February 2010

Guideline on the Assessment and Treatment of Delirium in Older Adults at the End of Life

Adapted from the CCSMH National Guidelines for Seniors' Mental Health: The Assessment and Treatment of Delirium

Bring solutions to light
Mettre en lumière les solutions

Canadian Coalition for Seniors' Mental Health
To promote seniors' mental health by connecting people, ideas and resources.

Coalition Canadienne pour la Santé Mentale des Personnes Âgées
Promouvoir la santé mentale des personnes âgées en reliant les personnes, les idées et les ressources.

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ABOUT THE CANADIAN COALITION FOR SENIORS' MENTAL HEALTH

The Canadian Coalition for Seniors' Mental Health (CCSMH) was established in 2002 following a two-day symposium on "Gaps in Mental Health Services for Seniors in Long-Term Care Settings" hosted by the Canadian Academy for Geriatric Psychiatry (CAGP). In 2002, Dr. David Conn and Dr. Ken Le Clair (CCMSH co-chairs) took on leadership responsibility for partnering with key national organizations, creating a mission and establishing goals for the organization.

The mission of the CCSMH is to ***promote the mental health of seniors by connecting people, ideas, and resources.*** Mental illness is not a normal part of aging. All seniors have the right and deserve to receive services and care that promotes their mental health and responds to their mental illness needs.

The CCSMH has a volunteer Steering Committee that provides ongoing strategic advice, leadership and direction. In addition, the CCSMH is composed of organizations and individuals representing seniors, family members and caregivers, health care professionals, frontline workers, researchers, and policy makers. There are currently over 2,000 members from across Canada. These stakeholders are representatives of local, provincial, territorial and federal organizations.

ACKNOWLEDGEMENTS

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Finally, the CCSMH would like to acknowledge the continued dedication of its Steering Committee members:

Canadian Academy of Geriatric Psychiatry (chair)

Alzheimer Society of Canada

Canadian Association of Social Workers

Canadian Caregiver Coalition

Canadian Geriatrics Society

Canadian Healthcare Association

Canadian Mental Health Association

Canadian Nurses Association

Canadian Pensioners Concerned

Canadian Psychological Association

Canadian Society of Consultant Physicians of Canada

College of Family Physicians of Canada

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DEFINITIONS & ABBREVIATIONS

Definitions

Approaching the end of life refers to living currently with a terminal illness and having an estimated life expectancy of six months or less.

Best Possible Medication History (BPMH) is an accurate and current record of what medications a patient is taking. Providing and maintaining a BPMH is an important safeguard to correct any discrepancies between physician orders and what is being taken and to prevent adverse events and potential patient harm.

End-of-life delirium refers to any delirium that is experienced by a patient with an estimated life expectancy of six months or less due to any progressive disease.

Geriatric syndromes are highly prevalent and multifactorial conditions affecting older adults. They involve multiple organ systems and have a substantial impact on quality of life and disability. Common syndromes are delirium, falls, incontinence, pressure sores, decline in functioning and frailty.

Legal threshold refers to the threshold / criteria in law that needs to be met.

Older adults refers to individuals 65 years of age and older.

Palliative care is whole-person health care that aims to relieve suffering and improve quality of living and dying. Palliative care:

- affirms the potential of terminally ill patients to die peacefully and also to live fully until death;
- is committed to family-centered models of care;
- is committed to integrated attention to the physical, psychological, social, and spiritual aspects of health, illness, and dying; and
- is not limited to hospice or specialist palliative care units, but rather can and should be provided wherever people are dying (residential care facilities, intensive care and acute medical / surgical units, and the home).

Terminal delirium refers to delirium that occurs in the last few days preceding death.

Abbreviations

NSAID: non-steroidal anti-inflammatory drug

PRN: Pro Re Nata (as needed)

PART 1: PREAMBLE: DELIRIUM IN OLDER ADULTS AT THE END OF LIFE

This document is an adaptation of the *National Guidelines for Seniors' Mental Health: The Assessment and Treatment of Delirium.* This adaptation is designed to guide the care of older adults with delirium at the end of life and their families across care settings.

The original guidelines published in 2006 by the Canadian Coalition for Seniors' Mental Health (CCSMH) represent a thorough knowledge translation work on delirium. The original guidelines have been widely disseminated across Canada to hospitals, clinicians, community mental health programs, government agencies, consumer groups, and administrators. They were created by a multidisciplinary team of leaders from medicine, neuropsychology, nursing, social work, pharmacy, library science, epidemiology and health policy. The guidelines were developed in a systematic manner incorporating established best practice guidelines, existing standards of care, and research findings on delirium. The original guidelines include general information on delirium in older persons and provide practice recommendations grouped along several categories, the following six of which have been adapted for application to end-of-life care contexts:

1) Legal and ethical issues
2) Prevention
3) Detection, assessment, diagnosis and monitoring
4) Non-pharmacological management
5) Pharmacological management
6) Education

Recommendations in this adapted document are targeted toward health care providers working with ***older adults with or at risk of developing delirium and approaching the end of life***. In this document, *older adults* refers to individuals 65 years of age and older. *Approaching the end of life* refers to living currently with a terminal illness and having an estimated life expectancy of six months or less.

1.1 Background

Delirium represents a tremendously important clinical issue for individuals at the end of life and those who care for them. Up to 85% of terminally ill patients may experience delirium before they die (Lawlor et al., 2000). Delirium is the second most common psychiatric diagnosis in patients with advanced cancer and should be considered a *palliative care emergency* (Gagnon, 2008; Roth & Breitbart, 1996).

The etiologies of delirium in terminally ill patients are invariably complex and multi-factorial (Morita et al., 2001; White & Bayer, 2007). The development of delirium at the end of life is potentially attributable to medications (e.g., opioids, steroids, benzodiazepines, anticholinergics), poorly controlled symptoms (e.g., constipation, pain, breathlessness), and/or disease progression itself (e.g., dehydration, fever, brain metastases, metabolic disturbances). Inouye (2006) draws an important distinction between factors that *predispose* the individual to the development of delirium (e.g., age, health status) and factors that *precipitate* delirium (e.g., contributing factors such as medications, disease-related insult / injury, environment). Refer to *Table 1.1* for a list of the common predisposing and precipitating factors for delirium that are particularly relevant at the end of life.

Delirium at the end of life is distressing to both the dying person and their family; it can be "the single most painful expression of the dying experience" (Maluso-Bolton, 2000). Delirium compromises effective communication between patients and their loved ones during a critical time of impending separation and results in painful memories that are carried forward into bereavement (Brajtman, 2003; Morita et al., 2007; Namba et al., 2007). Delirium interferes with the assessment and management of other physical and psychological problems (Braiteh et al., 2007; Ganzini, 2007) and impedes the ability for patients to make final decisions and plans

(Harris, 2007). Finally, delirium also constitutes significant safety concerns for the patient and family members. The goal of management is to deal with all of these issues.

Within palliative settings, care for delirious patients is generally subsumed under a broad *symptom control* approach, and guidance on delirium care is provided within general clinical palliative care practice guidelines (e.g., NCCN, 2009). However, these guidelines lack the necessary detail to address the multiple and complex variables associated with the assessment and management of delirium at the end of life. The need for comprehensive clinical guidelines that focus specifically on delirium experienced at the end of life was the motivation for producing this document.

1.2 Guideline Adaptation Process

This document is the result of a collaborative effort between the CCSMH and two CIHR funded New Emerging Teams in Palliative Care Research; the *End of Life Care for Seniors New Emerging Team* based at the University of Ottawa (Ottawa, Ontario) and the *Developing, Evaluating, and Implementing New Interventions in Palliative Care New Emerging Team* based at the University of Laval (Québec, Québec).

In January of 2008, the Guideline Adaptation Group for the Assessment and Treatment of Delirium in Older Adults at the End of Life (including representatives of the CCSMH, the two New Emerging Teams, and members of the original CCSMH delirium guideline development group) convened a two-day workshop in Ottawa Canada, funded through the CIHR Institute of Aging. Invited participants met to identify aspects of the original guidelines that would require adaptation to meet the needs of older adults with delirium at the end of life. Workshop participants included multidisciplinary clinical experts and researchers in palliative care, geriatrics, and seniors' mental health. Refer to *Appendix A* for a list of workshop participants, as well as consultants and external reviewers.

Following the workshop, six small working groups of 2-3 experts each made revisions to the original guidelines, taking into consideration changes that were proposed by workshop participants. An extensive literature review was conducted to support this process. Targeted, systematic search strategies using the databases MEDLINE, CINAHL, PSYCINFO, and EMBASE and keywords for *delirium* (e.g., delirium, confusion, agitation, restlessness, organic brain syndrome, etc.), and *palliative care* (e.g., palliative care, terminal care, hospice, dying, end of life, etc.) were repeated for different sections of the revised guidelines. Articles were included if published in the five years preceding the review (2004-2009) or if judged "seminal" by a core committee of experts. Refer to *Appendix B* for sample of literature search strategy. The expert panels also graded the level of evidence of any revised recommendations according to the Shekelle et al (1999) rating system. Refer to *Appendix C* for more details about this rating system. It is important to note that many of the guidelines as originally written were deemed to apply also in a palliative care context, however, the evidence level of such recommendations often required downgrading due to a lack of delirium research conducted specifically with palliative care populations. In such situations, the strength was downgraded by one level (e.g., from a C to a D). Once revised, each subsection was reviewed by consultants and external experts and any gaps or areas requiring clarification were addressed. A criterion of 80% consensus in support of a revised recommendation among the Guideline Adaptation Group was required for the inclusion of a recommendation in the final document.

Refer to *Appendix D* for a detailed overview of guideline adaptation process.

1.3 Diagnostic Features of Delirium

The definition of delirium used in the original guidelines, based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM IV-TR),* is unchanged. According to this definition, the core features of delirium are:

1) Disturbance of consciousness (i.e., reduced clarity of awareness of the

environment) with reduced ability to focus, sustain, or shift attention;

2) A change in cognition (i.e., memory deficit, disorientation, language disturbance that is not better accounted for by a pre-existing, established, or evolving dementia); and

3) The disturbance develops over a short period of time (usually hours to days) and tends to fluctuate during the course of the day.

It is important to note that while different delirium disorders share a common symptom presentation, they can be differentiated based on different etiologies, all of which are relevant to the end-of-life context. The *DSM IV-TR* distinguishes between delirium due to a general medical condition, substance-induced delirium (including medication side effects or toxicity), delirium due to multiple etiologies, and delirium not otherwise specified (i.e., where a specific etiology cannot be determined).

The three subtypes of delirium, hyperactive-hyperalert, hypoactive-hypoalert, and mixed, are relevant in a palliative care context (Plonk & Arnold, 2005). The significance of the hypoactive presentation is often underestimated by family members and care providers in palliative care, despite the fact that it is as distressing to patients as hyperactive delirium (Breitbart et al., 2002; Bruera et al., 2009). The inappropriate normalization of hypoactive delirium deserves special consideration in an end-of-life context, where a patient's symptoms related to delirium are too often mislabeled as fatigue or withdrawal, or wrongly considered as part of the normal dying process (Spiller & Keen, 2006). Moreover, clinicians should be aware of "subsyndromal delirium" (where patients do not meet all of the diagnostic criteria for clinical delirium but nonetheless exhibit certain delirium-associated symptoms) which may result in adverse clinical outcomes (Ouimet et al., 2007; Gagnon, 2008). Subsyndromal delirium merits careful attention.

