



Recognising and effectively managing delirium in palliative care

Professor Jane Phillips, Ms Annmarie Hosie and
A/Prof Meera Agar (via video)

Pre-PCA Conference, Melbourne
September 2015



Workshop overview

- Introduction
- What is delirium?
- Epidemiology and prevention
- Detecting delirium and assessing the patient
- Management: non-pharmacological, pharmacological and implications for nursing
- Communication, ethical decision making and practice
- Taking action for optimal delirium care



ACSQHC

<http://www.safetyandquality.gov.au/our-work/cognitive-impairment/>

What is delirium?



What are the delirium sub-types?



Simple definition





PaCCSC
Palliative Care Clinical Studies Collaborative



PALLIATIVE
CARE
NURSES
AUSTRALIA
INC

DSM-5 diagnostic criteria for delirium

- A. Disturbed Attention and Awareness
- B. Disturbance develops over a short period of time, is a change from Baseline, tends to fluctuate in severity over the course of the day
- C. An additional disturbance in Cognition
- D. A and C are not better explained by another pre-existing, established or evolving neurocognitive disorder (i.e. Dementia) nor in context of severely reduced level of consciousness, such as coma
- E. Evidence of an Etiological cause

Cognitive changes

- Memory deficit
- Disorientation
- Language
- Visuospatial ability
- Perceptual disturbances
 - Illusions
 - Hallucinations
 - Delusions

Other symptoms

- Lethargy
 - Mood changes: fear, anxiety, depression
 - Sleep-wake disturbance
- ... can also occur but are not required for a diagnosis



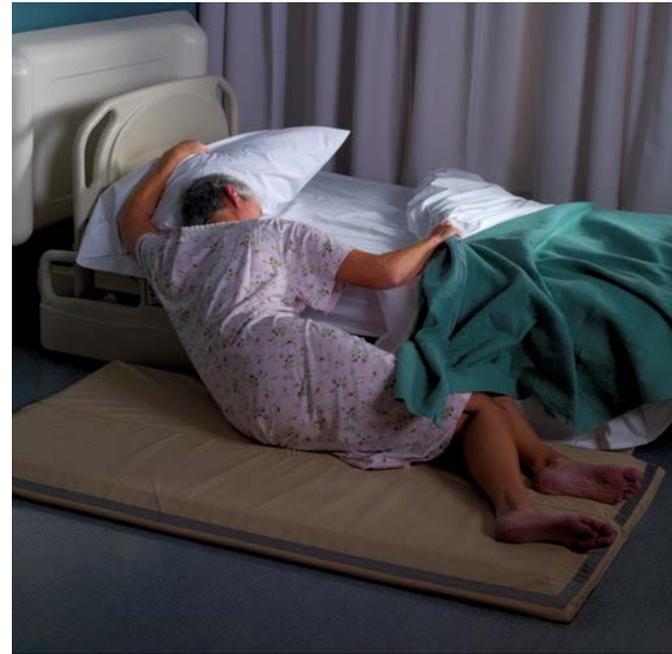
PaCCSC
Palliative Care Clinical Studies Collaborative

Subtypes



Hyperactive: high arousal

Hypoactive: low arousal



← Mixed: fluctuating between both →



PaCCSC
Palliative Care Clinical Studies Collaborative



Delirium Risk Factors

Predisposing factors	Precipitating factors	Additional risk factors in patients with cancer
<ul style="list-style-type: none"> • ≥ 65 years • Advanced illness • Prior cognitive impairment • Multiple co-morbidities • Sensory impairment • Diminished function/performance status • Current hip fracture • Impaired nutrition 	<ul style="list-style-type: none"> • Polypharmacy • Metabolic disturbance • Low albumin • Prolonged hospital stay • Indwelling catheter • Drug intoxication • Dehydration • Infection • Hypoxia • Pain • Anemia • Emotional stress • Environment • Use of physical restraints • Drug or alcohol withdrawal 	<ul style="list-style-type: none"> • Prior delirium • Benzodiazepines • Opioids • Corticosteroids • Bone metastases • Liver metastases • Haematological malignancies • Metastases to brain or meninges

References: (Ahmed, Leurent, & Sampson, 2014; Canadian Coalition for Seniors' Mental Health, 2010; Caraceni, 2013; Clinical Epidemiology and Health Service Evaluation Unit Melbourne Health, 2006; National Clinical Guideline Centre for Acute and Chronic Conditions, 2010).

