



Recognition and Screening of Delirium, Dementia and Depression -A self Learning Guide-



Rhonda Johnstone RN, BScN, GNC(C) and the 3D's and Least Restraint Project Team
May 2005

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Introduction

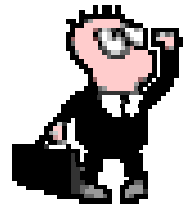
Welcome to the self-learning guide on the recognition and screening of delirium, dementia and depression (3D's). This learning guide has been developed to enhance the health care professional's awareness, knowledge and practice related to delirium, dementia and depression.

Work through the self-learning guide at your own pace.

Objectives

After progressing through this self-learning guide, you should be able to:

- Define delirium, dementia, depression
- Identify the types of delirium, dementia and depression
- Describe clinical features of delirium, dementia, depression
- Identify risks factors and causes of delirium
- Identify risk factors for dementia
- Differentiate delirium, dementia, depression
- Describe RVH's screening process for delirium, dementia and depression
- Use RVH's screening tools for delirium, dementia, depression



Module 1 – Delirium

Definition

Delirium is described as a syndrome because it is characterized by symptoms arising from various underlying causes. The direct pathophysiology of delirium is unknown. Delirium is defined as *“a temporary disordered mental state, characterized by acute and sudden onset of cognitive impairment, disorientation, disturbance in attention, decline in level of consciousness or perceptual disturbance”*.²¹

Delirium is also referred to as ‘acute confusion’, ‘ICU psychosis’, ‘acute toxic psychosis’, ‘acute brain syndrome’ and ‘acute brain failure’.¹¹ Delirium is recognized as an increasingly common and serious problem for hospitalized elderly patients and is considered a **‘geriatric emergency’** as it signifies a severe underlying illness. Often, delirium can be the only presenting sign of a life threatening illness in elderly patients. Delirium is often underassessed, underdiagnosed and undertreated by health care professionals.^{21, 22} A significant number of people who develop delirium never return to their previous functional level and require higher levels of care, ongoing support and education.

Prevalence and Incidence

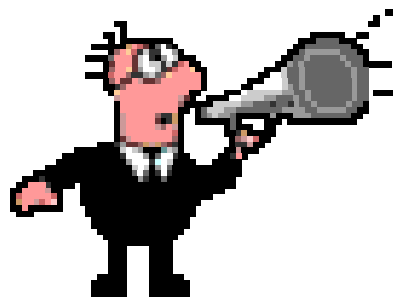
Delirium is very common among the elderly:

- Delirium occurs in 14 -80% of elderly hospitalized patients²¹
- For those 70 and over, 15-25% experience delirium post operatively after elective procedures⁷
- For emergency procedures (i.e. hip repair) this same group experiences delirium at a rate of 35-65%⁷
- Delirium accounts for 10-15% of admissions to acute care hospitals³
- Mortality rate of delirious elderly patients is 10-65%¹⁴
- Up to 75% of patients with delirium die within 3 years¹¹
- Two thirds of delirium cases are unrecognized or misdiagnosed by health care professionals¹²

Delirium is significant as it is associated with: ^{14, 22}

- increased in-hospital functional decline
- increased intensity of nursing care
- increased length of hospitalization
- increased rate of hospital related complications (pneumonia, pressure ulcers, incontinence)
- increased nursing home placement
- increased use of physical restraints
- increased rates of hospital death

The worse the delirium is, the more severe the outcome!



Delirium is
REVERSIBLE

Patients with delirium may fully recover if treated appropriately. However, if untreated delirium will persist and may ultimately result in death. So remember, delirium is a **GERIATIRC EMERGENCY** requiring immediate attention.

People who have experienced delirium describe it as 'dream-like', 'other world', 'fuzziness' and experience great fear, anxiety, frustration and anger.¹⁸

Clinical Features of Delirium

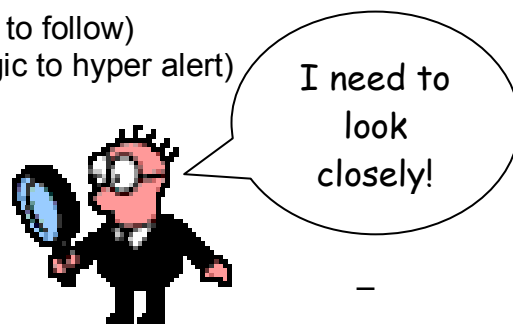
Symptoms such as anxiety, fearfulness, restlessness, insomnia and disturbing dreams may occur prior to delirium.¹⁷

The hallmark signs/symptoms of delirium are:^{22, 23}

- Acute onset (develops within hours to days)
- Fluctuating course (may be drowsy, hyper vigilant, lucid and agitated all within a short period)
- Poor attention (difficulty shifting or maintaining attention, difficulty concentrating on conversation/task)
- Disorganized thinking (thoughts are not logical, difficult to follow)
- Altered level of consciousness (may range from lethargic to hyper alert)

Other features suggestive of delirium include:^{6, 22}

- Disorientation
- Memory impairment
- Day-night reversal (may also experience “sundowning” increased agitation in late afternoon or early evening)
- Psychomotor agitation or slowness
- Hallucinations/misperceptions of reality – hallucinations are usually visual in nature and occur in upwards of 40% of cases – auditory, taste and smell hallucinations may occur but less frequently



During an episode of delirium a patient may present with behavioural, functional and physical symptoms Baycrest. These may include:

Behavioural symptoms:^{6, 21}

- Hyperactivity (agitation, restlessness, constant motion)
- Hypoactivity (inactive, withdrawn, sluggish state)
- Fear, irritability, combativeness
- Attempts to escape one's environment
- Removal of medical equipment (IV's, catheters)
- Acute sensitivity to light and sound
- Vocal disturbances (screaming, calling out, complaining, cursing, muttering moaning)
- A tendency to attack others

Functional symptoms:⁶

- Incontinence
- Falls
- Dependence for self care

Physical symptoms:⁶

- Hypertension
- Tachycardia

Types of Delirium

There are three clinical subtypes of delirium: ^{7, 12, 23}

- 1) **Hyperactive Delirium:** this type is easier to recognize as it is characterized by agitation +/- aggressive behaviour, increased psychomotor activity, psychosis and mood lability. These can lead to refusal of medical treatment, disruptive behaviours (shouting/screaming, resisting, spitting, hitting etc.), tube pulling and falls.
- 2) **Hypoactive Delirium:** this type of delirium is more common in the elderly and is often missed because of the absence of disruptive or challenging behaviour. This type presents with withdrawal, apathy and lethargy, quiet confusion. Patients with hypoactive delirium are difficult to arouse and require strong stimuli (vigorous shaking, shouting). Wakefulness is often incomplete and transient.
- 3) **Mixed Delirium:** this type of delirium is characterized by a mixture of both hyperactive and hypoactive delirium. In such cases patients fluctuate between the two types in unpredictable patterns.

