Royal Cornwall Hospitals
NHS Trust

Prevention and Management of Post-Operative Cognitive Dysfunction and Delirium Clinical Guideline

V1.0

August 2024

Summary

This document is to be used as a guideline for the prevention and management of post-operative cognitive dysfunction and delirium.

This identifies some of the risk factors and management plans to be considered.

Pre-Operative Assessment

Identify Risk Factors:

Age ≥65.

ASA>2.[1]

Dementia/Cognitive Impairment.

Hip Fracture.

Previous stroke/TIA.

Long operation.

Infection.

Severe Illness.

Multiple operations.

Lower educational status.[2]

Polypharmacy (esp. psychoactive medications).[3]

Target Modifiable Risk Factors:

Ensure Hydration.

Normalise Electrolytes.

Optimise Analgesia.

Promote Normal Sleep/Wake cycle.[4]

Treat Infection.

Ensure Access to Glasses, Hearing aids etc.

Minimise polypharmacy/drugs predisposing to delirium.

Consider risk of withdrawal (nicotine/alcohol/opiates).

Adopt an MDT approach to ensure holistic care.

Intra-Operative Management

Avoid Intra-operative Hypotension.[5]

Avoid trigger drugs (e.g. anticholinerguics, benzodiazepines, morphine). [6]

Use regional over GA (low level evidence). [7]

Use TIVA over volatile. [8,9]

BIS target anaesthesia. [10]

Optimise post op analgesia (avoid tramadol, minimise morphine)

Avoid unnecessary urethral catheterisation, lines, NGTs, etc.

Post-Operative Care

Diagnosis/Screening:

CAM-ICU (low sensitivity).[11]

Investigations:

Blood Gas (gluc, pCO2, electrolytes, hb etc).

Bladder scan.

Urinalysis (UTI).

Consider CXR (atelectasis/LRTI).

Management - Non-Pharmacological:

Re-orientation.

Blood pressure normalisation

Sleep enhancement.

Remove lines/catheters/NGTs where possible.

Early mobilisation to allow daily ambulation.

Familiar contacts e.g. relatives.

Ensure continuity of nursing/medical team.

DOLS if unavoidable risk to self/others.

Ensure Access to Glasses, Hearing aids etc. [12]

Management - Pharmacological:

Minimise non-essential medication.

Give haloperidol 1-2mg IV PRN *

(*only if risk to self/others).

1. Aim/Purpose of this Guideline

Clinical guideline for the prevention and management of post-operative delirium (POD) and post-operative cognitive dysfunction (POCD).

Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation.

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

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Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

2.1. Pre-operative Assessment

2.1.1. Prevention and management of POD and POCD should begin at pre-op assessment, with the identification of high-risk patients and addressing of reversible risk factors.

2.1.2. Vulnerable patients should be consented for the risk of POD and POCD and the associated morbidity.

2.1.3. Optimising patients prior to surgery requires a multi-disciplinary approach involving e.g. medical teams, pharmacists, physiotherapists and occupational therapists.

2.1.4. An accurate social and drug history is important to avoid the risk factor of substance withdrawal.

2.1.5. Patients in pain pre-operatively should have a comprehensive analgesia review, including consideration for regional intervention to reduce opiate prescribing e.g. Fascia Iliaca/Femoral Nerve blocks in hip fractures.

2.1.6. An appropriate post-op analgesia plan should be formulated prior to surgery to reduce the contribution of post-op pain and opiate use to the risk of POD and POCD.

2.1.7. Working with surgical teams to actively manage lists is important to prevent overly long fasting times.

2.1.8. ‘Sip to send’ is encouraged, as well as IV hydration where this is not possible.

2.2. Intra-operative Management

2.2.1. Anaesthetists should be proactive in avoiding intra-operative hypotension by identifying at-risk patients, modifying techniques accordingly and by the use of invasive arterial monitoring and vasopressor infusions where appropriate.

2.2.2. There is low level evidence to suggest that the use of both regional anaesthesia and propofol TIVA are superior to volatile anaesthesia in reducing the risk of POD and POCD.