Delirium outcomes

- Increased:
 - Falls
 - Development of pressure areas
 - Mortality
 - Length of hospital stay
 - Nursing home admission
 - Further cognitive decline
 - Costs to the health care system (2 ½ x)
- Reversal of delirium reverses many of these outcomes

Inouye et al 1998; Lawlor et al 2000; Leslie et al 2008; Lakatos et al 2009; Eeles et al 2010; Davis et al 2012

Delirium reversibility

- Delirium occurring in inpatient palliative care settings is highly reversible
 - 49% of all episodes
 - 56% if first episode
 - 26% if repeated episode within same admission.
- Reversibility associated with psychoactive medication, electrolyte imbalance, infection
- Irreversibility more common with hypoxia, subsequent delirium episodes and organ failure
- Dichotomy within population
 - Imminently dying irreversible delirium
 - Easily reversible delirium

Bush et al 2013, Leonard 2008



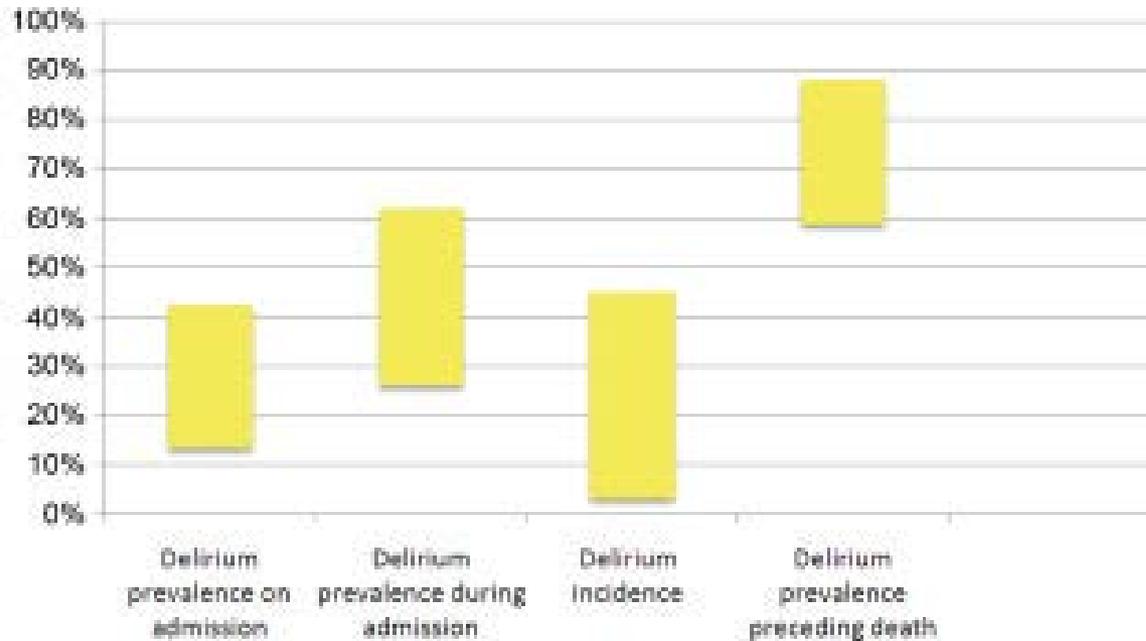
PaCCSC
Palliative Care Clinical Studies Collaborative



Prevalence and incidence

- Palliative care inpatient units:
 - On admission: 13-42%
 - During admission: 26-62%
 - Near death: 58-88%
- Older people:
 - On admission: 10-15%
 - During hospital stay: 5-40%
- Intensive Care Units: 70%
- Post hip surgery:
 - Develops in 40-56%
- Long-term care: 40%

Epidemiology – PC inpatient units



Prevalence ranges from 28% - 88%, increasing with advancing illness

Hosie, Davidson, Agar, Sanderson, Phillips. 2013, Delirium prevalence, incidence and implications for screening in specialist palliative care inpatient settings: A systematic review. Palliative Medicine