Various terms have been used to describe delirium that occurs in terminally ill patients, including terminal delirium, terminal agitation, terminal confusion, and terminal restlessness. For the purpose of these guidelines, ***end-of-life delirium*** refers to any delirium that is experienced by a patient with an estimated life expectancy of six months or less due to any progressive disease. End-of-life delirium may be reversible in up to half of all cases (Lawlor et al., 2000), particularly when it is caused by medication toxicity or metabolic abnormalities (Centeno et al., 2004). Younger patient age, lessened severity of cognitive disturbance, and absence of organ failure are associated with delirium reversibility in terminally ill patients (Leonard et al., 2008b). For the purpose of these guidelines, ***terminal delirium*** refers to delirium that occurs in the last few days preceding death. Terminal delirium may be a consequence of the dying process and therefore not reversible, although it must be stated that the distinction between end-of-life and terminal delirium can often only be made after patient death. It should never be assumed that delirium is an expected part of the dying process. Even when delirium is not reversible, *symptoms can and should be treated in all cases* (Gagnon, Allard, et al., 2000; MacLeod 2006a, 2006b).

1.4 Palliative Care

Palliative care is whole-person health care that aims to relieve suffering and improve quality of living and dying (CHPCA, 2002). It is an approach to service delivery that affirms not only the potential of terminally ill patients to die peacefully but also to live fully until death. Integral to palliative philosophy is a commitment to family-centered models of care as well as integrated attention to the physical, psychological, social, and spiritual aspects of health, illness, and dying (Corr, 2007; Davies & Higginson, 2004; Pastrana et al., 2008; Twycross, 2007). Principles and philosophies of quality end-of-life care can be found in such sources as the WHO Definition of Palliative Care (www.who.int/cancer/palliative/definition/en/) and the Ontario Palliative Care Position Statement (www.ontariopalliativecare.org) although these do not comprise an exhaustive list.

Quality palliative care at the end of life is not limited to hospice or specialist palliative care units, but rather can and should be provided wherever people are dying. Relevant settings may include residential care facilities, intensive care and acute medical / surgical units, and the home. Because of the wide differences between these settings, the general guidelines in this document may require individual modification for application to specific practice settings.

1.5 Geriatric Care Principles

Education of the health care team should incorporate established evidence-based geriatric principles of care to ensure routine screening for and comprehensive assessment, diagnosis and management of geriatric syndromes in the delivery of palliative interprofessional care.

Hickman et al., 2007 conducted an integrative literature review based on 26 controlled trial studies to establish the best practice management of older adults in acute care. Key components of intervention essential to provide optimal health outcomes for older adults were identified:

- A coordinated team approach to care utilizing a designated care unit or consultative gerontological expertise;
- Targeted assessment strategies to prevent complications;
- Emphasis on discharge planning; and
- Enhanced communication among all care providers.

A comprehensive geriatric assessment is central to understanding the complexity of the presenting problems of older persons and provides direction for non-pharmacological and pharmacological care approaches (Hickman et al., 2007, Hilmer et al., 2007).

Older adults with baseline cognitive and functional impairment or impaired mobility are at risk for certain geriatric syndromes, which include delirium as well as other conditions such as pressure sores, incontinence, falls, and functional decline (Inouye et al., 2007). Therefore, these risk factors are important considerations to incorporate in the development and implementation of effective care strategies for older adults.

Evidence-based considerations for pharmacotherapy for older adults should include knowledge of the efficacy of medication in frail elders, assessment of risk for adverse drug events and discussion of the potential risks and benefits of medication with the patient and family. Careful monitoring of the patient's response to medication is an important aspect of care as the elderly are more susceptible to serious adverse drug events making knowledge and monitoring in this area important to care providers (Hilmer et al., 2007).

1.6 Whole Person Care

As palliative care is whole person oriented, care of the delirious patient at the end of life necessitates consideration of the physical, psychological, social, and spiritual dimensions of patient and family experience. Physical care of the delirious patient includes appropriate clinical investigations to determine etiologic factors as well as the use of specific pharmacological management strategies. Psychological care involves addressing the cognitive changes, perceptual disturbances, and strong emotional reactions that occur in delirium. Social care acknowledges that patients are situated within a family context; family members require information and support in coping with the delirium experience, particularly around themes of communication with the dying patient. Spiritual care acknowledges that a person with delirium at the end of their life is no different than a person who doesn't have delirium, and may therefore have fears and existential distress that need attention. Physical, psychological, social, and spiritual care of the delirious patient and his / her family requires creativity, empathy, attentiveness, patience, acceptance, and compassion. The goal is for the care provider to relate to the patient and family as effectively as possible to create a safe context for a peaceful end-of-life experience.

1.7 Goals of Care

The implementation of these guidelines should take into account the patient and family's goals of care, which should be determined in all instances. Arriving at the goals of care for an older adult with delirium and approaching the end of life is a necessary process that involves careful consideration of the medical, psychosocial, and cultural aspects of the individual situation. Further consideration must be given to legal requirements governing capacity and consent to treatment.

In the acute care setting, the main clinical objective is to eliminate delirium through identification and treatment of the cause(s) (Meagher, 2001; White & Bayer, 2007). However, in an end-of-life context, reversal of delirium is often not feasible, either because it is caused by advanced and irreversible illness processes or because palliative goals of care do not accommodate the invasive investigations and/or treatments that would be required (Casarett & Inouye, 2001; Lyness, 2004).

At the end of life, professional caregivers, together with patients and families, should weigh the relative benefits and burdens of specific interventions while also considering other dimensions of wellbeing that are important to a quality end-of-life experience (e.g., dignity, comfort, communication). Assessing patient-family goals is not always a straight forward process, specifically because goals can change from one day to the next as the patient's clinical condition changes, and because simultaneously held goals might conflict with each other. Refer to *Table 1.2* for examples of the various types of goals that patients and families may have in end-of-life situations.

An individualized approach to determine the appropriate intensity of investigation and treatment of delirium is essential. Because delirium at the end of life is often reversible, screening for potentially correctable causes is a mandatory first step in all cases (Caraceni & Simonetti, 2009). An overly fatalistic acceptance of delirium as an inevitable consequence of the dying process should be avoided. However, clinicians must ensure that they do not impose undue discomfort on patients and families through overly burdensome approaches to diagnosis and management (Kress & Hall, 2004; Leonard et al., 2008a).

1.8 Overarching Recommendations and Considerations

In order to provide compassionate, person-centered care of the individual and family at the end of life that is respectful of the goals they have for their own care, the following overarching recommendations were developed by workshop participants and are meant to anchor the reading of *all* of the recommendations contained in this document.

1. **Person-centered care of the older individual with delirium at the end of life should be based on a thorough understanding of her / his life history (i.e., the psychosocial, relational, and spiritual narrative) in addition to the current clinical status and prognosis. D**

2. **There is a need to consider the "family": their strengths and needs; what role they may play in the care of the older individual at the end of life who is at risk for delirium or suffering from it; and how the delirium experience affects their own wellbeing, both pre and post bereavement. "Family" should be understood broadly to include all individuals who are close to the patient in knowledge, affection, and care, regardless of biological relationship. D**

3. **Terminally ill individuals who are at risk for or suffering from end-of-life delirium – and their families – should be encouraged to connect with what is sacred or spiritual in their lives, if desired and appropriate. D**

4. **At the time of first contact with the older individual at the end of life, goals of care should be clarified with the individual (or their proxy if the older individual lacks capacity). Continuous reassessments should be ongoing and documented throughout the course of their care, and the significance of involving the family in this process should not be underestimated. D**

5. **In caring for older adults at the end of life, the clinician is encouraged to follow accepted guidelines that are consistent with the principles and philosophies of quality end-of-life care. D**

6. **Adequate training and education of all members of the interprofessional health care team in how best to prevent, detect, and treat delirium, as well as how best to communicate with and support those affected by delirium, is crucial. D**

Several guidelines refer to appropriate communication strategies with delirious patients and/or their families. It should be noted at the outset that communication in a delirium context can be very challenging. For example, a clinician may need to tactfully disagree with the content of a delirious person's speech, while explicitly demonstrating respect for the person's lived experience. Cultural and linguistic considerations add a further layer of complexity to communication efforts.

The detection of delirium is multifaceted and is not based on brief cognitive tests like the *Mini Mental State Examination (MMSE).* Non-pharmacological strategies to prevent and manage delirium should always precede pharmacological strategies. Clinicians need to demonstrate a keen sensitivity to environmental considerations and how the environment can be made safe so as to prevent delirium or minimize its severity. Pharmacological therapies are an important adjunct to delirium management, and become especially important in delirium that is difficult to manage. When and if delirium becomes refractory to *all possible intervention efforts*, palliative sedation may be indicated. Palliative sedation is the deliberate reduction of consciousness to alleviate intolerable suffering (De Graeff & Dean, 2007; Quill & Byock, 2000). Delirium is one of the most common indications for palliative sedation at the end of life (Cowan & Walsh, 2001). Specific guidelines for palliative sedation are beyond the scope of this document, though two recommendations can be found in the Pharmacological Management section.

Table 1.1 – Predisposing and precipitating factors for delirium at end of life

- Age of 65 years or older
- Anemia
- Dehydration
- Drug intoxication and polypharmacy
- Emotional stress
- Environmental factors
- Functional / Performance status
- History of cognitive impairment
- Hypoxia
- Impaired nutrition
- Infection
- Metabolic disturbances
- Multiple co-morbidities
- Pain
- Sensory impairment
- Severe illness / Metastatic disease (incl. brain mets) / Organ failure

(Inouye, 2006, Leonard et al., 2008a) Refer also to Tables 3.1 and 3.2 for delirium risk factors and modifiable environmental factors.

Table 1.2 – Goals of care at life's end

Goals	Examples
Cure	• Curative therapies • Recovery
Live longer	• Avoidance of premature death • Feeling like one is "doing everything" or "fighting"
Function (quality of life, independence)	• Restoring health • Rehabilitation • Sense of control
Comfort	• Relief of pain and suffering • Symptom management • Not prolonging dying • Psychosocial support
Life goals	• Complete unfinished business • Prepare for a peaceful death • Strengthening relationships with loved ones
Family	• Relieve burden on loved ones • Education and support for loved ones

Based on an integrated literature review by Kaldjian et al (2009). It is important to note that different goals can be held simultaneously, and that relative priority placed on one goal over another will continuously shift over the course of the illness experience.

PART 2: LEGAL & ETHICAL ISSUES

Legal and ethical issues that arise in the clinical care of older adults with delirium at the end of life include consent to treatment and the use of physical restraints.

Health practitioners have a legal and ethical obligation to understand the legislation that governs consent to treatment in their jurisdiction and to ensure that individuals consenting to the treatments they are proposing are capable of providing consent. In the event that an older adult is not able to provide consent, practitioners are obligated to identify a substitute decision-maker and to chart the details of their findings of incapacity. In the context of delirium where mental status can fluctuate over the course of days and over the course of care, decisional capacity may also fluctuate over hours and days.

Although different from province to province, legislation that addresses issues of capacity define:

- What aspects of clinical care require consent and the requirements of a valid consent;
- The legal requirements of capacity to give consent to treatment;
- The conditions under which clinicians are legally obligated to assess capacity;
- The legal procedure to be followed in assessing capacity to consent to treatment (e.g., the legal threshold for incapacity, who conducts the capacity assessment, the role of diagnosis, communication deficits and persistent somnolence in determinations of capacity);
- The clinician's obligations if an individual is found to be incapable (e.g., whether the clinician is obligated to inform the individual of the finding of incapacity);
- Rights of appeal of a finding of incapacity and the process to be followed if the person found incapable wishes to contest the finding;
- The process by which a substitute decision-maker is identified; and
- The legal obligations of the substitute decision-maker.

