

Delirium Screening – DRAT & 4AT

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- This presentation has been designed to provide education about Delirium, Delirium Screening and Assessment and the use of the Delirium Risk Assessment Tool (DRAT) and 4AT tool inline with the Delirium Clinical Care standard and National Standard 5, Comprehensive Care to ensure that risk of harm for patients during health care are prevented and managed.

What is Delirium?

- An acute change in mental which is largely reversible, that is often triggered by acute illness, surgery, injuries or adverse effects of medicines.
- Characterised by disturbances in consciousness, attention, cognition & perception that develop over a short period of time (usually hours to a few days).
- Patients with delirium may be agitated & restless (hyperactive delirium), or quiet & withdrawn (hypoactive delirium). Patients may also move between these two subtypes (mixed delirium).

It is a Medical Emergency



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So what is delirium?

Delirium is an acute change in mental state, that is characterised by a disturbance in consciousness, attention, cognition and perception.

It develops over a short period of time, usually hours to days and is considered a medical emergency. It is often missed or misdiagnosed as dementia.

Delirium is often triggered by an acute illness, surgery, injuries or adverse effects of medication and is reversible if the underlying cause is treated.

30-40% of all deliriums are preventable if simple person centred care strategies are implemented on admission to your ward.

Why are we screening for Delirium?

- Delirium is a serious condition associated with increased mortality which is often under-recognised.
- Adverse outcomes include ↑ LOS, mortality, falls, institutionalisation & ↓ cognition & function
- In FY 2021–22, the rate of delirium as a hospital-acquired complication (HAC) was 42.2 per 10,000 episodes of care in Australia, & it is the most common of the set of HACs identified by the Commission.⁵
- The cost associated with delirium in Australia in 2016–17 was estimated to be \$8.8 billion.⁶



Why is it essential to screen for delirium?

Delirium is associated and an independent predictor for multiple adverse outcomes:

Patients with delirium have increased mortality rates, increased lengths of stays, higher risk of injurious falls, Increased risk of institutionalisation post discharge and a decrease in cognition and functioning.

In 2021-22, the rate of delirium as a hospital- acquired complication (HAC) was 42.2 per 10,000.00 admissions Nationally and according to the Australian Commission on Safety and Quality, is the most common HAC identified.

And finally The cost associated with delirium in Australia in 2016-17 was estimated to be \$8.8 billion dollars annually.

Common causes of Delirium- 2 useful Mnemonics

PINCHME mnemonic
to help identify potential causes of delirium

Pain

Infection

Nutrition

Constipation

Hydration

Medication

Environment



Remember – a delirium must be considered a medical emergency!
You need to advise your GP/nurse in charge/Team Leader/Supervisor immediately if you suspect a delirium

The five main causes of a delirium can be remembered by using 5 Ps

BLADDER (Pee)	BOWEL (Poo)	PAIN (Pain)	MEDICINES (Pills)	INFECTION (Pus)
<p>Urinary Tract Infections are a common cause of delirium.</p> <p>Look for:</p> <ul style="list-style-type: none"> Changes in urine colour, smell, clarity In their urine retention In their urine frequency In the person rarely urinating <p>Response:</p> <ul style="list-style-type: none"> Perform urine dipstick Increase fluids Write up a Fluid Balance Chart Inform the RN, Unit Manager and GP Document observations carefully 	<p>Constipation and diarrhoea can both bring on a delirium.</p> <p>Look for:</p> <ul style="list-style-type: none"> Changes in bowel habits Pain, cramps, bloating Diarrhoea that may be associated with infection <p>Response:</p> <ul style="list-style-type: none"> Check stool via Bristol Stool Chart Each older person in care should be on a bowel chart Increase fluids Write up a Fluid Balance Chart Inform the RN, Unit Manager and GP Document observations carefully 	<p>Any pain can increase the likelihood of a delirium.</p> <p>Look for:</p> <ul style="list-style-type: none"> Anger Agitation Cries, wails, moans or loud pain High, achy, aching and joint/operative pain Persistent noise and agitated verbally <p>Response:</p> <ul style="list-style-type: none"> Assess with the Older Pain Scale Ease the person in comfortable (e.g. positioning, warmth) Inform the RN, Unit Manager and GP Document observations carefully 	<p>Medicines are a common cause of delirium in the older adult.</p> <p>Look for:</p> <ul style="list-style-type: none"> Sedatives Anti-psychotics, anti-depressants Diuretics Insulin Paracetamol Alcohol (under medicaly reduced or stopped) Waxins withdrawal of medications or drug medication introduced <p>Response:</p> <ul style="list-style-type: none"> Inform the RN, Unit Manager and GP Document observations carefully 	<p>Any infection ANYWHERE can bring on a delirium.</p> <p>Look for:</p> <ul style="list-style-type: none"> Signs of localized infections such as pain, redness, pus, swelling, heat or heat to the site Look for pressure sores, ingrown toenails, cuts, bites, ulcers When bathing or doing common activities observe skin condition for any signs of infection A systemic infection (fever, localized facility, vomiting) <p>Response:</p> <ul style="list-style-type: none"> Inform the RN, Unit Manager and GP Document observations carefully