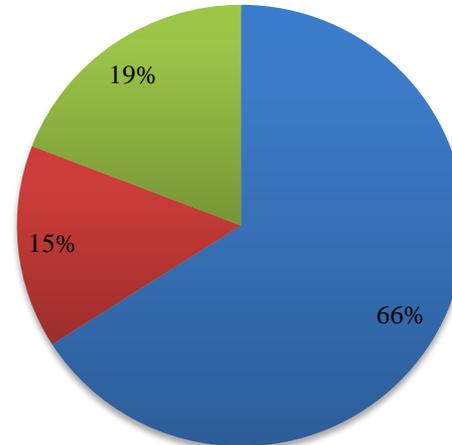


PaCCSC
Palliative Care Clinicians Collaborative



PALLIATIVE
CARE
NURSES
AUSTRALIA
INC

Delirium 24-hour point-prevalence in two Australian palliative care units



- Negative delirium screen
- Positive delirium screen, did not meet DSM-5 diagnostic criteria for delirium
- Positive delirium screen and met DSM-5 diagnostic criteria for delirium

Delirium in an adult acute hospital population: predictors, prevalence and detection

Daniel James Ryan,¹ Niamh Annmarie O'Regan,¹ Ronán Ó Caoimh,¹ Josie Clare,² Marie O'Connor,³ Maeve Leonard,⁴ John McFarland,⁵ Sheila Tighe,⁶ Kathleen O'Sullivan,⁷ Paula T Trzepacz,^{8,9} David Meagher,⁴ Suzanne Timmons¹

To cite: Ryan DJ, O'Regan NA, Ó Caoimh R, et al. Delirium in an adult acute hospital population: predictors, prevalence and detection. *BMJ Open* 2013;3:e001772. doi:10.1136/bmjopen-2012-001772

► Prepublication history for this paper are available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2012-001772>).

DJR and NAO contributed equally to this study.

Data were presented by DM at the American Delirium Society 2nd annual meeting, Indianapolis, Indiana, USA, June 2012

Received 24 August 2012
Revised 1 November 2012
Accepted 15 November 2012

This final article is available for use under the terms of the Creative Commons Attribution Non-Commercial 2.0 Licence; see <http://bmjopen.bmj.com>

For numbered affiliations see end of article.

Correspondence to
Dr Niamh O'Regan;
niamh.oregan@ucc.ie

ABSTRACT

Background: To date, delirium prevalence and incidence in acute hospitals has been estimated from pooled findings of studies performed in distinct patient populations.

Objective: To determine delirium prevalence across an acute care facility.

Design: A point prevalence study.

Setting: A large tertiary care, teaching hospital.

Patients: 311 general hospital adult inpatients were assessed over a single day. Of those, 280 had full data collected within the study's time frame (90%).

Measurements: Initial screening for inattention was performed using the spatial span forwards and backwards tests by junior medical staff, followed by two independent formal delirium assessments: first the Confusion Assessment Method (CAM) by trained geriatric medicine consultants and registrars, and, subsequently, the Delirium Rating Scale-Revised-98 (DRS-R98) by experienced psychiatrists. The diagnosis of delirium was ultimately made using DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition) criteria.

Results: Using DSM-IV criteria, 55 of 280 patients (19.6%) had delirium versus 17.6% using the CAM. Using the DRS-R98 total score for independent diagnosis, 20.7% had full delirium, and 8.6% had subsyndromal delirium. Prevalence was higher in older patients (4.7% if <50 years and 34.8% if >80 years) and particularly in those with prior dementia (OR=15.33, $p<0.001$), even when adjusted for potential confounders. Although 50.9% of delirious patients had pre-existing dementia, it was poorly documented in the medical notes. Delirium symptoms detected by medical notes, nurse interview and patient reports did not overlap much, with inattention noted by professional staff, and acute change and sleep-wake disturbance noted by patients.

Conclusions: Our point prevalence study confirms that delirium occurs in about 1/5 of general hospital inpatients and particularly in those with prior cognitive impairment. Recognition strategies may need to be tailored to the symptoms most noticed by the detector (patient, nurse or primary physician) if formal assessments are not available.

