Delirium identification, assessment and management

PAUL CADGER – DEMENTIA EDUCATION LEAD

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Objectives

- Understand the occurrence and poor outcomes associated with delirium
- Able to identify and assess for delirium
- Awareness of multifactorial causes of delirium
- Possible differentials
- Delirium prevention
- Non medical interventions (de-escalating)
- Medical Management
- Help your decision - where best to treat the person (home/hospital)

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Predictors of delirium development in Older Medical Inpatients: Readily identifiable factors at admission Reagan et al (2018)

Assessed all over 70's on admission for delirium

Of 529 people assessed 184 (35%) had delirium on admission

Biggest predictors;

Dementia 2.5 x more likely than without

Barthel Index (Function/ADLs) reduced function increases risk

Illness, increased severity or multiple systems affected increases risk

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Effects of Delirium

- 1/3 over 65s with delirium will develop dementia within 5 years[1]
- 23% of people admitted with delirium will change residence[2]
- A significant risk factor for falls (more evidence in hospital)
- In hospital mortality rates of delirium 14.5-37%[3]
- Distressing to staff, person but even greater for witnessing relatives/carers
- Estimated cost of delirium (US) $6.6-86 BILLION. (2019)[4]

1 Leighton et al, (2022) Delirium and risk of developing dementia: a cohort study of 12,949 patients. Journal of Neurology, Neurosurgery and Psychiatry (93) pg. 822-827
2 National Audit of Dementia (2018) Assessment of delirium in hospital for people with dementia
3 Vidal et al, (2013) Delirium in older adults, BMJ; 346 (f2031)
4 Kinchin et al, (2021) The economic cost of delirium: A systematic review and quality assessment. Alzheimers and Dementia. The journal of the Alzheimers Association DOI: 10.1002/alz.12262

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What is Delirium

- A Medical Emergency
- An ACUTE change
- A reversible state.
- A syndrome (caused by something else)
- Fluctuates throughout the day.

- Change to cognition: **memory, visuospatial, language and perception.**

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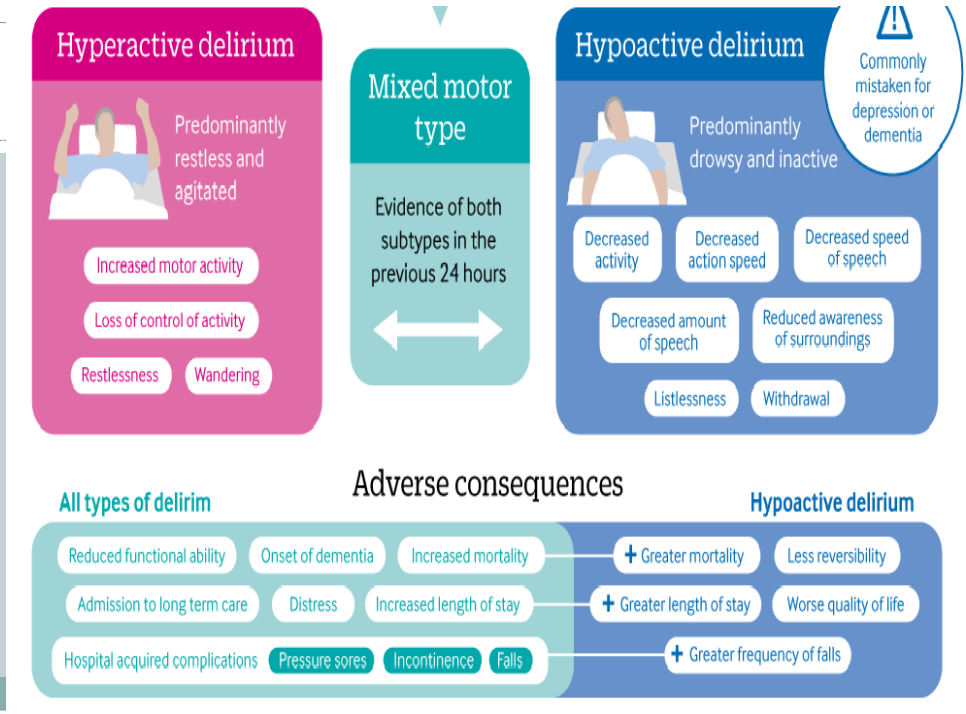

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SQiD Single Question in Delirium

- Ask family/carer - Do you feel that "persons name" is more confused or drowsy than normal?

