

A quality improvement project into delirium assessments on an Acute Senior Health Unit

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Introduction

What is delirium?

"Delirium (sometimes called 'acute confusional state') is an acute, fluctuating syndrome of encephalopathy [conditions that cause brain dysfunction] causing disturbed consciousness, attention, cognition, and perception."¹

What impact does it have?



What do current guidelines say?

NICE Guidelines²

Assess patients for risk factors:

65 years	Cognitive impairment +/- dementia	Hip fracture	Severe illness	Assess people at risk for recent (within hours or days) changes or fluctuations that may indicate delirium
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Getting It Right First Time: Geriatrics Report (2021)³

"All trusts should have a **clear pathway** for delirium that includes assessing **all older people** admitted as an emergency using **4AT**, a system for identifying delirium in elective admissions and rapid and effective delirium response. Delirium awareness should be embedded in basic frailty training for **all patient-facing staff**."

How can we assess delirium?⁴⁻⁵

4AT		
Rapid initial assessment for delirium	High score can trigger early intervention and proactive management	4 Domains: 1. Alertness, normal to abnormal. 2. Awareness of age, DOB, place, year. 3. Attention by ability to list months backwards. 4. Acute change or fluctuation in alertness and mental function.

Aims

- 1 To assess the current standard of delirium care of a London-based Acute Senior Health Unit (ASHU), from completion rates of delirium assessments and subsequent delirium diagnoses – **Cycle 1**
- 2 To design and implement an economic and sustainable intervention to improve completion of initial delirium assessments for patients on the ASHU – **Cycle 1&2**
- 3 To evaluate the impact of the intervention by comparing changes in the proportion of completed initial delirium assessments following implementation of the intervention. – **Cycle 2**

Methods

This single-centre, retrospective observational audit was conducted on a 28-bedded Acute Senior Health Unit (ASHU) at St George's Hospital, London.

Primary Outcomes

- Completion of delirium ad-hoc assessment
- Documented diagnosis of delirium

Secondary Outcomes

- Delirium assessment prior to ward admission
- Delirium noted in handover
- RADAR (nursing delirium screening form) on day of admission
- RADAR form completed
- 4AT documented
- % of people using new proforma
- Delirium assessment done on the day of admission

Statistical Analysis

Data was analysed using Microsoft Excel and anonymised to ensure patient confidentiality. Chi squared and Fisher exact tests were conducted to evaluate statistical significance.

References:

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3. Geriatric Medicine: GIRFT Programme National Specialty Report. A Hopper. February 2021. Available from: https://gettingitrightfirsttime.co.uk/medical_specialties/geriatric-medicine/
4. Diagnostic accuracy of the 4AT for delirium detection in older adults: systematic review and meta-analysis. Z Tieges et al. Age and Ageing. 2020. doi: 10.1093/ageing/afaa224
5. A short story of Geriatric Medicine: CFS, 4AT, news. S Ninan. Available from: <https://sean9n.wordpress.com/2023/05/23/a-short-story-of-geriatric-medicine-cfs-4at-news/>
6. Do post-take ward round proformas improve communication and influence quality of patient care? AG Thompson et al. Postgraduate Medical Journal. 2004. doi: 10.1136/pgmj.2003.016097
7. Post-acute surgical ward round proforma improves documentation. H Al-Mahrouqi et al. BMJ Quality Improvement Reports. 2013. doi: 10.1136/bmjquality.u201042.w688
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Delirium Screening Assessment

Risk Factors for developing delirium whilst in hospital

Age 65 or older ☐ Yes ☐ No

Admitted with hip fracture ☐ Yes ☐ No

Severely unwell (NEWS 5 or more) ☐ Yes ☐ No

Cognitive Impairment - Known Dementia ☐ Yes ☐ No

Cognitive Impairment - Learning Disability ☐ Yes ☐ No

Delirium Ad-hoc Form on iCLIP

Behavioural Indicators of Delirium

Problem with cognitive function ☐ Yes ☐ No

Problem with perception ☐ Yes ☐ No

Changes in physical function ☐ Yes ☐ No

Changes in social behaviour ☐ Yes ☐ No

4AT Screen for Delirium and Cognitive Impairment

1. Alertness: Observe patient, ask them to state their name and address, if asleep attempt to wake with touch on shoulder. Abnormal if drowsy or agitated. ☐ Normal ☐ Mild Sleepiness on waking ☐ Clearly abnormal

2. AMT4: Ask the patient to tell you the following: Age, DOB, Place, Current Year ☐ No mistakes ☐ 1 mistake ☐ <2 mistakes or unstable ☐ 7 months or more correct ☐ Unstable(drowsy/unwell) ☐ Starts (score <7(Relates)