ARTICLE SUMMARY

Article focus

- Delirium prevalence in the acute hospital has, to date, been estimated from pooled findings from many studies within individual units. The main focus of this study was to ascertain the point prevalence of delirium collectively across almost an entire tertiary referral centre.
- Additionally, we sought to evaluate the rates of delirium detection by medical and nursing staff and to describe which features alerted staff members to the presence of delirium.

Key messages

- Delirium is a very common problem in the acute hospital setting, with a point prevalence of approximately 20%.
- Advancing age and pre-existing cognitive impairment were independently associated with a higher prevalence of delirium, in keeping with previous studies.
- Medical and nursing staff detect different delirium features, which has clear implications for staff education and training: nursing staff notice inattentiveness, lability of affect and delusions, whereas medical staff tend to detect delirium in the presence of short-term memory impairment in addition to inattention.

INTRODUCTION

Delirium is a complex neuropsychiatric syndrome, commonly encountered across all healthcare settings, and associated with adverse outcomes including more prolonged hospitalisation, institutionalisation and increased mortality, independent of age, prior cognitive functioning and comorbidities.^{1 2} In a recent study, mortality was shown to increase by 11% for every additional 48 h of active delirium, highlighting the need for timely detection and treatment.³ However, delirium is misdiagnosed, detected late or missed in over 50% of cases across healthcare



PaCCSC
Palliative Care Clinical Studies Collaborative



What are the elements of delirium prevention care?



Are these feasible in palliative care settings and populations?



Delirium prevention

- Multicomponent non-pharmacological delirium prevention interventions:
 - Reduce delirium incidence
 - Prevent falls
 - Trend toward decreased length of hospital stay and admission to long term care

Hshieh, T. T., Yue, J., Oh, E., Puelle, M., Dowal, S., Trivison, T., & Inouye, S. K. (2015). Effectiveness of multicomponent nonpharmacological delirium interventions: a meta-analysis. *JAMA Internal Medicine*, 175(4), 512-520. doi: 10.1001/jamainternmed.2014.7779



PaCCSC
Palliative Care Clinical Studies Centre



PALLIATIVE
CARE
NURSES
AUSTRALIA
INC

Delirium prevention in palliative care

- Only one study to date
- Interventions targeting:
 - Physicians (written notice on selective delirium risk factors and inquest on intended medication changes)
 - Patients and their family (orientation to time and place, information about early delirium symptoms)
- Outcomes: No difference in delirium incidence, severity, duration, or patient mortality
- Minimal nursing interventions

Gagnon, et al. (2012) Delirium prevention in terminal cancer: Assessment of a multicomponent intervention. *Psycho-Oncology*, 21(2), 187-194.

Morning tea



Delirium under-recognition

- Delirium is under-recognised across care settings if a screening tool is not used
- Under-recognised in palliative care practice
- Symptom screening systems commonly used in Australian palliative care services do not include delirium
- Delirium under-recognition does not align with:
“...early identification and impeccable assessment...” (WHO 2002)

Fang, C.K., et al., *Prevalence, detection and treatment of delirium in terminal cancer inpatients: A prospective survey*. Japanese Journal of Clinical Oncology, 2008. **38**(1): p. 56-63.



PaCCSC
Palliative Care Clinical Studies Collaborative



Delirium screening & diagnostic tools

- Rationale and required features
 - Facilitate earlier recognition and/or diagnosis of delirium by non-psychiatric health professionals
 - Must be reliable, valid, reproducible
 - Also useful if they are brief, low burden, with easily memorised components
- Delirium tools
 - Single Question in Delirium (SQiD) (Sands et al 2010)
 - Nursing Delirium Screening Scale (NuDESC) (Gaudreau et al 2005)
 - bCAM (Han 2013)
 - RADAR (Voyer 2015)

Case Study - Mrs Jones

Mrs Jones is admitted to your palliative care unit. She is widowed, aged 81, lives alone and her diagnoses include: Stage IV lung cancer (large lung mass, liver metastases, bone metastases), chronic renal failure (creatinine on admission of 164), hypertension, osteoarthritis and vision impairment (macular degeneration).