National and provincial professional associations and/or professional regulatory colleges may also provide their members with direction and/or guidelines on issues relevant to the translation of regulatory requirements regarding consent to treatment and capacity to provide consent.

While provincial legislation defines the legal requirements of assessments of capacity, legislation does not inform the clinical skills required in collecting the necessary information to address the legal threshold for decisional capacity. Clinicians must translate the legal threshold for capacity in their jurisdiction to a clinical interview that provides a vehicle by which they can bear witness to their patient's thinking in rendering the treatment decision in question. In order to do this the clinician will require the clinical skills to meaningfully interview patients with impairments in sustaining attention, learning / memory and reasoning.

While evaluation of neurocognitive functioning can provide important information regarding impairments that underlie decisional incapacity, performance on measures of cognitive functioning should not be used as surrogate markers for capacity / incapacity. It should also be kept in mind that brief measures of neurocognitive functions such as the *Mini Mental State Examination (MMSE)* do not include important neurocognitive functions central to capacity (e.g., judgment, reasoning). As such, a normal score on the *MMSE* can be associated with incapacity (Schindler et al., 1995).

Many jurisdictions also have legislation regarding the use of physical restraints in the context of providing clinical care. Practitioners are obligated to be familiar with the legislation in their jurisdiction and to be aware of the risks associated with restraint.

PART 2: LEGAL & ETHICAL ISSUES

2.1 CAPACITY

1. Clinicians must be alert to the possibility that older persons with delirium approaching the end of life may not be capable of providing informed consent for treatment (including goals of care). **C**

2. If there is reason to suspect incapacity to consent to treatment, health practitioners have a legal and ethical obligation to:

   a) Assess capacity to consent to treatment;

   b) Identify a substitute decision-maker in the case of incapacity; and

   c) Chart the details of their findings. **C**

3. Clinicians should be familiar with the relevant provincial legislation regarding capacity to consent to treatment. Likewise, in the case where the older adult is deemed to be incapable, the clinician should be familiar with the stipulations of the relevant provincial legislation regarding the identification of a substitute decision-maker. **D**

4. It is recommended that practitioners obtain training in assessing capacity and in understanding the legal threshold for capacity in their jurisdiction. **D**

5. It is recommended that practitioners conducting capacity assessments obtain training in interviewing skills pertinent to interviewing older adults with neurocognitive impairments. **D**

6. Assessment of capacity to consent to treatment must elicit sufficient relevant information to allow for the determination of capacity as defined by the appropriate provincial legislation. **D**

7. The clinician should strive to make the assessment of capacity as brief as possible while still obtaining the required information. **C**

8. Clinicians should also be knowledgeable regarding their obligations should the older person be deemed to be incapable. In some provinces, the practitioner is obligated to advise the person of their finding and of their right to challenge it. **D**

9. Measures of neurocognitive functions known to underlie capacity (i.e., attention, language, verbal learning / memory and higher order cognitive functions) should be included as part of an in-depth assessment. These measures provide insight into the cognitive underpinnings of capacity, but the practitioner should not consider them to be the assessment of capacity. **C**

PART 2: LEGAL & ETHICAL ISSUES

10. It is recommended that clinicians consider supplementing brief measures of neurocognitive functions (e.g., *Mini Mental State Examination*) with other cognitive measures that include cognitive domains especially pertinent to decisional capacity (i.e., judgment and reasoning). The required sensitivity of the chosen measures will depend on the severity of the cognitive impairment that is present. **D**

11. Screening for psychotic features relevant to decision-making capacity is recommended. **D**

12. In view of the fluctuating nature of delirium and changing clinical conditions of patients approaching the end of life, serial evaluations of capacity may be necessary as treatment decisions arise. It may be inappropriate to wait for periods of lucidity to determine capacity to consent to treatment. **C**

13. The use of structured interviews is recommended for the assessment of capacity in complex cases. However, these interviews should not be conducted in a manner that would suggest that the interview protocol itself represents the legal threshold in any particular jurisdiction. These are tools that provide the benefit of systematic questioning to elicit the required information. These tools may or may not specifically request information required for specific jurisdictions. **D**

14. The use of the *MacArthur Competency Assessment Tool – Treatment* to assess capacity to consent to treatment is recommended in complex cases. **D**

15. The use of the *MacArthur Competency Assessment Tool – Research* is recommended for the assessment of capacity to participate in research in complex cases. **D**

16. If uncertainty regarding capacity persists after the clinician in charge has assessed the older person, referral to a neuropsychologist or psychiatrist with expertise in the evaluation of capacity and cognitive functioning should be considered. **C**

17. It is recommended that clinicians consider the relevance of the tool used to assess capacity to the legal threshold that must be applied within their jurisdiction. **D**

2.2 PHYSICAL RESTRAINTS

18. Since physical restraints can increase the risk of delirium in the older person approaching the end of life, avoidance of restraints is important. **A**

PART 2: LEGAL & ETHICAL ISSUES

19. The use of physical restraints for the purpose of enhancing safety for older persons suffering from delirium should be applied only in exceptional circumstances. These exceptional circumstances include:

    a) When there is a serious risk for bodily harm to self or others;

    b) When other means of reducing safety risks (i.e., medication) have been explored first and have been found to be ineffective; and

    c) The potential benefits of restraint (i.e., increased safety) outweigh the potential risks of restraints (i.e., increased risk of agitation). **D**

20. The use of physical restraints to prevent falls is not justified. **D**

21. The least restrictive physical restraint that is appropriate for the situation should be used first. **D**

22. Frequent monitoring, re-evaluation, and documentation regarding the use of restraints are necessary to justify the continued use of physical restraints. Restraints should be applied for the least amount of time possible. Restraints should be discontinued when:

    a) The harmful behaviour(s) is controlled;

    b) There is a less restrictive alternative which becomes viable (e.g., a sitter for constant supervision); or

    c) There are physical complications arising from the continued use of restraints. **D**

23. Clinicians should be aware of the legislation in their province and professional association positions regarding restraints. **D**

PART 3: PREVENTION

1. Prevention efforts should be targeted to the older person's individual risk factors for delirium (refer to *Table 3.1*). Ongoing medication review is recommended, with the goal of reducing the number of medications and reducing or discontinuing medications with central nervous system side effects. **D**

2. Interventions to prevent delirium should be interdisciplinary. **B**

3. Older hospitalized persons who are having problems sleeping should be offered non-pharmacologic sleep-enhancing approaches. Use of sedative-hypnotics should be minimized. **C**

4. The use of immobilizing devices / equipment should be minimized. **D**

5. Older persons with impairments of vision should be provided with their visual aids and/or other adaptive equipment. **C**

6. Older persons with impairments of hearing should be evaluated for reversible causes and provided with hearing aid(s) and/or other amplifying devices. **C**

7. Although there is conflicting opinion regarding the link between delirium and hydration status in the palliative care population, depending on patient goals of care, prognosis, burden of treatment, and likelihood of efficacy it may be appropriate to facilitate oral fluid intake or to utilise rehydration measures such as hypodermaclysis in the older palliative patient. **D**

8. Environmental risk factors should be modified, if possible (refer to *Table 3.2*). **D**

9. Education regarding delirium prevention and prodromal signs should be provided to medical staff, patients and family members. **C**

10. There is insufficient evidence to recommend the use of psychotropic medications specifically to prevent the development of delirium. **D**

Table 3.1 – Reported risk factors for delirium in hospitalized older persons

Socio-demographic • Advanced age • Male sex • Residence in an institution • Little contact with relatives	**Physical status** • Fever • Pain • Hypotension • Vision and/or hearing impairment • Pre-existing functional impairments / disability • Limited pre-morbid activity levels • Poor nutrition • Urinary catheterization • Constipation	**Mental status** • Cognitive impairment (especially dementia) • Depression
Medical illness and medications • Severe medical illness • Medication use (e.g., narcotics, psychotropics) • Fracture on admission	**Laboratory findings** • High urea / creatinine ratio • Sodium and/or potassium and/or calcium abnormalities • Hypoxia	**Surgery and anaesthesia** • Noncardiac thoracic surgery • Aortic aneurysm repair • Unplanned (i.e., emergency) surgery • Immobility after surgery
Other • Alcohol abuse • Urgent admission to hospital • Frequent admissions over the previous two years		

Table 3.2 – Modifiable environmental factors potentially contributing to the occurrence and/or severity of delirium

- Sensory deprivation (e.g., windowless room, single room)
- Sensory overload (e.g., too much noise and activity)
- Isolation from family / friends, familiar objects
- Frequent room changes
- Absence of orienting devices (e.g., watch, clock or calendar)
- Absence of visual / hearing aids
- Use of restraints

(McCusker et al., 2001)

PART 4: DETECTION, ASSESSMENT, DIAGNOSIS & MONITORING

Important note for readers!
While recommendations for the detection, assessment and differential diagnosis of delirium are presented sequentially, recommendations must frequently be implemented concurrently given that clinical decisions in response to delirium must often be made quickly in order to arrive at the goals of care, to alleviate discomfort and to ensure safety.

4.1 DETECTION

1. Clinicians working with older persons should be alert to the high risk of delirium at the end of life, especially in the presence of multi-organ failure and polypharmacy (including opioids, etc.). **C**

2. Older persons approaching end of life should be routinely screened for delirium (refer to *Appendix E* for an overview of delirium screening / severity tools). **D**

3. Patients being admitted to any care setting for palliative care should be screened for delirium at admission (refer to *Appendix E*). **D**

4. Clinicians working with older persons approaching end of life should be aware that symptoms of delirium may be superficially similar to other psychiatric and/or neurological conditions (e.g., dementia, depression, psychosis). **D**

5. Delirium can show a fluctuating course with periods of lucidity during which the person's mental / cognitive status can appear unremarkable. Therefore, repeated screening for delirium is recommended using standardized methods that take into account current mental status and course of mental status change. **D**

6. In the event that the older adult is unable to provide an accurate history (due to impairments in mental status, communication difficulties, etc.), collateral information should be sought. **D**

7. Clinicians working with patients approaching end of life should be aware that delirium can be present in spite of apparently preserved functional status (i.e., ability to engage in activities of daily living). **D**

8. Clinicians working with older persons approaching end of life should be vigilant of recent onset lethargy. Unexplained somnolence is not necessarily part of the normal dying process and might indicate the development of the hypoactive subtype of delirium. **C**

PART 4: DETECTION, ASSESSMENT, DIAGNOSIS & MONITORING

9. Clinicians working with older persons approaching end of life should recognize that, while symptoms of delirium typically develop abruptly, an insidious onset can occur. **D**

10. Delirium should be considered as a potential cause of any abrupt change in mental status, cognition, behavior, or functional ability (particularly declining mobility, impaired balance and risk of falls) of any person approaching the end of life.

    Changes in the patient's mental status, level of alertness or behavior should be taken seriously as they may indicate the presence of delirium or other clinically important condition. These changes are not necessarily part of the dying process. **C**

11. The evaluation of older persons approaching end of life for the possibility of delirium should include a review of their prior cognitive functioning relative to their baseline. **D**

12. Any clinician who notices changes in the mental status, alertness or behavior of a hospitalized older person approaching end of life should bring this to the attention of the bedside nurse for initiation of delirium screening (or family physician in the case of a non-hospitalized older person).