Research at present limited to hospitalised patients

Sensitivity (true positive) 44%[1] 80%[2]
Specificity (true negative) 87%[1] 71%[2]

1 Sands et al (2021) Single Question in Delirium; can a single question help clinicians to detect delirium in hospitalised cancer patients? BioMed Central Cancer 21 (1):75 doi: 10.1186/s12885-020-07504-x
2 Sands et al (2010) Single Question in Delirium (SQiD): testing its efficacy against psychiatrist interview, the Confusion Assessment Method and the Memorial Delirium Assessment Scale, Palliative medicine 24 (6) pp. 561-565

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4 A's Test (4AT)

[1] ALERTNESS
This includes patients who may be markedly drowsy (eg. difficult to rouse and/or obviously sleepy during assessment) or agitated/hyperactive. Observe the patient. If asleep, attempt to wake with speech or gentle touch on shoulder. Ask the patient to state their name and address to assist rating.

Normal (fully alert, but not agitated, throughout assessment)	0
Mild sleepiness for <10 seconds after waking, then normal	0
Clearly abnormal	4

[2] AMT4
Age, date of birth, place (name of the hospital or building), current year.

No mistakes	0
1 mistake	1
2 or more mistakes/untestable	2

[3] ATTENTION
Ask the patient: "Please tell me the months of the year in backwards order, starting at December." To assist initial understanding one prompt of "what is the month before December?" is permitted.

Months of the year backwards	Achieves 7 months or more correctly	0
	Starts but scores <7 months / refuses to start	1
	Untestable (cannot start because unwell, drowsy, inattentive)	2

[4] ACUTE CHANGE OR FLUCTUATING COURSE
Evidence of significant change or fluctuation in: alertness, cognition, other mental function (eg. paranoia, hallucinations) arising over the last 2 weeks and still evident in last 24hrs

No	0
Yes	4

4 or above: possible delirium +/- cognitive impairment
1-3: possible cognitive impairment
0: delirium or severe cognitive impairment unlikely (but delirium still possible if [4] information incomplete)

4AT SCORE ☐

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4AT

[1] ALERTNESS

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Normal (fully alert, but not agitated, throughout assessment)	**0**
Mild sleepiness for <10 seconds after waking, then normal	**0**
Clearly abnormal	**4**

Guide to scoring Item 1: altered level of alertness is >95% likely to be delirium in general hospital settings. If the patient shows significant altered alertness during the bedside assessment, score 4 for this item.

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4AT

[2] AMT4

Age, date of birth, place (name of the hospital or building), current year.

No mistakes	**0**
1 mistake	**1**
2 or more mistakes/untestable	**2**

Guide to scoring Item 2: the Abbreviated Mental Test 4 or AMT4 is a brief test of orientation in which the patient is asked: age, date of birth, place (name of the hospital or building), and the current year. 1 mistake scores 1 point on the item, and 2 or more mistakes scores 2 points.

If the patient cannot provide meaningful answers because of altered arousal, inability to produce speech, etc., then the patient is given **a score of 2** (given for patients who are 'untestable' on simple cognitive tests).

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4AT

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	Starts but scores <7 months / refuses to start	1
	Untestable (cannot start because unwell, drowsy, inattentive)	2

Guide to scoring Item 3: Months of the Year Backwards is a simple, widely-used test of attention which is sensitive to both delirium and general cognitive impairment. The patient is asked to recite the months of the year in backwards order from December.

