Rethinking Cognitive Loss in the CKD/Dialysis Patient: Strategies for Opportunistic Recognition and the Promotion of Brain Health

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Interior Health

Objectives

- Summarize the current research and guideline evidence concerning chronic kidney disease, cognitive impairment and related promising practices;
- Appraise opportunities within their own practice to recognize early cognitive loss in the CKD/dialysis patient;
- Select and apply appropriate cognitive screening tools for cognitive impairment;
- Specify actual or potential clinical pathways for early recognition and diagnosis of cognitive loss within their work place practices;
- Describe where to find practical resources to support and teach CKD/dialysis patients about positive lifestyle behaviours which reduce associated risk factors, enhance resiliency and protective factors, and promote brain health.

ARS Question #1:

- In my practice, I think that the prevalence of cognitive impairment among the adult renal population is…

1. Less than 2% – quite rare because the majority of my patients are younger than 65 and cognitively intact;
2. Probably about 5%, but mostly in those of age >65+ years because they have other risk factors;
3. Between 5 and 10% overall, I think it is increasingly common, but often missed;
4. I have no idea – never thought much about the prevalence of cognitive impairment in my practice.

ARS Question #2:

Rate your knowledge of current best practice guidelines in relation to early detection & screening for cognitive loss

My knowledge is best described as:

1. I didn't know there were best practice guidelines for this;
2. I am aware guidelines exist but don't know much about them or how to find them;
3. I have read and used them occasionally and know where to find them if I need them;
4. I am quite familiar and use the guidelines in my practice on a regular basis.

CANADIAN SOCIETY OF NEPHROLOGY
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Canadian Society of Nephrology: 2008 Guidelines for the Management of Chronic Kidney Disease

Levin A, Hemmelgarn B, Culleton B, Tobe S, McFarlane P, Ruzicka M, Burns K, Manns B, White C, Madore F, Moist L, Klarenbach S, Barrett B, Foley R, Jindal K, Senior P, Pannu N, Shuraw S, Akbari A, Cohn A, Reslerova M, Deved V, Mendelssohn D, Nesrallah G, Kappel J, Tonelli M

for the Canadian Society of Nephrology

Guidelines

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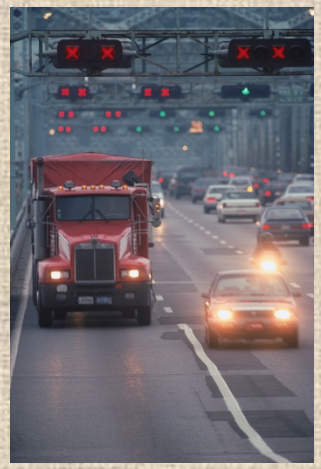
SEARCH

SUBMIT

WHO WE ARE
PROFESSIONAL PRACTICE
JOB/TRAINING OPPORTUNITIES
FELLOWS
MEMBERS
EVENTS
EDUCATION
INTERNATIONAL HEALTH
LINKS

The white lines on the road



- 3rd Canadian Consensus Guidelines on cognitive impairment/dementia
- Relevant BCMA GPAC Guidelines:
  - Cognitive Impairment in the Elderly Guidelines (2007)
  - Chronic Kidney Disease – Identification, Evaluation and Management of Patients (2008);
  - Diabetes Care (2005)
  - Hypertension: Detection, Diagnosis and Management (2008)
  - Cardiovascular Disease: Primary Prevention (2008)
- **Canadian Cardiovascular Society Guidelines for the Diagnosis and Treatment of Dyslipidemia and Prevention of Cardiovascular Disease (2009)**
- Canadian Hypertension Education Evidence Based Recommendations Task-Force (2009)
- Canadian Diabetes Guidelines (2008)

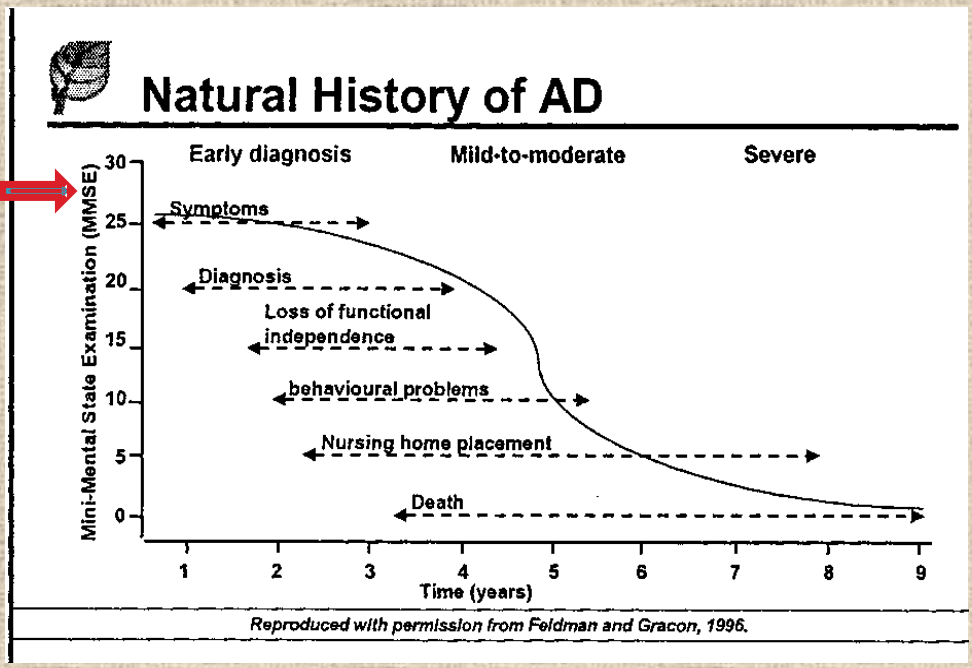
MCI: Defining the Term

- Represents cognitive loss > normal ageing, but does not fulfill the DSM-IV-TR criteria for dementia (often missing a second sphere of impairment or no detectable functional loss)

- Borderline impairment (like borderline diabetes, or borderline systolic hypertension of 130-150);

- Cognitive "continuum":