2.2.3. Avoiding burst suppression and excessive depth of anaesthesia through BIS monitoring has been shown to be beneficial.

2.2.4. The use of high risk drugs should be minimised where possible. These include centrally acting anticholinergics (e.g. atropine), benzodiazepines and opiates.

2.2.5. Anaesthetists should communicate with the surgical team to formulate a plan for analgesia in order to minimise post-op pain and opiate requirement.

2.2.6. Avoidance of non-essential urinary catheters and infusions reduces discomfort and distress whilst enabling early mobilisation, both of which promote orientation and reduce the risk of POD and POCD.

2.3. Post-operative Assessment

2.3.1. The Confusion Assessment Method for the ICU (CAM-ICU) is a useful tool for assessing POD/POCD in theatre recovery but has been shown to have low sensitivity

2.3.2. A high index of suspicion is therefore important in patients identified as more at risk

2.3.3. Appropriate investigations should be carried out to rule out reversible causes e.g. bladder scan to rule out retention, Arterial Blood Gas (ABG) to assess gas exchange/glucose/electrolytes etc.

2.3.4. Initial management should follow an Airway, Breathing, Circulation (ABC)approach, correcting abnormal observations such as hypotension, hypoxia and hypercapnoea and optimising analgesia

2.3.5. Pharmacological intervention should be a last resort and only utilised if a patient poses a risk to themselves or others.

2.3.6. Re-orientation to time and place help to reduce POD and POCD. Allowing phone calls or visits from family members and minimising staffing changeovers reduces confusion and distress.

2.3.7. Attempts should be made to avoid disturbance to patients undergoing an extended stay in recovery in order to promote a normal sleep/wake cycle. At night eye masks, ear plugs, room dividers, low lighting and corner bays may all be beneficial.

2.3.8. Non-essential lines, catheters, NG tubes etc should be removed and early mobilisation encouraged

2.3.9. If absolutely necessary to protect the patient or staff members, give Haloperidol 1-2mg IV PRN to effect.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	All aspects of this will require monitoring.
Lead	Geoff Taverner, Anaesthetics
Tool	Adherence will be monitored as part of the audit process within the department on a template specific to the topic.
Frequency	Yearly review with report shared with Anaesthetic governance for sign off.
Reporting arrangements	Reported to ACCT directorate structure and ACCT governance leads.
Acting on recommendations and Lead(s)	Clinical leads will act on directorate/governance recommendations.
Change in practice and lessons to be shared	Shared via ACCT governance sessions as appropriate.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the Equality Diversity And Inclusion Policy or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Prevention and Management of Post-Operative Cognitive Dysfunction and Delirium Clinical Guideline V1.0
This document replaces (exact title of previous version):	New
Date Issued/Approved:	August 2024
Date Valid From:	August 2024
Date Valid To:	August 2026
Directorate / Department responsible (author/owner):	Dr Geoff Taverner, Anaesthetics
Contact details:	01872253197
Brief summary of contents:	Guideline for the Prevention and Management of Post-Operative Cognitive Dysfunction and Delirium.
Suggested Keywords:	Delirium, Cognitive decline, Post-operative, Recovery.
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Anaesthetics, Critical Care and Theatres Care Group Governance
Head of Nursing confirming approval processes:	Claire Blake
Name of Governance Lead confirming consultation and ratification:	James Masters
Links to key external standards:	None Required
Related Documents:	CHA4861: Delirium Care Plan Delirium and dementia in hospital - Information for patients and carers (RCHT1763) Systemwide Delirium Policy for Frail, Older Adults

Information Category	Detailed Information
	Post-Operative Delirium Clinical Guideline
Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Anaesthetics

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
July 2024	V1.0	Initial issue	Geoff Taverner, Anaesthetics

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust The Policy on Policies (Development and Management of Knowledge Procedural and Web Documents Policy). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance, please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Prevention and Management of Post-Operative Cognitive Dysfunction and Delirium Clinical Guideline V1.0
Directorate and service area:	Anaesthetics, Critical Care and Theatres Care Group Governance
Is this a new or existing Policy?	New
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Dr Geoff Taverner, Anaesthetics
Contact details:	01872 253197