    Screening involves the systematic collection of evidence in support of delirium (refer to *Appendix E*) and discussion with the attending physician. **C**

13. Clinicians should advise family members and caregivers to alert the physician and/or other members of the clinical team if they were to notice changes in the patient's mental status, functional abilities, level of alertness or usual behaviour. Family members are ideally placed to recognize subtle changes in the patient's cognition and behaviour. **D**

14. In response to observations or reports of changes in mental status or alertness, a bedside nurse or other appropriate clinician should initiate collection of information that may signal delirium. **D**

4.2 DETECTION INSTRUMENTS

15. Any clinician using a screening measure for delirium should be competent in its administration and interpretation. **C**

16. Screening for symptoms of delirium should be done using standardized methods with demonstrated reliability and validity (refer to *Appendix E*). **D**

17. Clinicians must be trained in the use of clinical tools to detect changes in mental status at the end of life that may signal delirium. **C**

PART 4: DETECTION, ASSESSMENT, DIAGNOSIS & MONITORING

18. In choosing an instrument for screening or case finding, it is important to ensure that:

    a) The symptoms surveyed are consistent with the symptoms of delirium as specified in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM IV-TR);*

    b) The tool has met acceptable standards of reliability / validity; and

    c) It is appropriate for the proposed purpose and setting.

    Refer to *Appendix E* for examples of such tools. **D**

19. Screening tools are to be used as an aid in the diagnosis / detection of delirium. They are not recommended as the sole means for identifying delirium in the clinical setting, which ultimately rests on the skill and judgment of the diagnosing clinician. **D**

20. Sensory impairments and physical disability should be considered in the administration of mental status tests and in the interpretation of the findings obtained. **D**

21. It is recommended that clinicians use the *Confusion Assessment Method (CAM)* as an aid in diagnosing delirium in older persons at the end of life. **C**

22. Ratings on the *CAM* should be informed by an objective evaluation of cognition such as the *Mini Mental State Examination* or the *Cognitive Test for Delirium*, as long as the burden of this is not greater than would be clinically appropriate. **C**

23. The *CAM-ICU* is recommended for use with persons in intensive care units who are not able to communicate verbally. **D**

24. Clinicians may consider the use of the *Delirium Symptom Interview* to query the patient's experience of symptoms. **D**

4.3 DIAGNOSIS OF DELIRIUM

25. The *DSM IV-TR* criteria for delirium should be used for establishing a diagnosis of a delirium. **D**

26. The physician and other appropriate clinicians primarily responsible for the care of the older person approaching the end of life should promptly review the delirium screening results. Based on these results, the need for further evaluation of mental status as well as any further physical or laboratory investigations should be determined. **D**

PART 4: DETECTION, ASSESSMENT, DIAGNOSIS & MONITORING

27. The physician and other appropriate clinicians primarily responsible for the care of the older person should also review medication that might be contributing to delirium with particular attention to opioids, anticholinergic and psychoactive agents, and/or possible drug interactions (refer to *Table 6.1* for a list of medications associated with an increased risk of delirium in palliative care). **D**

28. The clinical assessment of a delirious older person should include a review of their current and past medical conditions and treatments (including medications) with special attention paid to those conditions or treatments that might contribute to the delirium. Refer to *Table 4.1* for historical information required during initial assessment of a delirious patient. **D**

29. Many older persons with a delirium will be unable to provide an accurate history. Wherever possible, corroboration should be sought from health records, community physicians / nurses, other health care professionals, family, friends, and other reliable sources. **D**

30. The initial assessment should include an evaluation of the patient's potential for harm to self or others, the availability of means for harm to self or others, and the lethality of those means. **D**

31. Environmental factors that might be contributing to the delirium should be identified, reduced and preferably eliminated. Refer to *Table 3.2* for a list of modifiable environmental factors that could potentially contribute to the occurrence and/or severity of delirium. **D**

32. Older persons approaching end of life with complex presentations (e.g., those with pre-existing neurocognitive decline or a history of developmental disorder or psychiatric illness) may require referral for assistance in the diagnostic work-up. Depending on the clinical circumstances, the referral may be directed to the most appropriate clinical expert (e.g., geriatrician, geriatric psychiatrist, neurologist, psychologist, neuropsychologist). **D**

4.4 Assessment and Investigations to Determine the Cause of Delirium

Physical Examination & Laboratory Investigations

33. The decision to search aggressively for causes of delirium in terminally ill persons should be based on the older person's goals for care (or the goals of their proxy decision-maker if the patient is incapable to consent to treatment), the burdens of an evaluation, and the likelihood that a remediable cause will be found. **D**

34. Decisions about the goals of care, including the nature and extent of assessment and investigation of delirium, should be documented / charted. **D**

PART 4: DETECTION, ASSESSMENT, DIAGNOSIS & MONITORING

35. Clinicians should be aware that relatively minor physiological factors may contribute to delirium in older adults with a brain made vulnerable by key pre-existing factors (e.g., diabetes, dementia, hypertension, heart disease).

    Clinicians should also be aware that delirium at the end of life is most often caused by multiple co-existing factors, and is rarely the result of a single physiological insult. **C**

36. A physical examination should be conducted in most cases. Refer to *Table 4.2* for the components of the physical examination that require emphasis. **D**

37. Baseline investigations should be considered in keeping with the goals of care. Refer to *Table 4.3* for a list of investigations usually indicated in older persons with delirium at the end of life or in the palliative care setting.

    Other investigations would be determined on the basis of findings on history, physical examination, and initial and subsequent laboratory investigations in keeping with the goals of care. **D**

38. Neuroimaging studies should be reserved only for cases where an intracranial lesion is suspected and when such an investigation is concordant with the goals of care. For example, those with the following features: focal neurological / neuropsychological signs, confusion developing after head injury / trauma and evidence of raised intracranial pressure on examination. **D**

39. An electroencephalogram should not be done routinely. It can be useful where there is difficulty in differentiating delirium from dementia or a seizure disorder (e.g., non-convulsive status epilepticus, partial-complex seizures) and in differentiating hypoactive delirium from depression. **D**

40. A lumbar puncture should not be done routinely. If such an investigation is consistent with the goals of care, it should be reserved for cases where meningitis is suspected. **D**

41. Infections are one of the most frequent precipitants of delirium in older adults and should always be considered as a contributing factor. Please note that older persons approaching end of life may not develop typical manifestations of an infection and can present in a muted or non-specific manner. **D**

42. If there is evidence of infection (e.g., fever, chills, high white count, localizing symptoms or signs of an infection, abnormal urinalysis, abnormal chest exam), and if clinically appropriate given the goals of care, bacterial cultures should be taken and appropriate antibiotics commenced promptly. **D**

PART 4: DETECTION, ASSESSMENT, DIAGNOSIS & MONITORING

43. In keeping with the goals of care when death is imminent, extensive evaluation and invasive investigations should be avoided. However, it is imperative to relieve distressing symptoms and provide emotional support to the patient's family. **D**

4.5 MONITORING

44. To provide protection for the patient, monitoring of the patient's behavioural and cognitive status is needed (refer to *Table 4.4*). The patient's potential to harm themselves or others should be assessed. **D**

45. The care team, working together, should decide if there is a need to monitor delirium severity (i.e., response to interventions, need for safety measures, etc.).

    Objective tools such as the *Delirium Rating Scale-R-98* or the *Memorial Delirium Assessment Scale* are recommended to measure the severity of delirium states if this is considered to be clinically useful. **D**

46. Older patients with delirium are at high risk of falls. Monitor the environment and modify as appropriate to decrease risk. **C**

47. The environment of the delirious older person should be monitored for safety risks. **D**

48. All patients approaching end of life, including older persons with delirium, should have a pressure sore risk assessment and receive regular pressure area care. **D**

49. In order to monitor the older person's progress and their need for care, serial assessment of their mental / behavioural status, ability to effectively / safely engage in self-care and ability to ambulate should be considered if clinically appropriate and consistent with the goals of care. **D**

50. When the care of an older person with delirium is transferred to another practitioner or service, the receiving practitioner or service must be informed of the presence of the delirium, its current status, and how it is being managed in the context of the patient's goals of care. **D**

51. Continuous attention should be paid to the patient's medications with a view to identifying medication likely to increase the risk of delirium in older adults at the end of life. This review should be carried out with a particular emphasis on opioids, anticholinergics, psychoactive drugs and potential drug interactions (refer to *Table 6.1).*

    The decision to reduce and/or change medications depends on the specific clinical situation. A pharmacist may be consulted to conduct a medication history or medication review. **D**

Table 4.1 – Historical information required during the initial assessment of a delirious older adult approaching the end of life

- Known medical conditions (acute and chronic)
- Recent surgeries
- Best Possible Medication History including nonprescription drugs
- Thorough history of current patterns of alcohol and other substance use
- Previous cognitive functioning
- Functional abilities (i.e., basic and instrumental activities of daily living)
- Onset and course of the client's delirium
- History of any previous episodes of delirium (and treatment responses)
- Other current psychiatric disorders and symptoms
- Psychosocial history
- Symptoms of suggestive or underlying cause / precipitant (e.g., infection)
- Sensory deficits and presence / use of any sensory aids (e.g., hearing aids, eyeglasses)
- Elimination patterns
- Sleep patterns

Table 4.2 – Components of the physical examination during the initial assessment of the delirious older adult approaching the end of life

During the initial assessment of the delirious older adult, a complete physical examination should be conducted. The following components of the physical examination may require emphasis. The decision to complete the following assessments depends on the place of care, consideration of how such assessment will inform intervention, and the goals of care.

- Neurological examination including level of consciousness and neurocognitive function using a standardized instrument (refer to *Appendix E*)
- Hydration and nutritional status
- Evidence of sepsis (e.g., fever) and potential source (e.g., pneumonia) if present
- Evidence of alcohol abuse (stigmata of chronic alcohol abuse) and/or withdrawal (e.g., tremor)

Table 4.3 – Investigations that may be indicated in older adults with delirium approaching the end of life, depending on the goals of care

The decision to complete the following investigations depends on the place of care, consideration of how such assessment will inform intervention, and the goals of care.

- Complete blood count (CBC)
- Biochemistry – calcium, albumin, magnesium, phosphate, creatinine, urea, electrolytes, liver function tests (ALT, AST, bilirubin, alkaline phosphatase), glucose
- Thyroid function tests (e.g., TSH)
- Blood culture
- Oxygen saturation or arterial blood gases
- Urinalysis
- Chest X-ray
- Electrocardiogram (ECG)

Table 4.4 – Monitoring older adults with delirium approaching the end of life includes:

- Cognition
- Vital signs (including temperature)
- Oxygenation
- Fluid intake / hydration
- Swallowing
- Electrolytes
- Glucose level
- Nutrition
- Elimination (including output)
- Fatigue
- Activity
- Mobility
- Discomfort
- Behavioral symptoms
- Sleep-wake pattern

PART 5: NON-PHARMACOLOGICAL MANAGEMENT

5.1 General Considerations

1. The decision to treat the causes of delirium in terminally ill persons should be based on the goals of care in view of the likelihood that the intervention will be effective, estimated life expectancy, clinical prognosis, and the burden of treatment. **D**

2. Assess, monitor and control pain. **D**

3. Monitor nutrition, hydration, and bladder / bowel function. As appropriate, implement interventions to promote a normal elimination pattern. **D**

4. Consistently monitor, assess and provide care strategies to prevent and/or manage urinary retention, constipation and fecal impaction that can cause the older adult distress and contribute to delirium. **C**

5. Where consistent with the goals for care, monitor fluid and electrolyte balance, as well as clinical signs of infection. Implement interventions to establish and maintain acceptable:
   - Cardiovascular stability;
   - Temperature;
   - Oxygenation;
   - Fluid and electrolyte balance;
   - Glucose levels; and
   - Adequate intake of nutrients. **C**

5.2 Mobility and Function

6. With careful consideration of the older adult's energy tolerance, provide opportunities for the person to remain mobile and active in self-care. Encourage and facilitate personally-valued activities. Do not restrict free movement (unless this would result in imminent injury). Minimize the use of indwelling catheters and intravenous lines as these may also restrict mobility. **D**

7. All patients approaching end of life, including older persons with delirium, should have a pressure sore risk assessment and receive regular pressure area care. **D**

8. Facilitate a normal sleep-wake pattern (e.g., relaxation music at bedtime, warm drinks, gentle massage). **D**

5.3 Safety

9. Assess the risk of older adults for self harm or harm to others and utilize safety protocols with the least restrictive measures. **D**

PART 5: NON-PHARMACOLOGICAL MANAGEMENT

10. The use of physical restraints for older adults suffering from delirium can increase the severity of delirium symptoms and should be applied only in exceptional circumstances. Refer to recommendation #19 in the Legal & Ethical Section for specific details.

