IRISH ASSOCIATION FOR EMERGENCY MEDICINE

IAEM Clinical Guideline

Management of Delirium in the Emergency Department

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DISCLAIMER

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

Revision History

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GLOSSARY OF ABBREVIATIONS

ABG	Arterial blood gas
ACLS	Advanced Cardiac Life Support
ACS	Acute coronary syndrome
ADLs	Activities of daily living
ATLS	Advanced Trauma Life Support
CRP	C-reactive protein
CNS	Central nervous system
COPD	Chronic obstructive pulmonary disease
ED	Emergency Department
ECG	Electrocardiogram
GeriEM	European Task Force for Geriatric Emergency Medicine
HSE	Health Service Executive
FBC	Full blood count
GP	General Practitioner
IV	Intravenous
LFTs	Liver function tests
LBD	Lewy body dementia
IM	Intramuscular
PD	Parkinson's disease
PE	Pulmonary embolism
SpR	Specialist Registrar
U&Es	Urea and Electrolytes
VBG	Venous blood gas

GLOSSARY OF TERMS

SAMPLE	**S**igns and symptoms, **A**llergies, **M**edications, **P**ast history, **L**ast oral intake, **E**vents leading up to event/injury
Hs and Ts	Hypovolaemia, Hypoxia, Hypothermia, Hyper-/hypokalaemia, Hydrogen ions (acidosis), Tension pneumothorax, Tamponade (cardiac), Toxins, Thrombosis (PE, ACS)

Management of delirium in the Emergency Department

INTRODUCTION

Delirium, also known as acute brain failure, is a sudden decline in cognitive functioning and constitutes a neuropsychiatric emergency.[1,2] It can manifest as the only symptom of severe, potentially fatal medical conditions, especially among older adults.[3] Although common in the Emergency Department (ED), delirium is often underdiagnosed. This is particularly concerning given that a delay in appropriate treatment is associated with poor outcomes, including prolonged hospital admission, risk of institutionalisation post-discharge, functional and cognitive decline, and increased mortality.[4-5]

Hypoactive delirium is characterised by quiet, withdrawn behaviour and often described as the patient being "not quite her/his usual self". This frequently overlooked form is common among older adults in the ED and is associated with a worse prognosis.[6] Delirium's clinical features can vary, frequently involving fluctuations in levels of consciousness, awareness, and cognitive function. Patients present with varying degrees of inattention and confusion, often alongside distressing visual hallucinations. In about one fifth of cases, delirium can persist for weeks or months despite appropriate management, and some patients may not fully recover.[7]

The pathophysiology of delirium is complex, multifactorial and not clearly understood. In some instances, the precise cause remains unidentified after appropriate investigations.[7,8] Given the ongoing aging of the population, delirium rates are expected to rise, underscoring the critical importance of its prevention, early and accurate diagnosis, and management.[9] Accordingly, current guidelines recommend screening all patients aged 65 years and older presenting to the ED for delirium.[10] Early and accurate diagnosis can help prevent adverse events, especially in patients with subtle symptoms or pre-existing cognitive impairment.

PARAMETERS

Target audience	Emergency Medicine doctors involved in the management of adult patients presenting with delirium.
Patient population	Adult patients in the ED with delirium.
Exclusion criteria	< 18 years of age, Patients receiving end-of-life care, or Patients experiencing delirium, from drug, alcohol intoxication or withdrawal.

AIMS

Guideline Objectives: Delirium Recognition, Management and Prevention

1. Recognition and Monitoring: To establish protocols for early detection and regular monitoring for delirium, appreciating it might not be immediately apparent during initial ED assessments.

2. Standardised Practice: To develop a standard of practice specifically tailored for older patients with delirium. This practice acknowledges them as a unique patient cohort requiring distinct approaches and treatment plans to ensure their safety and promote favourable outcomes.

3. Prevention Strategies: To identify, avoid, or manage potential triggers of delirium in high-risk patients, with a special emphasis on environmental factors and medications.

4. Awareness and Understanding: To enhance multidisciplinary awareness about delirium's significance, fostering a broad understanding of the potential adverse consequences of unrecognised or improperly managed cases.