Information Category	Detailed Information
1. **Policy Aim - Who is the Policy aimed at?** (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	All Anesthetist consultants and trainees
2. **Policy Objectives**	To reduce the incidence of post operative delirium (POD) and cognitive decline POCD) and to guide their management.
3. **Policy Intended Outcomes**	A reduction in anaesthetic causes of POCD and POD
4. **How will you measure each outcome?**	These are not amenable to measurement
5. **Who is intended to benefit from the policy?**	Patients having surgery within RCHT

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** Anaesthetic consultants and trainees.
6c. What was the outcome of the consultation?	Ratification of the guideline.
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	No
Sex (male or female)	No	No
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	No
Race	No	No
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	No
Religion or belief	No	No
Marriage and civil partnership	No	No

Protected Characteristic	(Yes or No)	Rationale
Pregnancy and maternity	No	No
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	No

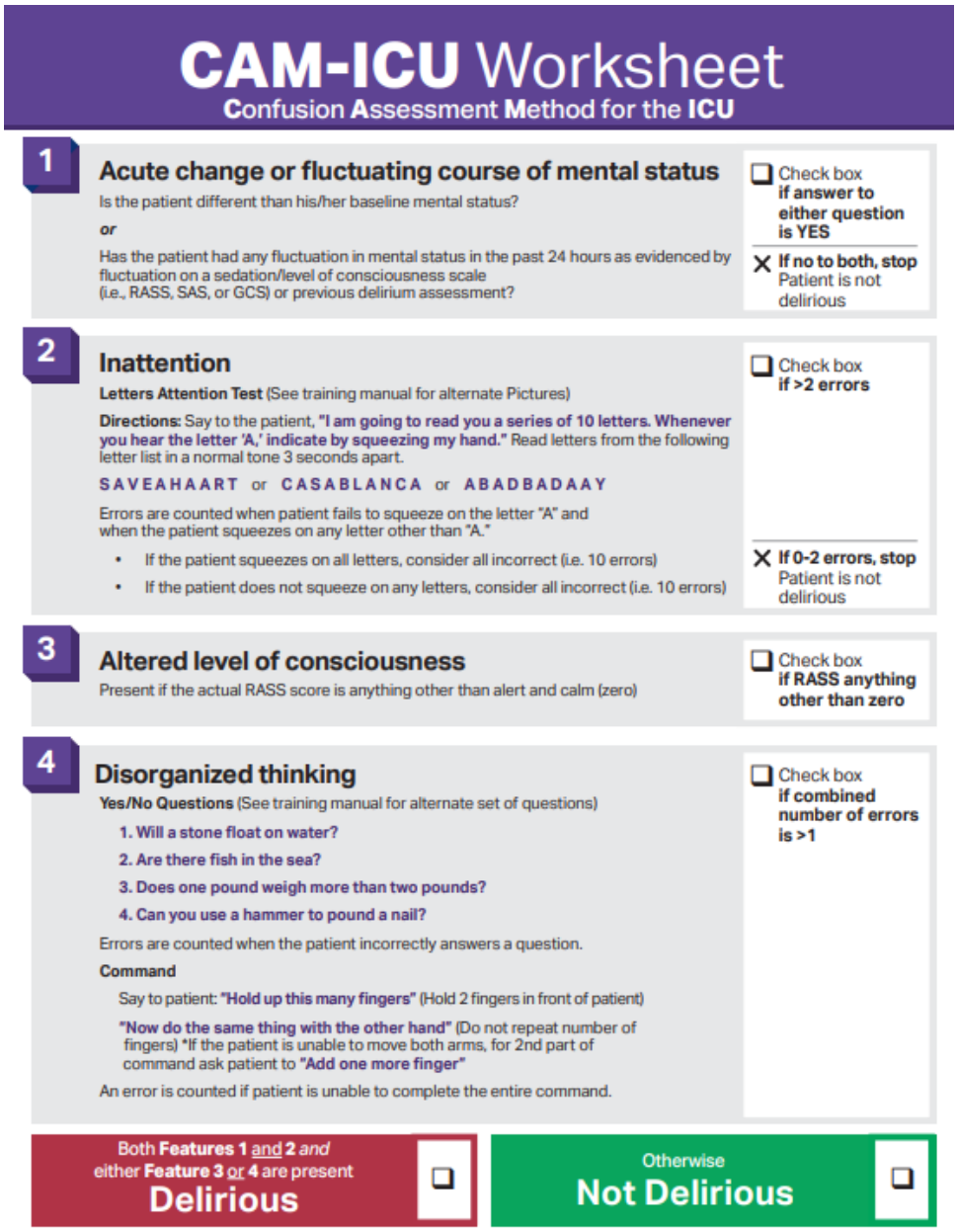
A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Dr Geoff Taverner, Anaesthetics.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis

