Reference Number:	FOI/2020/204
From:	Other
Date:	24 July 2020
Subject:	Delirium Assessments in non-ICU Patients

Q1 Do you have use a delirium assessment tool as part of clinical practice for your non-ICU patients in your trust/hospital? YES / NO

A1 Yes

Q2 If yes, in which clinical settings are they in place?
  a. Acute general medicine/Medicine of the Elderly
  b. Emergency Department
  c. Surgical wards
  d. Other (please specify):

A2 a. Acute general medicine/Medicine of the Elderly
  d. Surgical Wards

Q3 Which, if any, validated tools are included in your written (paper or electronic) policies?
  a. 4 'A's Test (4AT)
  b. Confusion Assessment Method
  c. Single Question in Delirium
  d. Other (please specify):

A3 b. Confusion Assessment Method

Q4 Do you have a pathway or guidelines relating to delirium? YES / NO
If yes, in which year were they written?
Please attach an electronic copy.

A4 Yes, written in 2017. Please see copy attached FOI2020204

Q5 Have staff or students performed any audits or quality improvement projects on delirium detection?
If so, please attach an electronic copy of reports or posters.

A5 Two medical students have conducted reviews in to delirium screening within Critical Care, one in 2017 and one in 2019. Please see copies attached FOI2020204 Report 1 and FOI2020204 Report 2.

The Trust has also formulated a delirium e-learning tool for all staff.

A retrospective audit of the use of a novel electronic Delirium Assessment and Management Tool in a cardiothoracic critical care

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Introduction

Delirium is a fluctuating clinical syndrome frequently encountered in a critical care environment which is characterised by an altered level of consciousness, inattention and cognitive impairment. It is usually reversible and has an acute onset but can lead to the development of serious complications such as increased length of hospital stay and increased mortality.[1] A systematic review by Bathula and Gonzales reported delirium rates of approximately 30% on intensive care unit (ICU) admission which doubled at ICU discharge while other reports have encountered higher incidence rates in those who have undergone cardiac surgery with a figure of up to 50%.[2][3] Delirium is divided into hyperactive, hypoactive or mixed subtypes. Symptoms of hyperactive delirium include restlessness, agitation and aggression whereas the hypoactive state may make patients withdrawn, apathetic and drowsy.[1]

Key risk factors highlighted in the National Institute for Health and Care Excellence (NICE) quality standard include those aged 65 years and older, current hip fracture, cognitive impairment (past or present) and/or dementia and severe illness present. There has been less research investigating risk factors for delirium in ICU compared to non-ICU patients but a study by Ouimet et al. revealed that hypertension, alcoholism and exposure to analgesics and sedatives increased the risk of developing delirium in ICU.[4] In a prospective study in patients undergoing elective cardiac surgery, it was found that independent risk factors of delirium included a lower Mini-Mental Status Examination score, increased length of cardiopulmonary bypass and postoperative systemic inflammation.[5]

The identification of delirium in critically ill patients is of utmost importance in order for complications or worsening of the patient's condition to be prevented. Complications can impact the patient's quality of life for a prolonged period of time due to the association with cognitive decline, poor functional outcomes and increased morbidity and mortality. There is a risk of noncompliance in management

of the patient's overall care such as cooperating during physiotherapy sessions postoperatively which would ultimately delay discharge and return to normal health. Owing to the fluctuating course and different subtypes, delirium may go unnoticed in almost 75% of cases with more patients experiencing the hypoactive subtype thus requiring the use of validated tools to screen for the syndrome.[6]

The Confusion Assessment Method (CAM) was developed as a diagnostic tool which is used to screen for delirium, thus enabling nonpsychiatric clinicians to recognise delirium in a critical care setting by assessing characteristics such as inattention and disorganised thinking. Due to poor clinical outcomes, it is essential that rigorous monitoring and preventative strategies are implemented as pharmacological therapy has no role in the treatment of delirium other than to manage certain symptoms such as agitation and restlessness. The CAM tool has been tailored to ensure appropriate use in critical care areas, thus the CAM-ICU is more suited to assess nonverbal patients, such as those who are mechanically ventilated. The CAM algorithm and CAM-ICU tool outline the diagnostic criteria by observing four domains: the nature of onset, presence of inattention or disorganised thinking and an altered level of consciousness (shown by Figure 1). A positive screening result would be denoted by the presence of a fluctuating course (or acute onset) and inattention accompanied by disorganised thinking or an altered level of consciousness.[7][8]