Risk Factors and Causes of Delirium

There are numerous risk factors and causes for the development of delirium. Often delirium is multifactorial and is dependent on patient vulnerability (number of risk factors) and the number and severity of potential causes. Those patients with a number of risk factors are highly vulnerable and require minimal insults to develop delirium. Likewise those at low risk require more insults to develop delirium. Therefore risk assessment may be helpful in predicting patients that will develop delirium.

Risk factors: ^{14, 16}

- Advanced age (>80)
- Cognitive impairment
- Multiple medications
- Vision and/or hearing impairment
- Functional impairment
- History of substance abuse
- Multiple medical co morbidities
- Socially isolated
- Malnourished
- Physically frail
- Previous delirium

Potential causes of delirium:

Trying to figure out the cause of delirium is sometimes straight forward (i.e. UTI) however, most often it is challenging and takes some detective work. Frequently delirium is caused by a multitude of factors not just one.

The mnemonic “**I WATCH DEATH**” often is used to help remember the various causes of delirium and it clearly denotes the severity of delirium.²²

I = Infections (i.e. pneumonia, bladder infection, encephalitis)

W = Withdrawal (alcohol, benzodiazepines, sedatives, hypnotics)

A = Acute Metabolic (electrolyte disturbance, dehydration, renal/hepatic failure, acidosis/alkalosis)

T = Toxins, Drugs (opiates, steroids, dilantin, digoxin, cardiac medications, anticholinergics, psychotropics – medications are one of the most common causes of delirium in the elderly –Refer to appendix A for list of drugs that can potentially cause delirium)

C = CNS Pathology (stroke, tumor, seizure, hemorrhage, infection)

H = Hypoxia (anemia, pulmonary/cardiac failure, hypotension)

D = Deficiencies (Thiamine, B12)

E = Endocrine (thyroid, hypo/hyperglycemia, hyperparathyroid, adrenal insufficiency)

A = Acute Vascular (shock, hypertensive encephalopathy)

T = Trauma (head injury, post-operative, falls)

H = Heavy Metals (lead, mercury, magnesium poisoning)

Other factors that may contribute to delirium include:^{10, 14}

- Urinary/stool retention
- Bladder catheters
- Physical restraints
- Sleep deprivation
- Increased time in ICU
- Pain

Involving the family and/or caregiver is important as they can give information about the onset and course of the confusion, which is essential to help distinguish between delirium and dementia.

Research has found that the risk of delirium postoperatively is the same regardless of the route (general versus spinal) of anesthetic.⁸



Investigations

Once delirium is identified further investigations may be required to identify the cause of the delirium. Investigations may include such things as: ^{1,7}

- CBC
- BUN and Creatinine
- Electrolytes
- Thyroid function tests
- Urinalysis
- Chest X-ray
- ♦ Calcium
- ♦ Liver function tests
- ♦ Glucose
- ♦ ECG

If these routine investigations do not uncover a cause sometimes further investigation is required. Tests that may be considered include: ^{1,7}

- EEG
- CT head
- B12 and folate
- ♦ ABG's
- ♦ specific cultures (urine, blood)
- ♦ Lumbar puncture

Interventions

When delirium occurs there are many things that can be done to improve the patient situation. Interventions may include physiological stability, consultation/referral, medication review/awareness, environmental considerations; communication approaches, behavioural strategies and education (staff/patient/family). Care strategies for delirium will be addressed in more detail in the fall of 2005. Until then, some basic interventions to implement on a routine basis, which will help manage a delirious patient but also help prevent delirium in those at risk, include: ^{12, 22, 23}

- Optimize vision and hearing
- Limit environmental noise
- Ensure adequate lighting during the day
- Minimize room changes
- Ensure adequate hydration and nutrition
- Maximize mobility (for every 1 day in bed it takes seniors 4 days to recuperate)
- Optimize sleep environment (reduce noise, nightlight)
- Use orientation clues (calendar, signs...)
- Involve family/caregiver



KEY Points:

1. Delirium is a geriatric emergency
2. Delirium is reversible if treated appropriately
3. Acute onset, fluctuating course, inattention, disorganized thinking and altered LOC are hallmark signs of delirium
4. Family/caregiver involvement is imperative

Case Study

Mr. V was admitted to your medical unit with recurrent falls and increasing confusion. During his admission assessment you note Mr. V is difficult to keep awake and he cannot give you a clear history of why he is in the hospital. He constantly gets distracted by his roommate and the activity in the hall. Mr. V lives with his daughter and she reports he has mild dementia but is generally not this confused. Over the last few days Mr. V has been eating and drinking very little and his daughter noted his medications are all mixed up. Currently his medications include ranitidine, bactrim, prozac and valium.

What signs/symptoms is Mr. V displaying that would lead you to consider delirium?

What could be potential causes of his delirium?

What interventions would you implement?

(Answers – See Appendix C)

Module 2 – Dementia

Definition

Dementia is a “*syndrome of progressive decline in multiple areas of cognitive function eventually leading to a significant inability to maintain occupational and social performance*”. (Registered Nurses Association of Ontario, 2003). Dementia is not a disease in itself but characterizes a group of symptoms that accompany certain disease processes.

Prevalence and Incidence

Given that the prevalence of dementia increases with age, dementia is an increasing concern in society as the population ages. Presently it is estimated:

- that 364,000 Canadian seniors have dementia ²²
- this number will rise to 592,000 by 2021 and to 778,000 by 2031²²
- there are approximately 60,150 new cases of dementia in Canada each year²¹
- 10% of seniors age 65-84, and 50% of seniors over 85 have some form dementia ¹⁵

Dementia has significant implications as it results in considerable burden and suffering to the individual, caregivers and the health care system. Given the statistics, health care professionals must be suspicious of dementia in older patients. It is imperative that health care professionals must be able to recognize and assess dementia in a timely manner, as medications used for dementia are most effective when given in the early stages of the disease. Timely recognition and assessment will lead to timely interventions and treatment which will assist in preventing excess disability, improving quality of life, preserving individual function for a longer period and reducing caregiver burden. It is recognized that nothing can alter the outcome for individuals with a progressive dementia but health care professionals can provide care that will impact the quality of this journey.

Mild Cognitive Impairment

As people age there are normal changes on memory. There are changes in the way our brains store information and it is often harder to recall information. It is normal to forget names of people you have recently met, experience the “tip-of-the-tongue” phenomena (where you know a word but can not recall it), walk into a room and forget what you went in there for and forget where you have put things.¹ However, normal memory changes do not interfere with your ability to function on a day-to-day basis. When this occurs it is not normal aging.

Mild cognitive impairment (MCI) is a transition phase between normal aging and dementia. People with MCI present with subjective memory loss and have evidence of memory impairment on cognitive testing. However, general intelligence is preserved and there are no changes in the ability to carry out activities of daily living (ADL's)⁴. Research has found that people presenting with MCI convert to Alzheimer's disease at a rate of 10-15% per year whereas normal elderly develop Alzheimer's disease at a rate of 1-2% per year.^{4,9} So, those with MCI are at an increased risk of developing dementia.