3. Attention: Ask the patient to tell you the months of the year in backwards order starting at December. 1 prompt allowed ☐ No ☐ Yes

4. Acute change or fluctuating course: In alertness, cognition, other mental function e.g. hallucinations, paranoia ☐ No ☐ Yes

Total

4 or Above - possible delirium +/- cognitive impairment
1 to 3 - possible cognitive impairment
0 - Delirium or cognitive impairment unlikely (but delirium still possible if collateral history incomplete)

Can you make a diagnosis of delirium? ☐ Yes ☐ No ☐ Unsure

Yes - Identify and treat causes as per delirium pathway (see intranet)
(Selecting Yes adds delirium diagnosis to the patients record)
No - Remains at risk for developing delirium on this admission
Unclear - Seek senior advice and reassess in 24 hrs

Specific risk factors for developing delirium

Infection ☐ No ☐ Yes Look for and treat infection as per Trust Guidelines

Catheter ☐ No ☐ Yes Remove short term catheters as soon as possible

Multiple Medications ☐ No ☐ Yes Review all medications and consider risks and benefits of: opiates, benzodiazepines, anticholinergics, antiparkinsonian drugs, high dose steroids, tricyclics. Look for risk of drug or alcohol withdrawal

Pain ☐ No ☐ Yes Actively assess for pain and ensure adequate analgesia. If communication difficulties - look for non-verbal signs of pain - use Abbey Pain Scale

Dehydration - or at risk ☐ No ☐ Yes Encourage oral fluids (subject to any fluid restriction)
Start fluid balance chart (Consider SC or IV fluids)

Constipation - or at risk ☐ No ☐ Yes Start Stool Chart - Consider PR exam - Consider laxatives

Hypoxia or at risk ☐ No ☐ Yes Ensure O2 prescription written up
Optimise O2 saturation according to prescription

Admission Proforma (Cycle 2 intervention):

Marnham Ward – New Admission Consultant Review

Reviewing consultant:
Date of admission:
Admitted from:

Issues:

-
-
-

PMH:

SHx:

Review:

TEP

VTE

NEWS2

CFS

4-AT

/// =

Bladder/bowels:

E&D/swallow:

Medication review:

O/E:

Impression:

NMO/MOFD

-

-

-

Plan:

-

-

-

Discharge plans:

-

Name

Grade

Contact

Prompt to assess 4AT

[Complete iCLIP form]
[Complete AdHoc VTE Risk Ax]
[Complete AdHoc Frailty Ax]
[Complete AdHoc Delirium Ax]