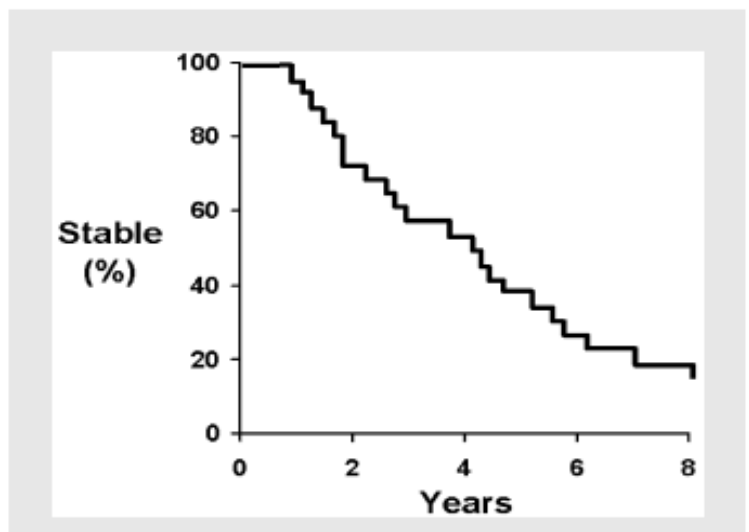
MCI



- Courtesy, Dr. Carol Ward

MCI – Cognitive Outcomes

- represents an increased risk for development of dementia
- Rate of progression 10–16% per yr
- Normal rate of progression 1–2% per yr
- 80% conversion by 8 years



Mayo AD Center/AD patient registry

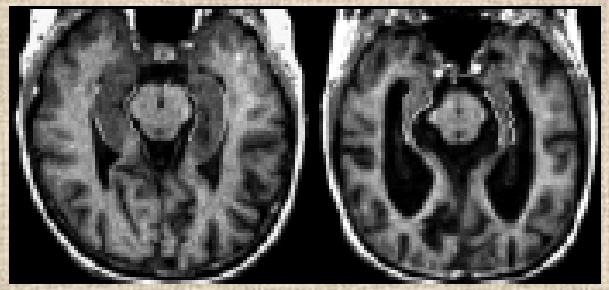
ADRD:
Alzheimer Disease and Related Dementias

- Alzheimers' Disease
- Related Dementias
  - *Vascular*
  - Frontotemporal
  - Lewy Body
  - *Mixed/Other*

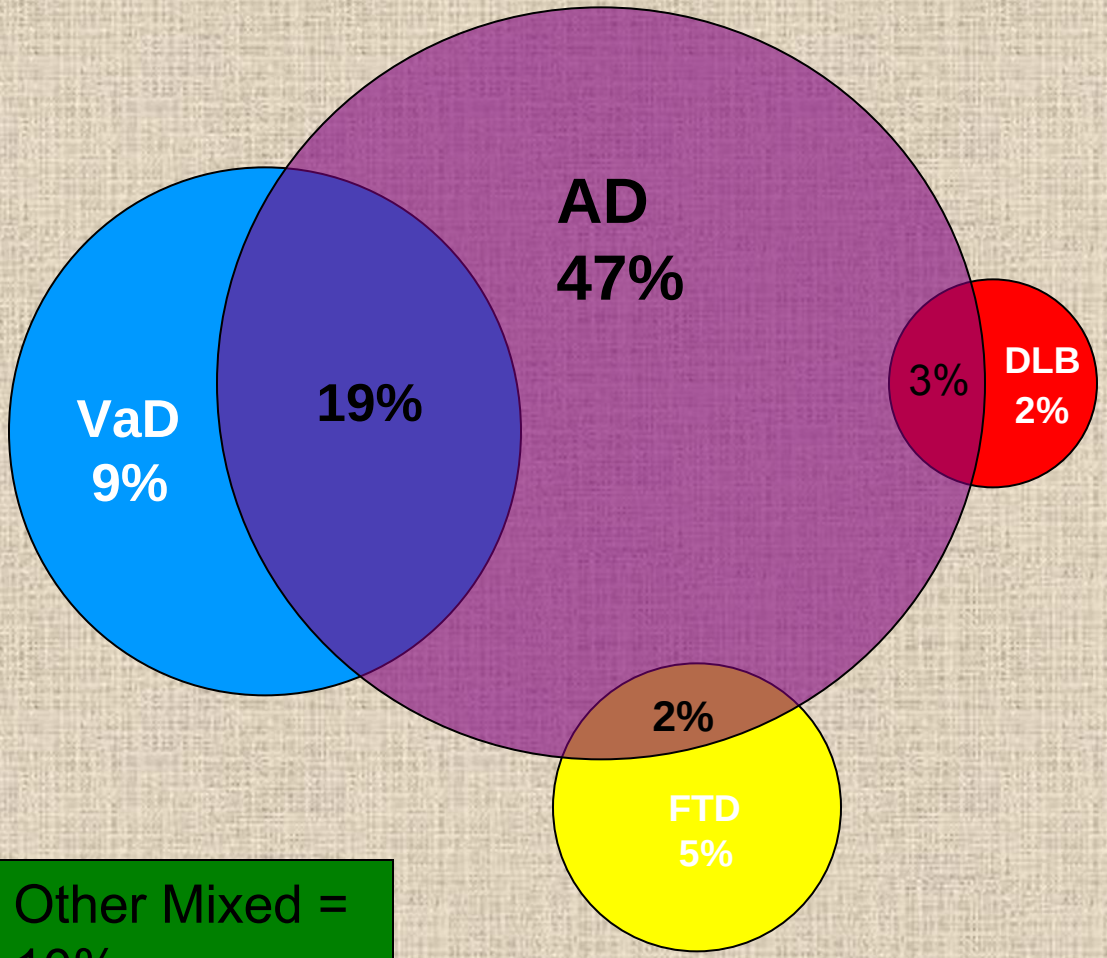
- Dementia Risk Factors:
  - Age
  - Family history
  - Vascular risk factors
    - ✓High blood pressure
    - ✓Diabetes
    - ✓Smoking
    - ✓Obesity
    - ✓High Cholesterol
    - ✓Atrial Fibrillation
  - Low education
  - Head injury/concussion

The Diagnosis of Dementia

- Is a psychiatric diagnosis (DSM-IV-TR)
- diagnosis requires change in 2 or more impairments in brain function, usually memory and another, e.g.,
  - Understanding/perception
  - Reasoning Skills (plan, sequence, organize)
  - Insight/Judgement
  - Language Abilities
  - Visuospatial Abilities
- Significant losses in social, occupational and everyday functioning ***over time***
- Comprehensive assessment critical
  (rule out non-progressive, reversible causes first)
- Diagnosis by exclusion – validated only by autopsy.