So what are some of the most common causes of delirium. These two mnemonics shown here can assist us in identifying potential causes.

It is important to remember the causes of delirium are generally multifactorial and can coexist together.

The PINCHME aronym stands for pain, infection, nutrition, constipation, hydration, medication and the environment

While the 5ps stands for pee, poo, pain, pills and pus.

As you can see many of these causes can be minimised or prevented with simple, yet effective person centred care strategies.

For example if your patient has pain administer analgesia, if they are constipated they will aperients, if they are dehydrated rehydrate and ensure you maintain a fluid balance chart to monitor hydration status.

In terms of the environment use noise reduction strategies and avoid multiple room changes.

Like all health care provision collaboration with family and carers is essential.

Screening for Delirium.

The 2 tools that are to be used for screening of Delirium include:-

- D.R.A.T. (Delirium Risk Assessment Tool) that identifies people at risk of developing delirium
- The 4AT Assessment that screens for cognitive impairment and the presence of delirium



How do we screen for delirium?

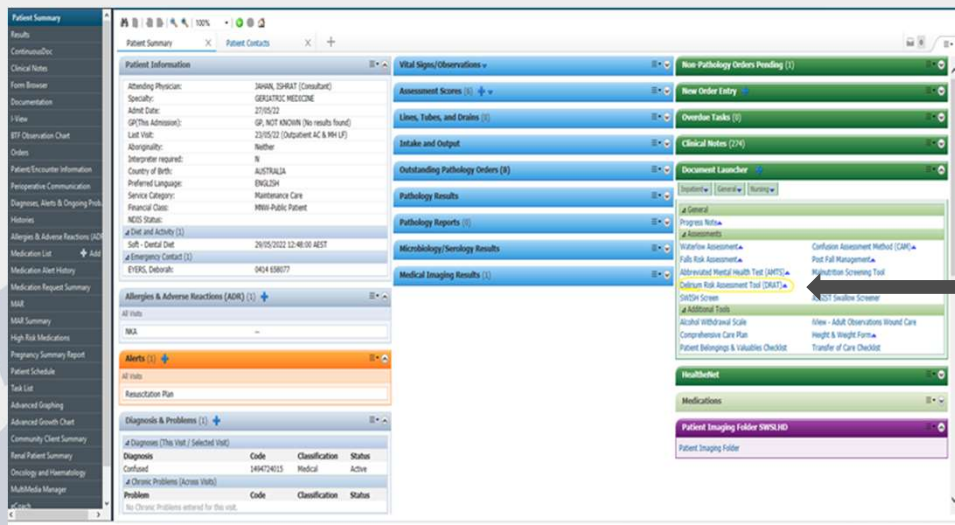
To screen and assess for delirium a validated tool is required in accordance to the Delirium Clinical Standards 2021.

The DRAT (Delirium Risk Assessment Tool) identifies **key risk factors** that predispose the patient to delirium, and risk factors that may precipitate or trigger delirium and recommends further investigations, if there is a change in behaviour.