Risk Factors

Although there are many causes of dementia and specific risk factors associated with the different types of dementia, there are some general factors, which increase the risk of developing dementia. These include:^{15,24}

- Advanced age (single greatest risk factor)
- Female (tend to live longer)
- Genetics/family history of dementia
- Down's Syndrome
- Head trauma (especially with loss of consciousness)
- Less than 6 years of education

Clinical Features of Dementia

Clinical presentation in dementia is quite variable, and depends on the type of dementia, the stage of dementia and the person's "normal" physical, functional and intellectual ability. However, as dementia progresses the individual presentations start to look the same.

Clinical features that are suggestive of dementia include: ²¹

- memory loss that affects day to day function
- difficulty performing tasks
- problems with language
- disorientation of time and place
- poor or decreased judgment
- misplacing things
- problems with abstract thinking
- changes in mood, behaviour, personality
- loss of initiative
- gait disorders

Dementia is suspected when...

- there is a decline in social function
- there is a decline in occupational function
- there is a decline in day-to-day function
- there is a decline in memory
- there is a change in behaviour



Case Scenario

Consider the following case scenario. What information would make you think this patient has dementia?

Mrs. K, a 78-year-old widow, is admitted with failure to thrive. She lives alone. Mrs. K. states things are going well at home, she is independent in her ADL's and has no concerns.

Her daughter reports Mrs. K has lost 30 lbs in the last year, she often doesn't eat and has difficulty preparing a meal (she used to be a great cook). Mrs. K needs reminding to change her clothes and has stopped attending her regular euchre games. She spends a lot of time sitting in the living room doing nothing. Mrs. K's daughter reports her phone was disconnected, as she did not pay the bill. Her house is a mess and there is always spoiled food in the fridge. Mrs. K frequently talks to her daughter on the phone but often does not recall these conversations and accuses her daughter of just being out for her money.

(Answers: See Appendix C)

Types of Dementia

There are over 60 causes of dementia. The four most common types of dementia are Alzheimer's disease (60%), Vascular Dementia (15%), Fronto-Temporal Dementia (5%) and Lewy Body Dementia (20-25%).^{20, 22} Each of these dementias has a characteristic onset and disease progression and it is important to identify the type of dementia as the treatment and interventions will vary. The common characteristics for these dementias are as follows:

Alzheimer's Disease^{20, 22}

- Most common cause of dementia in Canada
- Females affected more than males
- Gradual onset of memory decline with at least one additional area affected (language, visuospatial, executive function, insight)
- Short term memory is affected first
- Social skills are often intact in the early stages
- Very predictable pattern of decline over time (early, mid and late stage)
- Cause – 10-30% genetic – rest unknown
- Diagnosis of exclusion (rule out other possible causes)

Vascular Dementia^{20, 22}

- Multi-infarcts (small strokes), lacunar infarcts (small strokes in the deep subcortex arteries), Binswangers disease (subcortical arteriolosclerosis)
- Risk factors include stroke, hypertension, diabetes, atrial fibrillation, arteriosclerosis, emboli
- Abrupt onset (days) and stepwise decline
- Gait disturbances
- Impaired executive function
- Frontal symptoms (emotional lability, apathy, amotivation, concrete thinking, inattention)
- Clinical and neuroimaging evidence of focal and generalized neurological deficits

Fronto-Temporal Lobe Dementia ^{20, 22}

- May present differently depending on the area affected
- Gradual onset (10-15 year duration)
- 40-65 years
- male = female
- 50% hereditary
- first symptoms are behavioural changes
- Poor insight, disinhibition, socially inappropriate/childlike behaviour – can lead to problems with police and the justice system (often mistaken as a psychiatric issue)
- Language difficulties occur early in the disease process
- Memory and intellectual deficits occur later in the disease process – do well on the Mini Mental State Exam at first (often not recognized because of this)
- Executive function impaired – often cannot translate scenarios into real life

Lewy Body Dementia ^{20, 22}

- Usually affected at 60-70 years
- Males affected more than females (2:1)
- Early problems with executive functioning, attention, visuo-spatial skills, verbal fluency, not necessarily early memory problems
- May have rapid progression (6 years)
- 3 distinguishing features – fluctuating level of confusion, hallucinations, spontaneous parkinsonism
- Consider when a senior presents with: frequent falls, delusions, hallucinations, unexplained syncope, transient loss of consciousness
- Sensitive ++++ to neuroleptics (i.e. risperdal, seroquel) so must be used with extreme caution

Recent research is revealing that often these different types of dementia co-exist, so as an example, those with Alzheimer's disease will often have vascular dementia concurrently or those with lewy body dementia often have Alzheimer's disease. ²² As each of these diseases progress into later stages and disability increases, they all start to look the same and share a common clinical path to the end.

Classifications of Dementia

Primary vs. secondary: ²⁰

- Primary dementia occurs in the brain and is not a result of any other physiological change (i.e. Alzheimer's Disease, Fronto-Temporal Dementia, Lewy Body Dementia)
- Secondary dementia is a result of another disease process that starts outside of the brain but impacts the brain function through neurological damage or neurotransmitter changes (i.e. vascular dementia)

Cortical vs. subcortical: ²⁰

- Cortical dementia occurs when pathological changes occur in the outer surface or the cerebral cortex of the brain (i.e. Alzheimer's Disease, Fronto-Temporal)
- Subcortical dementia occurs when pathological changes occur in the subcortical structures of the brain (i.e. Vascular Dementia)

Reversible vs. irreversible: ²⁰

- Reversible dementia refers to cognitive impairment that has a reversible cause such as medication, nutritional deficiencies, metabolic disorders, tumors, depression, etc.
- Irreversible dementia refers to dementia that is not reversible but will continue to progress (i.e. Alzheimer's Disease, Vascular Dementia, Fronto-Temporal Dementia, Lewy Body dementia)

Assessment of Dementia

A definitive diagnosis of dementia is possible only through brain autopsy; so completing a thorough assessment encompassing many components lends to the best probable diagnosis.

Assessment for dementia includes: ^{7, 22}

- History from the patient
- History from a reliable family member/caregiver
- Physical examination
- Functional assessment (ADL/IADL'S)
- Cognitive assessment
- Laboratory tests – to rule out reversible causes (i.e. CBC, electrolytes, glucose, BUN, creatinine, urinalysis, albumin, calcium, B12, folate, TSH, syphilis, HIV...)
- Diagnostic tests – to rule out reversible causes (i.e. chest X-ray, CT scan, MRI...)

NOTE:

Family and/or caregivers accurately identify cognitive decline in their loved ones, so their concerns should be taken seriously and investigated

Goals of Care in Dementia

Although health care professionals are unable to change the ultimate outcome of dementia, we have the ability to significantly impact our patient's experience through this progressive condition. So, the goals of dementia care are not to cure but to: ²²

- Optimize cognitive functioning
- Optimize social/interpersonal functioning
- Optimize ADL/IADL's
- Reduce behavioural symptoms
- Facilitate appropriate and timely utilization of resources
- Support person with dementia and their caregivers
- Enhance understanding by individuals, families, caregivers and professionals about dementia and effective care strategies



Module 3 – Depression

Definition

Depression is “a syndrome comprised of a constellation of affective, cognitive and somatic or physiological manifestations in varying severity form mild to severe” (Registered Nurses Association of Ontario, 2003).