She was admitted for symptom management, as she has escalating chest wall pain (NRS 7-8). She has a son and daughter, but she is unaccompanied by any family or friends at admission. Medical and nursing admission processes are completed. Mrs Jones was independent with ADLs prior to admission. She shares a four-bed room with 3 other female patients.

Her opioid and adjuvant doses are increased after admission. Her medications include:

- Oxycodone 3mg po Q4h since admission (2.5mg QID at home)
- Dexamethasone 4mg
- Gabapentin 100mg tds since admission (100mg nocte at home)
- Paracetamol 1g QID
- Coloxyl with senna 2 BD
- Temazepam 10mg nocte (using regularly for last 5 years)
- Atorvastatin
- Metoprolol 12.5mg BD

By day 4 her pain appears to be improving – as although she is not able to give you a NRS today you notice that yesterday the NRS was 3-4. However, she isn't eating a great deal, has not had her bowels open since admission and has urinary frequency.

Mrs Jones is a quiet, cooperative lady who displays no signs of agitation, but is noted to be a little vague in her verbal responses. She interacts only occasionally with the other patients in the room. She sleeps for intervals during the day, and is sometimes slow to rouse. Night staff report that she is awake for periods of time each night. When awake, she sits quietly and watches what is happening in the room.

Her son visits her each evening after he finishes work. On the evening of the 4th day of admission, he speaks to the nurse on duty and tells her that his mother has told him that she can see a dead man in the corner of the room, and that it has been there since she arrived on the ward. He also reports that his mother is not as clear in her speech and thinking as is usual for her.

The nurse speaks to Mrs Jones about this. Mrs Jones says she has been wondering why no one has talked about this man and that she was too frightened to report what she was seeing, in case people thought she was 'crazy'. She reveals that she finds the sight of the dead man very disturbing, and is worried she is 'losing her marbles'. She also reports she is finding it harder to concentrate and remember simple things.

Case Study: Mrs Jones

- Identify predisposing delirium risk factors
- Identify precipitating delirium risk factors
- Apply SQiD, RADAR, NuDESC, bCAM
- Apply DSM-5
- Conduct a comprehensive assessment: identify the elements



SQiD

- A single question: 'Do you think [name of patient] has been more confused lately?' is put to friend or family.

RADAR

When you gave the patient his/her medication...

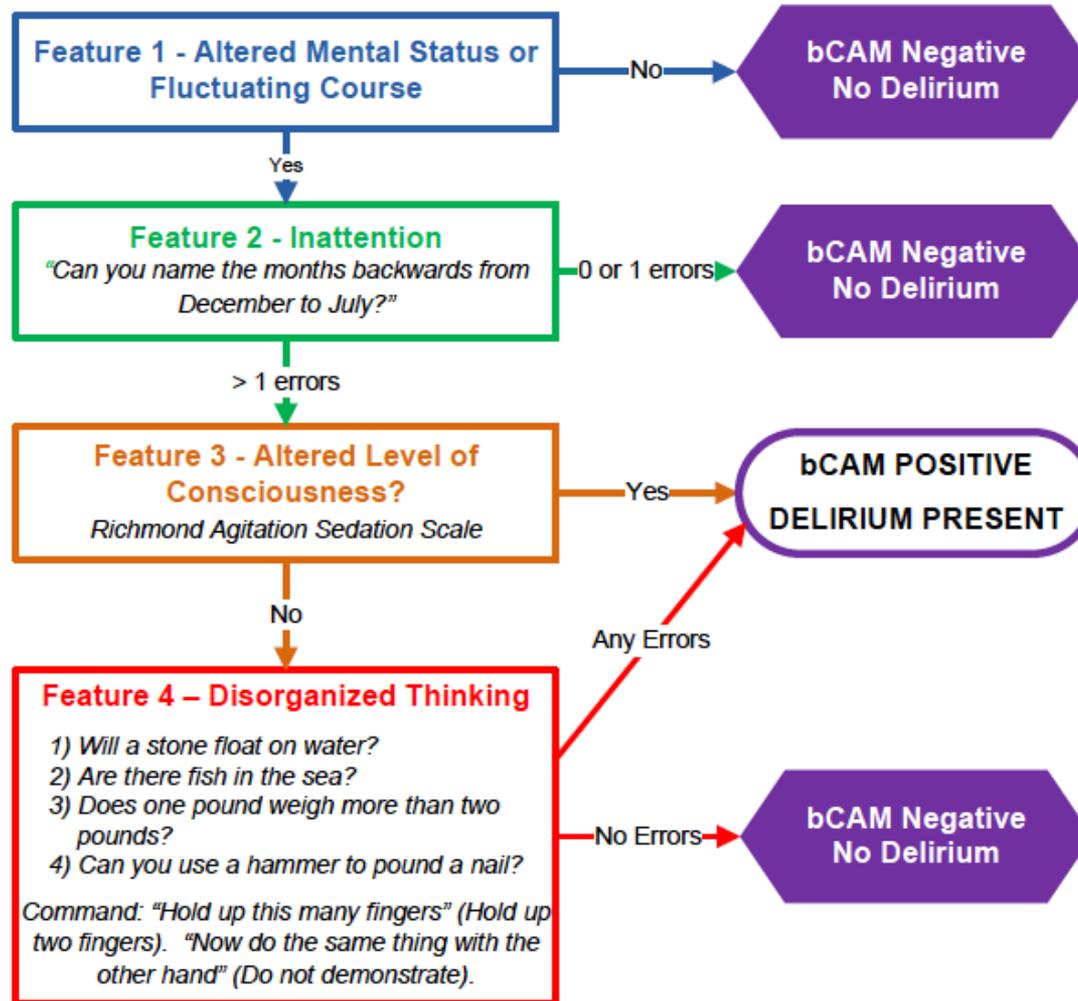
1. Was the patient drowsy?
2. Did the patient have trouble following your instructions?
3. Were the patient's movements slowed down?