It is to be performed on all adult patients upon arrival to the ED, in the pre admission clinic or within 24 hours of presentation to hospital for admitted patients.

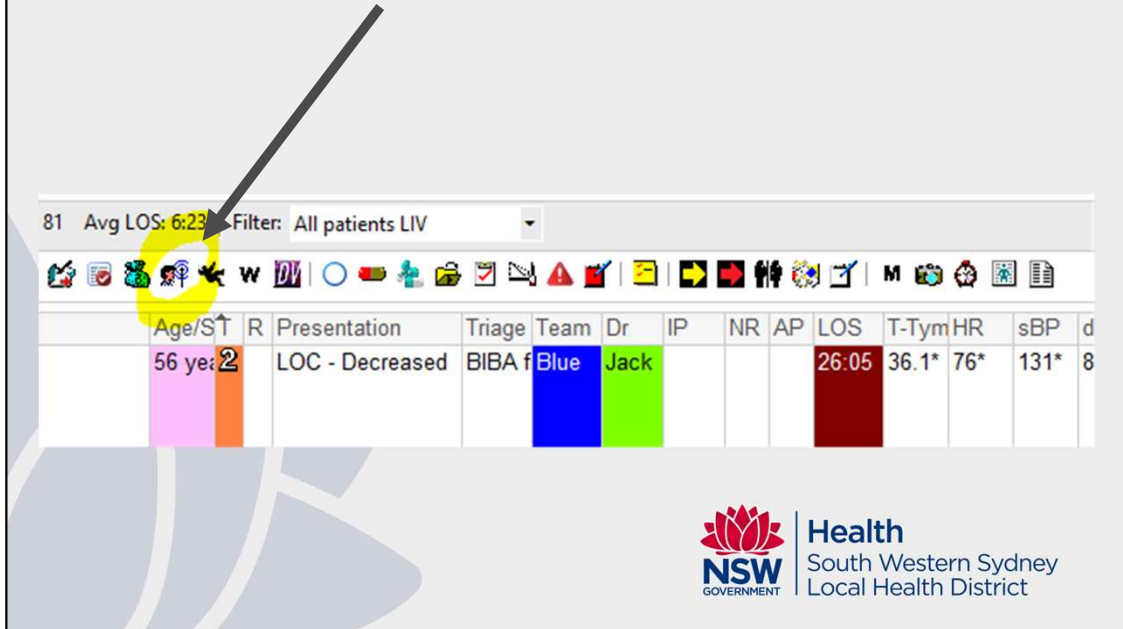
The 4AT is a Validated screening instrument designed for the initial rapid assessment of delirium and cognitive impairment and should be completed on all patients who have identified Key risk factors.

How to access the DRAT Assessment on Powerchart.



For those Clinicians working on the wards within the hospital setting, The DRAT is located on the Patient Summary on EMR under the assessment heading on the right hand column of the screen as shown here on this slide.

How to access the DRAT Assessment on FirstNet



The screenshot displays the FirstNet interface. At the top, it shows '81 Avg LOS: 6:23' and a filter set to 'All patients LIV'. Below this is a tool bar containing various icons. A yellow circle highlights the DRAT icon, which is a small icon with a red and blue design. A black arrow points from the top of the slide to this icon. Below the tool bar is a patient record table with the following data:

Age/ST	R	Presentation	Triage	Team	Dr	IP	NR	AP	LOS	T-Tym	HR	sBP	d
56 year	2	LOC - Decreased	BIBA f	Blue	Jack				26:05	36.1*	76*	131*	8

In the bottom right corner, there is a logo for NSW GOVERNMENT Health South Western Sydney Local Health District.

If you are working in the Emergency Department, the DRAT is located on the Firstnet tool bar as shown here on this slide.