Prevalence and Incidence

Depression can have very devastating effect on a person's ability to think, feel, interact, function, love and maintain life responsibilities. Some times it even effects one's desire or purpose to live. Depression in seniors is very complex and a prevalent problem, however, if recognized, assessed and treated the effects of depression are reversible.

Depression in older adults is often attributed to normal aging changes and thus is underrecognized, underassessed, underdiagnosed and undertreated. Consider these stats:

- Depression requiring clinical attention occurs in 15-20% of community-based seniors²¹
- Depression requiring clinical attention occurs in 37% of seniors in primary care settings²¹
- There is a high incidence of depression with other medical conditions (i.e. heart disease, stroke)²²

Clinical significance of depression: ^{21, 22}

- Morbidity and mortality rates increase with depression in older adults
- Untreated depression can lead to increased substance abuse, slow recovery from medical illness/surgery, malnutrition and social isolation
- Can lead to physiological and functional deterioration and excessive disability
- Depressed seniors have the highest risk of suicide of any age groups – factors which increase their risk include personal loss, death of loved ones, cascade of life changes, social isolation, medical conditions associated with chronic pain
- Suicide rate for 85 years and over is 21 per 100,000
- Single, white, elderly males have the highest rate of suicide (6 times that of the general population)

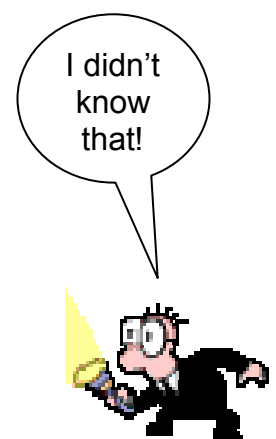
Clinical Presentation

People experiencing depression present with similar symptoms, these may include: ²¹

- Depressed mood most of the day, nearly everyday
- Marked diminished interest or pleasure in normal activities
- Significant weight loss or gain
- Insomnia or hypersomnia nearly every day
- Psychomotor agitation or retardation nearly every day
- Fatigue or loss of energy nearly every day
- Feelings of worthlessness or excessive guilt
- Diminished ability to think or concentrate, indecisiveness
- Recurrent thoughts of death or suicidal thoughts/actions

Older adults experiencing depression may present with the above, however they often have unique characteristics. Seniors often: ²¹

- report more somatic or physical symptoms (i.e. stomach aches/pains that have no identified cause) rather than depressed mood
- are more likely to accept their “unhappiness”
- present with apathy and withdrawal
- express less feelings of guilt
- present with loss of self-esteem
- experience decreased concentration/memory or cognitive impairment



Different Levels of Depression Severity

Depression can be classified by the nature and severity of the depression. The different classifications of depression are: ²²

Mild

Moderate

Severe without psychotic features

Severe with psychotic features

Recurrent

Medial illnesses associated with depression

Many medical illnesses are associated with an increased risk of depression. Studies have even shown that the treatment of depression in cardiac and stroke patients may reduce future negative outcomes. Medical conditions associated with depression include: ²²

- Stroke
- Heart attack
- Head injury
- Chronic pain
- Diabetes
- Arthritis and other musculoskeletal diseases
- Parkinson's Disease
- Chronic obstructive pulmonary disease
- Cancer
- Dementia
- Urinary incontinence

Medication associated with depression

There are many medications that are commonly taken by older adults that may cause symptoms of depression. Such medications include: ²²

- Antihypertensives
- Antimicrobilas
- Analgesics
- Hypoglycemic agents
- Antiparkinson medication
- Steroids
- Cardiovascular agents
- Psychotropic agents

Assessment of Depression

The assessment of depression on the elderly includes multiple components: ^{21, 22}

- History from patient (depression, anxiety, family history...)
- Physical examination
- Laboratory studies (rule out contributing/causative factors – i.e. TSH, Hgb)
- Medication review (prescribed, over the counter, herbal)
- Alcohol/drug history
- Assessment using a standardized tool

Interventions for Depression

Treating depression is complex and multifaceted. Often more than one treatment measure is required to resolve or control the depression. Treatment may include such measures as: ²²

- Consultation/referral to mental health services
- Addressing safety concerns/issues
- Communication/emotional support
- Adjunctive/alternative therapies (cognitive behaviour therapy, individual/group counselling, lifestyle education, aromatherapy/music/light therapy)
- Pharmacological therapy
- Electroconvulsive therapy (ECT)
- Client/family/community partnering

Case Study

Margaret, age 78, was brought to the emergency department by her sister-in-law, who stated “She does nothing but sit and stare into space. I can’t get her to eat or anything!” On assessment, it was found that 6 months ago Margaret’s husband of 55 years had died of a massive myocardial infarction. They had no children and had been inseparable. Since her husband’s death, Margaret has visited the cemetery every day, changing the flowers often on his grave. She has not revoked any of his clothes from the closet or chest of drawers. His shaving materials still occupy the same space in the bathroom. Over the months, Margaret has become more and more socially isolated. She refused invitations from friends, preferring instead to make her daily trips to the cemetery. She has lost 15 pounds, and her sister-in-law reports that there is very little food in the house. Today Margaret said to her sister-in-law, “I don’t really want to live anymore. My life is nothing without Frank.” Her sister-in-law became frightened and, with forceful persuasion, was able to convince Margaret she needed to see a doctor.

What behaviors/signs does Margaret manifest that are indicative of major depression?

What key characteristics would lead you to recommend hospitalization for this individual?

What major life issues might contribute to the development and continuation of depression?

(Answers: See Appendix C)

Module 4

Screening for Delirium, Dementia and Depression

The new standard of care at RVH is that all patients will be screened for delirium, dementia and depression using four trigger questions on the nursing admission assessment. Screening is important because of: ²⁵

- the high prevalence and incidence of the 3D's
- the need to promote earlier recognition, assessment, diagnosis and treatment of the 3D's
- the need to provide explanations to patient/family about presenting symptoms
- the need for appropriate planning for current and future health and social resources

The four questions found on the nursing admission assessment include: (See algorithm – Appendix B)

- 1) Do you have trouble with your memory?
- 2) Have you had any recent changes in your memory?
- 3) Are others (family, friends) concerned about your memory?
- 4) Do you often feel downhearted and blue?

If the patient is 65 years and over and answers yes to question #1, #2 or #3 then:

- the Cognitive Assessment Method (CAM) should be completed within 24 hours and repeated Q12H X2
- the Mini-Cog should be completed within 24 hours

If the patient is 65 years and over and answers yes to question #4 then:

- the Depression Screen should be completed within 24 hours

If the CAM is positive and/or the Mini-Cog is abnormal and/or the depression screen is positive, then the appropriate interventions identified in the delirium, dementia and depression screening algorithm should be implemented (See algorithm - Appendix B).