Types of Progressive Dementia



Other Mixed = 10%

Feldman et al, 2003: Accord Study
Neuroepidemiology,22;265-74

The "Related Dementias": Vascular Dementia (VaD)

- Caused by the damage from loss of blood flow to brain
- can be a single or multiple event, often sudden in occurrence, e.g., stroke, multiple TIAs
- traditional "step-wise" vs. current belief: global damage and loss
- VaD can be "mixed" with other types of dementias, e.g.
  - AD and VaD
  - LBD and VaD
  - FTD and VaD

- Risk factors for VaD include:
  - hypertension;
  - hyperlipidemia,
  - heart disease ;
  - poorly controlled diabetes
- Reducing vascular risk relieves the burden on the brain, so lifestyle health promotion, client teaching and treatment & monitoring trends of cognitive scores and risk factor indicators (e.g., BP, HgbA1C levels, lipids, etc) is an important consideration.

Dementia and Chronic Disease

- Dementia *is* classified as a chronic disease in BC (B.C. Physicians CD survey, 2001)
- BC Dementia Service Framework (2007)
  - adapted expanded chronic care model framework
  - outlines optimal care for persons affected by dementia across the continuum
  - 7 critical gaps
- Rising Tide: The Impact of Dementia on Canadian Society (2010);
- Alzheimer Society of Canada

Rising Tide Report

- Incidence (new cases) and Prevalence (living with) of Dementia will significantly rise in the next 30 years unless there is intervention;
- Demographic bulge becoming a reality: 2011 the first boomer turns 65
- Very significant *health, social and economic* impacts on Canadian society and the health care system.

Incidence of Dementia in Canada and BC

(Incidence = # of newly diagnosed cases per year)

In Canada:

- 2008: 103,700 new cases/year

↓

- 2038: 257,800 new cases/year

In BC:

- 2008: 15,150 new cases/year

↓

- 2038: 35,720 new cases/yr (2.4X)

Rising Tide Report (2009), p.7

Interior Health

Prevalence of dementia (# of people living with dementia)

In Canada:

- 2008 – 480,600 people with dementia (1.5% of Canada's population)

- 2038 – 1,125,200 people with dementia (2.8% of Canada's population)

In B.C.

- 2008: 68,910 BC Residents living with dementia (1.6% pop'n)

- 2038: 177,684 BC Residents projected to be living with dementia (3.2% pop'n, and 2.6X the 2008 estimate)

Rising Tide Report (2009), p.7

Hours of Unpaid Care

- Hours of Unpaid Care provided annually by families for PWD in BC:
  - 2008: 33.1 million hours
  - 2038: 118.7 million hours

3.6X

- Demand for LTC services will increase 10 fold
- Economic burden to BC system & families to exceed $130.2 billion (currently $2.1 billion in 2008 $)

Rising Tide Report (2009), p.7

Rising Tide – Key Messages

- Need to mitigate or delay health and economic burdens by:
  - Delaying onset of dementia
  - Delaying institutionalization
  - Supporting caregivers
  - Enhancing system navigation/integration
- The time to act is now
- Recommendations for a National Strategy
- Report available on ASC & ASBC websites

Why should you care about cognitive impairment?

- "need to explore cognitive and functional status to help facilitate more appropriate use of resources and improved patient outcomes";

  (Campbell et al, 2008)

- "an occult burden"; "largely unrecognized and undiagnosed" (Murray, 2006, 2008)

- "Chronic kidney disease is a newly identified and independent risk factor for MCI" (Etgen et al, 2010)

- Estimated prevalence of cognitive impairment in moderate to severe CKD (eGFR <30) is 16 to 38% for patients > 65years of age

  (Shlipak, et al 2002)
  (Coresh et al, 2005, 2007)
  (Kurella-Tamura et al, 2010)

Recent Evidence

- NHANES III study, 2007
- Moderate CKD and cognitive function in adults 20-59 years old;
- N=4849, randomly sampled, young, healthy and ethnically diverse
- 31 (0.8%) prevalence of moderate CKD with eGFR 30 to 59 ml/min per 1.73 m^2;
- Results:
  - Response time normal;
  - Significantly associated with poorer visual attention, learning and concentration

Hailpern et al, 2007

Recent Evidence

- Kurella-Tamura et al (2008, 2009)
  - REGARDS cross-sectional study, large national sample
  - (n=23,405), mean age, 64.9 +/- 9.6 years

- showed CKD associated with increased prevalence of cognitive impairment (CI), independent of confounding factors

- Among those with CKD, for each 10mL/min/1.73m^2 decrease in eGFR below 60 mL/min/1.73m^2 , there was an associated 11% increase in prevalence of cognitive impairment (OR1.11, 95% CI)

- Recommendation:
  Early targeted cognitive screening among all adults with CKD.

Recent Evidence

- **Yaffee et al, 2010**:
  - Chronic Renal Insufficiency Cohort cross-sectional study
  - n=825, age 55+ (mean age 64.9 years)
- Participants with lower eGFR have lower cognitive scores;
- advanced CKD (eGFR<30) significant multi-domain, global deterioration (naming, attention, memory);
- **Recommendation**: older adults with advancing renal disease should be targeted for routine screening

Recent Evidence

- **Etgen et al** (2009)
  - INVADE study, n=3679, age 55+
  - Community based cohort study, 2 year follow-up;
- 10.6% of participants had cognitive impairment at baseline; 6.2% developed cognitive impairment at the 2 year follow-up;
- Even after adjustment for confounding CV risk factors, moderate-to-severe (eGFR<45) renal function was significantly associated with development of cognitive impairment within the 2 years.
- Recommendation: early screening for older adults with moderate to severe renal disease.