DRAT Assessment on Powerchart

Always keep in mind All people > 70, or > 50 for First Nations populations are at risk of delirium

The screenshot shows the Delirium Risk Assessment Tool (DRAT) form. At the top, it indicates the assessment was performed on 14/07/2022 at 12:23 by AEST, and the assessor is Stott, Katrina (Clinical Nurse Consultant). The form is divided into several sections:

- Pre morbid risk factors:** Includes questions about sensory impairment, severe illness, cognitive impairment (AMTS <7/10 or MMSE <25/30), and dehydration. Each question has 'Yes' and 'No' radio buttons.
- Precipitating factors:** Includes a warning that these factors increase risk, such as mechanical restraint, malnutrition, 3 new medications in 24hrs, IDC, and iatrogenic events.
- Delirium Risk:** A section with radio buttons for Low, Medium, and High risk, and a 'Score' field.
- Recommended Investigations:** A row of checkboxes for CAM, History (incl family), Medical Review, Physical Exam, Medication review, Bloods, and MSU.
- Delirium diagnosed?:** A dropdown menu.
- Delirium Prevention and Management Protocol:** A large box containing detailed protocols for Cognition, Hydration Nutrition & Elimination, Mobilisation & Activities, Vision & Hearing, Drugs, Sleep, and Consult & Monitor.
- Signatures:** Fields for Medical Officer and Nursing signatures.

This is a copy of the DRAT, As you can see It highlights pre morbid risk factors, precipitating factors at top of the document as well as prompts for prevention and management strategies. A score of 0 is considered low risk, 1-2 medium risk and greater than 3 is a high risk. Delirium prevention strategies should be implemented on all patients who score greater than 1. Please be mindful however All patients over the age of 70 or 50 for First nations people are at risk of developing delirium and require delirium prevention care strategies implemented regardless of score.

Where to locate the 4AT on Powerchart

Via Document Launcher

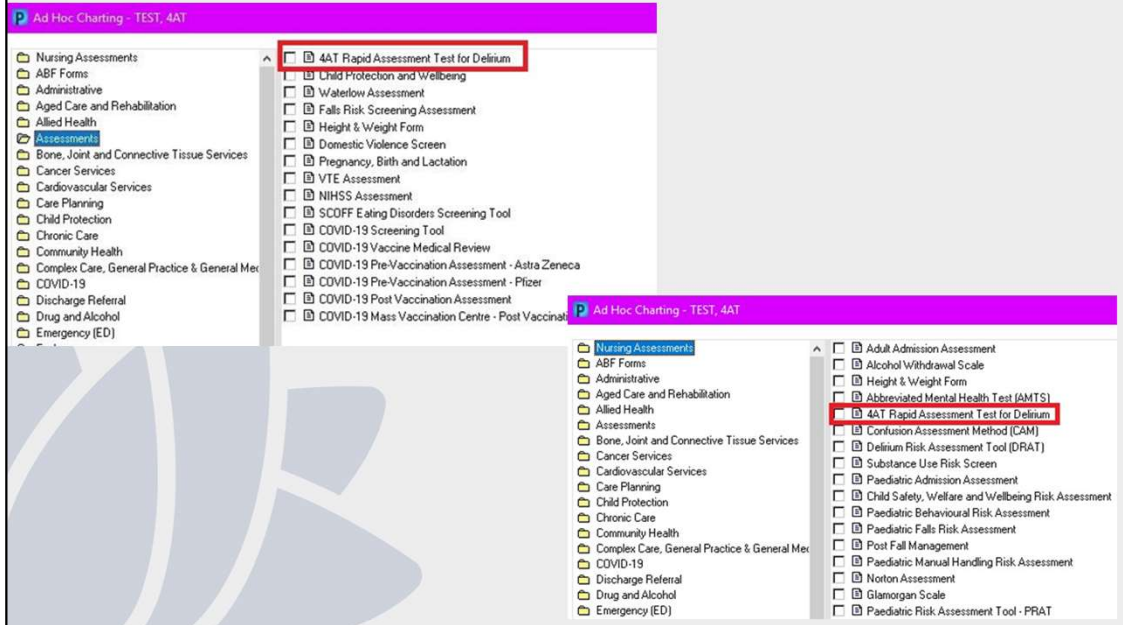


There are a number of ways to access the 4AT on Powerchart

One is to simply go to Assessments which again is located on the Patient summary page, as shown here on this slide.

Where to locate the Powerchart 4AT.