Throughout the patient's hospital stay clinicians must always be suspicious of the 3D's and if there are changes in the patient's cognition, behaviour or mood the appropriate screening should be implemented.



Changing to Improve Care!



The Confusion Assessment Method (CAM)

The Confusion Assessment Method (CAM) was developed by Dr. Sharon Inouye et al. (1990) to improve the assessment of **delirium** by clinicians without speciality training. The CAM has been trialled in medical, surgical and ICU populations and has been shown to be reliable and valid, and is quick and easy to administer. ²⁵

After interacting with the patient (i.e. after admission assessment, Mini-Cog) answer the following questions based on what you observed during that interaction.

- 1) Is there evidence of an acute change in mental status from the client's baseline? or Did the (abnormal) behaviour fluctuate during the day, that is, tend to come and go or increase in severity?
- 2) Did the patient have difficulty focusing attention, e.g. being easily distractible or having difficulty keeping track of what was being said?
- 3) 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?
- 4) Overall, how would you rate the patient's level of consciousness? (alert, vigilant, lethargic, stupor, coma)

To better understand your patient's cognitive, functional and physical abilities consultation with family/caregivers may be necessary.

The CAM is considered positive if the features in #1 and #2 are present and features in either #3 or #4 (other than alert) are present. If positive, your patient is demonstrating signs/symptoms of delirium and further assessment is required.

The Mini-Cog

The Mini-Cog is a screening tool for cognitive impairment using uncued 3-item recall and a clock drawing test. It is administered in approximately 3 minutes, requires no special equipment or training and is relatively uninfluenced by education and language variations. This test is useful as it tests memory but also executive functioning. ^{5, 25}

STEP #1: Have the patient listen to 3 unrelated words (i.e. bell, jar, fan or bull, war, pan), then ask the patient to repeat the words back to you and ask him/her to try to remember the words.

STEP #2: Give the patient a blank sheet of paper and ask him/her to draw a clock. After the patient puts the numbers on the clock ask him/her to make the clock read 10 after 11. Give the patient as much time as required.

Note: If the patient does not understand the instructions you may need to give more cues – i.e. draw them a circle, ask to put the numbers on the clock, prompt to put all the numbers on the clock, explain you want the hands on the clock- if the patient requires extra cues this should be documented.

STEP #3: Ask your patient to repeat the three previously presented words.

If the patient has vision or hearing impairment, remember to use glasses and hearing aids during the screening process. If the patient is “legally” blind participation in the clock drawing test may not be possible and should be documented as such.

Mini-Cog Scoring:

Give one point for each word remembered (1-3/3)

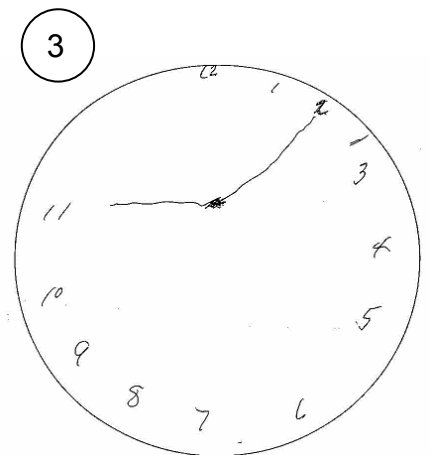
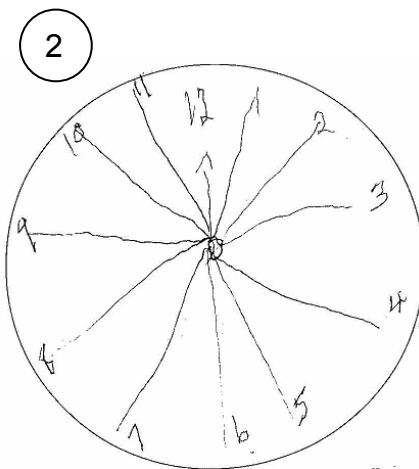
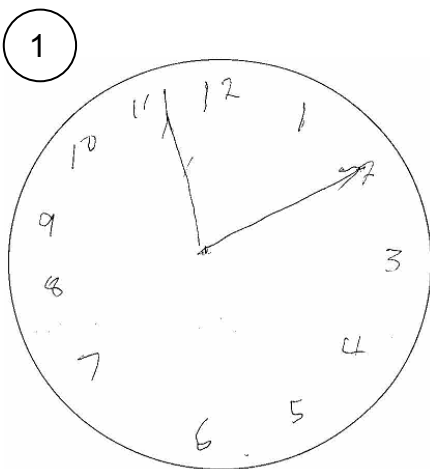
The clock is considered **normal** if all numbers are present in the correct sequence and position, and the hands readably display the requested time

The Mini-Cog is considered positive if the recall score is 2 or less and/or the clock is abnormal. If positive, your patient is demonstrating signs/symptoms of impaired cognition and further assessment is required.

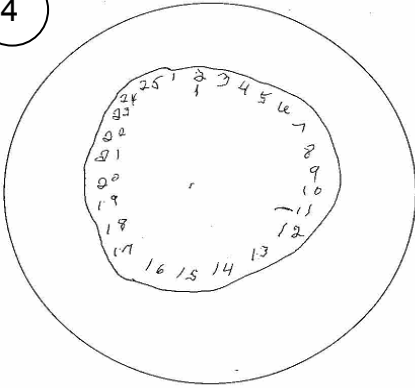
Clock Drawing

Clock drawing requires some explanation to understand the usefulness of this task. Clock drawing is useful to detect, diagnose, educate and monitor changes in cognitive impairment over time.^{20, 25} Clock drawing measures many aspects of one’s thinking including abstraction, attention, concentration, visuo-spatial capabilities, and executive control to name a few.^{20, 25}

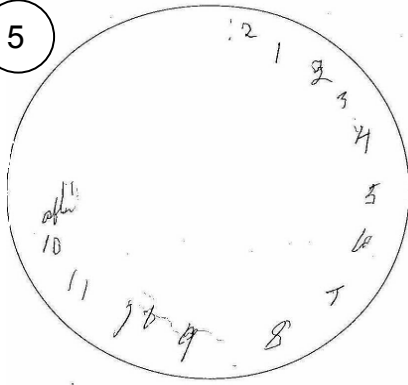
The challenge is interpreting whether a clock is normal or abnormal. Given the criteria in the Mini-Cog scoring (above) for **normal** clocks, look at the following clocks and decide whether they are normal or abnormal and if abnormal identify what is wrong with them. Each clock is supposed to display the time 10 after 11.