This guideline provides a suggested approach to managing delirium, with a focus on early recognition, prompt intervention, and prevention in at-risk individuals. It strongly advocates for targeted, multi-component, and, where possible, non-pharmacological interventions that can significantly improve patient safety outcomes and lead to cost savings.

EPIDEMIOLOGY

The literature shows that while delirium is very common in acute hospital settings, it is still underdiagnosed and this seems to be an international trend.[11,12] Ireland continues to use data and treatment guidelines from both United Kingdom and European settings as a national delirium audit has not yet been done. The data on delirium that is available has been incorporated into the Irish National Audit of Dementia. This audit revealed that <20% of patients with dementia were screened for delirium during their hospital stay.[12]

The Health Service Executive (HSE) developed a delirium algorithm which has been adopted by the European Task Force for Geriatric Emergency Medicine (geriEM).[13,14] (Posters are available on their website and cover a broad range of topics relating to Geriatric Emergency Medicine. These educational tools and guidelines were developed as a collaboration between the European Society of Emergency Medicine (EUSEM) and the European Geriatric Medicine Society (EuGMS).[15])

As per these guidelines, approximately 10% of patients older than 65 years presenting to the ED have delirium and more than half of these are not diagnosed at presentation. This results in a 3-fold increase in mortality at 3 months.[16]

While there is a growing awareness of delirium and the way it is approached, it's treatment seems to be shifting away from relying primarily on pharmacological treatment and more towards delirium prevention and developing cognitively friendly EDs. The impact and consequences of delirium continue to be underestimated.[17]

SCREENING FOR DELIRIUM

The **4AT test** is a validated screening tool to assess for delirium and cognitive impairment that is feasible to use in the ED as it has a short administration time, is easy to use and requires very little special training to use correctly.[10,18]

Alertness	Score
Normal (fully alert, but not agitated throughout assessment)	0
Mild sleepiness for <10 seconds after waking, then normal	0
Clearly abnormal	4
AMT4: age, date of birth, place, current year	
No mistakes	0
1 mistake	1
2 or more mistakes or untestable	2
Attention: months of the year backwards	
Achieves 7 months/more correctly	0
Starts but scores <7 months or refuses to start	1
Untestable (unwell, drowsy, inattentive)	2
Acute or fluctuating course: evidence of significant change/fluctuation in alertness, cognition or other mental function arising over the last 2 weeks and still evident in last 24 hours	
No	0
Yes	4
Interpretation of results Total score ≥ 4: Possible delirium and/or cognitive impairment 1-3: Possible cognitive impairment 0: Delirium/severe cognitive impairment unlikely (but still possible)	

It is important to record the date and time of the assessment as signs of delirium may not be present initially and a patient may need to be screened again as symptoms may evolve.[18]

IDENTIFICATION AND ASSESSMENT OF DELIRIUM IN ED

Perform a 4AT[10] assessment for all patients 65 years and older presenting to the ED and maintain a high index of suspicion as signs may be subtle. Delirium is a medical emergency and the patient will need an early medical review.

4AT score ≥ 4

Assess as per ACLS guidelines if patient is haemodynamically unstable[7,19]

1. Primary assessment
2. Secondary assessment
    a) Focused history
    b) SAMPLE
    c) Hs and Ts

Assess as per ATLS guidelines if trauma is the presenting complaint[7,20]

1. Primary survey
2. Secondary survey
    a) Head to toe examination, including the spine
    b) Focused history
    c) SAMPLE

Keep in mind that 'silver trauma' often includes simple ground level falls, which can have significant injury patterns and associated underlying medical cause(s) resulting in the fall.