Recent Evidence

- **Elias et al** (2009).
  - n=923. community based cohort study examining cognitive status of non-dialysis dependent CKD patients;
  - (780 with eGFR >60, mean age 62.3 and 143 with eGFR< 60, mean age 68.5)
  - Multi-domain testing

- Global performance and specific cognitive functions (visiospatial, attention, concentration, etc.) are negatively affected early in CKD

- **Recommendation**:
  - targeted screening for CKD early in disease course warranted

Dialysis Modality and Cognition

- "CKD and dialysis patients may also be at risk for cognitive impairment via nonvascular risk factors and the hemodialysis procedure itself". (Madero et al, 2008)

- "The effect of dialysis modality on risk of cognitive impairment is unclear. Some data suggest that patients with ESRD treated with chronic ambulatory peritoneal dialysis (CAPD) had consistently better cognitive function than patients treated with haemodialysis". (Radic et al, 2010)

Midlife Risks

- Assess modifiable risk factors so as to target patients for preventative strategies in midlife, thus potentially reducing the burden of cognitive impairment and dementia in the subsequent decades (Hughes and Ganguli, 2009; 3rd Canadian Consensus Guidelines)

- Examples:
  - Increased BP in midlife increases risk for MCI and dementia (Kivipelto et al, 2001, 2002, 2005) ;(Whitmer et al, 2005)
  - Cholestrol (Kivipelto, 2001; Soloman et al, 2007; Yaffe et al, 2002)
  - Diabetes (Luchsinger et al, 2007;Whitmer et al, 2005; Xu et al, 2008; Schnaider et al, 2004)

Summary: Commonality of CVD Risk Factors

	Risk Indicators	CVD	CKD	Diabetes	Dementia
Hypertension	>130/80	√ (>140/90)	√	√	√ (>140/90)
Dyslipidemia	LDL-C>3.5 TC/HDL-C>5	√	√	√	√
Uncontrolled Hyperglycemia	RPG>11.1 FPG>7.0	√	√	√	√
Abdominal Obesity/ ⇧ weight (BMI >25)	WC: ♀ > 88 cm ♂ > 102 cm	√	√	√	√
Inactivity/ Sedentary Lifestyle	< 30 mins/day	√	√	√	√
Smoking	any	√	√	√	√

What is the Phased Dementia Pathway?

- The Phased Dementia Pathway provides practice recommendations that can assist interdisciplinary clinicians, educators and managers in identifying “best practices” for common clinical issues, across the spectrum of dementia

- The information is organized within a phased pathway rather than an encounter-based pathway

What is the IH Phased Dementia Pathway?

- The Pathway describes the client and caregiver's physical, emotional & psychosocial journey of dementia from onset to end-of-life.
- Is web-based and fully accessible at:

http://www.interiorhealth.ca/health-services.aspx?id=314

The main components of the Pathway

look like this…

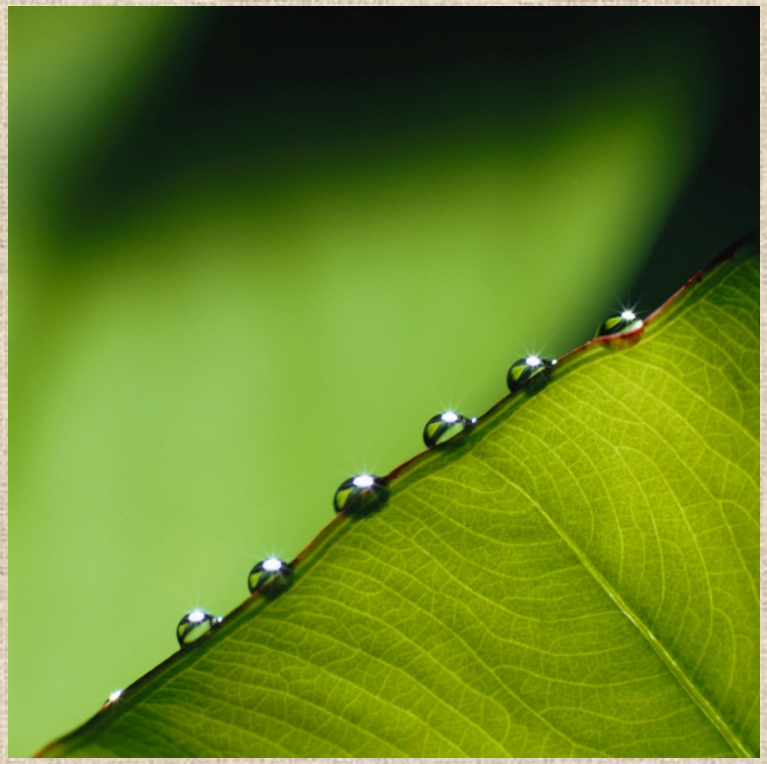
Pre-Clinical Phase

Mild Cognitive Impairment Phase

Early Phase Dementia

Middle Phase Dementia

Late Phase Dementia



Focus:
Pre-Clinical Phase

- Public desire to know what they can do to reduce personal risk for dementia or slow existing cognitive losses
- Focus is to reduce personal risk for dementia by encouraging the regular practice of healthy living behaviours (brain health)
- Risk reduction largely attributed to *reduction of cerebrovascular burden and cardiovascular risk*

The Clinical Pinch-points for Pre-Clinical Phase

- Risk factors accumulate across the life course
- Commonality of chronic disease risk factors
- Benefit by working together to shift health behaviours in CDM, not duplicate efforts;
- Clinical Pinch-points for Pre-Clinical phase include:
  Evidence-based modules for promoting brain health
  - ✓ Physical Activity
  - ✓ Mental Activity
  - ✓ Social Activity and Social Connectedness
  - ✓ Alcohol and Brain Health
  - ✓ Smoking and Brain Health
  - ✓ Heart-Smart = Brain Smart

The Pre-clinical Pathway provides recommendations that include:

- Primary Prevention Strategies:
  - Healthy Aging/Healthy Brain initiatives across the life course addressing lifestyle brain health risks and lifetime legacies of cerebrovascular burden.