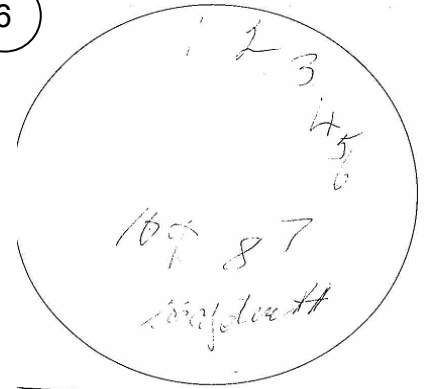
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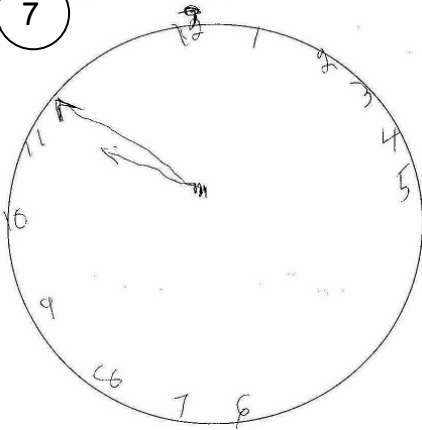
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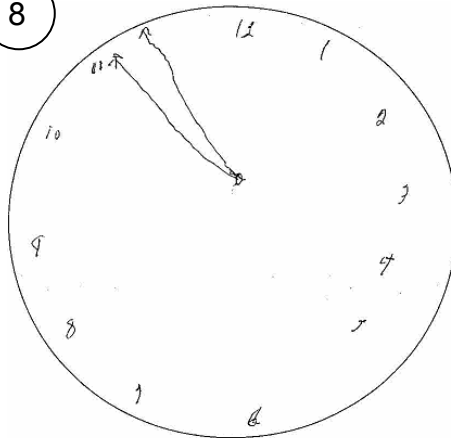
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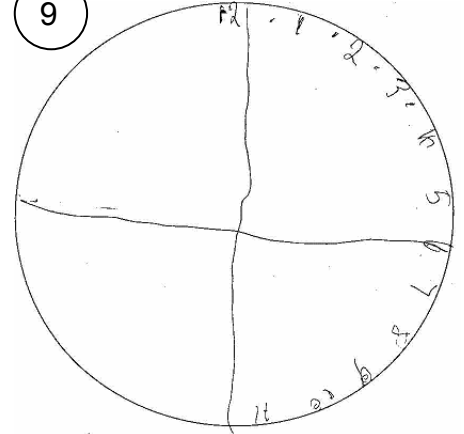
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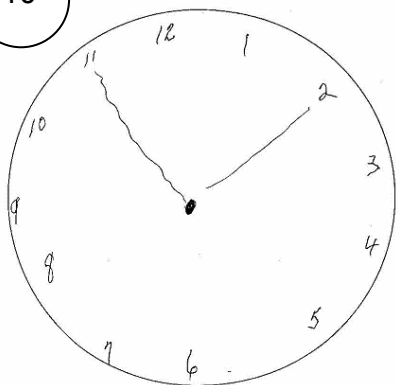
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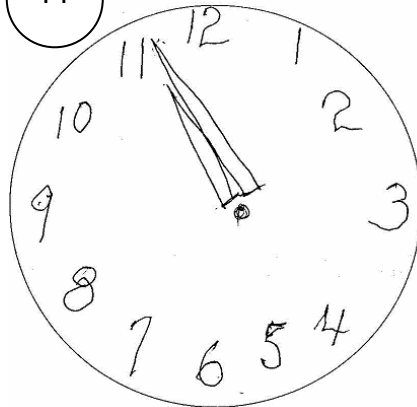
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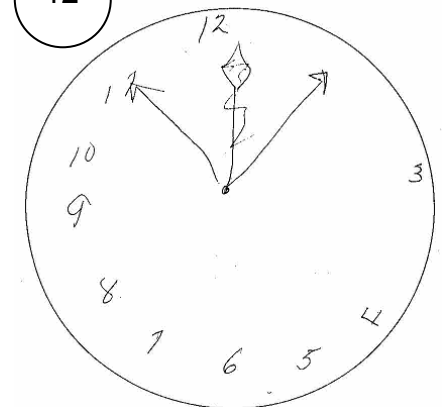
10



11



12



(Answers: See Appendix C)

NOTE: All these clocks were drawn by seniors in our hospital during the 2004 Senior's Survey

Depression Screen

Depression screening involves asking four questions during an interaction with the patient. This screen is a quick, valid and reliable tool. The questions include:

1. Are you basically satisfied with your life? No Yes
2. Do you feel that your life is empty? No Yes
3. Do you often feel helpless? No Yes
4. Do you feel happy most of the time? No Yes

The depression screen is considered positive if TWO or more questions are answered with an 'X' as above (this criterion has been selected at RVH based on the research information below). If positive, your patient is demonstrating signs/symptoms of depression and further assessment is required.

Research shows that:

- if 1 of the 4 questions is positive then there is a 38% chance of depression
- if 2 of the 4 questions are positive then there is a 68% chance of depression
- if 3 of the 4 questions are positive then there is a 90% chance of depression
- if 4 of the 4 questions are positive then there is a 98% chance of depression

Refer to Appendix B for the Delirium, Dementia and Depression Screening Tool

Differentiating between delirium, dementia and depression can be challenging as their signs and symptoms often overlap. The following comparison chart can be used to help differentiate the 3D's.

Comparison of Delirium, Dementia and Depression			
	Delirium	Dementia	Depression
Onset	Acute, over hours to days	Insidious over months or years	Relatively rapid, progressing weeks to months
Acuity	Acute illness, medical emergency	Chronic, progressive	Episodic
Course	Fluctuates hourly, intervals of lucidity and confusion during the day, confusion usually worsens at night	Stable throughout the day, progresses slowly	May be self-limiting, recurrent or chronic, symptoms worse in the morning, improve during the day
Duration	Lasts hours to weeks, resolves with treatment	Progressive and irreversible, ends in death	Lasts months or years, resolves with treatment
Awareness	Reduced	Unaffected	Clear but selective
Alertness	Fluctuates, abnormally low or high	Usually normal	Normal, may be selective
Attention	Short attention span, lacking in direction and selectivity, easily distracted	Usually unaffected	Minimal deficit, difficulty concentrating
Orientation	Disorientated to time and place	Impaired as disease progresses, loss of ability to recognize function of everyday objects	Selective disorientation
Memory	Impaired immediate and short-term memory	Memory for immediate and recent events impaired, inability to learn new information, unconcerned about memory deficits	May be impaired (slow recall, short-term memory deficits), concerned about memory deficits
Thinking	Disorganized, hard to follow, distorted	Impoverished, trouble finding words, abstraction, reasoned judgments	Intact but coloured by negative thoughts and feelings of helplessness and hopelessness
Perception	Gross distortions, illusions, visual or tactile hallucinations	Prone to hallucinations	Intact but coloured by depressive themes, delusions or hallucinations may occur in severe cases
Speech	Incoherent, loud, belligerent, can be slow, hard to understand	Impoverished, tangential, repetitive, superficial, trouble finding words, confabulation	Quiet and minimal, can be belligerent, attacking, language skill intact
Sleep-Wake Cycle	Disturbed, changes hourly	Disturbed, day/night reversal	Disturbed with early morning wakening, hypersomnia during the day
Contributing Factors	Associated with a physical or medical condition such as infection, drug toxicity, renal failure, head trauma, substance abuse	Precise cause may be unknown, associated with advanced age, cardiovascular deficits, substance dependence	Recent or cumulative loss, drug toxicity

From Arnold, E. (2004).