A RADAR screening is considered positive when at least one item is checked “Yes”

NUDESC**Date today;** ____/____/____

Features and descriptions	SYMPTOM RATING 0 - 2		
	Midnight – 8am	8am – 4pm	4pm - midnight
DISORIENTATION: Verbal or behavioural of not being orientated to time or place or misperceiving persons in the environment			
INAPPROPRIATE BEHAVIOUR: Behaviour inappropriate to place and/or for the person e.g pulling at tubes or dressings, attempting to get out of bed when that is contraindicated and the like			
INAPPROPRIATE COMMUNICATION: Communication inappropriate to place and/or for the person e.g incoherence, non-communicativeness, nonsensical or unintelligible speech			
ILLUSIONS/HALLUCINATIONS: Seeing or hearing things that are not there, distortion of visual objects.			
PSYCHOMOTOR RETARDATION: Delayed responsiveness, few or no spontaneous actions/words e.g when patient is prodded, reaction is deferred and/or the patient is unrousable			
TOTAL SCORE (out of 10)			

Brief Confusion Assessment Method (bCAM) Flow Sheet



Copyright © 2012. Vanderbilt University.

The Brief Confusion Assessment Method (bCAM) is adapted from:
Ely EW, et al. *JAMA*. 2001; 286: 2703-2710. Confusion Assessment Method for the Intensive Care Unit. Copyright © 2002, Vanderbilt University.
Inouye SK, et al. *Ann Intern Med*. 1990; 113: 941-948. Confusion Assessment Method. Copyright © 2003, Hospital Elder Life Program, LLC.
Not to be reproduced without permission.

DSM-5 diagnostic criteria for delirium

- A. Disturbed Attention and Awareness
- B. Disturbance develops over a short period of time, is a change from Baseline, tends to fluctuate in severity over the course of the day
- C. An additional disturbance in Cognition
- D. A and C are not better explained by another pre-existing, established or evolving neurocognitive disorder (i.e. Dementia) nor in context of severely reduced level of consciousness, such as coma
- E. Evidence of an Etiological cause

Elements of assessment

- Baseline:
 - Attention
 - Awareness
 - Cognition
 - Perception
 - Behaviour
 - Communication
 - Function
- Relevant history
- What recent changes have occurred?