- Secondary Prevention Strategies:
  - Dementia is a chronic disease
  - Addressing CDM risks can slow cognitive loss
  - Work with high at-risk populations

  - Both strategies are needed for dementia

Focus: Mild Cognitive Impairment

- Clear insight and judgment into challenges in everyday life, "my world is not right"; usually seeking help, but don't know who to turn to
- *Lack* of impaired insight is a hallmark clinical feature for this group;
- Very commonly, self-reported changes in thinking are often not taken seriously and minimized by frontline providers
- Studies show majority of people with MCI prefer a diagnosis
- People with MCI feel high levels of stress and uncertainty and need added support
- Large Health system gap re:
  - Recognition
  - Diagnosis
  - Disclosure
  - Support
  - Knowledge

The Clinical Pinch-points of Mild Cognitive Impairment

Evidence-based modules for:

- Early recognition and referral of cognitive-related changes
- Understanding the clinical and ethical challenges of diagnosis and disclosure
- Providing client and caregiver support during uncertainty and transition

Focus: Early Dementia Phase

- "Help-seeking" Pathways
  - Involve a process that evolves over time
  - can be characterized as smooth, fragmented, crisis-evented (triggered), dead-end
- Patterns of diagnostic care
  - Under-diagnosis #1 issue in dementia care (~50%)
  - Result in average delays of 3 years between onset of symptoms and diagnosis
  - Causes for delays are multifactorial and complex

Early Dementia Phase Focus

- Focus groups reported frequent adverse family experiences while seeking help;
- People with early dementia wish they had learned even earlier;
- Studies show most people with early dementia desire their diagnosis:
  - "I have a right to know"
  - "I want to understand what is happening to me"
  - "to find an answer";
  - "is there a cure? Can it improve?"
  - "to plan for the future"

The Clinical Pinch-points of Early Dementia Phase

Evidence-based modules for:

- Supporting Help-Seeking Behaviours: The Pathway from Recognition to Diagnosis
- After the Diagnosis: Supporting the Client and Caregiver
- Planning for the Future: The Road Ahead
- When Depression, Delirium and Dementia Co-Exist

The MCI/Early Dementia Pathway …

- Guides all interdisciplinary staff to maintain a ***high index of suspicion for cognitive-related changes*** by:
  - Listening and assessing client and caregiver *reports* of cognitive, functional, behavioural and/or emotional changes as first line evidence;
  - Using 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.
  - Recognize and monitor reported or observed changes or difficulties over time to assess for *trends*.

In Interior Health, we are anchoring the early pathway work in CDM

- To support the concept of *'opportunistic recognition'* in which individuals (physicians, professional and unregulated professional staff) working with *clients at high risk for dementia* are provided with necessary information, education and tools to support help seeking behaviors or provide targeted screening for cognitive impairment.

Opportunistic Recognition Strategies

- ***"Opportunistic recognition"*** is a means to promote early detection and referral within high risk populations for follow-up investigation
- If you have an "index of suspicion" that cognitive impairment may exist, it needs further investigation and monitored over time.
- Not the same as general population screening which is not recommended

Flags for Professionals

1. Frequent phone calls
2. Poor historian, vague, seems “off”
3. Poor compliance: meds, instructions
4. Appearance/hygiene/makeup
5. Word finding/decreased interaction
6. Appointment – missing/wrong day
7. Weight loss/dwindles
8. Driving problems
9. Head turning sign

Opportunistic Recognition Strategies

- **Four Red Flags for Cognitive Change:**

1. Changes in Thinking
2. Changes in Mood
3. Changes in Function
4. Changes in Behaviour

Case Study: Mr. H

- 88 y.o male is a CKD clinic patient X 8 years;
- Past Medical History includes:
  - CKD Stage 5 (renovascular disease)
  - C.A.D., past left circumflex angioplasty
  - Angina, class II
  - Atrial fibrillation
  - Peripheral vascular disease
  - Hypertension
- No past psychiatric history
- Poly pharmacy – 20 meds (!)
- Non-smoker, social drinker
- Social History: lives alone on acreage, wife died, 6 children, strained relationship with all but one.
- Question: What identifiable risk factors for cognitive impairment does Mr. H have?

Story Timelines

- July 2001: became a patient of the CKD clinic
- 2002-2007: stable renal function, no major issues
- 2008 = Earliest documentation of changes:
  - April-May 2008: nurse noted vagueness during a call
  - June 2008 missed an appointment (unusual)
  - August 2008: profound weight loss

ARS Question:

- Which of these three changes (vagueness, missed appointment, lost weight) are significant for possible cognitive change?

1. None of them
2. Missed appointment is the only significant change
3. Vagueness and the missed appointment
4. All three changes are significant.

Story Timelines

- April 2009, referred to surgeon for peritoneal dialysis catheter insert
- July 2009, refuses, “not ready” despite multiple education sessions
- August 2009, close friends report:
  - Significant changes over past year, including confusion, argumentive, agitated (“not himself”)
  - Neighbour reports loss of usual routines (paper, garbage);
- How’s your index of suspicion of cognitive loss for Mr. H?
  - Cognitive change
  - Mood change
  - Behavioural Change

Recognition and Diagnosis

- General population screening in asymptomatic individuals is not recommended at this time.
- Cognitive impairment should be suspected when there is a history that suggests a decline in occupational, social or day-to-day functional status.
- This might be directly observed or reported by the patient, concerned family members, friends and/or caregivers. (BC GPAC Cognitive Guidelines, page 1)

ARS Question:
If Mr. H presented in your workplace, what type of routine cognitive screening would take place?

Select the statement that best describes your workplace practices:

In my workplace, we would...

1. Not routinely consider Mr. H to be at risk for cognitive impairment as this type of history is quite common;

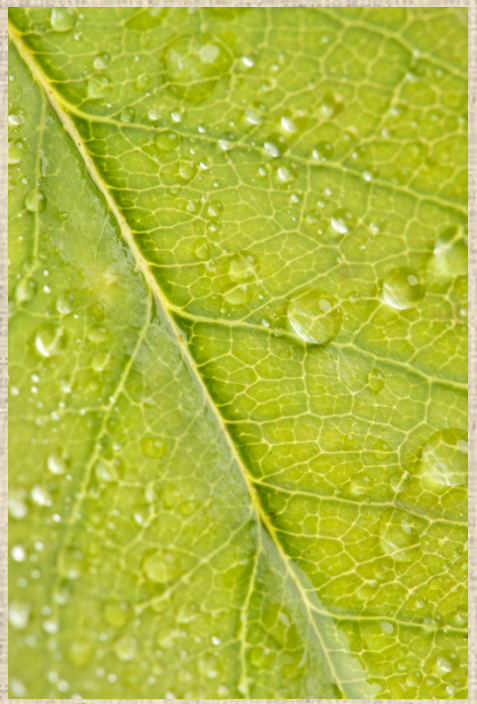
2. Recognize the cardiovascular risk factors in his history as they pertain to CKD *only*, and work with him to modify his risks through lifestyle choices over time;