Via AdHoc Folder



Alternatively it can be accessed via the ADHOC folder under Assessments and Nursing assessments as shown here.

The 4AT Assessment.

4AT Rapid Assessment Test for Delirium	
Test 4at 22 Turing Street SYDNEY 2000 ABORIGINALITY: Neither	MRN: 274-47-32 SEX: M DOB: 01/09/1990 AGE: 32 Years MC: 9999 99999 9 9 LOC: BW-1; 1; 17 single
For guidance on completing this tool please refer to the "Facilitation Guide" by right clicking in the field to the right and selecting "Reference text" <input type="checkbox"/> <i>i</i>	
1. ALERTNESS	
This includes patients who may be markedly drowsy (e.g. 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.	<input type="radio"/> Normal <input type="radio"/> Mild sleepiness for <10 seconds after waking, then normal <input type="radio"/> Clearly abnormal
2. AMT4	
Ask the patient: Age Date of birth Place (name of the hospital or building) Current year	<input type="radio"/> No mistakes <input type="radio"/> Untestable <input type="radio"/> 1 mistake <input type="radio"/> >2 mistakes
3. ATTENTION	
Ask the patient: "Please tell me the months of the year in backwards order, starting of December." To assist initial understanding one prompt of: "What is the month before December?" is permitted.	Months of the year backwards <input type="radio"/> Achieves 7+ months correctly <input type="radio"/> Starts but scores < 7 months correctly <input type="radio"/> Refuses to start <input type="radio"/> Untestable
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	<input type="radio"/> Yes <input type="radio"/> No
SCORING	
A score of 4 or more suggests delirium but is not diagnostic; more detailed assessment of mental status may be required to reach a diagnosis.	Total Score: <input type="text"/>
A score of 1-3 suggests cognitive impairment and more detailed cognitive testing and informant history-taking are required.	<input type="radio"/> Possible delirium +/- cognitive impairment (Score >=4) <input type="radio"/> Possible cognitive impairment (Score 1-3) <input type="radio"/> Delirium or severe cognitive impairment unlikely (Score 0)
A score of 0 does not definitively exclude delirium or cognitive impairment; more detailed testing may be required depending on the clinical context.	
If delirium is present, please contact medical team for prompt review	

• Alertness

• AMT4

• Attention

• Acute Changes



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- The 4AT rapid screening tool for delirium looks at **Alertness** (whether your patient is alert, drowsy or clearly abnormal upon review); **Orientation** (if they can tell you their age, date of birth, place where they are, current year) – this may not be possible for patients with a known cognitive impairment which may be normal for them or if they are unable to communicate, in this case, you can mark the patient as 'untestable'; **Attention** (ask the patient to tell you the months backwards from December) - this may not be possible for patients with a known cognitive impairment which may be normal for them or if they are unable to communicate, in this case, you can mark the patient as 'untestable'; **Acute Changes** (are there changes in the patient's alertness, mentality over the last 2 weeks that are present in the last 24 hrs?) – answer yes or no.
- A score of >4 is suggestive of a positive delirium score -> a medical review is required ASAP.

Item 1 – Checking for Alertness

⑩- Look for an altered level of alertness: sleepiness/unresponsiveness, or agitation.

Items 2 & 3 – Checking Orientation & Attention

Ask your patient to name the months of the year backwards. If your patient's alertness is preventing them from doing this, score as 'untestable'.

Item 4 – Assessing for Acute or Fluctuating changes

Fluctuations in condition / behaviour can be indicative of a Delirium.

Case Studies

- 54-year-old gentleman BIBA to ED – slurred speech, altered gait, hypotension, desaturating. Recent diagnosis of shingles- T- 37.2,RR -18, SaO2 – 93% on O2, HR - 120. BP – 80/60
- PMH – HT, T2DM, 4 glasses wine/day
- ? Confused at times, usually has a baseline of GCS of 15 had been commenced on Celebrex, valacyclovir, has a shuffling gait, unable to tolerate fluids BNO 2/7
- Bloods of note: Cr- 125, Trop 25, WCC -15.6, CRP -95



The next few slides will include two case studies.

