **Education/Training**:

Provide interdisciplinary education and training opportunities regarding:	Level of Evidence (sources cited)	SOR‡
• the importance of follow-up visits and/or interdisciplinary referrals to address client and caregiver needs for further monitoring, emotional support, and information and support services following the diagnosis of mild cognitive impairment.	Q[13,17,18] 3[§,††,‡‡]	A
• current knowledge of cross-sector program information and available resources that assist clients and caregivers to connect with appropriate services in the formal health system (as needed);	3[**]	B
• current knowledge of information and material resources that assist clients and caregivers to initiate advanced planning for financial, legal and domestic personal matters	3[**]	B
• current knowledge of informal health resources (i.e., Alzheimer Society of BC) that assist clients and caregivers to connect to support and information services.	3[**]	B

2. **Information**:

a) Communicate the following key information about the need for information and support for clients with Mild Cognitive Impairment and their caregivers for use in planning and delivering care.	Level of Evidence (sources cited)	SOR‡
• There is limited research evidence concerning the psychological consequences of receiving a diagnosis of MCI (i.e, both first reactions and longer term emotional outcomes of living with MCI) available to guide practitioners in providing effective emotional support. It is reasonable to suspect that because the diagnosis of MCI is often a challenging and extended process, the uncertainty of this phase can produce anxiety and stress for clients and caregivers. Reported emotional reactions during the MCI phase include depression, apathy and irritability.	Q[1,20] 3[††,‡‡] 1[2,3,4]; 2[5,6]	C
• It is reasonable to believe that some of the limited evidence from investigation into disclosure of early stage dementia may be applicable to clients with MCI. However, care must be taken not to confuse or equate a	Q[7]	B

‡ Strength of Recommendation

§ Based on interview results from discussions with both the Kelowna Early Dementia Client Support Group and the Kelowna Early Dementia Caregiver Support Group (see other footnotes) held in Kelowna on June 2005 and April 2006. The Kelowna Early Dementia Support Group is comprised of people with diagnoses of both MCI and various dementias in the early stages of disease progression. Both clients and caregivers report feeling ”lost” and “isolated” and identified that their priority need following diagnosis is information about what to expect and how to connect to the health care system to find resources for further or future assistance.

** Both clients and caregivers reported receiving outdated contact information (i.e., telephone numbers, names) and brochure information on support services, and expressed frustration that health providers were not knowledgeable and up-to-date in these areas.

diagnosis of MCI with dementia, and some key differences between MCI and dementia may result in very different emotional needs. These differences include: ○ the degree of personal awareness into cognitive disabilities (anosognosia); ○ the variance in diagnostic certainty (MCI does not currently have diagnostic consensus, whereas criteria do exist for Alzheimer Disease and related dementias); ○ the long term cognitive prognosis (uncertain cognitive outcome for MCI vs. progressive debility for dementias).	Q[13,14,15,16] 3[8,9]; Reviews[10,11,12]	
• There is good evidence that compared to persons with early stage dementia, persons with MCI have significant insight into their cognitive and functional abilities. As a result of studies into this unique increased awareness, emotional reactions such as embarrassment, fear and depression have also been identified. Therefore, taking a ***client-led*** approach to providing emotional support is likely the best clinical practice focus available.	Q[13,14,15, 16]	A
• Practitioners should realize that caregivers may have different information and support needs and these needs may change throughout the caregiving experience.	Q[17, 18]	B
b) Communicate to the general public the following key information about Mild Cognitive Impairment:		
• The diagnosis of mild cognitive impairment is not a diagnosis of dementia, yet the literature suggests that some clients with MCI may already be convinced that they have dementia. Provide accurate and current public information that while MCI is associated with an increased risk of dementia, many people with MCI do not progress to dementia, even after several years.	3[19]	B
• Provide public information about the benefits of contacting a local coordinator of The Alzheimer Society of British Columbia (a national non-profit health organization) as a valuable resource that provides information, education and support to people affected by Alzheimer's disease and related dementias, including MCI.	3[§,**,††,‡‡]	A
• Provide public information about the benefits of advanced personal planning and ensuring personal voice in decision-making in the event that one should not be able to speak for one self.	3[(§)]	C
• Provide public information regarding access to resources for advanced personal planning.	3	C