    Restraint orders should be time-limited and the older adult's condition monitored closely and at specific, frequent intervals. **D**

11. Older adults approaching end of life with delirium are at risk for falls. A fall prevention protocol should be implemented.

    Bed rails do not necessarily protect the patient, and may *increase* the height of the fall. The older adult's mattress should be placed as low to the ground as possible, while high enough to facilitate a safe transfer from sitting to standing. This height will vary from individual to individual. **D**

12. Provide an environment that is as hazard free as possible. Remove potentially harmful objects and unfamiliar equipment / devices as soon as possible. **D**

5.4 COMMUNICATION

13. Given the older adult's difficulties in sustaining attention during delirium, when communicating with the person, ensure that all instructions and explanations are communicated using a face-to-face approach, presenting one idea or task at a time. Communications should be clear, concrete, slow-paced, short, simple, and repeated. Avoid insisting that the older person appreciate the information that is being given. **D**

14. Based on the older adult's life experience, discuss topics with them that are familiar and/or of interest, such as hobbies and occupation. This can reduce agitation by shifting the focus of attention to less distressing topics. **D**

15. Provide and integrate orienting information (e.g., reminders of time, day, place) within the context of care. Use the older person's name and convey identifying information (e.g., "I'm your nurse"). **D**

16. When providing care, routinely explain what you are about to do in order to avoid or reduce fear or misinterpretation. Avoid gestures, rapid movements or touching / grabbing that might be misinterpreted as aggressive. Try to avoid touching the older person in an attempt to redirect him / her. **D**

17. When the patient doesn't understand the language spoken by care providers, this can further exacerbate agitation related to delirium due to a misunderstanding of what is being said. Evaluate the need for language interpreters and ensure their availability if required. **D**

PART 5: NON-PHARMACOLOGICAL MANAGEMENT

18. Conversations about episodes of delirium with older persons and/or their families must be done in a sensitive manner. Many older persons with delirium retain memories of the distress they experience as a result of a hyperactive and/or hypoactive delirium. Others become embarrassed of their behaviour during delirium. Explanation and reassurance should be provided when appropriate. **C**

19. It is important to clarify if episodes of hallucinations or delusions are perceived as distressful for the older adult and/or family. **C**

5.5 BEHAVIOURAL MANAGEMENT

20. In engaging with the delirious older person approaching end of life and their family, health care providers need to remain calm as they build and maintain a therapeutic relationship. This includes being receptive to communication of the delirious person, acknowledging the emotions and perceived meanings, however confused it may appear to be. Through this relationship, the care provider offers caring and supportive presence to the older adult and family, conveying an attitude of empathy and respect. **C**

21. Strategies for managing the behaviour of a delirious patient should be derived from an understanding of the neurocognitive / neurobehavioural features of delirium and behavioural management principles. **C**

22. Assess for triggers of agitation when it occurs. This information should be used to inform the modification of the environment and/or the delivery of care to reduce the incidence of agitation. Monitor and evaluate the strategies used to confirm their effectiveness. **D**

23. Do not directly contradict delusional beliefs, as this will only increase agitation. Instead:

    a) Acknowledge the older person's distress, but do not focus on the content;

    b) Use distraction to shift attention to another topic.

    If it is important to correct the older adult's understanding, wait and try offering the required information at another time in a calm, matter-of-fact tone of voice. **D**

24. Referral to complementary services such as music therapy should be considered to explore interventions that may reduce anxiety and have a calming effect on the older adult with delirium. **C**

25. Where interventions based on the above recommendations have not been successful in managing the individual's delirium, referral to available specialty services for behaviour management should be considered (i.e., a palliative care consultation service, and/or other services such as geriatric psychiatry, neuropsychology, psychology and/or psychiatry). **D**

PART 5: NON-PHARMACOLOGICAL MANAGEMENT

5.6 ENVIRONMENT

26. Avoid both sensory deprivation (e.g., windowless room) and sensory overload (e.g., too much noise and activity). Ideally, the older adult should be cared for in a private room. The older adult's room should be quiet with adequate lighting. Over-stimulation is a common antecedent of agitation. **D**

27. Implement unit-wide noise-reduction strategies at night (e.g., silent pill crushers, vibrating beepers, quiet hallways) in an effort to enhance sleep. **D**

28. Minimize disruptions and interventions at bedtime and throughout the night (e.g., by re-scheduling medication times). **D**

29. Offer delirious older adults the opportunity for familiar background stimulation like listening to a radio, the music of their choice, or watching TV. Solicit family perspectives about what might be comforting to the patient if the patient cannot communicate. If it is observed that these devices are distracting, disorientating and/or disturbing to the older person when used, they should be discontinued. **C**

30. Ensure that the older adult's room has some orientating materials (e.g., clock, calendar, schedule of the day's activities, name / location of the setting). **D**

31. To reduce the impact of sensory impairment and enhance clear communication, ensure that sensory aids (e.g., visual and hearing aids) used by the patient are available. **D**

32. Keep the older adult in the same surroundings. Avoid unnecessary room changes, except when transfer to a private room is indicated. **D**

33. Obtain familiar possessions from home, particularly family pictures, sleepwear and objects from the bedside, to help orient and calm the older person. **D**

5.7 CARE PROVIDERS / CAREGIVERS

34. Inter-professional collaboration is required for effective care of the delirious older person who is terminally ill. **B**

35. Clear and consistent communication with family members is essential. Family members of older persons with delirium approaching the end of life require specific information and support about delirium that is tailored to their needs. This includes information about delirium, including recognition of initial signs, causes, its management, and potential reversibility. It should also include information about communicating with a delirious person (refer to Part 7: Education).

PART 5: NON-PHARMACOLOGICAL MANAGEMENT

As appropriate, family members should be included in discussions regarding the care of the older person with delirium. **C**

36. The delirium experience can be extremely distressing to family members. Care providers should be sensitive to the suffering of loved ones and be attentive to how family members understand the causes and meanings of delirious episodes. Caregivers should offer guidance, emotional support, and accompaniment as well as be available to discuss the significance and impact of the delirium experience (refer to Part 7: Education). **C**

37. Encourage, support and facilitate family presence, as appropriate, as familiar faces might calm and comfort the delirious patient.

    Family members may be able to help re-orientate, calm, assist, protect, and support the older delirious adult approaching end of life. As well, they may be able to help facilitate effective communication and advocate for the older adult. Care staff should appreciate that not all family members will be able and/or willing to provide such care. **C**

38. Where it is deemed necessary to increase supervision during a delirious episode, one-on-one nursing should be considered and may prevent and/or reduce the need for pharmacological intervention.

    If there is no one available to stay with the older person and staff cannot provide the required degree of surveillance, consider the use of a private-duty nurse or unregulated care provider (e.g., volunteer, nurse sitter, personal care attendant or patient companion).* Any person engaged in this activity requires training on the assessment and management of delirium.

    The presence of uniformed security personnel (i.e., guards) may trigger or increase delusional thinking and agitation. Unless absolutely necessary, contact with uniformed security personnel should be completely avoided.

    Please note that their use does not obviate the need to ensure adequate staffing in health care facilities.* **D

39. Consistency in routine and personnel reduces demands on patients' memory and provides them with a sense of order and security. Continuity of care providers should be supported. **D**

PART 6: PHARMACOLOGICAL MANAGEMENT

6.1 INFECTIONS & PAIN MANAGEMENT

1. If there is a high likelihood of infection contributing to delirium, the decision to investigate and/or treat should depend on the goals of care and life expectancy estimation. **D**

2. Strive to adequately manage the older adult's pain, as pain can cause or exacerbate delirium. This can be complicated by the observation that some of the medications used to treat pain**,** including co-analgesics, can also cause delirium. The treatment goal is to control the older adult's pain with the safest available intervention. **D**

3. Non-pharmacological approaches for pain management should be implemented where appropriate. **D**

4. Local or regional drug therapies (e.g., local blocks, epidural catheters) for pain that have minimal systemic effects should be considered. **D**

5. For persistent pain, analgesics should be given on a scheduled basis (i.e., round-the-clock dosing) with an appropriate rescue dose in place for breakthrough pain. **C**

6. If analgesics are needed, then NSAIDs and/or acetaminophen should be used first line for pain of mild severity. Additionally, they should usually be given as adjunctive therapy to those receiving opioids in an effort to minimize the total dose of opioid analgesia required. **D**

7. If opioids are needed, the minimum effective dose should be used. Opioid rotation (or switch) and/or a change in the opioid administration route may be also be helpful (i.e., may favourably alter the pharmaco-kinetics / pharmaco-dynamics). **C**

8. The opioid meperidine should be avoided as it is associated with an increased risk of delirium. **D**

9. The practitioner should always be alert to the possibility of opioid-induced confusion. **D**

6.2 MEDICATIONS: PRECIPITATING OR AGGRAVATING A DELIRIUM

10. Whenever possible, withdraw all current medications that might be contributing to the older adult's delirium**,** with particular consideration to the risks versus benefits and goals of care (refer to *Table 6.1* for select high-risk medications). Medications with anticholinergic effects, psychoactive medications, and/or medications recently initiated or with a dosage change are particularly suspect as inciting causes. **D**

PART 6: PHARMACOLOGICAL MANAGEMENT

11. If suspect drugs cannot be withdrawn, the lowest possible dose of the suspected medication(s) should be used or substitution with a similar but lower risk medication should be considered. **D**

12. Monitor for potential adverse drug-disease interactions and drug-drug interactions. **D**

13. Try to manage insomnia by taking a non-pharmacologic approach with the patient and modifying the environment so as to promote sleep. Routine use of sedatives for sleep problems should be avoided. **D**

14. Ensure that medication schedules minimize sleep disruption while maintaining adequate symptom control. **D**

15. Diphenhydramine should be used with caution in older hospitalized persons and its routine use as a sleep aid should be avoided. **C**

16. Restarting a formerly consumed sedative, hypnotic or anxiolytic (or with any other substance associated with the potential to induce a withdrawal delirium) should be considered when delirium develops shortly after stopping or reducing the agent. **D**

6.3 PHARMACOLOGICAL MANAGEMENT

General Principles

17. Psychotropic medications are recommended for older adults approaching end of life who are experiencing distress and/or agitation due to their delirium symptoms, and/or to prevent older delirious adults from endangering themselves or others. **D**

18. Clinicians should attempt to ascertain as precisely as possible whether the older adult approaching end of life is experiencing distress from hypoactive delirium. In the absence of distress, there is insufficient evidence to recommend for or against the use of psychotropic medications in hypoactive delirium. **D**