Self Evaluation

After completing this self learning guide answer the following **True** and **False** questions. Place your completed form in the designated envelope on your unit. For those without units please forward your form to Rhonda Johnstone, Special Project Leader for Least Restraint and Healthy Aging, room 3203. Please be advised this self evaluation is strictly being used to track participation. A final list of staff names (no scores) will be forwarded to your manager or professional practice leader for information only.

Please complete this self learning guide and return the self evaluation by September 1, 2005.

- 1) Delirious patients present with an acute change in cognition and altered LOC. T F
- 2) Medications are one of the common causes of delirium in older adults. T F
- 3) There are two types of delirium. T F
- 4) Advanced age, multiple medications and pre-existing cognitive impairment are risk factors for the development of delirium. T F
- 5) Approximately 50% of seniors over the age of 85 have dementia. T F
- 6) The most common types of dementia are Alzheimer's disease, Parkinson's and Fronto-temporal dementia. T F
- 7) Dementia should be suspected when older patients present with social, occupational or functional decline. T F
- 8) Untreated depression can slow recovery from medical illness, cause social isolation and increase substance abuse. T F
- 9) Seniors with depression often present with more physical complaints, apathy and Withdrawal. T F
- 10) At RVH, screening for delirium, dementia and depression using the CAM, Mini-Cog and depression screen only pertains to seniors 85 and over. T F

(Answers: See Appendix C)

Name: _____ Unit: _____ Discipline: _____



**Congratulations!!
You have successfully completed
the self learning guide**



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Appendix A

Medications Known to Contribute to Delirium in Older Adults

Note: This is a table noting some examples of possible medications that can contribute to delirium. It is the physiological status of the older adults and the combination of medications, among other factors that increase risk. **Therefore: “Watch and Beware”**

Mnemonic for the drug category: ACUTE CHANGE IN MS (mental status)²²

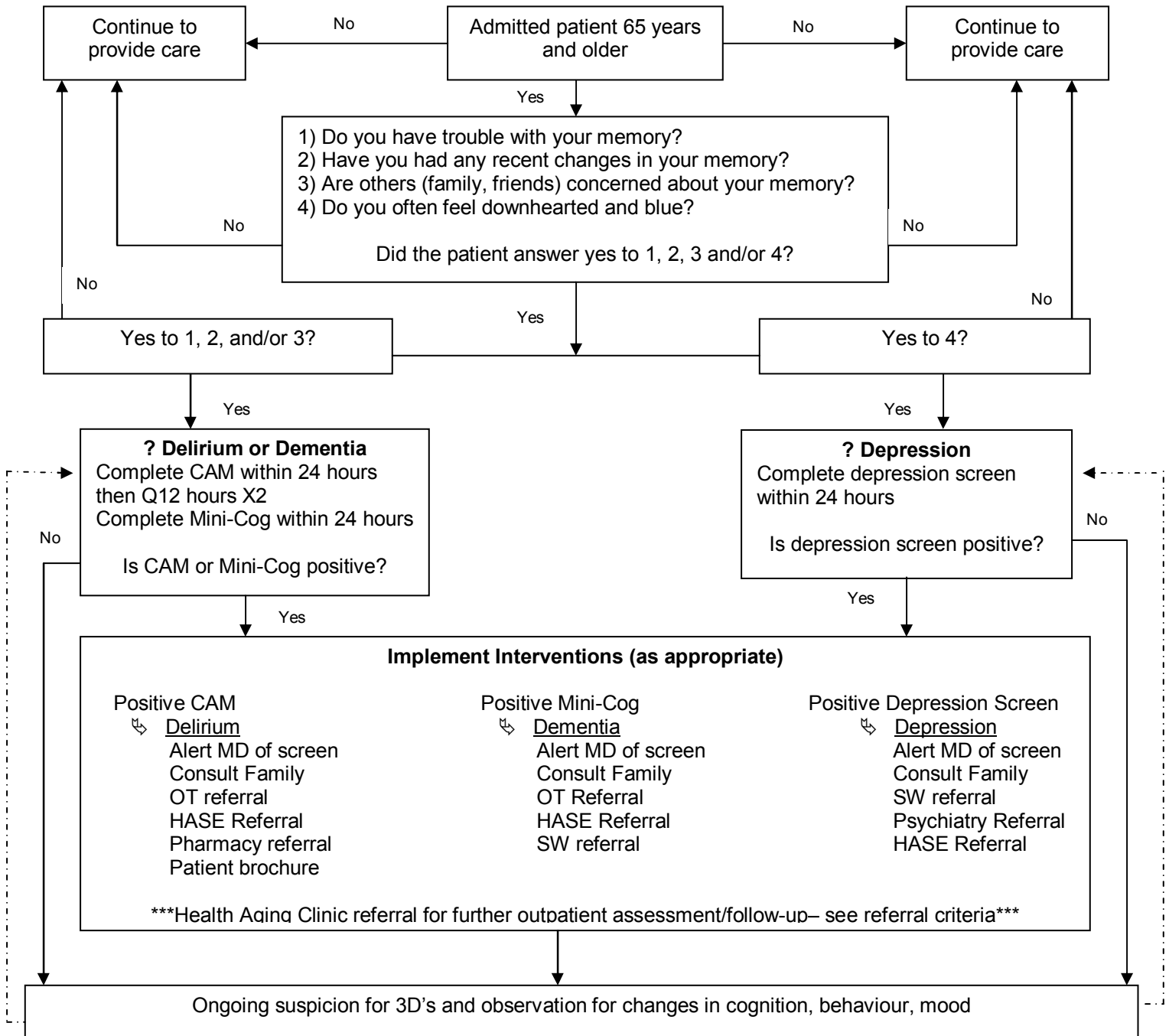
Mnemonic: Drug Category	Examples of Drugs
A ntiparkinsonian drugs	Trihexphenidyl, Benztropine, Bromocriptine, Levodopa, Selegiline
C orticosteroids	Prednisone
U rinary incontinence drugs	Oxybutinin (Ditropan), Flavoxate (Urispas)
T heophylline	Theophylline
E emptying drugs (motility drugs)	Metoclopramide (Reglan), Prepulsid (Cisapride)
C ardiovascular drugs (including anti-hypertensives)	Digoxin, Quinidine, Methadopa, Reserpine, Beta Blockers (Propranolol – to a less amount), Diuretics, Ace inhibitors (Captopril & Enalapril), Calcium Channel antagonists (Nifedipine, Verapamil, Diltiazem)
H 2 blockers	Cimetidien (uncommon on its own but ↑ risk with renal impairment), Ranitidine
A ntimicrobials	Cephalosporins, Penicillin, Quinolones & others
N SAIDS	Indomethacin, Ibuprofen, Naproxen, as well as salicylate compounds
G eropsychiatry drugs	1. Tricyclic antidepressants (e.g. Amitriptyline, Desipramine – to a ↓, Imipramine, Nortriptyline) 2. SSRIs – safer but watch if hyponatremis present 3. Benzodiazepines (e.g. diazepam) 4. Antipsychotics (e.g. Haldol, Chlorpromazine, Risperidone)
E NT drugs	Antihistamines/decongestants/cough syrups in the over-the-counter preparations
I nsomnia	Nitrazepam, Flurazepam, Diazepam, Temazepam
N arcotics	Meperidine, Pentazocine (risky)
M uscle relaxants	Cyclobenzapine (Flexeril), Methocarbamol (Robaxin)
S eizure drugs	Phenytoin, Primidone

Appendix B Delirium, Dementia and Depression Screening

When to use: Delirium, dementia and depression screening should occur on all admitted patients 65 years and older using 4 screening questions on the nursing admission form. If your patient responds yes to any of these questions, further screening should be completed within 24 hours using the tools on the back. You may need to consult with your patient's family and/or friends to verify information.