3. <u>Program Planning:</u>

It is recommended that the following information (which identifies potential and actual gaps in providing emotional support for clients and caregivers following the diagnosis and disclosure of Mild Cognitive Impairment) is used for clinical program planning across disciplines and sectors as relevant:	Level of Evidence (sources cited)	SOR‡
• There is limited phenomenological research into the client's emotional needs following the diagnosis of cognitive loss, particularly for MCI. This is an area that needs further research attention.	2[20]; Q[7]	C
• It is reasonable to expect this phase to be a period of turmoil, uncertainty and stress for both client and caregiver, and a critical time for families to receive support through follow-up contact, either with their	3[§,**,††,‡‡]	A

physician or through interdisciplinary (e.g., social work or mental health) support services. Yet, the feedback received from clients with MCI in Support Groups[††], Caregiver Support Groups[‡‡] and from various providers in Interior Health (case managers, social workers, mental health clinicians) indicate that this follow-up support is infrequently practiced. This appears to be a gap in care delivery that could be addressed.		
• The idea that individuals may benefit from a short series of counseling following the disclosure of a diagnosis such as MCI or dementia is mentioned in literature, yet this is not an identifiable interdisciplinary practice within IH programs. While some physicians disclose diagnoses and request a follow-up visit to assess coping and answer questions, client and clinical group feedback[††‡‡] indicates that this is also not common. More frequently, follow-up visits with the physician are booked at 6 month to 1 year intervals for the purposes of monitoring cognitive losses to see if they have progressed or clearly converted to early dementia. This appears to be a gap in existing program planning that could be addressed.	Q[(7)] 3[(§,††)]	B
• The Kelowna client group also identified that during this period they did not always feel they could speak with their family and friends as talking about it was upsetting for both of them, and clients wanted to protect their family members from further distress. Allowing for variability in coping styles, it appears that the immediate emotional care needs (first reactions) in the weeks following diagnosis are a potential gap between the formal and informal health system. • Providing clients and caregivers with opportunities to talk about the diagnosis and what it means to them with a professional may be very useful intervention. This need could potentially be met through existing individualized home-based programs or in through "memory clinic" referrals (support and education *following* diagnosis) via shared or integrated care programs that involve interdisciplinary staff from HCC, Mental Health, Acute or Primary Care Centers, etc. and which could provide a few brief intervention sessions. Such contact is also an opportunity for clients and caregivers to learn and understand how and when to make contact with the formal health system in the future as their needs may change.	3[(††,§)] Q[(1,713,17,)] 1[(21)]; 2[(22,23)]	B B
• Although the Alzheimer Society of B.C. has expanded their focus for care beyond Alzheimer disease to include support, information and education for people experiencing related dementias, as well as for people with MCI, this fact is not well understood by practitioners or the public. Identifying the Society as an appropriate resource for clients with MCI and their caregivers should be incorporated into appropriate client pamphlets web-based sites and other dementia-related resource brokering tools used by staff.	3**	B
• Early advanced planning of financial, legal and personal affairs is essential to addressing future crisis problem solving and decision making should a client's autonomy become incapacitated by cognitive losses. Advance planning involves building a trusting relationship with client and caregivers, engaging in psychosocial and	Q[(24,25)] 1[(26)] 3[(27,28)]	A

[††] Based on interview results from discussions with the Kelowna Early Dementia Client Support Group (validation client focus groups for this project) held in Kelowna on June 2005 and April 2006). The Kelowna Early Dementia Client Support Group is comprised of people with diagnoses of both MCI and various dementias in the early stages of disease progression. Clients report that once they have been given their diagnosis, they find themselves trying to adjust and cope with this life-altering event without further assistance. Members of the group used words like "scary", "confusing", "dismal" to describe the period after diagnosis.