CAM-ICU Worksheet

Feature 1: Acute Onset or Fluctuating Course Positive if you answer 'yes' to either 1A or 1B.	Positive	Negative
1A: Is the pt different than his/her baseline mental status? Or 1B: Has the patient had any fluctuation in mental status in the past 24 hours as evidenced by fluctuation on a sedation scale (e.g. RASS), GCS, or previous delirium assessment?	Yes	No
Feature 2: Inattention Positive if either score for 2A or 2B is less than 8. Attempt the ASE letters first. If pt is able to perform this test and the score is clear, record this score and move to Feature 3. If pt is unable to perform this test or the score is unclear, then perform the ASE Pictures. If you perform both tests, use the ASE Pictures' results to score the Feature.	Positive	Negative
2A: ASE Letters: record score (enter NT for not tested) 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. **S A V E A H A A R T** Scoring: Errors are counted when patient fails to squeeze on the letter "A" and when the patient squeezes on any letter other than "A."	Score (out of 10): _____	
2B: ASE Pictures: record score (enter NT for not tested) Directions are included on the picture packets.	Score (out of 10): _____	
Feature 3:Disorganized Thinking Positive if the combined score is less than 4	Positive	Negative

3A: Yes/No Questions
(Use either Set A or Set B, alternate on consecutive days if necessary):
     Set A   Set B
 1. Will a stone float on water?   1. Will a leaf float on water?
 2. Are there fish in the sea?   2. Are there elephants in the sea?
 3. Does one pound weigh more than 3. Do two pounds weigh
   two pounds?   more than one pound?
 4. Can you use a hammer to pound a nail? 4. Can you use a hammer to cut wood?
 	
Score ___(Patient earns 1 point for each correct answer out of 4)
 	
3B:Command
Say to patient: "Hold up this many fingers" (Examiner holds two fingers in front of patient) "Now do the same thing with the other hand" (Not repeating the number of fingers). *If pt is unable to move both arms, for the second part of the command ask patient "Add one more finger)
 	
Score___(Patient earns 1 point if able to successfully complete the entire command)
	Combined Score (3A+3B): _____ (out of 5)	

Feature 4: Altered Level of Consciousness Positive if the Actual RASS score is anything other than "0" (zero)	Positive	Negative
Overall CAM-ICU (Features 1 and 2 and either Feature 3 or 4):	Positive	Negative

Figure 1- The validated CAM-ICU worksheet[9]

The Delirium Assessment and Management Tool is a novel electronic document recently developed at the Liverpool Heart and Chest Hospital that includes the widely used CAM-ICU and trust-specific tailored interventions recommended by NICE. Tailored interventions are designed to reduce the duration of existing delirium and also to aid in the prevention of the development of delirium. They identify

potential causes and contributing factors of delirium which should be documented and regularly reviewed by nursing staff. These factors include the following:

- Dehydration
- Disorientation in time or place
- Constipation
- History of recent smoking, alcohol or drug use
- Hypoxia
- Sepsis
- Poor mobility
- Pain
- Polypharmacy
- Sensory issues such as the need for glasses or hearing aids
- Poor sleep

These non-pharmacological interventions are reinforced by the five quality statements also produced by NICE guidelines pertaining to the identification and management of delirium. The third statement includes the need to provide tailored interventions for those at risk to reduce the requirement to prescribe antipsychotic medication.[10]

Overall, the key focus of this study is to address whether the Delirium Assessment and Management Tool has been performed and completed during the patient's stay in critical care over a period of a week, provided the patient has remained in critical care for over 24 hours. Data was collected from electronic notes at the Liverpool Heart and Chest Hospital where the trust policy recommends the document should be completed and tailored interventions should be reviewed by the by the nursing staff once per shift (early, late and night) in order to detect and manage delirium or reduce the risk of developing delirium. As well as recording whether this newly developed tool was being completed at the correct frequency within the one week period, the other objectives are to note the number of partially completed forms and in which shift the greatest number of forms were completed by the nurses.