If there are changes in, or concerns with your patient's cognition, behaviour or mood during their hospital stay not identified on admission the appropriate screening tool(s) should be initiated.

Algorithm



Confusion Assessment Method (CAM) (delirium) – after interacting with and observing your patient answer the following questions. After the initial CAM, this should be completed Q 12 hours X 2 to assess for fluctuation.

	Observation #1		Observation #2		Observation #3	
Sec. #1 - Acute Onset						
• Is there evidence of an acute change in mental status from the client's baseline OR • Did the (abnormal) behaviour fluctuate during the day (i.e. tend to come and go or increase in severity)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Sec. #2 - Inattention						
• Did the patient have difficulty focusing attention (i.e. being easily distractible, difficulty keeping track of what was being said)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Sec. #3 - Disorganized Thinking						
• Was the patient's thinking disorganized or incoherent (i.e. rambling or irrelevant conversation, unclear or illogical flow of ideas, unpredictable switching from subject to subject)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Sec. #4 - Altered Level of Consciousness						
• Overall, how would you rate the patient's level of consciousness? <input type="checkbox"/> Alert <input type="checkbox"/> Vigilant (hyperalert) <input type="checkbox"/> Lethargic (drowsy, easily aroused) <input type="checkbox"/> Stupor (difficult to arouse) <input type="checkbox"/> Coma (unarousable)						
Do any checks appear in the shaded boxes above?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes

* The CAM is considered positive if yes is checked in Sec. #1 and Sec. #2 **AND** either Sec. #3 or Sec. #4. If positive, your patient is demonstrating signs/symptoms of delirium and further assessment is required (see algorithm on front).

Mini-Cog (dementia) – Complete steps 1-3 during an interaction with your patient. Label and attach the completed clock to this form.

STEP #1: Have your patient listen to 3 unrelated words (i.e. bell, jar, fan or bull, war, pan), then ask your patient to repeat the words back to you and try to remember them.

STEP #2: Give your patient a blank sheet of paper and ask him/her to draw a clock. After your patient puts the numbers on the clock ask him/her to make the clock read 10 after 11. Give your patient as much time as required.

STEP #3: Ask your patient to repeat the three previously presented words.

Mini-Cog Scoring	
Recall: give one point for each word remembered (1, 2 or 3)	Score = /3
Clock: is considered normal if all numbers are present in the correct sequence and position, and the hands correctly display the requested time	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal

* The Mini-Cog is considered positive if the recall score is 2 or less and/or the clock is abnormal. If positive, your patient is demonstrating signs/symptoms of impaired cognition and further assessment is required (see algorithm on front).

Depression Screen – During an interaction with your patient ask the following questions.

Depression Screen - Questions	Responses	
1) Are you basically satisfied with your life?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
2) Do you feel that your life is empty?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
3) Do you often feel helpless?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
4) Do you feel happy most of the time?	<input type="checkbox"/> No	<input type="checkbox"/> Yes

* The depression screen is considered positive if **TWO** or more answers are in the gray areas. If positive, your patient is demonstrating signs/symptoms of depression and further assessment is required (see algorithm on front).

Appendix C Self Learning Guide Answers

Delirium Case Study (from page 9)

What signs/symptoms is Mr. V displaying that would lead you to consider delirium?

- Decreased level of consciousness (he is difficult to keep awake)
- Poor attention (distracted by roommate/activity in the hall)
- Acute change in mental status (more confused than normal)

What could be potential causes of his delirium?

- Acute metabolic (dehydration, electrolyte imbalance, renal failure)
- Medication (?taking too much, not taking routine medications, types of medication)

What interventions would you implement? (just some examples, more interventions may be appropriate)

- Ensure adequate fluids/nutrition
- Review medication – refer to pharmacy
- Use orientation clues
- Maintain function – frequent mobilization, toileting routine
- Involve family in his care
- Cognitive assessment – can use to monitor for changes and improvement

Dementia Case Scenario (from page 11)

In the case scenario below, all issues identified in italics could be suggestive that this patient has dementia.

Mrs. K, a 78-year-old widow, is admitted with *failure to thrive*. She lives alone. Mrs. K. states things are going well at home, she is independent in her ADL's and *has no concerns*.

Her daughter reports Mrs. K has *lost 30 lbs* in the last year, she often *doesn't eat* and has *difficult preparing a meal* (she used to be a great cook). Mrs. K needs *reminding to change her clothes* and has *stopped attending her regular euchre* games. She spends *a lot of time sitting the living room doing nothing*. Mrs. K's daughter reports her phone was disconnected, as she *did not pay the bill*. Her *house is a mess* and there is always *spoiled food* in the fridge. Mrs. K frequently talks to her daughter on the phone but often *does not recall these conversations* and *accuses her daughter* of just being out for her money.

Depression Case Study (from page 18)

What behaviors/signs does Margaret manifest that are indicative of major depression?

- Not eating/weight loss
- Self Isolation
- Not wanting to live any longer

What key characteristics would lead you to recommend hospitalization for this individual?

- Stating not wanting to live anymore
- Not eating

What major life issues might contribute to the development and continuation of depression?

- Death of spouse
- Limited support/care (no children)

Clock Drawing (from page 21-22)

- 1 Normal clock
- 2 Abnormal clock – extra line, ? hand placement
- 3 Abnormal clock – improper number placement
- 4 Abnormal clock – improper number placement, extra numbers
- 5 Abnormal clock – improper number placement, missing numbers, wrote 10 after 11
- 6 Abnormal clock – improper number placement, wrote 10 after 11
- 7 Abnormal clock – improper number and hand placement
- 8 Abnormal clock – improper hand placement
- 9 Abnormal clock – improper number placement, extra lines, ? left neglect
- 10 Normal clock
- 11 Abnormal clock – improper hand placement
- 12 Abnormal clock – missing numbers

Self Evaluation (from page 25)

- | | | | |
|----------|----------|---------|-----------|
| 1) True | 5) True | 7) True | 10) False |
| 2) True | 5) True | 8) True | |
| 3) False | 6) False | 9) True | |