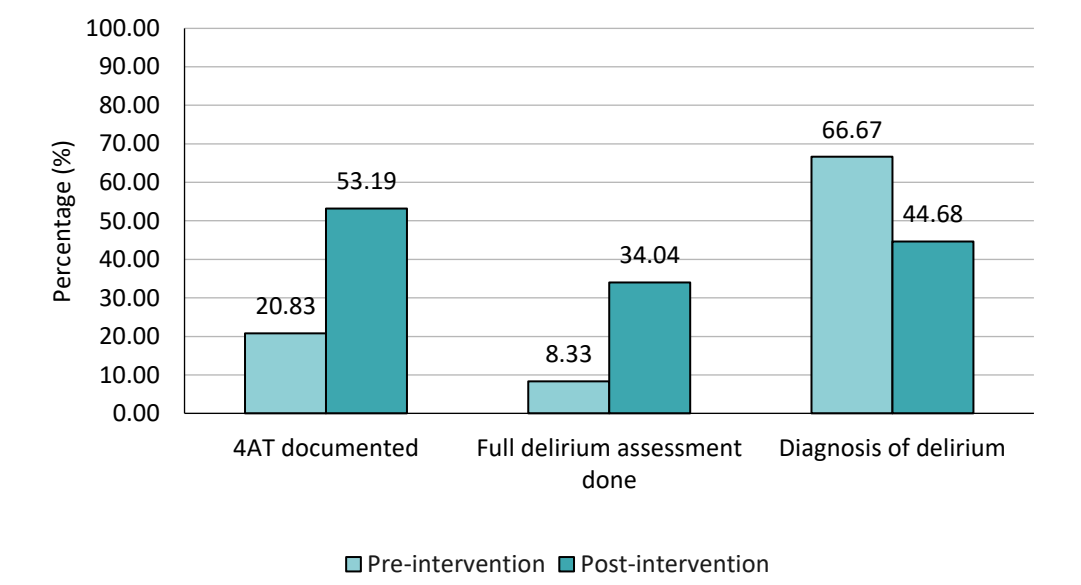
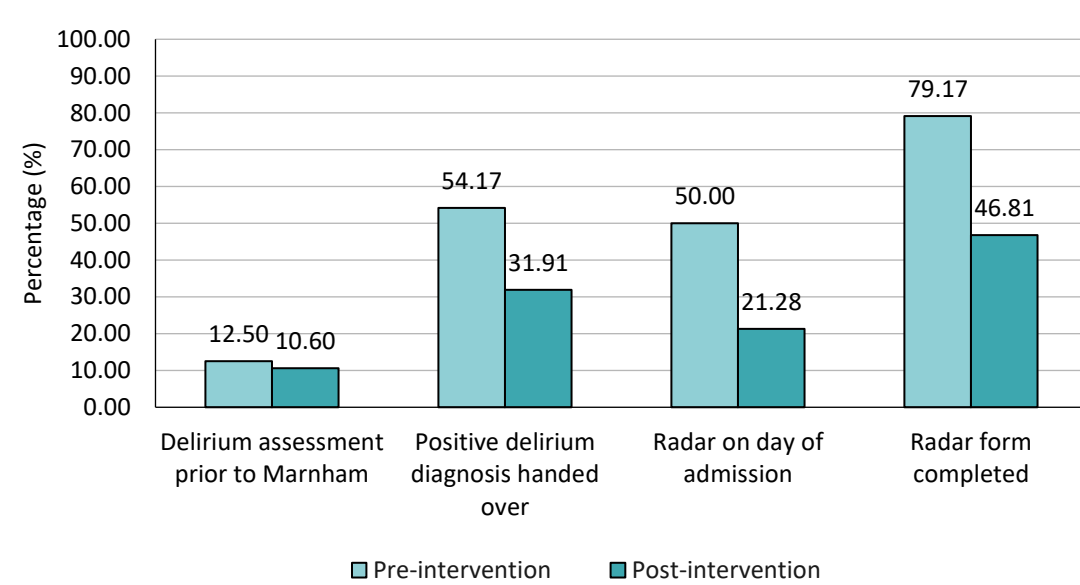
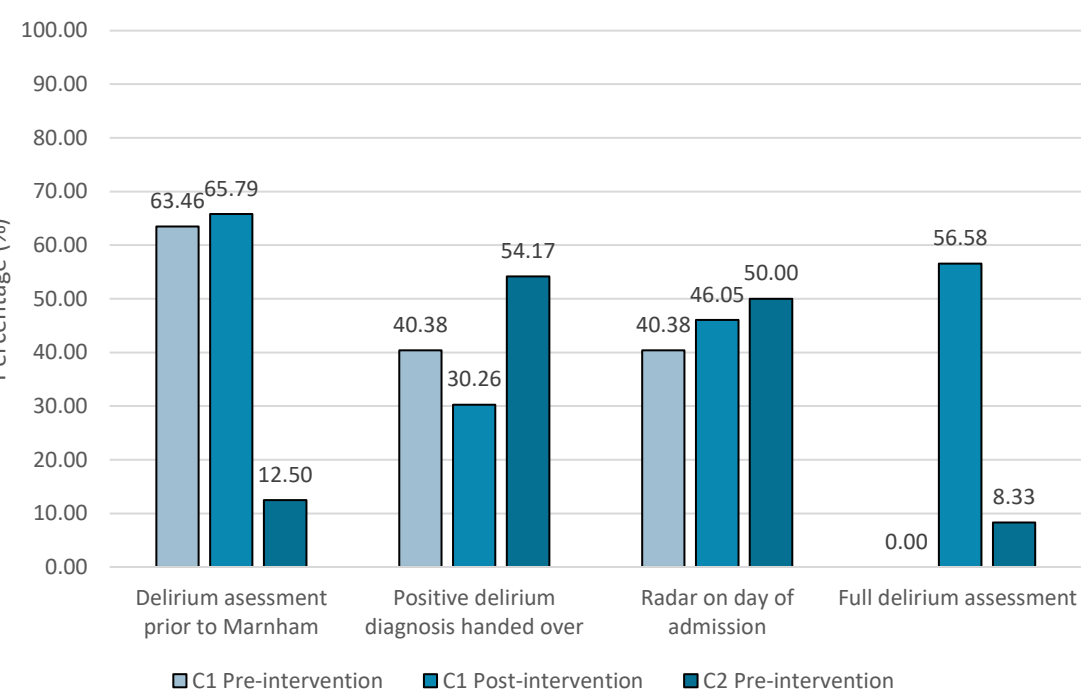
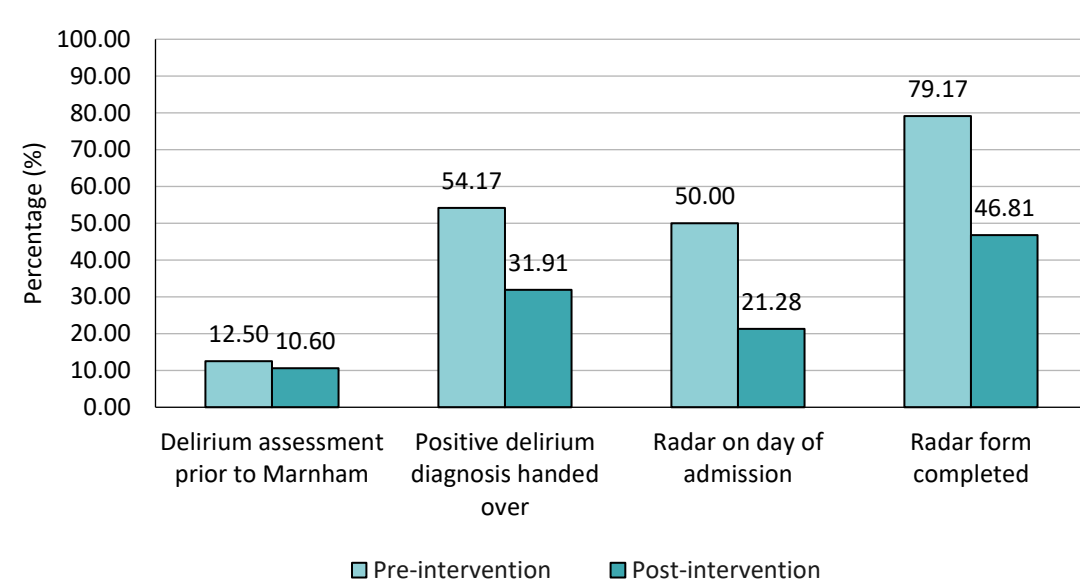
Prompt to complete delirium ad-hoc form