Method

Data was collected retrospectively using electronic notes within the Allscripts Gateway software from inpatients at the Liverpool Heart and Chest Hospital in those who required a stay in critical care areas (ICU and POCCU). A one-week arbitrary timeframe was chosen from 25th September 00:00 to 1st October 23:59; the nurses (who have received training on how to use the tool) should have completed the form for all patients who required a stay of over 24 hours in critical care and this should have been completed once per shift, totalling three assessments per 24 hour period. The age of each patient, the length of stay in ICU or POCCU, when the patient was transferred to and from POCCU and ICU and the number of partially completed forms were noted during the one week period. In addition, the nursing and medical notes were reviewed for any mention of delirium and whether antipsychotic medication was commenced and the indication for it. The data was tabulated into an Excel spreadsheet for analysis.

Results

The data collected showed that the total number of patients who stayed in critical care for over 24 hours in the one week period was 47, with a mean length of hospital stay of 13.12 days of which a mean of 2.62 days were spent in critical care. The average age of the patients was 67.45 years. In total, 349 delirium assessment and management forms should have been completed but only 76 (21.78%) forms had been filled out within the week in critical care. The data revealed that 11 patients (23.40%, n=47) did not have a form done at all and 10 out of 36 patients had the first form completed in the first 24-48 hours of their stay in critical care. There was also a higher proportion of forms that were incompletely filled out as they did not include assessment for tailored interventions as shown by the table below.

The total number of forms that should have been filled	The total number of forms filled within a week	The number of required assessments where the form was partially	The number of required assessments where the form was fully	The number of forms completed during the early shift out of the total	The number of forms completed during the late shift	The number of forms completed during the night shift

within a week		completed	completed	number of forms filled within a week		
349	76 (21.78%)	51 (14.61%)	25 (7.16%)	32 (42.11%)	21 (27.63%)	23 (30.26%)

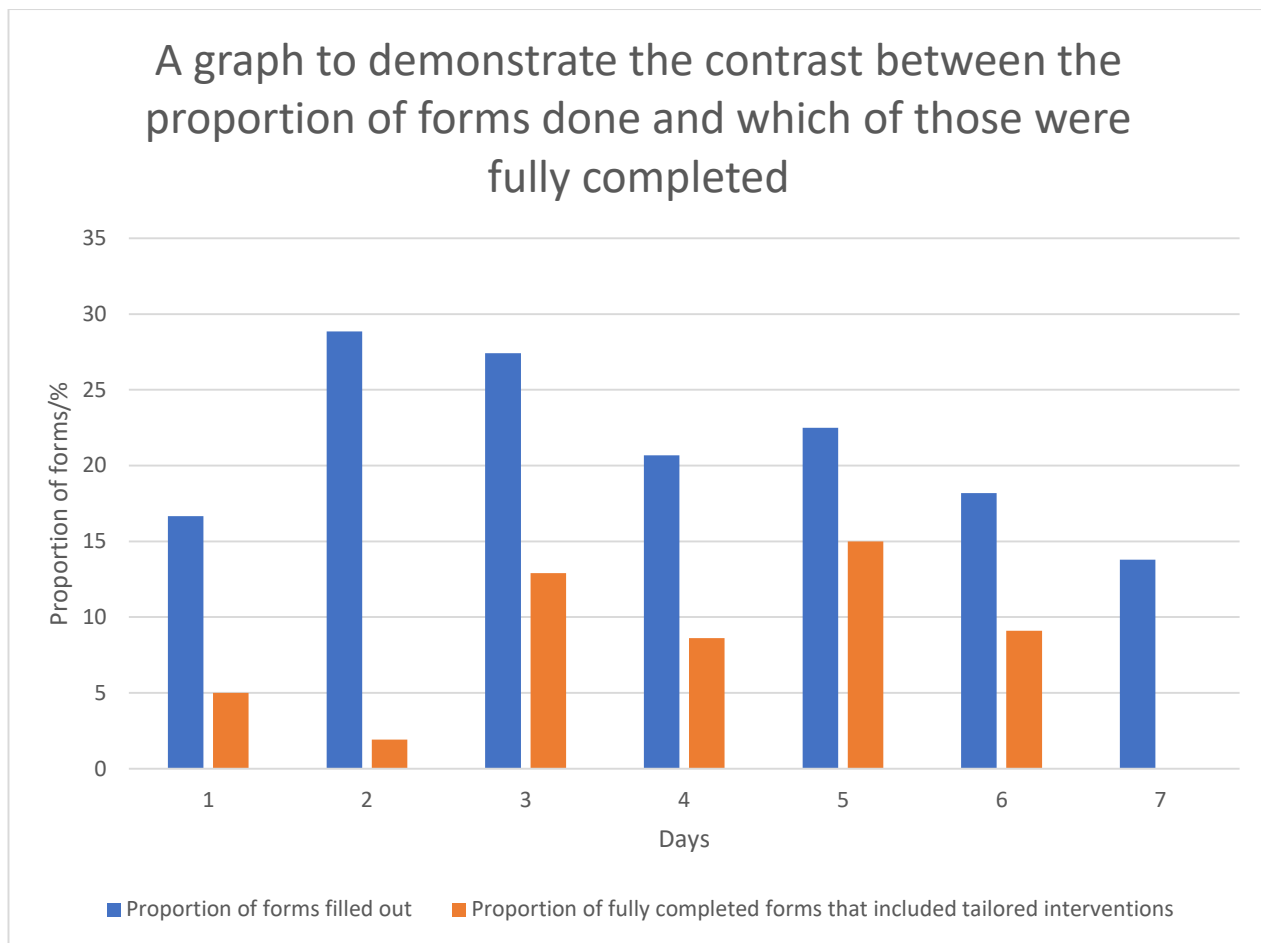*Table 1- A table to show the number of forms fully and partially completed and those done during each shift*