19. The use of psychotropic medications for the specific purpose of controlling wandering in delirium is not recommended. **D**

20. When using psychotropic medications, aim for monotherapy, the lowest effective dose, and tapering when indicated. **D**

21. The titration, dosage, and tapering of the medication should be guided by close monitoring of the older person for evidence of efficacy of treatment and the development of adverse effects. **D**

PART 6: PHARMACOLOGICAL MANAGEMENT

22. Increase in regular dosage or administration of PRN dosages of psychotropics should be based on target symptoms such as agitation, psychosis, and distress. Cognitive dysfunction alone would not be a suggested target symptom. **D**

Antipsychotics

23. Antipsychotics are the treatment of choice to manage the symptoms of delirium (with the exception of alcohol or benzodiazepine withdrawal delirium). **C**

24. While haloperidol is the antipsychotic of choice, antipsychotics should be chosen according to target symptoms, treatment goals, and the pharmacological profile of the drug. **D**

25. Initial dosages of haloperidol are in the range of 0.5 mg to 2.0 mg od-bid depending on symptom severity and the patient's physiological condition. The dose can be titrated as needed every 1-2 hours until target symptoms improve. Severely agitated persons may require higher dosages. **D**

26. Benztropine should not be used prophylactically with haloperidol in the treatment of delirium. **D**

27. Atypical antipsychotics may be considered as alternative agents as they have lower rates of extra-pyramidal signs. **C**

28. In older persons with delirium who also have Parkinson's Disease or Lewy Body Dementia, atypical antipsychotics are preferred over typical antipsychotics. **D**

Benzodiazepines

29. Benzodiazepines as monotherapy are reserved for older persons with delirium caused by withdrawal from alcohol / sedative-hypnotics. **C**

30. As benzodiazepines can exacerbate delirium, their use should generally be avoided other than in alcohol / sedative withdrawal delirium or when the management goal is sedation. **D**

Refractory Hyperactive Delirium

31. In cases of refractory delirium (hyperactive or mixed), the clinician should reassess the diagnosis, comorbidities, precipitating and aggravating factors, and ensure optimization of treatment. A second opinion from a colleague is recommended. If delirium continues to remain refractory, alternative strategies can be considered, for example: switching antipsychotics; combining two antipsychotics including one with a sedative profile; combining a benzodiazepine with an antipsychotic. **D**

PART 6: PHARMACOLOGICAL MANAGEMENT

32. Palliative sedation is the deliberate reduction of consciousness to alleviate intolerable suffering. The practice of palliative sedation is ethically complex and decisions involving its use need to be arrived at carefully through active involvement of the patient and family, other members of the health care team, and consultation with a palliative care specialist. **D**

Table 6.1 - Medications associated with an increased risk of delirium in palliative care (not an exhaustive list)	
Drug Class	**Examples**
Sedative-hypnotics	• Benzodiazepines • Barbiturates • Antihistamines (e.g., diphenhydramine)
Opioids	• Opioid-induced neurotoxicity (OIN) can occur with all known opiod agonists used in pain management, including morphine, hydromorphone, oxycodone, fentanyl & methadone • Meperidine appears to be particularly likely to precipitate delirium • Meperidine not only produces a high rate of neurotoxicity, but is not recommended for long term pain management
Drugs with anticholinergic effects	• Oxybutynin • Tolteridine • Antinauseants (antihistamines, antipsychotics) • Promotility agents • Tricyclic antidepressants (especially tertiary amine tricyclic agents such as amitriptyline, imipramine and doxepin) • Antipsychotics (e.g., low potency neuroleptics such as chlorpromazine, atypical antipsychotics such as olanzapine) • Cumulative effect of multiple medications with anticholinergic effects
Histamine-2 blocking agents	• Cimetidine
Anticonvulsants	• Mysoline • Phenobarbitone • Phenytoin
Antiparkinsonian medications	• Dopamine agonists • Levodopa-carbidopa • Amantadine • Anticholinergics • Benztropine
Steroids	• Decadron • Prednisone • Solucortef
Other	• Selective serotonin reuptake inhibitors • Antibiotics (quinolones) • Certain antivirals

PART 7: EDUCATION

1. All entry levels of health care education / curricula provided by colleges and/or universities should include specialized, evidence-based content relevant to the care of older delirious persons with end stage cancer or chronic, non-curable, end stage disease. Faculty development is essential for appropriate curriculum development. Refer to *Table 7.1* for elements of a comprehensive curriculum. **C**

2. Education of the health care team should incorporate established geriatric care principles to ensure routine screening for and comprehensive assessment, diagnosis and management of geriatric syndromes in the delivery of palliative, interprofessional care. **B**

3. All health care team members require sustainable, ongoing educational opportunities to enhance their knowledge of specialized, evidence-based content relevant to the care of older delirious adults with end stage cancer or chronic, non-curable end stage disease (refer to *Table 7.1*). These educational opportunities should address the specific learning needs of the health care team and be based on the principles of adult education. **B**

4. The design of educational interventions supported by the host agency require specific planning and need to recognize the importance of interprofessional collaboration in the management of older adult and family needs. **C**

5. All health care providers should be able to detect, assess, and report changes in behaviour, affect, and/or cognition. They require training, as necessary within their context of care, on the use of screening tools to identify and monitor the course of delirium. **C**

6. Health care providers require sustainable education strategies, supported by the host agency, to maintain delirium knowledge. **B**

7. Delirium education in end-of-life care may be enhanced by appointing an identified practice leader to advance knowledge transfer and provide support to front-line caregivers. **D**

8. Families of older persons receiving end-of-life care require delirium education, interventions, and resources (Refer to Part 5: Non-Pharmacological Management). **B**

9. Opportunities should be provided for family members and older adults approaching end of life (when able) to discuss goals of care with the health care team and to participate in decisions related to these goals. **C**

PART 7: EDUCATION

10. The incidence and complexity of delirium experienced in end-stage disease of the aging demographic supports the need for the development and implementation of provincial and national education strategies regarding delirium, its causes, presentation, prevention, and management. **C**

Table 7.1 - Elements of a comprehensive curriculum relevant to the care of older delirious persons with delirium at the end of life:

- Palliative care philosophy / principles
- Incidence of delirium experienced at the end of life
- Importance of recognizing that delirium is: a medical emergency; not a normal part of aging; and associated with increased morbidity and mortality in older adults
- Diagnostic criteria for delirium, including subtypes (hyperactive, hypoactive, mixed)
- Terminology used in the identification and management of delirium symptoms
- Precipitating and predisposing factors
- Prodromal symptoms, early detection / screening, prevention
- Differentiation of delirium from other conditions encountered in older persons that can affect their mental state (e.g., dementia, depression), mood changes (e.g., anxiety), and pain
- The importance of obtaining a baseline personal history to identify delirium onset (pre-delirium mental status changes, behaviours)
- Management strategies that include the older person, family, and members of the health care team
- An overview of the pharmacological and non-pharmacological approaches to delirium
- An overview of educational and supportive interventions for family members
- Awareness of the subjective and potentially distressing nature of the patient's delirium experience and their resultant need for support
- Indications for the appropriate use of palliative sedation in the presence of refractory symptoms
- The importance of interprofessional collaboration in the management of patient and family needs

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Additional references may be found in the *CCSMH National Guidelines for Seniors' Mental Health: The Assessment and Treatment of Delirium* available at www.ccsmh.ca/en/guidelinesusers.cfm

APPENDIX A: WORKSHOP PARTICIPANTS, CONSULTANTS AND EXTERNAL REVIEWERS

Name	Discipline	Region
Pierre Allard, MD, PhD, FRCP(C) Full Professor, Division of Palliative Care, University of Ottawa Clinical Scientist, Élisabeth-Bruyère Research Institute, affiliated with the University of Ottawa Principal Investigator (NET) "Optimizing End of Life Care for Seniors" (April 1, 2003 – March 31, 2010)	Medicine	Ottawa
Peter Barnes, DMin Assistant Professor, Human Sciences, St. Paul University	Spiritual Care	Ottawa
Susan Brajtman, RN, PhD Associate Professor, School of Nursing, University of Ottawa Research Scientist, Elisabeth Bruyère Research Institute Co-Investigator (NET) "Optimizing End of Life Care for Seniors" (April 1, 2003 – March 31, 2010)	Nursing	Ottawa
Jonathan Breslin, PhD Ethicist, North York General Hospital Member Joint Centre for Bioethics, University of Toronto	Bio-ethics	Toronto
Venera Bruto, PhD, C.Psych. Neuropsychologist & Professional Practice Leader, Psychology Professional Practice, Research & Education, North York General Hospital Assistant Professor (Associate Faculty), Dept. of Human Development & Applied Psychology, University of Toronto	Neuro-psychology	Toronto
Deborah Burne, RN, BA (Psych), CPMHN(C) Faculty, Sheridan College and Institute of Technology and Advanced Learning	Nursing	Toronto
Shirley H. Bush, MBBS, DRCOG, DCH, MRCGP, Dip Pall Med, FAChPM Assistant Professor, Division of Palliative Care, University of Ottawa Palliative Care Physician, The Ottawa Hospital / Bruyère Continuing Care	Medicine	Ottawa
Mary Egan, PhD Associate Professor, Occupational Therapy, University of Ottawa	Occupational Therapy	Ottawa
Eamonn Eeles, MBBS, MRCP, MSc Consultant Geriatrician / Physician, Faculty of Medicine, Dalhousie University (Sept 2007-Sept 2009) UK Consultant Geriatrician/ Physician, University Hospital Llandough, Cardiff	Medicine	Halifax
Rory Fisher, MB Regional Geriatric Program, Sunnybrook Health Science Centre, Professor Emeritus, Department of Medicine, University of Toronto	Medicine	Toronto
Chris Frank, MD, FCFP Clinical Leader, Specialized Geriatric Services, Providence Care Past President, Canadian Geriatrics Society	Medicine	Kingston
Laura Gage, MD, FRCPC Director, Special Services, Ontario Shores Centre for Mental Health Sciences; Whitby, Ontario Assistant Professor (Associate Faculty), Department of Psychiatry, University of Toronto	Medicine	Toronto