The first is a 54 year old gentleman who presented to the ED with slurred speech, altered gait Hypotension and was desaturating

He was recently diagnosed with shingles and commenced on acylcovir and celebrex

He was confused with a GCS of 14,

Of note his Cr was 125, WCC 15.6 and CRP 95

Concerns for patient

- Shingles
- Commenced on new medication's
- Elevated Creatinine
- Elevated WCC
- 4 drinks a day. ?
Standard drink
- Recent confusion – Change in Cognition.
- Hypotension
- Oxygen Saturations
↓
- Hypotension
- Tachycardia
- Pain



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What are our concerns for this gentleman:

Pain associated with shingles

He has slurred speech and recent confusion

He is desaturating, hypotensive, tachycardic

His infective markers are elevated

The commenced of new medication

And he drinks approximately 40grams of alcohol daily therefore potential for etoh withdrawal

Impact of Delirium for patient

- Increasing agitation ->had multiple code blacks, antipsychotic meds for sedation
- 4 x falls in 24 hours
- Subdural haematoma
- Unwell
- Delirium
- Palliated
- 21/1/19 – RIP - Coroner's



This gentleman was admitted with sepsis and diagnosed with hyperactive delirium
He had increasing aggression and agitation with multiple Code Blacks requiring antipsychotics medication
Unfortunately he had 4 falls within a 24 hour period sustaining a subdural hematoma
He subsequently passed away and was referred to the coroner.

- Compliance with correct handover procedure – discussion of strategies / management
- Harm to patient
- Grief and Loss to family
- Reputation to organisation
- Potential Litigation
- Financial burden- altered/no funding
- employee implications e.g. stress potential PTSD

CASE STUDY 2

- Gentleman 68yrs. From home with NDIS carer BIBA to ED – fall > long lie
- Agitated / confused

PMHx –

- Parkinson's , T2DM, CKD, ETOH

Pathology

- Cr 351 (baseline 106) - Rhabdomyolysis with AKI
- CK 144, 200



The second case study was a 68 year old gentleman

Fall with long lie from home

He presented with agitation, confusion on a background of Parkinsons, Type 2 diabetes, chronic kidney disease and long term alcohol use

His Creatinine was 351, baseline 120 and his Cks were 144,200

He was diagnosed with Rhabdomyolysis and right shoulder injury secondary to the fall.

Concerns for patient

- Fall, long lie
- Rhabdomyolysis
- AKI
- Delirium
- Fevers and tremors – secondary to omitted PD medications
- Right Shoulder pain- secondary to fall
- Dehydration/malnutrition secondary to long lie
- Alcohol withdrawal



So as you can see there were multiple triggers for delirium

Fall with a long lie,

Rhabdomyolysis

Electrolyte imbalance

Pain

Dehydration and malnutrition

Alcohol withdrawal

Impact of delirium for this patient

- Increased Length of stay
- Administration of Antipsychotic medication- resulting in Neuroleptic Malignancy Syndrome
- Progression of Parkinsons Disease
- Cognitive and functional decline
- Loss of independence
- Institutionalisation



During his stay he had ongoing delirium resulting in multiple clinical reviews

He was unfortunately given antipsychotic medication to treat his agitation and hallucinations and subsequently developed neuroleptic malignant syndrome

Because of the complications associated with his presentation this gentleman had an extensive length of stay with a significant functional and cognitive decline. He was discharged and placed into a Residential Aged Care facility.

Take home message

- Early screening and identification is key.
- Implementation of person centred delirium prevention and management strategies to minimise harm.

So from these two case studies we can see how delirium can have a negative impact on patients outcomes, highlighting the importance of delirium screening using the DRAT and 4AT to implement either prevention or management care strategies and consequently minimizing harm to the patient.

References.

- Australian Commission on Safety and Quality in Health Care, Delirium Clinical Care Standard, September 2021.
- Website – Why use the 4AT? <https://www.the4at.com/whythe4at>
- ACI – Care of Confused Hospitalized Older Persons (CHOPS) <https://aci.health.nsw.gov.au/chops/chops-key-principles/delirium-risk-identification-and-preventive-measures/delirium-risk-assessment>



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