If the patient verbally declines to start the test or is not able to correctly recite to June, score 1. If the patient cannot start the test for example through being drowsy or too inattentive they are in the 'untestable' category for this item and receive **a score of 2**.

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4AT

[4] ACUTE CHANGE OR FLUCTUATING COURSE

Evidence of significant change or fluctuation in: alertness, cognition, other mental function (eg. paranoia, hallucinations) arising over the last 2 weeks and still evident in last 24hrs

No	0
Yes	4

Guide to scoring Item 4: rapid (hours, days) deterioration in mental functioning is highly specific to delirium. If there is evidence of change or fluctuation then this item scores 4. This gives an overall 4AT score of at least 4, indicating likely delirium.

Item 4 requires information from one or more source(s), eg. your own knowledge of the patient, other staff who know the patient (eg. ward nurses), GP letter, case notes, or carers.

As part of the process of determining change from baseline in non-cognitive areas it can be helpful to elicit any hallucinations and/or paranoid thoughts by asking the questions such as, "Are you concerned about anything going on here?"; "Do you feel frightened by anything or anyone?"; "Have you been seeing or hearing anything unusual?"

Fluctuation can occur without delirium in some cases of dementia, but marked fluctuation usually indicates delirium.

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Causes - PINCH ME SUE

- Pain – adequate analgesia / over opioid use?
- Infection – Antibiotics, cultures (sputum/urine/bloods) inflammatory markers
- Nutrition – monitor food /dentures/swallow
- Constipation – mobilise / toileting regime
- Hydration/Hypoxia - fluid intake / supplementary O2

- Medications – new change? Pharmacist review - ABS
- Metabolic – bloods required, BMs
- Environment – good lighting, reduce noise, temperature

- Stroke (infarct/haemorrhage)
- Urinary incontinence/retention - urinalysis / MSU
- Ethanol/substance abuse

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Differentials

	Delirium	Dementia	Depression
Onset	Sudden onset over hours or days	Gradual onset over months to years (> 6 month history)	Variable, weeks to months. May coincide with life changes
Duration	Hours to weeks*	Months to years	Weeks to months
Course	Fluctuating, often worse at night reversible with treatment	Progressive gradual or stepwise decline depends upon subtype	Gradual onset, worsening without treatment.
Attention/Concentration	Markedly Impaired	Preserved	Often poor
Memory	Poor recall for period of illness	Recent and remote impaired*	Can be affected and related to poor concentration and mental slowing (depressive pseudo-dementia)
Orientation	Markedly Impaired	Varies	Usually intact
Sleep-wake cycle	Disturbed, no set pattern, may have day night reversal	May have nocturnal wandering or day night reversal	Early morning wakening or hypersomnia
Mood	Variable, may be irritable, aggressive or fearful	Variable, irritable, labile or apathetic	Low, withdrawn, loss of interest diurnal variation of mood is classic
Perceptions/Thoughts	Hallucinations, misperceptions, delusions, often persecutory content	During some phases of the illness, hallucinations and delusions can be present.	Themes of guilt, hopelessness. Nihilistic delusions and hallucinations in severe illness
Diagnosis	Based on rapid onset of symptoms and fluctuating course CAM and 4-AT	Rule out other causes (see depression and delirium) 6 CIT, Diadem tool, AMTS	Low mood and anxiety may not be obvious or denied. Useful screening tools include PHQ-2 and PHQ-9

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Preventing Delirium

1/3rd of delirium is preventable.

Awareness of risk factors (PINCH ME SUE) and the appropriate avoidance of these wherever possible are essential to prevent. – NICE 2023

Delirium is usually the result of the complex interaction of multiple conditions and risk factors.

There is often a balance between risk factors and precipitating factors i.e., a person with dementia will only require a relatively minor precipitating factor to become delirious.

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Management

- Reorientation/Remind/Reassure – Repeat
- Identify and treat causes
- Sensory aids clean/charged and used
- Manage current medications
- Think environment (avoid bed moves/falls risks)
- Encourage mobility
- This is me (see resources)
- Include carers and relatives (reminisce/patterns of engagement)
- Familiar stimulating activities (music / hobbies)

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Management cont.