3. Recognize the cardiovascular risk factors in his history are significant for *both* renal and cognitive functioning, and monitor for changes in his cognitive status over time as part of regular re-assessments;

4. Deal with cognitive change issues as they are recognized and identified by staff.

The Phased Dementia Pathway also provides interdisciplinary clinicians with…

- Knowledge and tools for recognizing and assessing early cognitive changes in multiple domains.
- Instruction in use of tools (e.g., correct use of MoCA);
- How to use knowledge of MCI as different from ADRD to appropriately assess and provide sensitive emotional support and care both leading up to and after diagnosis



Cognitive Screening Tools

- Purpose: screening tools which provide objective evidence of cognitive deficit

1. SMMSE: Standardized Mini-Mental Status Exam
   - 24-30 = "normal";
   - interpret with language, culture, education and sensory impairment
2. MoCA: Montreal Cognitive Assessment tool
   - use when 26 or > on SMMSE;
   - if MoCA score is 26> = normal
3. Clock Drawing Tool: Adjunct tool
4. Geriatric Depression Scale (GDS): a score of 5 or > indicative of possible depression;
5. Cornell Scale for Depression in Dementia: use for individuals who are cognitively impaired (informant tool)
6. Confusion Assessment Method (CAM): screener for delirium.

(**Consider sensory impairment and physical disability when choosing mental status tests.)

ARS Question:

Rate your degree of comfort and confidence in using the suite of cognitive screening tools:

1. "Isn't moca a coffee with chocolate? Nope – never used these before, start me at the beginning".
2. "Ummm… sorta, maybe, kinda… (Hmmm. I think I need to review…)"
3. "I don't do these everyday, but I have used these tools enough to know how to use them correctly…"
4. "I use these screens so regularly I could teach the correct use of these tools if needed"

Suggested Cognitive Screening

- Full item SMMSE and clock drawing test (5-10 min)

or

- "Mini-cog" exam (2-3 min)- used in ER, etc.
  - 3-item recall
  - Clock drawing test as distractor

and

- A screen for delirium and depression (3 + 5 min)

Standardized Mini-Mental Status Exam (SMMSE)

- Universally recognized, track trends over time

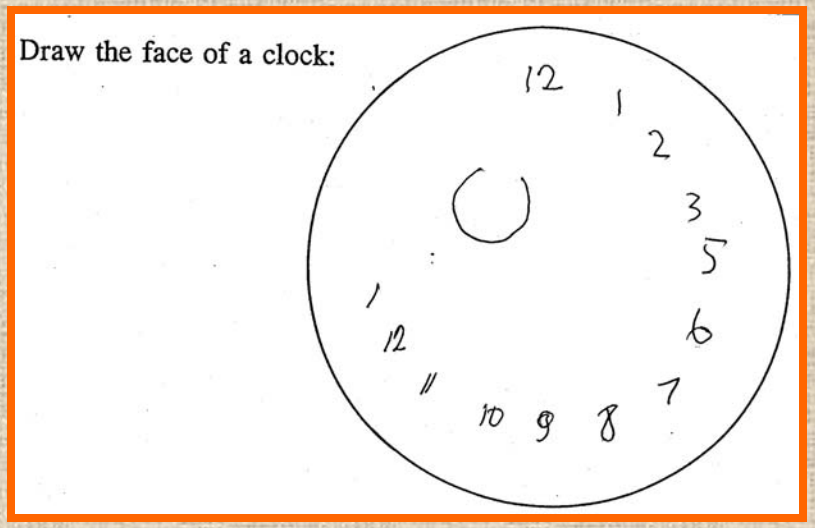
- Measures baseline cognitive functioning in several cognitive domains:
  - Orientation
  - Calculation
  - Visual Spatial
  - Attention
  - Recall
  - Language

- Out of 30; Lower score = greater impairment

- Limitations: education, culture and language can impact score, always assess in context

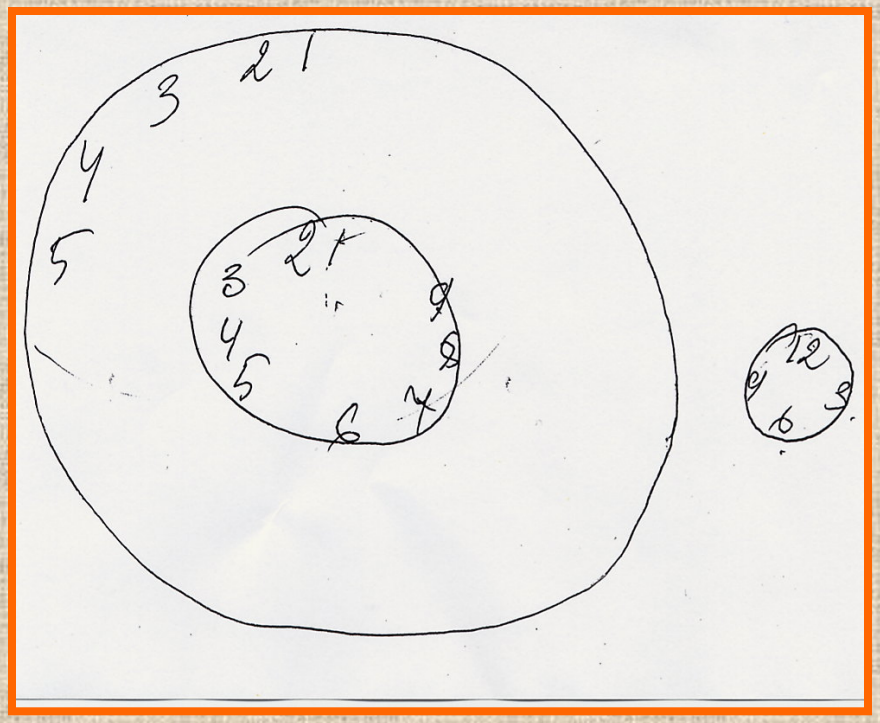
Clock Drawing Test (CDT)

- Adjunct test to the SMMSE
- Assesses higher level functions:
  - comprehension of instructions
  - visual-spatial perception
  - abstract thinking
  - organization and construction abilities
  - motor execution
  - memory