Elements of assessment

- Physiological and pharmacological status:
 - Vital signs
 - Oximetry
 - Blood Sugar Level
 - Urinalysis
 - Bowel function
 - Laboratory findings
 - Medications: likely precipitants, recent changes



PaCCSC
Palliative Care Clinical Studies Collaborative



Elements of assessment

- Potential investigations:
 - Full blood count
 - Biochemistry – calcium, albumin, magnesium, phosphate, creatinine, urea, electrolytes, liver function tests (ALT, AST, bilirubin, alkaline phosphatase), glucose
 - Thyroid function tests
 - Blood culture
 - Oxygen saturation or arterial blood gases
 - Urine culture
 - Chest X-ray
 - Electrocardiogram

Canadian Coalition for Seniors' Mental Health. (2010). *Guideline on the Assessment and Treatment of Delirium in Older Adults at the End of Life.*

Elements of assessment

- Safety: re-assess falls and other risks
- Level of distress, impact and meaning of delirium symptoms for patient and family
- What is the patient's illness trajectory and phase?
- What are the patient's wishes and goals of care?
- Interdisciplinary assessment and communication
- Further investigation as appropriate



Key determinants of management

The assessed situation, needs and wishes of the individual patient

Issues for management

- Reversibility
- Patient goals of care and phase of illness
- Maintaining patient and staff safety
- Communication
- Addressing distress
 - Functional change
 - Hypoactive and cognitive symptoms
 - Sleep
 - Perceptual disturbance
- Adequate pain and symptom management balanced with managing psychoactive medication load



PaCCSC
Palliative Care Clinical Studies Collaborative



Treat underlying causes, if appropriate

- Modify medications contributing to delirium whenever possible:
 - Opioids, benzodiazepines, corticosteroids, anticholinergics, psychotropics
 - Consider necessity, duplication, interactions, schedule, minimally effective dose
- Manage pain using safest interventions
- Approximately 70% drug induced delirium episodes are reversible

Bush et al 2013; Lawlor et al 2000; Canadian Coalition for Seniors' Mental Health. (2010). *Guideline on the Assessment and Treatment of Delirium in Older Adults at the End of Life.*



PaCCSC
Palliative Care Clinical Studies Collaborative



Treat underlying causes, if appropriate

- If infection is suspected, start antibiotics promptly
- Ensure adequate oxygenation and electrolyte balance
- Ensure hydration; monitor fluid intake and urinary output
- Monitor elimination patterns
- Monitor nutrition and skin integrity
- Correct sensory deficits (e.g., hearing aids, eyeglasses).
- Support normal sleep patterns and avoid routine use of sedatives

Canadian Coalition for Seniors' Mental Health. (2010). *Guideline on the Assessment and Treatment of Delirium in Older Adults at the End of Life*

Environmental interventions

- Avoid unnecessary room transfers
- Consistent staffing
- Re-orientation strategies (e.g., clocks, calendars)
- Appropriate lighting to reduce misinterpretations and promote sleep
- Provide objects familiar to the older person to reduce disorientation
- Ensure safe environment for the patient and for others
- Appropriate music
- Comfortable noise levels

Canadian Coalition for Seniors' Mental Health. (2010). *Guideline on the Assessment and Treatment of Delirium in Older Adults at the End of Life*



PaCCSC
Palliative Care Clinical Studies Collaborative



Communication-behavioral management

- Use clear and simple communication
- Communicate compassion, understanding and reassurance
- Avoid confrontation and use distraction to minimize agitation
- Consider the need for language interpreters
- Provide patient and family with information about delirium
- Identify triggers for agitation
- Use least restrictive measures for safety - restraints to control wandering or prevent falls is not justified
- Encourage presence of a family member/friend or consider a sitter
- Mobilise the patient, as appropriate

Canadian Coalition for Seniors' Mental Health. (2010). *Guideline on the Assessment and Treatment of Delirium in Older Adults at the End of Life*

Pharmacological interventions

- Important to note:
 - Benzodiazepines should be avoided in patients at risk of delirium
 - There is evidence that antipsychotics increase the severity of delirium symptoms in palliative care patients

Australian Commission on Safety and Quality in Health Care. (2013a). *Evidence for the safety and care of patients with a cognitive impairment in acute care settings: a rapid review*. Sydney: ACSQHC

Delirium in the last days of life

- Comprehensive assessment continues to be vital
- Communication needs of the family intensify
- Consider Mrs Jones:
 - Recovered from first episode of delirium and went home for three months
 - Now re-admitted, Phase 4, AKPS 20, drowsy, mumbled speech, unintelligible speech, restlessly moving in the bed, moaning.