[‡‡] Based on group discussions held with Kelowna Early Stage Caregiver Group, April 2006.

lifestyle discussion, and providing basic information about B.C. tools such as enduring power of attorney, Representation Agreements, financial arrangements, living will directives, etc. During the Mild Cognitive Impairment phase, clients are able to actively participate in advanced financial, legal and personal planning and decision-making and should be encouraged to do so. There is good evidence that a team approach to early advanced planning results in better client outcomes than relying or assuming that physicians alone will address these issues.		
• LTC case managers, mental health clinicians and social workers have special educational and practice needs to both advise and use knowledge regarding details of advanced planning resources, legislation, etc. Programs need to plan education and support time to these clinicians to ensure currency of knowledge, skills and abilities.	3(**,29,30,31)	C

4. Provision of Care:

*Interdisciplinary professionals in all sectors are encouraged to use the following practice recommendations to guide the provision of emotional support and informational/educational needs related to clients with Mild Cognitive Impairment and their family/caregivers. The focus for care is to **connect** clients and their caregivers to appropriate support and information services both in the formal and informal health care system to assist adjusting to the diagnosis of MCI..*	Level of Evidence (sources cited)	SOR§§
A. Supporting Emotional Needs:		
• Use knowledge of MCI as different from Alzheimer Disease and Related Dementias to appropriately assess and provide sensitive emotional support and care.	3(§,††,‡‡)	B
• Assess client and caregiver coping in the period following diagnosis of MCI, particularly in the areas of adjustment to uncertainty, current and past coping behaviours, knowledge and availability of formal and informal supports, etc.	3	C
• Assess the quality of social support networks for both client and caregiver, and encourage clients to identify a close trusted companion (family member, friend) who can provide emotional support at a personal level throughout this period of time (e.g., accompany to physician offices, be available to talk, etc.);	3[32]	C
• Recognize client or caregiver emotional distress in the period following diagnosis and provide emotional support, either by direct brief counselling or referral to appropriate interdisciplinary support services (social work, mental health, physician, etc).	3	C
B. Supporting Information and Educational Needs		
• Provide clients and families with current information of MCI, particularly enforcing that MCI is *not* dementia and that while MCI is a risk factor for dementia, many people with MCI do not progress to	3(††,‡‡)	B

§§ Strength of Recommendation

develop disease, even after several years. Truthful and accurate information can assist clients and families to balance hope and understanding of what the future might bring, and may help them to adjust to the shock by using this information and taking action to plan ahead.		
• Refer clients and families to the Alzheimer Society of B.C. or other relevant client-support sites for easy to understand information, information on local support persons, groups and other resources.	3**	B
• Encourage clients and families to openly discuss and prepare for the future by planning and organizing financial, legal, health and personal affairs in advance, including the use of advance planning tools	Q[24,25]; 3[27,28]	B

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Return to the Resource Pathway

Interior Health

Phased Dementia Pathway – Mild Cognitive Impairment

Clinical Practice Recommendations

Understanding Clinical and Ethical Challenges of Early Diagnosis and Disclosure

The following Clinical Practice Recommendations were created as part of the IH Phased Dementia Pathway. These recommendations are evidence-informed or "best practice", and were created by the process described in the IH Dementia Care website*. Clinical Practice Recommendations at the Mild Cognitive Impairment phase of the pathway highlight the need for interdisciplinary health professionals to recognize early cognitive-related changes, understand the clinical and ethical challenges related to early diagnosis and disclosure, and be able to meet the support needs of the client and caregiver throughout the uncertainty of this phase.

Levels of Evidence and Strength of Recommendations

The SORT research grading tool† emphasizes client-oriented outcomes – outcomes that matter to clients and help them live longer or better lives, including reduced morbidity, mortality or symptoms, improved quality of life and lower cost of health care services. Levels of evidence are ranked "**1, 2, 3"** based on the validity (quality) of the study design. Where existing relevant guidelines were found, they are cited as **"G"** in the level of evidence. Strengths of recommendations (**A, B, C**) are based on grading the quantity and consistency of the body of evidence. Ratings are listed following each recommendation or group of recommendations as needed.

Levels of Evidence and Strength of Recommendations Taxonomy

Levels of Evidence are ranked 1-3 based on the validity (quality) of the study design.
1 = Good quality client-oriented evidence
2 = Limited quality client-oriented evidence
3 = Other evidence

Evidence-based Recommendations are rated as follows:
A = consistent and good quality client-oriented evidence;
B = inconsistent or limited-quality client-oriented evidence;
C= evidence lacking, more research needed; based on expert consensus/usual practice

Qualitative Evidence

No comparable grading tool was found for qualitative research, however the well established criteria of *credibility, applicability (or fittingness), auditability and confirmability* are used. All four criteria must be met in order to be considered suitable evidence for practice recommendations. A designation of "Q" is given under level of evidence and source cited.