The number of patients who had the forms completed increased over the first two days and thereafter decreased in the latter part of the week with the number of negative results (i.e. patients who had no signs of delirium as mentioned on the form) also reducing. This is highlighted in Figure 2 below which also shows comparatively fewer positive results (i.e. patients who showed signs of delirium) on most days. Furthermore, it was important to assess the number of completely filled forms including a list of tailored interventions noted which would reduce the incidence of delirium. Overall, there were a lower proportion of forms that were fully completed as shown by figure 3.
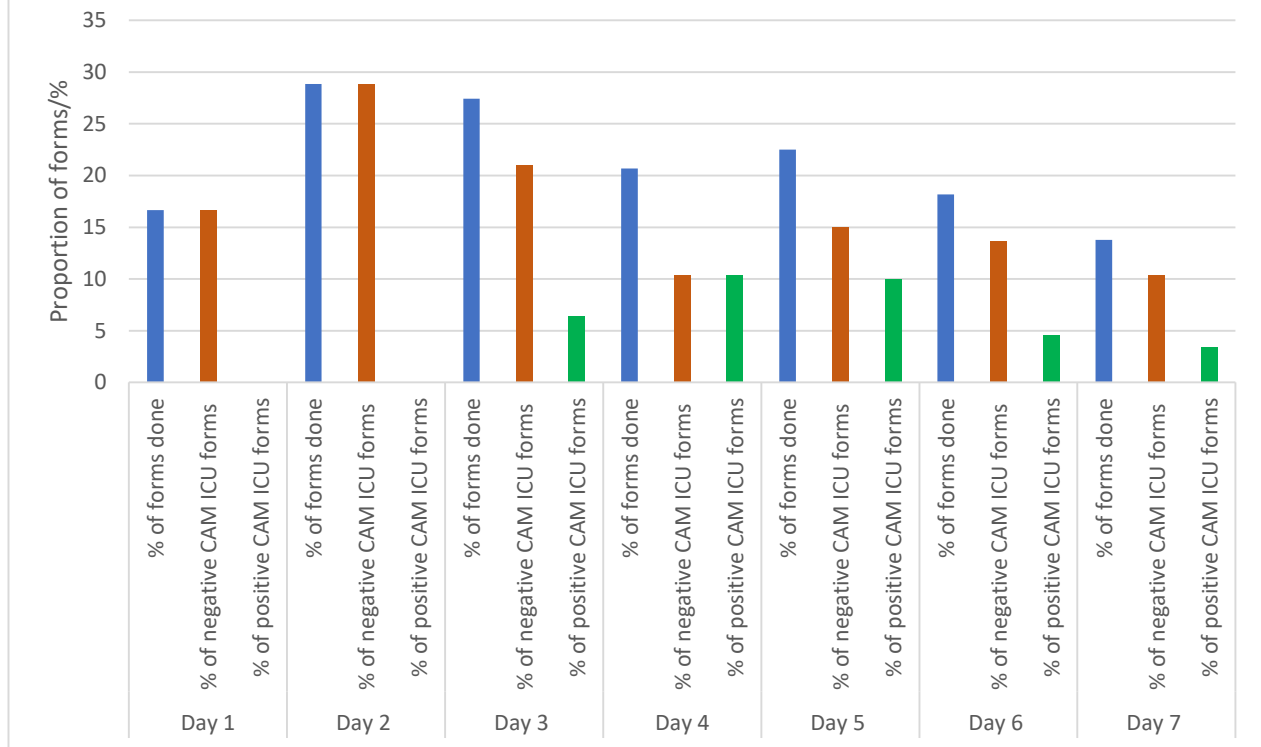
Figure 2 shows the percentage of forms completed while on critical care and the results.