Taking action for optimal delirium care



- **Strategies for change**



**‘Everyone thinks of
changing the world
but none thinks of
changing himself’**

Leo Tolstoy



PaCCSC
Palliative Care Clinical Studies Collaborative



ADKAR Change Management Model

[https://www.slideshare.net/syedarh/
adkar-change-management-model-
17701652?from_m_app=ios](https://www.slideshare.net/syedarh/adkar-change-management-model-17701652?from_m_app=ios)



PaCCSC
Palliative Care Clinical Studies Collaborative



Overall findings of The DePAC project

Epidemiology (QUANT)	Systems (QUAL)	Nursing practice (QUAL)
<p>Geriatric, advanced cancer population, at risk of delirium Incidence: 3-45% (screened at least daily: 33-45%) Prevalence: • 13-42% at admission • 26-62% during admission • 59-88% in weeks or hours before death Hypoactive delirium most prevalent</p>	<p>Reliant on but separated from wider organisational direction Need to build, adapt and integrate knowledge into systems Multidisciplinary approaches to practice and learning Patients and families not included and informed</p>	<p>Concern and compassion Symptoms recognised but not framed as delirium Comprehensive assessment not undertaken Brief, simple tools, point-of-care guidance and education requested Need to develop communication, define role and build leadership</p>

Barriers and enablers to nurse's delirium recognition and assessment in palliative care inpatient settings

Level	Barriers	Current Enablers	Potential Enablers
Patient and family	<p>Delirium is challenging to recognise</p> <p>Commonly used cognitive assessment tools are burdensome for patients</p> <p>Few delirium tools validated in the palliative care inpatient setting</p> <p>Patients and families are not routinely engaged</p>	<p>Establishment of rapport and trust with the patient</p> <p>Seeking family knowledge of the patient</p>	<p>Routinely engage patients and family in delirium recognition and assessment e.g. provide them with verbal and written information</p> <p>Develop brief, low burden tools and those incorporating family knowledge of the patient, and test their psychometric properties in the palliative care setting</p>
Clinician	<p>Time and workload pressures</p> <p>Multidisciplinary rather than interdisciplinary approach:</p> <ul style="list-style-type: none"> • Disconnected communication, practice and learning • Team meetings are infrequent and away from the bedside • Lack of respect for nurses' observations • Undefined role and absent nursing leadership <p>Gaps in knowledge, erroneous beliefs, imprecise communication and terminology, over-confidence of some nurses in their recognition capabilities</p> <p>Few delirium education opportunities relevant to palliative care</p>	<p>Generalised awareness of the problem of delirium</p> <p>Compassion and concern for patients</p> <p>Conducting assessment during delivery of care</p>	<p>Build on compassion, concern and awareness of the problem of delirium to:</p> <p>Adopt an interdisciplinary approach:</p> <ul style="list-style-type: none"> • Connect communication, practice and education • Daily interdisciplinary delirium discussion at the bedside • Strengthen nurses' communication skills • Clearly define nurses' role and build leadership capacity • Promote respect and value each disciplines' role in delirium care <p>Provide education resources using palliative care scenarios, deliverable locally and widely</p> <p>Encourage nurse involvement in delirium practice change</p>
System	<p>Palliative care populations and end-of-life care recommendations are missing from almost all evidence-based delirium guidelines</p> <p>Minimal integration of delirium tools and point-of-care guidance</p>	<p>One evidence-based clinical practice guideline for delirium care of older adults at the end of life</p> <p>Hospital-wide delirium policy and guidelines, where present</p>	<p>Inclusion of palliative care populations and end-of-life care recommendations in all delirium guidelines</p> <p>Hospital wide guidelines, organisational direction and clinical care standards</p>



PaCCSC
Palliative Care Clinical Studies Collaborative



Conclusion

Impeccable nursing care is the key to reducing the impact of delirium for palliative care patients and their families



Thank you

Contacts:

- jane.phillips@uts.edu.au
- annmarie.hosie1@my.nd.edu.au