Appendix 3. [CAM-ICU worksheet]



CAM-ICU Worksheet

Confusion Assessment Method for the ICU

1 Acute change or fluctuating course of mental status

Is the patient different than his/her baseline mental status?

or

Has the patient had any fluctuation in mental status in the past 24 hours as evidenced by fluctuation on a sedation/level of consciousness scale (i.e., RASS, SAS, or GCS) or previous delirium assessment?

☐ Check box **if answer to either question is YES**

✕ **If no to both, stop** Patient is not delirious

2 Inattention

Letters Attention Test (See training manual for alternate Pictures)

Directions: Say to the patient, **"I am going to read you a series of 10 letters. Whenever you hear the letter 'A,' indicate by squeezing my hand."** Read letters from the following letter list in a normal tone 3 seconds apart.

S A V E A H A A R T or C A S A B L A N C A or A B A D B A D A A Y

Errors are counted when patient fails to squeeze on the letter "A" and when the patient squeezes on any letter other than "A."

- If the patient squeezes on all letters, consider all incorrect (i.e. 10 errors)
- If the patient does not squeeze on any letters, consider all incorrect (i.e. 10 errors)

☐ Check box **if >2 errors**

✕ **If 0-2 errors, stop** Patient is not delirious

3 Altered level of consciousness

Present if the actual RASS score is anything other than alert and calm (zero)

☐ Check box **if RASS anything other than zero**

4 Disorganized thinking

Yes/No Questions (See training manual for alternate set of questions)

1. **Will a stone float on water?**
2. **Are there fish in the sea?**
3. **Does one pound weigh more than two pounds?**
4. **Can you use a hammer to pound a nail?**

Errors are counted when the patient incorrectly answers a question.

Command

Say to patient: **"Hold up this many fingers"** (Hold 2 fingers in front of patient)

"Now do the same thing with the other hand" (Do not repeat number of fingers) *If the patient is unable to move both arms, for 2nd part of command ask patient to **"Add one more finger"**

An error is counted if patient is unable to complete the entire command.

☐ Check box **if combined number of errors is >1**

Both **Features 1** and **2** *and* either **Feature 3** or **4** are present **Delirious** ☐

Otherwise **Not Delirious** ☐

RASS score

Richmond Agitation & Sedation Scale				CAM-ICU
Score	**Description**			
+4	Combative	Violent, immediate danger to staff		RASS ≥ -2 Proceed to CAM-ICU assessment
+3	Very agitated	Pulls at or removes tubes, aggressive		
+2	Agitated	Frequent non-purposeful movements, fights ventilator		
+1	Restless	Anxious, apprehensive but movements not aggressive or vigorous		
0	Alert & calm			
-1	Drowsy	Not fully alert, sustained awakening to voice (eye opening & contact >10 secs)	Voice	
-2	Light sedation	Briefly awakens to voice (eye opening & contact < 10 secs)		
-3	Moderate sedation	Movement or eye-opening to voice (no eye contact)		RASS < -2 STOP Recheck later
-4	Deep sedation	No response to voice, but movement or eye opening to physical stimulation	Touch	
-5	Un-rousable	No response to voice or physical stimulation		

Appendix 4. References

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