Name	Discipline	Region
Bruno Gagnon, MD, MSc Assistant Professor, Department of Medicine, Faculty of Medicine, McGill University Clinical Scientist, Division of Clinical Epidemiology, McGill University Health Centre	Medicine	Montreal
Pierre R. Gagnon, MD, FRCPC Psychiatrist specialized in psycho-oncology Associate Professor, Université Laval NCIC Research Scientist, Director, CIHR Research Team in Palliative Care, Hôtel-Dieu de Québec and Maison Michel-Sarrazin Principal Investigator (NET) "Developing, Evaluating and Implementing New Interventions in Palliative Care" (July 1, 2004 – March 31, 2011)	Medicine	Québec City
David Globerman, BSc, MSW Founder, The Running to Daylight Foundation, the Ben Globerman Memorial	Family Representative	Ottawa
Pippa Hall, MD, CCFP, MEd, FCFPC Associate Professor, Department of Family Medicine Palliative Care Physician, Bruyère Continuing Care Member, Division of Palliative Medicine, University of Ottawa Program Director, Palliative Medicine Residency Program, University of Ottawa	Medicine	Ottawa
Mark Handelman, LLB, MHSc Member of Tribunal, Ontario Human Rights Commission former Vice-Chair, Ontario Consent & Capacity Board	Law, Bio-ethics	Toronto
Sherri Helsdingen, BA Project Manager, Canadian Coalition for Seniors' Mental Health	Admin	Toronto
David Hogan, MD, FACP, FRCPC Professor and the Brenda Strafford Foundation Chair in Geriatric Medicine, University of Calgary	Medicine	Calgary
Ellen Kampf Social Worker, Baycrest	Social Work	Toronto
Dorothy Morris, RN, BSN, MA, CCN(C) Clinical Nurse Educator, Cardiac/Vascular Surgery, Vancouver Island Health Authority, Royal Jubilee Hospital	Nursing	Vancouver
Millie Paupst, MD, D.T.M.H., FRCPC Oncology Psychiatrist, North York General Hospital	Psychiatry	Toronto
Daryl Roitman, MD, FRCPC Medical Oncology/Hematology Medical Director Cancer Care, North York General Hospital	Medicine	Toronto
Cheryl Sadowski, B.Sc.(Pharm), Pharm.D Associate Professor, Faculty of Pharmacy & Pharmaceutical Sciences, University of Alberta	Pharmacy	Edmonton
Heidi N. Schmaltz, MDCM, FRCPC Geriatrician, Seniors' Health, Calgary Zone, Alberta Health Services Clinical Assistant Professor, Geriatric Medicine, University of Calgary	Medicine	Calgary
Beckie Walbourne, BComm, PMP Operations Manager, Élisabeth-Bruyère Research Institute;	Admin	Ottawa
Kimberley Wilson, MSW, BASc Executive Director, Canadian Coalition for Seniors' Mental Health	Admin	Toronto
David Wright, RN, PhD(c) Research Associate, School of Nursing, University of Ottawa	Nursing	Ottawa

APPENDIX B: EXAMPLE OF LITERATURE SEARCH STRATEGY USED TO INFORM GUIDELINE REVISION PROCESS

Section: Non-pharmacological management*

Keywords:

"delirium" or "delirious" or "confusion" or "confused" or "acute confusion" or "organic brain syndrome" or "organic mental disorders" or "organic mental disorders, psychotic" or "restlessness" or "psychomotor agitation" or "agitation" or "acute psychosis" or "mental confusion" or "cognitive impairment" or "psychiatric symptoms"

AND

"death and dying" or "palliative" or "hospice and palliative nursing" or "palliative care" or "palliative therapy" or "hospice care" or "hospice" or "hospice nursing" or "hospice patient" or "terminal care" or "end of life" or "dying" or "terminally ill patients"

AND

"interventions" or "nursing interventions" or "intervention trials" or "intervention studies" or "non-pharmacological" or "complementary therapies" or "patient care" or "patient care planning" or "patient management" or "alternative medicine" or "treatment" or "health promotion" or "program evaluation" or "treatment planning" or "treatment guidelines"

Screening of potentially relevant titles & abstracts

MEDLINE	PSYCINFO	CINAHL	EMBASE
11 of 74	1 of 56	6 of 46	10 of 169

Selection of final literature set to guide revisions to non-pharmacological section

**Similar searches were performed for other sections of the guidelines*

APPENDIX C: CATEGORIES OF EVIDENCE AND STRENGTH OF RECOMMENDATIONS

The evidence and recommendations were interpreted using the two tier system created by Shekelle and colleagues' (1999) *Categories of Evidence and Strength of Recommendations*. The individual studies are categorized from I to IV.

Categories of evidence for causal relationships and treatment:

Evidence from meta-analysis or randomized controlled trials	Ia
Evidence from at least one randomized controlled trial	Ib
Evidence from at least one controlled study without randomization	IIa
Evidence from at least one other type of quasi-experimental study	IIb
Evidence from non-experimental descriptive studies, such as comparative studies, correlations studies and case-control studies	III
Evidence from expert committees, reports or opinions and/or clinical experience of respected authorities	IV

Strength of recommendation:

The strength of the recommendation, ranging from A to D (see below) is based on the entire body of evidence ***and the expert opinion of the core committee regarding the available evidence.***

It is important to interpret the rating for the strength of recommendation (A to D) as a synthesis of all the underlying evidence and not as a strict indication of the relevant importance of the recommendation for clinical practice or quality of care. Some recommendations with little empirical support, resulting in a lower rating for strength on this scale, are in fact critical components of the assessment and treatment of delirium in end-of-life care.

Directly based on category I evidence	A
Directly based on category II evidence or extrapolated recommendation from category I evidence, or extrapolated A level recommendation from original guidelines.	B
Directly based on category III evidence or extrapolated recommendation from category I or II evidence, or extrapolated B level recommendation from original guidelines.	C
Directly based on category IV evidence or extrapolated recommendation from category I, II, or III evidence, or extrapolated C level recommendation from original guidelines.	D

(Adapted from Shekelle et al., 1999)

APPENDIX D: GUIDELINE ADAPTATION PROCESS

Collaboration between CCSMH (funded by Public Health Agency of Canada, Population Health Fund) and two CIHR-funded New Emerging Teams in Palliative Care Research: the *End-of-Life Care for Seniors New Emerging Team* (based at University of Ottawa, Ontario) and the *Developing, Evaluating, and Implementing New Interventions in Palliative Care New Emerging Team* (based at University of Laval, Québec).

Formation of the Guideline Adaptation Group for the Assessment and Treatment of Delirium in Older Adults at the End of Life

New Emerging Team leads, members of the original CCSMH delirium guideline development group, and CCSMH staff formed the Guideline Adaptation Group. Leads and work groups for each guideline section were determined from this core committee.

Determine and Formalize Additional External Experts

- Determined criteria for selection
- Gathered names and contacted individuals with expertise
- Invited these individuals to participate in workshop and external review process

Phase 1: Creation of Adapted Delirium Recommendations to End-of-life Care Settings (Jan 08 – Oct 09)

a. Two-day workshop to review / adapt recommendations in the detection, pharma, and non-pharma sections (Jan 08)
b. Extensive literature review to ensure revisions in each guideline section are consistent with current literature (Jan 08 – Oct 09)
c. Revisions for each guideline section refined by core committee work groups. Levels of evidence graded for all revisions (Jan 08 – Oct 09)

Phase 2: Consultations (Feb 08 – Oct 09)

a. Drafts reviewed by core committee members (Feb 08 – Sept 08)
b. Drafts reviewed by consultants and external experts (Sept 08 – Oct 09)

Phase 3: Revisions to Final Drafts of Guideline (Sept 08 – Jan 10)

a. Feedback from core committee and external reviewers reviewed by work groups. Achieve consensus on content and recommendations within each guideline section work group.
b. Final draft compiled and presented to core committee. Achieve overall consensus on content and recommendations.
c. Final revisions to draft.

Phase 4: Completion of Final Guideline Document (Feb 10)

Phase 5: Dissemination of Final Guideline Document (Feb 10 - ongoing)

APPENDIX E: OVERVIEW OF DELIRIUM SCREENING / SEVERITY TOOLS

Note to reader: This table does not provide an exhaustive list of all delirium screening or severity tools available. Many of the following tools have been validated in palliative care populations. Tools designed to address the unique profile of intensive care patients may be of particular interest for use with an end-of-life patient population due to similarities in these patient groups (e.g., impaired communication, reduced ability to participate in clinical interviews, decreased level of consciousness, potential confound of treatment with sedatives / analgesics).

Table 1: Tool objectives

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990; Wei et al, 2008*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
Objective of Tool	A standardized method to enable non-psychiatrically trained clinicians to identify delirium quickly and accurately in clinical and research settings.	A brief, accurate, reliable instrument for use by nurses and physicians to identify delirium in ICU patients who cannot speak. The CAM-ICU is an adaptation of the original CAM for non-verbal patients. The actual features of the original CAM are unchanged (i.e., onset, inattention, disorganized thinking, altered level of consciousness [LOC]).	A systematic collection of clinical information relevant to the detection / diagnosis of delirium as well as a severity scale for repeated measurement.	A structured interview that provides clear operational definitions of the symptoms of delirium that can be used in combination with other data to define cases of delirium.	A scale designed to quantify the severity of delirium symptoms and to allow for objective measurement of changes in delirium severity in response to medical changes or clinical interventions. Although not designed as a diagnostic tool, the MDAS may also be useful in establishing a delirium diagnosis in medically ill patients. Scale items reflect the diagnostic criteria for delirium in the DSM-IV as well as symptoms of delirium from earlier / alternative classification systems.	A screening checklist based on DSM criteria and features of delirium designed for patients who are unable to participate in an interview or answer questionnaires due to compromised communication.	A brief delirium screening instrument that provides continuous cognitive status assessment as well as delirium symptom monitoring. Systematic collection of clinical information over a number of nursing shifts (24 hour monitoring). The Nu-DESC is not directly based on the criteria of the DSM-IV.

Table 2: Degree to which each tool monitors DSM-IV TR criteria for delirium

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990; Wei et al., 2008*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
A. Disturbance of consciousness (i.e., reduced clarity of awareness of environment) with reduced ability to focus, sustain or shift attention	Inattention	Inattention	Attention		Attention	Inattention	
	Altered level of consciousness	Change in level of consciousness		Disturbance of consciousness	Awareness (level of consciousness)	Altered level of consciousness	
B. A change in cognition (such as memory deficit, disorientation, language disturbance) or the development of a perceptual disturbance that is not better accounted for by a pre-existing, established or evolving dementia	Disorganized thinking	Disorganized thinking	Abnormal thought process; delusions		Disorganized thinking; delusions	Hallucination – delusion – psychosis	
	Disorientation	Disorientation	Orientation	Disorientation	Disorientation	Disorientation	Disorientation
	Memory impairment	Memory impairment	Short and long term memory		Short term memory impairment		
	Perceptual disturbances	Perceptual disturbances	Perceptual disturbances and hallucinations	Perceptual disturbance	Perceptual disturbance	Hallucination – delusion – psychosis	Illusions / hallucinations
			Language	Incoherence of speech		Inappropriate speech or mood	Inappropriate communication
C. The disturbance develops over a short period of time (usually hours to days) & tends to fluctuate during the course of the day	Acute onset & fluctuating course	Acute onset & fluctuating course	Acute onset & fluctuating course	Course		Symptom fluctuation	Course
Other features included	Altered sleep-wake cycle	Change in sleep-wake cycle	Sleep-wake cycle disturbance	Disruption of the sleep-wake cycle	Sleep-wake cycle disturbance	Sleep-wake cycle disturbance	

Table 2: Degree to which each tool monitors DSM-IV TR criteria for delirium

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990; Wei et al., 2008*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
Other features included *(cont.)*	Psychomotor agitation Psychomotor retardation	Psychomotor behavior	Motor agitation and retardation	Change in psychomotor activity	Decreased or increased psychomotor activity	Psychomotor agitation or retardation	Psychomotor retardation
			Lability of affect			Inappropriate speech or mood	
			Visuospatial skills				
				Fluctuating behaviour			

Table 3: Administration & scoring information

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	**Confusion Assessment Method [CAM]** *Inouye et al., 1990*	**CAM-ICU** *Ely et al., 2001*	**Delirium Rating Scale – Revised 98 [DRS-R 98]** *Trzepacz et al., 2001*	**Delirium Symptom Interview [DSI]** *Albert et al., 1992*	**Memorial Delirium Assessment Scale [MDAS]** *Breibart et al., 1997*	**Intensive Care Delirium Screening Checklist [ICD SC]** *Bergeron et al., 2001*	**Nursing Delirium Screening Scale [Nu-DESC]** *Gaudrau et al., 2005*
Administration & Scoring Information	9-item scale (acute onset; inattention; disorganized thinking; altered LOC; disorientation; memory impairment; perceptual disturbance; psychomotor agitation; psychomotor retardation; altered sleep-wake cycle)	Same as for CAM. The *Attention Screening Exam (ASE)* replaces the MMSE (which requires verbal ability) as the formal cognitive assessment to inform CAM ratings.	16-item clinician-rated scale with 2 sections (13 item severity scale and 3 item diagnostic scale)	17-question interview with 7 sections (disorientation; disturbance of sleep; perceptual disturbance; disturbance of consciousness; incoherent speech; psychomotor activity; fluctuating behaviour)	10-item scale on a 4 point scale measures severity [0-30]	8-item scale on a 2 point scale screens for delirium [0-8]	5-item scale measured at each nursing shift (continuous 24 hour assessment)
	Symptom endorsement informed by history, interview with family and treating nurse, and bedside observations during clinical interview & findings on formal cognitive assessment (e.g., MMSE).	As with original CAM, ratings are informed by history, as well as patient, family, and nurse interviews.			Items reflect the diagnostic criteria for delirium in the DSM-IV as well as symptoms from other classification systems.	Each item is operationalized so as to facilitate scoring.	Each symptom is rated from 0 to 2, based on the presence & intensity of each symptom, ratings are added to obtain total score per shift. *Note: no operational criteria provided for intensity ranking.