A graph to demonstrate the contrast between the proportion of forms done and which of those were fully completed

Legend: ■ Proportion of forms filled out   ■ Proportion of fully completed forms that included tailored interventions

Figure 3 illustrates the percentage of forms filled out and the proportion of those fully completed including tailored interventions

Discussion

The presence of delirium post cardiac surgery has significant effects on the patient's physical and mental health which purports the need for an effective strategy for prevention. The CAM ICU worksheet has been shown to have a high sensitivity and specificity thus making it an ideal screening tool.[11] Simple bedside interventions have been proven to reduce delirium rates such as re-orientating the patient, sleep enhancement, family education, the use of hearing aids and glasses if required and early mobilisation. There are, however, limited studies on the prevention of delirium using non-pharmacological and pharmacological therapy in those undergoing elective cardiac surgery but generally non-pharmacological interventions are considered first line as well as managing risk factors.[2] It is important to gain an understanding of the frequency at which the Delirium Assessment and Management

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Tool is being used and whether they are being completed. This audit will also enable us to explore why some of the forms are only partially filled and therefore create steps to improve completion rates.

The data revealed that 21.78% of forms were filled out of the 349 forms that should have been done during the one-week period. A significant proportion of patients did not have a form completed at all with a figure of 23.40%. Out of the total number of forms filled out in the course of the week, 14.61% were only partially completed while approximately half the proportion was fully completed with a figure of 7.16%. The range of the proportion of forms filled was 13.79-28.85% and the range of those which were fully completed was 0-15% according to figure 3. These findings mainly illustrate the low completion rates of the form and that majority of forms did not have tailored interventions mentioned. While this was not a qualitative study, members of the nursing staff gave reasons for low compliance rates when filling out the form. Some nurses would fill out the first section which outlines whether there has been an acute change from baseline mental status or if the patient's mental status has fluctuated during the past 24 hours and if negative (i.e. no signs of delirium), they would neglect to fill the rest of the form. Other reasons for lack of completion could be that time is a limiting factor when the patient's needs are complex, the nurses may require more education on recognising delirium and administering the tool, or they may feel that the tool does not contribute to patient care as tailored interventions may not be routinely carried out. An observational study on the implementation of CAM-ICU in trauma patients carried out by Soja et al. revealed that 47.6% of staff members felt that the CAM ICU results did not affect treatment plans or medication regimes formulated by clinicians which led to inconsistencies in preventing and treating delirium.[12]

Furthermore, the greatest number of forms were completed in the early shift which could be since a negative result may lead to a perception that the completion of forms in the later shifts is unnecessary. Further qualitative research, however, would be required to substantiate this inference. The number of negative forms was greater than the number of positive forms except for day 4 but a causal relationship between the presence of delirium and usage of the tool cannot be proven without further research using a larger cohort of patients and accounting for confounding factors. Lastly, the proportion of assessments carried out increased in the first two days and

results then showed a general decrease. The reason for this is unclear but could be due to increased workload during the course of the week therefore omitting later assessments. This implication would only be conclusive if the audit had been carried out over a longer period of time to assess the weekly trend as well as documenting the patients' other needs during the same time frame.