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† Ebell MH, Siwek J, Weiss BD, Woolf SH, Susman J, Ewigman B, & Bowman M. Simplifying the language of evidence to improve patient care: Strength of Recommendation Taxonomy (SORT): A patient-centered approach to grading evidence in the medical literature. *The Journal of Family Practice* 2004;53(2):111-120, available in the public domain from http://www.aafp.org/afp/20040201/548.pdf

Clinical Practice Recommendations

The Dementia Clinical Practice Working Group advises the following clinical practice recommendations concerning ***understanding the clinical and ethical challenges associated with the early diagnosis and disclosure of mild cognitive impairment (MCI):***

1. **Education/Training**:

Provide interdisciplinary education and training opportunities regarding:	Level of Evidence (sources cited)	SOR ‡
• current concepts and basic knowledge of MCI. (e.g., clinical definition, risk factors and clinical predictors, sub-type relationship to ADRD, known conversion rates and current diagnostic criteria for MCI – *note: no diagnostic consensus at this time)*	*Knowledge content evidence:* 1[1, 2, 3, 4]; 3 ([5,6,7]); Meta-analysis[8]; International Working Reports[9,10]	C
• the benefits, barriers and impacts of early diagnosis and disclosure of mild cognitive impairment from multiple perspectives, including client, caregiver, physician and socio-cultural views (e.g., right to know, self-determination while capable, clinical uncertainty, "labelling", fear of emotional distress response, etc.)	Q([11, 12, 13, 14, 15,16, 17]) 1[18]; 3[19,20]	C
• common ethical challenges that can arise during the diagnostic and disclosure period (e.g., conflicting beliefs and attitudes between client, family and physician, competing rights and principles of practice)	Q[14, 15, 21]	C

2. **Information**:

a) Communicate the following key information about the diagnosis and disclosure of Mild Cognitive Impairment to relevant clinical managers and front-line interdisciplinary professional staff:	Level of Evidence (sources cited)	SOR‡
• Self-awareness and subjective complaints of cognitive-related changes, especially episodic memory loss, is a hallmark clinical feature that may help to distinguish MCI from early dementia *(often self-awareness is further eroded in early dementia)*. Evidence from research and client interviews indicates that it is not uncommon for client complaints of memory loss to be minimized (e.g., discounted as part of normal aging or attributed to stress without further investigation) and not taken seriously by health professionals, including family physicians.	1[22, 23, 24]	A
• Cultural perceptions of cognitive impairment and knowledge of dementing illnesses such as Alzheimer disease are two of the major factors influencing client and caregiver help-seeking behaviours. This information needs to be incorporated into both program planning for dementia services, and the provision of care.	Q[2526,27,28,29]	A

‡ Strength of Recommendation

• Seeking a diagnosis is often a difficult and extended process that can be anxiety producing for clients and caregivers due to the uncertainty.	Q[13,14,15,18]	A
• There is evidence that the majority of clients wish to be told of a diagnosis that explains their cognitive changes, yet it is frequently reported by clients[§] that they were not directly told their diagnosis by their physician.	Q[11,12,13,14] 1[18]; 3[§,30]	A
b) Communicate to the general public the following key information about the importance of reporting cognitive changes in mid and later life in an effort to increase awareness and decrease stigma:		
• Provide public information identifying normal cognitive changes that can be expected with aging, especially into the 7th and 8th decade of life. Provide public information that memory loss, cognitive impairment and dementia is *not* a part of normal aging.	1[31] 3[32,33,34,35]	A
• Provide public information that observed declines in thinking, memory, mood, behaviour and ability to function in everyday living are not associated with normal aging and require reporting to, and further investigation by, the family physician.	Guidelines[36,37,38]	A
• Provide public information that brain health strategies such as healthy blood pressure, normal blood sugars and lipids, and engaging in regular social, mental and physical activity can reduce the burden on the brain, and are appropriate (secondary prevention) strategies for any age.	Guidelines[39, 40, 41,42]	A