Table 3: Administration & scoring information

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	**Confusion Assessment Method [CAM]** *Inouye et al., 1990*	**CAM-ICU** *Ely et al., 2001*	**Delirium Rating Scale – Revised 98 [DRS-R 98]** *Trzepacz et al., 2001*	**Delirium Symptom Interview [DSI]** *Albert et al., 1992*	**Memorial Delirium Assessment Scale [MDAS]** *Breibart et al., 1997*	**Intensive Care Delirium Screening Checklist [ICD SC]** *Bergeron et al., 2001*	**Nursing Delirium Screening Scale [Nu-DESC]** *Gaudrau et al., 2005*
Algorithm / Decision Rule	Diagnostic algorithm includes 4 features: a) Acute onset & fluctuating course b) Inattention c) Disorganized thinking d) Altered level of consciousness A diagnosis of delirium requires the presence of both features 'a' and 'b' as well as one of 'c' or 'd'	As for original CAM, a diagnosis of delirium requires the presence of acute onset *and* inattention as well as *either* disorganized thinking *or* an altered LOC. ASE scoring: The cut-off for the vigilance A random letter test is 8 or more correct out of 10. The picture recognition test is scored qualitatively based on the overall impression of the CAM-ICU rater after the entire patient evaluation is completed.	Total Scale: Cut-off score of 15.25 for a specificity of 0.86 Cut-off score of 17.75 for a specificity of 0.95 (both cut-offs yield same sensitivity) Severity Scale: Cut-off score of 15.25	A patient is "positive" on the DSI if they have any one of the critical symptoms of delirium: disorientation, disturbance of consciousness, or perceptual disturbance.	Cut-off score of 13 *Validation in a palliative care sample (n=104) finds a total cut-off score of 7/30 to yield the highest sensitivity (0.98) and specificity (0.96)	Cut-off score of 4	Cut-off score of 2
Detection relies on spontaneously emitted behaviour OR elicited behaviors on mental status / cognitive assessment	Both	Both	Both	Both	Both	Emitted	Emitted

Table 3: Administration & scoring information

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	**Confusion Assessment Method [CAM]** *Inouye et al., 1990*	**CAM-ICU** *Ely et al., 2001*	**Delirium Rating Scale – Revised 98 [DRS-R 98]** *Trzepacz et al., 2001*	**Delirium Symptom Interview [DSI]** *Albert et al., 1992*	**Memorial Delirium Assessment Scale [MDAS]** *Breibart et al., 1997*	**Intensive Care Delirium Screening Checklist [ICD SC]** *Bergeron et al., 2001*	**Nursing Delirium Screening Scale [Nu-DESC]** *Gaudrau et al., 2005*
Additional Information	Can be used for the systematic monitoring and recording of clinical observations over time.	As for the original CAM, this tool allows non-psychiatrically trained clinicians to screen for delirium (although use of the tool itself does require training).	Can be used to assess how symptoms evolve during an episode of delirium and respond to treatment.	Does not assess information about the rapidity of onset or etiology. Can be administered daily and by non-clinicians.	Can be used to aid in diagnosis. Measures severity. Can be used for monitoring over time. Takes approximately 10 minutes to administer.	Level of consciousness is rated A-E: **A**: No response **B**: Response to intense and repeated stimulation (loud voice and pain) **C**: Response to mild or moderate stimulation **D**: Normal wakefulness **E**: Exaggerated response to normal stimulation	Does not require patient participation (low burden).
	Can have a high false-positive rate (10%), therefore further evaluation is recommended to confirm a delirium diagnosis.						Psychomotor retardation due to severe analgesia may result in a high number of false-negatives.
	The CAM is designed to be scored based on observations made during formal cognitive assessment (e.g., with the MMSE). Relying on CAM ratings in the absence of formal cognitive testing compromises sensitivity.					The ICD SC is designed to circumvent many of the communication difficulties inherent to an ICU population (e.g., impaired visual acuity, impaired motor skills, pharmacological sedation, medical instability).	

Table 3: Administration & scoring information

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
Additional Information *(cont.)*	Adaptations of the CAM for use in the ICU, emergency department, and nursing home are available.						
						The ICD SC is a useful screening tool (high sensitivity) but not a useful diagnosis tool (low specificity); not able to discriminate between patients with clinical features that mimic delirium (e.g., a primary diagnosis of schizophrenia).	

Table 4: Statistical properties of measures and validation information

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
Sensitivity	0.94-1.0 (original validation study) 0.94 (review of all CAM validation studies)[1]	0.95-1.0 (original pilot) 0.93-1.0 (follow-up validation study of mechanically ventilated patients)[2]	0.92 (both severity and total scales)	0.90	.71 - .82	0.99	.86
Specificity	0.90-0.95 (original validation study) 0.89 (review of all CAM validation studies)	0.89-0.93 (original pilot) 0.98-1.0 (follow-up validation study of mechanically ventilated patients)	Total scale: 0.86 (cut-off of 15.25) 0.95 (cut-off of 17.75) Severity scale: 0.93	0.80	.75 - .94	.64	.87
Inter-rater reliability (kappa)	1.0 (presence / absence of delirium; original validation study, paired assessments) 0.67 (rating all 9 clinical features; original validation study, paired assessments)	0.79-0.85 (original pilot) 0.96 (follow-up validation study of mechanically ventilated patients)	No K reported Intraclass correlation coefficient (between three psychiatrists for each rating scale) = 0.98 - 0.99	0.90 (between lay interviewers) 0.93 (between DSI and reference standard)	No K reported Intraclass correlation coefficient between two psychiatrist ratings = 0.92	No K reported A 94% overlap between nurses and between nurses and physicians was reported in original study.	

[1] Wei et al. (2008). The confusion assessment method (CAM): a systematic review of current usage. *J Am Geriatr Soc, 56(5),* 823-830.
[2] Ely et al. (2001). Delirium in mechanically ventilated patients: validity and reliability of the confusion assessment method for the intensive care unit (CAM-ICU). *JAMA, 286(21),* 2703-2710.

Table 4: Statistical properties of measures and validation information

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
Inter-rater reliability (kappa) *(cont.)*	0.81 (assessing the 4 CAM features; original validation study, paired assessments) 0.70-1.0 (review of all CAM validation studies)						
Validation Samples	Older adults (>65 years old), both in- and out-patients. CAM has been widely validated in different patient populations. Validation in a palliative care sample demonstrates good sensitivity (0.88) and specificity (1.0) but demonstrates that utility is dependant on the skill of the operator. A training procedure involving mock interviews, pilot interviews with delirious and non-delirious patients, inter-rater reliability assessments, and special coding sessions is recommended.[3]	Excluded ICU patients with history of severe dementia, psychosis, or neurologic disease that would confound the diagnosis of delirium.	Adult inpatients from medical, surgical, psychiatric, rehabilitation, and nursing home units (no a priori exclusion criteria). Validated against a dementia group and other psychiatric diagnostic groups.	Older adults (>65 years old) hospitalized on medical or surgical units of an acute care hospital (n=50).	Heterogeneous population of cancer and non-cancer patients. Validated in a palliative care population.[4]	Patients hospitalized in a large medical and surgical intensive care unit over a 3-month period. (n=93)	Patients admitted to an inpatient hemato-oncology / internal medicine unit. Sample did not include patients with dementia. Suitability of this scale for patients with dementia unknown.

[3] Ryan, Leonard, Guerin, Donnelly, Conroy, & Meagher. (2009). Validation of the confusion assessment method in the palliative care setting. *Palliative Medicine, 23,* 40-45.
[4] Lawlor et al. (2000). Clinical utility, factor analysis, and further validation of the Memorial Delirium Assessment Scale in patients with advanced cancer. *Cancer, 88(12)*, 2859-2867.

Table 4: Statistical properties of measures and validation information							
DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	**Confusion Assessment Method [CAM]** *Inouye et al., 1990*	**CAM-ICU** *Ely et al., 2001*	**Delirium Rating Scale – Revised 98 [DRS-R 98]** *Trzepacz et al., 2001*	**Delirium Symptom Interview [DSI]** *Albert et al., 1992*	**Memorial Delirium Assessment Scale [MDAS]** *Breibart et al., 1997*	**Intensive Care Delirium Screening Checklist [ICD SC]** *Bergeron et al., 2001*	**Nursing Delirium Screening Scale [Nu-DESC]** *Gaudrau et al., 2005*
Reference Standard	Clinical opinion of geriatric psychiatrist based on DSM criteria.	Clinical opinion of geriatrician (expert in delirium) or geriatric psychiatrist based on DSM criteria.	Compared with the original DRS, the *Cognitive Test for Delirium* (CTD), and a global clinical impression scale.	Clinical assessment by a psychiatrist and a neurologist. (k=0.92)		Clinical diagnosis confirmed by a psychiatrist.	*Confusion Assessment Method* (CAM)
Single point assessment or over a time frame		Single point assessment.	Cross-sectional evaluations. Ratings covered a 24 hour period.	Single point assessment.		Detection period over a number of shifts so greater probability of detection if delirium given fluctuating course.	Over a time frame of 24 hours (3x).

Table 5: Training requirements

DSM IV-TR Diagnostic Criteria for Delirium Due to a General Medical Condition	Confusion Assessment Method [CAM] *Inouye et al., 1990*	CAM-ICU *Ely et al., 2001*	Delirium Rating Scale – Revised 98 [DRS-R 98] *Trzepacz et al., 2001*	Delirium Symptom Interview [DSI] *Albert et al., 1992*	Memorial Delirium Assessment Scale [MDAS] *Breibart et al., 1997*	Intensive Care Delirium Screening Checklist [ICD SC] *Bergeron et al., 2001*	Nursing Delirium Screening Scale [Nu-DESC] *Gaudrau et al., 2005*
Training Required for Valid Administration	Yes *training manual available from *Hospital Elder Life Program* [http://elderlife.med.yale.edu/public/public-main.php] Without much training sensitivity = 0.5 With training sensitivity = 0.88 Delirium is severely under recognized when CAM is used without training[5]	Yes	Yes	Yes	Yes	Yes	Yes

[5] Inouye et al., 2001. Nurse's recognition of delirium and its symptoms. Comparison of nurse and researcher ratings. Archives of Internal Medicine, 161(20), 2467-2473

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