- Normalise sleep wake cycles
  - Bright sunlight if possible day, dark quiet at night
- Minimise over stimulation
- Refer for more formal support
- Behaviour chart, support positive behaviour approaches
- Identify triggers of agitation
- Avoid conflict, either acknowledge or distract

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Medical Management

Last resort
- reduce risk of harm to self/others
- relieve distress those dangerously agitated
- calm before vital investigation/treatment

1st line treatment Olanzapine 2.5-5mg (anti-ψ) every 4 hours, max dose 10mg/day review within 24 hours

Contra-indications best interest discussion regarding cardiac complications

Parkinson's Disease or Lewy Body Dementia

Lorazepam 0.5-1mg (sedative) every 2-4 hours max 2mg

+ Health warnings with Haloperidol – rigidity and sedative effects
+ Daily review of anti-psychotic looking for improvement and side effects (over-sedation)
+ Review 4AT minimum fortnight

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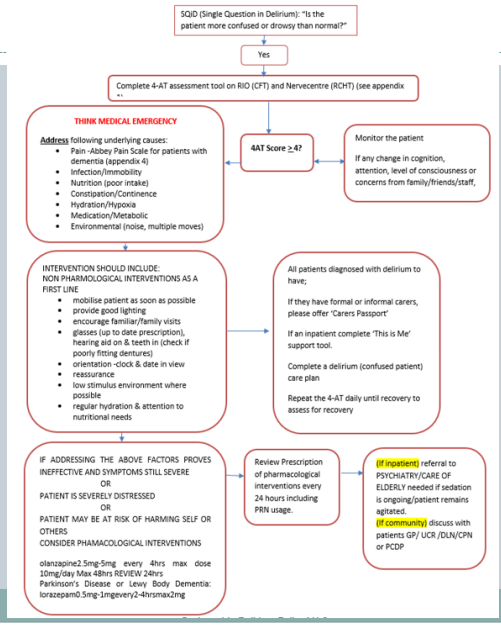
Delirium Flow chart



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Where to treat (Hospital or Home)

- NICE (2021) "Most people with delirium will need admission for same-day investigation and treatment of precipitating factors"

<u>Think capacity (4 parts)</u>

Able to understand

Retain information

Weigh up – understand consequences

Communicate

Discuss with family/carers – Best interest

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Treat at home if you are satisfied with-

- Well enough to stay home
- Symptoms not causing harm (themself/family/carer)
- Cause(s) known and treatable
- Has constant supervision
- Access to primary care if deteriorates and has follow up plan NICE, 2021

In hours not conveying to hospital
- Phone call to surgery to create plan for f/up
- Urgent Crisis Response 01872 322 709
- Virtual ward to support physical needs via SERF

OOH
- EPCR sent via email to GP with explicit actions for f/up

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Delirium can be safely managed in the community through implementation of a community toolkit – Vardy, V., Roberts, S and Pratt, H., (2022)

6 month pilot in Greater Manchester Aug 20-Jan21
Included Admission Avoidance, Intermediate Care, Urgent Care, PCN

156 people seen with new onset confusion
- 87 (56%) had ≥4 on 4AT - Prevention in remaining group
  - 61 (70%) were managed at home with modified TIME bundle
  - 67 (77%) had a cause identified
  - 40 (46%) had bloods taken – Optional assessment

26 (30%) people not Mx at home (17 admitted, 1 hospice, placement, RIP, 6 unknown