PINCHES ME

Activate PINCHES ME to assess for possible reversible causes of delirium.[13,16]

"PINCHES ME"		
P	Pain	Is the patient in pain? Use Abbey Pain Scale Exclude urinary retention. Provide analgesia and avoid sedatives.
I	Infection	Rule out common infections such as chest, urine, skin and CNS. Avoid unnecessary invasive devices such as IV cannulas and urinary catheters.
N	Nutrition	Is the patient hungry? When was the last meal? Is there possible underlying malnutrition? Check blood glucose.
C	Constipation	Confirm last bowel movement and consider laxatives.
H	Hydration	Are there clinical features of dehydration? Are there any major electrolyte imbalance or new renal impairment? Encourage oral fluids, but consider the need for IV fluids.
E	Exercise	Encourage and assist with regular mobilisation and sit out for meals if appropriate. Ensure correct walking aids are readily available. Consider referral to physiotherapy.
S	Sleep	Avoid disturbing the patient when sleeping. Reduce noise (quiet room, ear plugs).
M	Medication	Check for any omission of regular medications / addition of new medications. Reduce anti-cholinergic burden (https://www.acbcalc.com) Stop unnecessary medications if possible. Consider substance misuse, withdrawal or other toxidromes.
E	Environment	Avoid moving the patient if possible.

		Re-orientate the patient and facilitate visits from family. Check for visual and hearing impairment and ensure hearing aids and glasses are available. Ensure clock and calendar are easily visible.

Remember you may not always find a cause for delirium and that the patient might need further work up.

Baseline investigations to consider:

1. Routine bloods including FBC, coagulation studies, U&Es, LFTs, bone profile, CRP, blood glucose and VBG.
2. Consider ABG if the patient is hypoxic with oxygen saturations of <95% (<88% for COPD patients) and the information from the VBG is insufficient.
3. Send relevant samples for microscopy, culture and sensitivity if sepsis/infection is being considered as a possible underlying cause of delirium (e.g. peripheral blood and midstream urine samples).
4. Chest x-ray depending on clinical assessment.
5. ECG depending on clinical assessment.
6. Relevant x-rays or additional imaging if there is a history of trauma.
7. Consider CT brain if:
    a. Focal neurology
    b. New onset seizures

c. Head injury and the patient is on anti-coagulants

d. Evidence of raised intracranial pressure.

8. Toxicology screen and/or specific drug levels.

4AT score <4

It is important to realise that delirium may develop later in patients who are in the department/admitted. At risk patients should be re-assessed for symptoms and signs thereof. Consider preventative measures especially in patients with recognised risk factors.

If patient scores ≥4 on serial 4AT assessment then proceed to assess for causes and manage appropriately.[13,16]

"DELIRIUM" risk factors

- Dehydration
- Eyes and ears
- Limited mobility
- Infection
- Reduce pain
- Impaired cognition
- Up at night
- Medication

PATIENTS AT RISK

- Pre-existing cognitive impairment
- Previous history of delirium
- CNS disorders such as Parkinson's disease, previous head injury
- Frailty/functional dependence
- Poor mobility
- Poor nutrition
- Visual or hearing impairment
- Depression
- Major trauma, including hip fractures
- Multiple co-morbidities
- Severe medical illness/infection, renal impairment and electrolyte disturbances
- Alcohol or substance misuse
- Polypharmacy and/or use of high risk medications (benzodiazepines, opioids)

PREVENTING DELIRIUM

- Avoid new sedatives
- Avoid restraints, both physical and chemical
- Ensure adequate fluids/nutrition with access to drinks and snacks
- Avoid use of urinary catheters if possible
- Avoid constipation
- Promote relaxation and adequate sleep in a quiet area
- Encourage and assist with mobilisation, early and regular
- Provide own hearing aids and glasses
- Encourage carers and family members to stay with the patient
- Encourage independence with ADLs (washing, dressing and toileting)
- Assess for and manage pain adequately and appropriately
- Review medications

MANAGEMENT OF DELIRIUM

Management will focused on:

1. Prevention and managing underlying aetiology. Ensure patient safety.[13,16]
2. Resuscitation and stabilisation will take priority for any patient that is clinically unwell and haemodynamically unstable.[7,19,20]
3. Management of agitation and aggression.

KEY PRINCIPLES

- **Non-pharmacological management** of delirium is associated with **better** patient outcomes
- The 2 primary indications for low dose antipsychotics are an immediate risk to the patient and/or others because of delirium associated behaviours or the need to institute urgent treatment that cannot be initiated otherwise
- Avoid benzodiazepines as much as possible as they worsen delirium. Only consider benzodiazepines if the delirium is suspected to be from alcohol/benzodiazepine withdrawal, or if anti-psychotics are contraindicated.