3. Program Planning:

It is recommended that the following information about diagnosis and disclosure of Mild Cognitive Impairment is used for clinical program planning across disciplines and sectors as relevant:	Level of Evidence (sources cited)	SOR‡
• Cognitive impairment carries a social stigma in Canadian society**, and stigma is a significant deterrent to seeking early diagnoses and care. Engaging in opportunities to partner with local Alzheimer Society offices in efforts to raise public awareness, and provide early information and positive public messaging may assist in reducing social stigma and enhance public knowledge and acceptance of cognitive loss associated with Alzheimer Disease and related dementias (ADRD)	3**	C
• There is limited phenomenological research into the client's experience of receiving a diagnosis of cognitive loss. This is an area that needs further research attention.	Q[11,12,18]	C

§ Based on limited phenomenological research evidence and results from discussions with the Kelowna Early Dementia Support Client Group (validation client focus groups for this project held in June 2005 and April 2006).

** Based on the results of an Ipsos-Reid public opinion poll that was conducted on behalf of the Alzheimer Society of Canada between July 23rd and July 25th, 2002 . See http://www.alzheimer.ca/english/media/stigma03-poll.htm for details.

4. Provision of Care:

Interdisciplinary professionals in all sectors are encouraged to use the following practice recommendations to guide assessment, problem-solving, decision-making and all aspects of direct care related to clients with Mild Cognitive Impairment and their family/caregivers.	Level of Evidence (sources cited)	SOR[††]
• Be sensitive to various perspectives (client, caregiver, physician and societal and cultural views) concerning early diagnosis and disclosure of cognitive loss.	Q([25,27,28,43])	B
• Provide non-judgemental and neutral support and information to clients, caregivers and physician colleagues throughout the process of early diagnosis and disclosure.	3[(group consensus)]	C
• Use knowledge about the barriers and benefits associated with an early diagnosis and disclosure of cognitive loss to plan individualized care and support.	Q[(11,12,13,14,15,16.17)] 1[(18)] ; 3[(19,20)]	B
• Support clients and caregivers in understanding the significance of observed changes in cognition, mood, behaviour and daily functioning and to seek physician consultation.	Guidelines[(36,37,38)]	C
• Provide emotional support to clients and/or caregiver(s) during the uncertainty of seeking and receiving a diagnosis of mild cognitive impairment; For example, ○ Elicit the client and caregiver(s) beliefs and understanding about what is happening and what and how much information they wish to know. ▪ "What do you think is wrong with you?" ▪ "What have you been told by your doctor?" ▪ "What would you like to know?" ○ Encourage open family discussion of questions, fears, observations; ○ Encourage clients and family members to write questions down *before* the doctor's appointment; ○ Encourage clients and family member(s) to discuss options to visit the physician together but provide opportunity for privacy if desired.	Q[(11,12,13,14,15,18,24)] 3[(group consensus)]	C
• Provide emotional support during the uncertainty of seeking and ***not*** receiving a definitive medical diagnosis, but receiving recognition of possible/probable cognitive loss/change(s) that will require ongoing monitoring. ○ Assist client and family to articulate their concerns re: changes (details, timeline, etc) ○ Acknowledging the stress of living with uncertainty; ○ Reinforce messages of hope (e.g., early awareness of small changes, physician will follow-up regularly, self-management of life-style behaviours that promote brain health, etc) ○ Suggest the use of a journal to note changes over time.	3[(34, group consensus)]	C
• Provide client and family support to first reactions (e.g., shock, anger, fear, embarrassment, relief, validation) in the first days and weeks following the receiving of a diagnosis of mild cognitive impairment;	Q[(14,15,18)] 3[(group consensus)]	B

[††] Strength of Recommendation

• Recognize the ethical dilemmas and challenges that arise when physician and caregiver beliefs, attitudes and practices about truth-telling of the diagnosis conflict with the individual client's rights (e.g., to know, to not know, for privacy of information, autonomous decision-making, etc.) and principles of practice (beneficence , non-maleficence *"do no harm"*).	Q[14, 15, 21]	C
• Recognize that the decision to disclose the diagnosis of mild cognitive impairment is a complex one that needs to be considered individually	3[9,10, group consensus]	C

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