This study did not have any selection bias as a patient list within an arbitrary window was provided prior to data collection but the patients with risk factors for delirium were not identified. For future audits, it would be important to gather information regarding the number of risk factors each patient has in order to observe whether there is an increased association with a positive result using the tool and if tailored interventions (if implemented) helped to aid prevention or management.

Other future endeavours to gather information could include a survey or evaluation of the tool to explore areas for improvement and difficulties encountered when completing the form. In addition, dissemination of results amongst the nursing staff may highlight the large proportion of incomplete forms and lack of completion per shift. Further education or e-learning modules as well as bedside pocket cards with concise points on administering the tool may help to remind nurses to complete the form. Once some of these changes have been implemented, a repeat of the audit would enable us to observe whether there has been an increase in completion of the tool and frequency of usage thus recognising and preventing delirium more effectively.

Conclusion

Delirium is a common clinical syndrome associated with significant adverse outcomes that can affect critically ill patients in the short-term and long-term. The CAM-ICU is well validated for the detection of delirium and the newly developed Delirium Assessment and Management Tool is aimed at enhancing detection and early prevention within the trust. Repeating the audit after implementing the changes outlined and increasing compliance with the tool will provide further insight into the effectiveness of the tool. Overall, the objectives of the audit were met and areas for improvement were identified with particular emphasis on developing strategies to

ensure the completion and implementation of tailored interventions, as this had not been achieved in over 90% of forms for patients in critical care during the week.

References

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Impact of a Nursing Education Programme on Delirium Screening in a Cardiothoracic Intensive Care Unit

SAMP 2

Abstract:

Introduction & Aims:

Delirium is a common problem in the critical care setting that predicts poorer patient outcomes as a result. Screening can provide prompt detection of delirium on ICU to enable treatment and reduce the sequale of prolonged delirium on patients. This re-audit aimed to assess the impact of a nursing education programme on the completion of CAM-ICU screening.

Method:

Retrospective audit to evaluate completion of the CAM-ICU screening tool in a tertiary cardiothoracic intensive care unit against international PADIS (2018) recommendations. All patients in the critical care environment for over 24 hours were included in the study population. Electronic patient records were used to collect data on CAM-ICU and Tailored Intervention (TI) completion.

Results:
CAM-ICU completion was found moderate (50%) and the completion of TIs only occurred in 60.8% of patients, dropping to 9.7% when the CAM-ICU was unable to complete. This re-audit post educational intervention has shown a significant improvement in the completion of delirium screening using the structured assessment tool and a 7 fold increase in the rate of completion of TIs.

Conclusion:
This closed loop audit has demonstrated that the implementation of a nursing education programme has significantly improved the frequency of CAM-ICU completion and the completion of TIs.

Introduction:

Delirium is an acute confusional state defined as a "disturbance of consciousness characterised by acute onset and fluctuating course of inattention accompanied by either a change in cognition or perceptual disturbance, so that a patient's ability to receive, process, store and recall information is impaired" (1). The changes that occur in delirium are described in Table 1 (2).

Table 1: Features of Delirium			
Cognitive Function	**Perception**	**Physical Function**	**Social Behaviour**
Decreased concentration Slowed responses Confusion	Visual or auditory hallucinations	Reduced mobility Restlessness Agitation Appetite changes Sleep disturbance	Lack of co-operation Withdrawal Altered mood and/or attitude

Delirium can be described as hyperactive, hypoactive or mixed (3). In hyperactive delirium patients present with agitated, paranoid and restless behaviour. In contrast, hypoactive delirium patients become quiet and withdrawn and therefore recognition of this sub-type is more difficult and requires active monitoring. Mixed type occurs when patients fluctuate between the two sub-types.