Please refer to Appendix 3 for algorithm for management of dementia in the ED and Appendix 4 for dementia/delirium combined pathway and care bundles.

Management of patient with delirium

1. **First line non-pharmacological interventions include** (Always try to de-escalate the situation first):
    a. Explain to the patient what is happening.
    b. Re-orientate the patient to time, place and the people around.
    c. Where possible, move the patient to a quieter area with less patient/staff traffic.
    d. Where possible, arrange for one to one care. If this is not possible, even ensuring the same member of staff looks after the delirious patient can help de-escalate undesired behaviours.
2. Quick PINCHES ME assessment to screen for any immediately reversible causes of delirium and manage accordingly.
3. If the patient is still severely agitated, in distress/combative and a threat to themselves/others then the following can be considered:
    a. If there is no past history of Lewy body dementia (LBD) or Parkinson's disease (PD) and if the QT interval on the ECG is normal, consider:
        i. Quetiapine 12.5-25 mg PO, or
        ii. Haloperidol 0.5-1.0 mg PO, or
        iii. Olanzepine 2.5-5.0 mg PO
    b. In LBD, PD, alcohol and benzodiazepine withdrawal consider lorazepam 0.25-0.5mg PO[13,16]
4. If IM or IV sedation is being considered:
    a. Inform the senior ED doctor on the floor and the ED nurse shift leader.
    b. Move the patient to the resuscitation room (or other appropriately monitored area).
    c. Ensure full resuscitation equipment and reversal agents are available (e.g. flumazenil if using lorazepam).[13,16]

Important: Antipsychotics are **CONTRAINDICATED** in patients with Parkinson's Disease and Lewy Body Dementia as they are more prone to extrapyramidal symptoms and at increased risk of permanent cognitive decline and increased mortality.[21]

Important: start with low doses and increase gradually if/as needed. Use one medication at a time. (Confirm patient's weight before starting).

PATIENT MONITORING AND HANDOVER

The ED nurse shift leader and hospital patient flow coordinator need to be made aware of any patient with delirium being admitted in order to expedite an urgent inpatient bed. These patients often need more nursing supervision during their admission to prevent falls, dehydration and medication errors.

Most patients will need admission, as delirium is associated with increased morbidity and mortality. If discharge is being considered, this should be discussed with a senior ED colleague first. Review risk factors as well as strategies for the prevention of delirium and discuss these with family/carers as well.[13,16]

Discuss the case of the patient with the medical registrar on-call. If the ED has a Geriatric or Frailty team, consider early referral to them for a more thorough assessment and decision whether the patient is safe/fit to be discharged home.

DELIRIUM PREVENTION STRATEGIES

- Prioritise allocation of cubicles with daylight exposure to older patients at risk of delirium.
- Minimise disruptions to sleep hygiene / sleep wake cycle.
- Reduce noise and/or provide earplugs.
- Provide sensory aids and cognitive stimulation.
- Orientate patient to person, time and place during the day and provide clocks and calendars.
- Request for family members/carers to bring familiar/personal items of the patient.
- Early mobilisation such as sitting out in a chair and doing active and passive range of movement exercises in the bed.
- Encourage daily routines / meaningful ADLs such as getting dressed and brushing their hair and teeth.
- Encourage family/carer involvement and visits.[23]

POSSIBLE AUDIT AND TRAINING TOPICS

- Percentage of patients age 65 years and over who are screened for delirium (either at triage or as part of their clinical evaluation).
- Percentage of patients with delirium who were managed with evidence based non-pharmacological approaches.
- Percentage of patients with agitated delirium receiving a benzodiazepine (excluding those with active benzodiazepine or alcohol withdrawal).
- Patient/family satisfaction with ED care: surveys, complaints, compliment letters.

COMPANION DOCUMENTS

- **Appendix 1: 4AT (Assessment test for delirium and cognitive impairment)**
- **Appendix 2: Abbey pain scale**
- **Appendix 3: Early identification and management of delirium in the Emergency Department/ Acute Medical Assessment Unit**
- **Appendix 4: Dementia/delirium combined pathway and care bundle for Emergency Department and Acute Medical Assessment Unit**
- **Appendix 5: Non-pharmacological approaches to delirium/ management in ICU**

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