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Modified TIME bundle

T = TRIGGERS – think "**PINCH ME**"	**Summarise suspected trigger(s):**
PAIN e.g. Abbey pain scale score *Optional resource (OR) 7*	
INTRACEREBRAL e.g. haemorrhage **INFECTION** Any clinical signs to warrant investigations? i.e. suggestive of chest or urine infection. Consider COVID-19 as per PHE guidance to swab for COVID-19 in context of delirium.	
(mal) NUTRITION e.g. use Age UK paper weight arm band tool *(OR 8A)* mouth care assessment *(OR 9)*	
CONSTIPATION e.g. bowels last moved Bristol stool chart *(OR 10)*	
HYPOXIA – Pulse oximeter reading **HYPOGLYCAEMIC** – Glucometer reading **(de)HYDRATION** e.g. urine colour chart, drink taken *(OR 8B)*, urinary retention	
METABOLIC e.g. hyponatraemia, hypercalcaemia **MEDICATION** – Structured medication review, anticholinergic burden e.g. West Essex CCG Anticholinergic side-effects and prescribing guidance *(OR 11)*	
ENVIRONMENTAL e.g. disturbed sleep, sensory deficits, recent major surgery, falls, over or under stimulation, discharge home etc.	

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I = INVESTIGATIONS	**Time requested and contact (or reason why not completed)**
Standard Delirium Bloods: FBC, UE, LFT, Calcium, Magnesium, CRP, glucose, phosphate	
Urinalysis if applicable e.g. Bury UTI Assessment Tool *(OR12)* (sterile urine culture, not dipstick)	
Other tests required if applicable e.g. scans, ECG **Please state:**	

If any of the below is completed after the Triggers and Investigations and/or by a different professional, please date and write name and profession accordingly.

M = MANAGEMENT
State trigger(s) of delirium and treatment. **Please provide details below:**
Please refer to the management of delirium guidance **(Key document 4)** as this provides detail on aspects to be considering. **Please provide details below:**

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E = ENGAGEMENT	
Engage with family members and informal/formal carers (consider if there needs to be a referral to social care, occupational health, mental health, physiotherapy). Engage with family/informal carers and any formal carers asking them to monitor whether or not delirium is improving and to support the patient's needs of reassurance, orientation, occupation, physical comfort, wellbeing, safety and security **(Key document 4)** Consider *OR 13A, B, C, D and 14.* **Please provide details below:**	
Personalise the longer version of the with the completion of the person-centred care plan **GM Delirium Leaflet (Key document 5)** and give to the person with delirium and their family/carer, taking time to go through the leaflet and to address any concerns answer any questions. **Date the Leaflet was handed to person:** _____ (Date the leaflet was sent to the family/carers if in a care home)	
Following treatment, if delirium is not improving complete TIME again	
Send copy of completed TIME bundle to involved teams including the person's GP:	
Team the TIME Bundle was sent to:	**Date sent:**

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Patient story

- 85 year old gentleman fell 4am Wednesday morning, wife unable to help off floor when you arrive at 9am. Wife reports more confused than normal.
- Past medical history hypertension, dementia, day 6 antibiotics for UTI.
- Lives with wife who assists with finances and medication, normally independently mobile in/outdoors 50m with 1x walking stick. 2x falls in past year.

Do you think this person has delirium?

Would you say confusion or suspected delirium?

What are possible causes of delirium?

What would your management plan be?

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Possible Rx plan

- Pain – adequate analgesia
- Infection – Antibiotics – is he responding
- Nutrition
- Constipation
- Hydration/Hypoxia - fluid intake and output

- Medications – new change - pharmacist review
- Metabolic – bloods required, BMs
- Environment

- Stroke (infarct/haemorrhage)
- Urinary incontinence/retention - urinalysis / MSU / palpate bladder
- Ethanol/substance abuse

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Key Points

- Fragile brains are vulnerable to Delirium.
- Timing is everything!
- Delirium can persist for weeks, months even.
- Normal inflammatory markers doesn't mean no Delirium!

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Any questions?



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Thank you for your attention



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Resources

4AT
https://static1.squarespace.com/static/543cac47e4b0388ca43554df/t/5f0592e7917a0733e509ea0b/1594200808505/4AT+v1_2+Oct+2014.pdf

This is me

https://www.alzheimers.org.uk/sites/default/files/2020-03/this_is_me_1553.pdf

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