Results

- Cycle 1 included a total of 128 patients.
- Initial audit revealed suboptimal compliance with NICE recommendations.
- Posters and education-based MDT interventions were designed and implemented.
- Following these initial interventions, patients were more likely to receive a full delirium assessment (1.9% vs 56.6%, p = 0.001) and formal diagnosis (5.8% vs 27.6%, p = 0.002).

- 71 patients were included in Cycle 2.
- Re-audit compared to Cycle 1 showed significant decline in patients receiving a formal delirium assessment with 4-AT, from 56.6% to 8.3%

- The new admission proforma was designed and implemented during Cycle 2, with proforma uptake at 91%.
- After implementation, there was an increase in delirium assessment completion (8% vs. 34%, p < 0.05).
- There was no statistically significant difference between delirium noted on handover (54% vs. 32%, p > 0.05).
- The most notable change was the increase in 4AT completion following the proforma (21% vs. 53%, p < 0.01).



Discussion

What did Cycle 2 add?

- Identified a fall in completion of delirium adhoc forms between rotating cohorts of junior doctors
- Development of a new admission proforma as an intervention aiming to improve these completion rates⁶⁻⁸
- Positive impact on delirium ad-hoc form completion
- However, also showed fall in RADAR completion rates

Limitations

- Single centre with a small sample size
- Winter bed pressures and ward closures may have contributed to smaller sample size in January
- Impact of junior doctor strikes
- Changes in staffing, including ASHU nurses

Conclusion

- ✓ There was a significant improvement in delirium and 4AT assessment following the introduction of a new admissions proforma.
- ✓ Despite this, compliance still falls short of recommended guidelines and there is clear recognition of further improvement to adhere to national standards for delirium management.
- ✓ This project demonstrates the challenges of sustaining change across multiple cycles and trainee rotations.
- ✓ Cycle 3 is ongoing, aiming to address this and update the admission proforma in response to multi-disciplinary team feedback.
- ✓ The admissions proforma also serves as a basis for further clinical audit in various areas of clinical practice.

▪ **Objective:** assess sustainability of improvements made in cycle 1, make improvements where possible
▪ **Prediction:** improvements made won't have been sustainable
▪ **Change idea:** standardised "new admission" proforma, prompting delirium assessment, diagnosis and form completion

▪ **Next cycle:**
▪ Integrate proforma into IT software to improve ease of use and lessen variability
▪ Formal handover at changeover to highlight these forms

▪ Inter-individual variability in implementation of proforma
▪ Awareness of ad hoc delirium assessment forms was low

▪ Outcomes similar to the predictions
▪ Proforma uptake was good



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