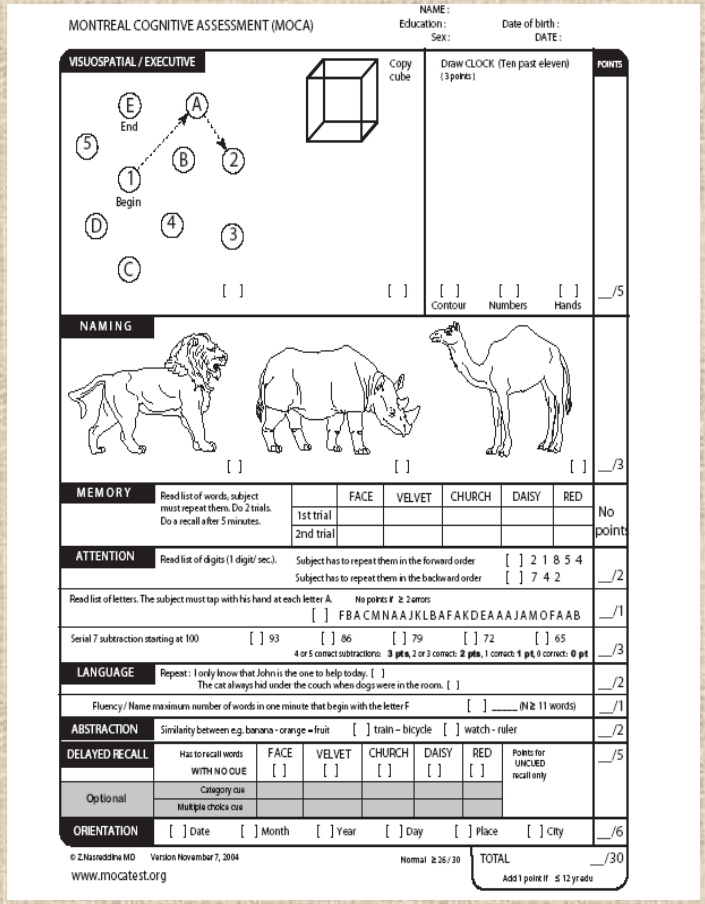
Clock Drawing Tool

- Quick, well-tolerated and acceptable to patients
- Less dependent of culture, language and education
- High inter-rater and test re-test reliability
- 85% sensitivity and specificity in people with dementia



Assessment of MCI: Montreal Cognitive Assessment (MoCA)

- Scored out of 30, ≥26 considered normal
- Add 1 point for <12 years education
- May be used without permission for clinical and educational non-commercial purposes
- Good validity and reliability



MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME :
Education :
Sex :
Date of birth :
DATE :

VISUOSPATIAL / EXECUTIVE — Copy cube — Draw CLOCK (Ten past eleven) (3 points) — POINTS

End, Begin, A, B, C, D, E, 1, 2, 3, 4, 5

[ ] [ ] [ ] Contour [ ] Numbers [ ] Hands /5

NAMING

[ ] [ ] [ ] /3

MEMORY — Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED
1st trial					
2nd trial					

No points

ATTENTION — Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order [ ] 2 1 8 5 4. Subject has to repeat them in the backward order [ ] 7 4 2 /2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors
[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B /1

Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65
4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt /3

LANGUAGE — Repeat : I only know that John is the one to help today. [ ]
The cat always hid under the couch when dogs were in the room. [ ] /2

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] ____ (N ≥ 11 words) /1

ABSTRACTION — Similarity between e.g. banana - orange = fruit [ ] train – bicycle [ ] watch - ruler /2

DELAYED RECALL

	Has to recall words WITH NO CUE	FACE [ ]	VELVET [ ]	CHURCH [ ]	DAISY [ ]	RED [ ]	Points for UNCUED recall only
Optional	Category cue						
	Multiple choice cue						

/5

ORIENTATION [ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City /6

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Normal ≥ 26 / 30

TOTAL /30

Add 1 point if ≤ 12 yr edu

http://www.mocatest.org/

When to consider doing the MoCA?

- After MMSE inconclusive (27 or >) but clinically you observe or hear cognitive change and suspect MCI or early dementia
- Do *not* use MoCA if the MMSE was conclusive (26 or less) for cognitive loss
- Source: 3rd Canadian Consensus Guidelines

Case Study: Mr. H, continued

- **October 2009**:
  - Staff continue to report daily fluctuations in cognition and mood;
  - Suspiciousness increased, fires housekeeper
  - referred to psychologist for testing, scored MoCA 21/30;
  - CT scan done: “mild age appropriate atrophy”
  - GP suspended his driver’s licence;
  - Decided too impaired for peritoneal dialysis training
  - Started on hemodialysis 3X/week, CRF Stage 4
- **November 2009**:
  - repeat MoCA 21/30; referral to Elder Services Team

Case Study: Mr. H, continued

- January 2010:
  - Seen by EST clinician, first time comprehensive "cognitive lens" used to evaluate;
  - MMSE 27/30:
    - 3-item recall: 7/9 on first recall; 5/9 on second recall;
    - Temporal and spatial domains intact
    - Poor abstract reasoning (3/6)
    - Intact reading and writing skills
  - Clock Drawing Test: abnormal
  - MoCA: 22/30: losses in verbal fluency, delayed recall, clock, cube;
  - Geriatric Depression Score: 2/15: negative for depression
  - Axis I diagnosis: ? MCI; ? Mixed vascular/AD dementia

- Referral to Geriatric Psychiatrist for further assessment

Case Study: Mr. H, continued

- February 2010: Assessed by Geriatric Psychiatrist
  - Aware and permission re: assessing for memory loss
  - Denies forgetfulness, missed appointments, getting lost, or any financial errors;
  - Denies changes in mood
  - reports independent ADL & IADLs except for transportation;

- Collateral sources report concerns of:
  - medication management (qid meds taken bid; 4 pharmacies);
  - meals (weight loss 20# since October);
  - 20 medications, including Tylenol #3 PRN; Ativan and Quetiapine at hs, unclear why;

Case Study: Mr. H, continued

- Provisional Diagnosis:
  - Axis I: MCI, rule out emerging vascular dementia; rule out episodic delirium;

- Treatment Plan Recommendations:
  - Discontinue unneeded meds (Quetiapine)
  - Blister pack, 1 pharmacy
  - Delirium Watch, Prevention measures
  - Meal support
  - TSH ordered
  - 6 month follow-up

Benefits of "Early" Diagnosis/ Treatment of MCI/Dementia

Social

- Social/financial/domestic planning
- Early caregiver education
- Safety: compliance, driving, cooking
- Advance directives planning
- Right/need to know

Medical

- Reversible cause/component
- Risk factor treatment
- Compliance strategies
- Treatment of other diseases
- ChEI treatment if dementia
- Crisis avoidance/delay

Disclosure

- The disclosure of a diagnosis of dementia should be done as soon as possible, but can cause significant stress.
- The timing and extent of disclosure should be individualized and is best carried out over a few visits supported by referral to other support resources
- Source: BCMA Cognitive Impairment Guidelines

- Disclosure is facilitated through an initial open-ended approach, e.g. asking:
  What do you think the change in your memory and thinking is due to?"
- Ensure privacy
- Ask if want caregiver or other in attendance (recommended)
- Follow-up is essential:
  - Changing information needs
  - Advanced planning
  - Education and support
  - Connection and referral to services when needed

Pathway Resource: Ethical Screener

- Based on the work of Boustani et al (2007)
- Asks 3 simple questions to assess insight:
  - *"Have you noticed any changes in your memory or thinking"?*
  - *"Have you ever been told by family, friends or doctor that you have changes in your memory or thinking"?*
  - *"If yes, do you have any concerns about those changes? "*
- Asks 3 questions to assess screening acceptance:
- Agree or disagree:
  - *"I would like to know if I am at increased risk to develop memory problems".*
  - *"I would like to be checked for any changes in my memory on a regular basis"*
  - *"I would like to know if I develop a problem with my memory."*

Mild Cognitive Impairment (MCI): Relevant guidelines ("treatment")

- *"As vascular risk factors and co-morbidities impact on the development and expression of dementia, they should be screened for and treated optimally in MCI." (Grade B, Level 2,"3rdCCCDTD);*

- Once identified, patients with MCI should be re-examined periodically (e.g. every 6 months) so that treatment and counselling can be offered and incident dementia can be identified *(BC GPAC, page 6)*

Lifestyles Focus

- Evidence shows reducing cerebrovascular burden can slow the rate of cognitive impairment
- e.g.:
  - smoking cessation;
  - blood pressure control;
  - blood sugar control;
  - increasing physical, mental and social activity
- Heads UP for Healthier Brains!
  - For more info: http://www.alzheimerbc.org/headsup.php
- Excellent goal sheet;
- Multiple resources for patient teaching in the phased dementia pathway

Suggested Planned Interventions for Mr. H

- ASBC goal sheet: engage in discussion
- Adapting treatments to lower his CV risks (BP? cholestrol? Blood glucose)
- Advanced planning?
- Caregiver supports – linkage in Saskatchewan?
- Consider cognitive enhancers if/when dementia diagnosis confirmed
- Follow-up assessment, referrals for community supports
- Watch for behavioural issues
- Delirium watch on appointment times

Cognitive enhancers

- **Cholinesterase Inhibitors (ChEIs)**:
  - decrease the rate of degradation of acetylcholine in the synapse; this helps maintain cell–cell communication;
  - Examples:
    o Donepezil (Aricept)
    o Rivastigmine (Exelon)
    o Galantamine (Reminyl)
  - All three cholinesterase inhibitors (ChEIs) approved tx mild to moderate AD, insufficient evidence to recommend for MCI

Caution:

- **ChEI Relative Contraindications:**
  - Renal disease (BC GPAC)
- **Donepezil** can be safely administered in patients with moderate renal disease (Nagy et al, 2004);
- **Rivastigmine** deemed safe for renal and hepatic impairment patients (Jann, 2000);
- **Galantamine** – literature unclear (renal clearance is longer)

Cognitive enhancers, con't

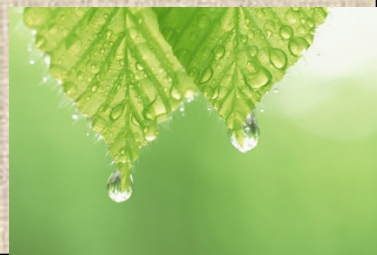
- **Cholinesterase Inhibitors (ChEIs)**: continued
  - Early studies demonstrated small to modest efficacy in cognitive and global outcome measures
  - BC Alzheimer Drug Therapy Initiative (2007) still underway: see the government website for details
  - <u>Potential benefits</u>;
    - forestalls need for facility placement;
    - prevents emergence of BPSD;
    - slows loss of ADLs;
    - reduction of caregiver burden as outcomes
- **Memantine** – different cog enhancer;
  - Can be used as adjunct to ChEIs;
  - Used for behavioural issues in late/severe AD
  - Needs to be dose adjusted for renal patients

Story Timeline – conclusion

- **Nov 2009 to May 2010**:
  - multiple attempts to support Mr. H at home with variable success;
  - Eventually "escalating risk" in living alone at home
  - Finally agreement between Mr. H and family to move to Saskatchewan to be closer to family;
  - He entered a "nursing home" in Saskatchewan with local renal program providing care.

Reflection and Closing Thoughts:
Identifying Current Practices and Resources which address Cognitive Impairment in CDM

- Can you describe where and how cognitive impairment (CI) is addressed within your current practices (e.g., intake, assessment, interventions, patient teaching, program evaluation or outcomes, etc)
- What current resources (e.g., staff knowledge, protocols, assessment tools) address CI in your everyday work?
- How is your program linked with other CDM programs? What relationships do you have with each other, networks with other partners?
- What practice shifts or resources are needed to address CI in your practice area? in CDM as a whole?



ARS Question:

Describe how relevant the materials discussed in today's session are to your practice:

- Not at all relevant
- Somewhat relevant
- Quite relevant
- Extremely relevant

ARS Question:

Describe your degree of commitment in taking action &/or using what you learned about cognitive impairment in today's session upon your return to work:

1. **Pass** – I am not convinced that the material today is something that I can use in practice;
2. **Somewhat committed** – I need to think about what I learned and how it all connects;
3. **Committed** – I am definitely going to follow-up on some of the information and I will think how I will use it in my practice
4. **Very committed** – I feel keen to get to started in using my new knowledge and I will start to take the first steps of concrete action in my practice/workplace the next time I go to work.