Risk factors for the development of delirium can be non-modifiable and therefore can not be alerted by intervention, such as advanced age, baseline cognitive impairment and the presence of a number of co-morbid conditions especially chronic liver or renal disease (2, 4). Modifiable risk factors for delirium are amenable to intervention and include sensory impairment (mainly a disruption to hearing or vision that can be addressed with appropriate aids), immobility, sleep depravation, pain, surgery, intercurrent illness (infection), emotional distress, sedatives and use of invasive devices (4, 5). Preventative strategies for delirium focus on minimising modifiable risk factors.
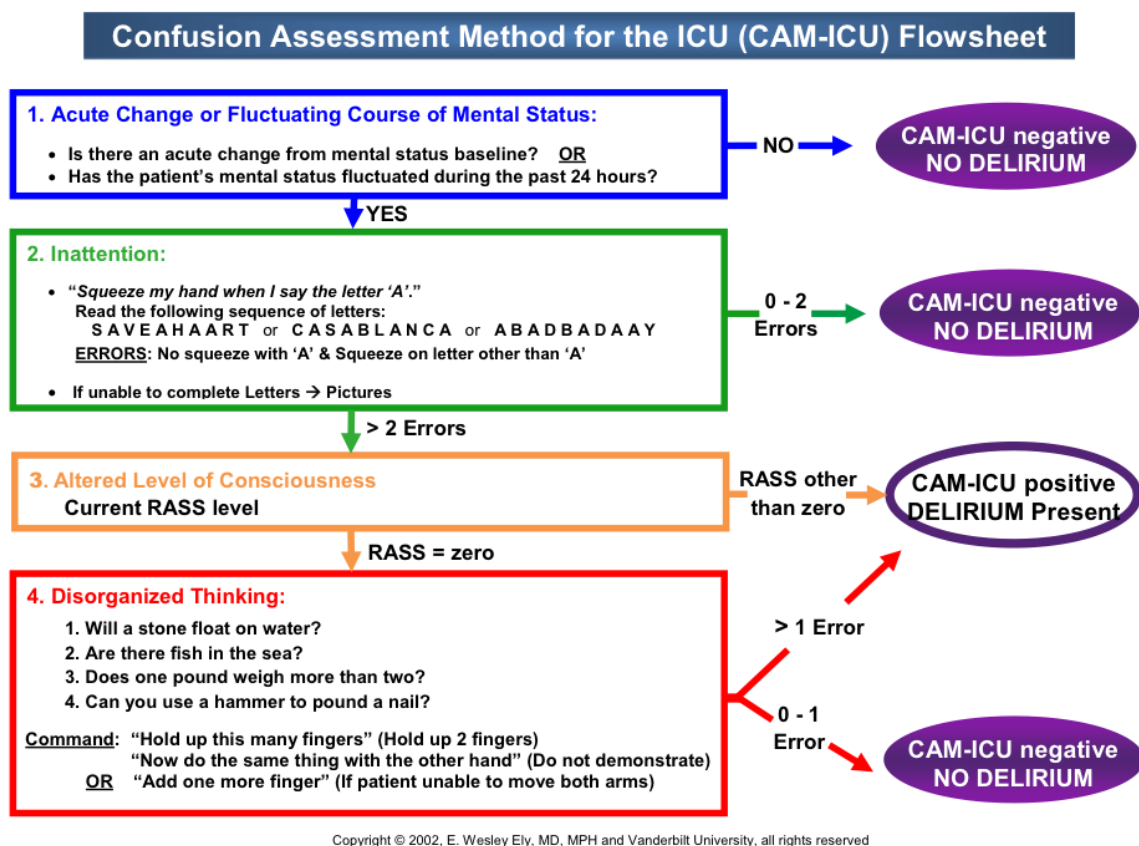
Delirium occurs across all healthcare settings; point prevalence of delirium in hospital inpatients has been estimated at approximately 20% (6). The incidence of delirium within

intensive care units has been found to be as high as 85% in mechanically ventilated patients and between 20% – 60% in non-ventilated patients (4, 5, 7, 8). The higher prevalence of delirium within ICU is a result of increased risk factors both non-modifiable and modifiable being present in this cohort of patients. Cardiothoracic ICUs have additional specific risk factors as a result of the nature of treatments provided such as increased requirements for mechanical support (compared to non-cardiac ICUs), transcutaneous pacing, increased immobility (compared to non-cardiac ICUs), use of therapeutic hypothermia, use of anti-arrhythmic agents, patients with heart failure and patients post high-risk surgical procedures (4).

Delirium is a poor prognostic indicator for ICU patients associated with increased length of hospital stay, increased mortality risk, prolonged mechanical ventilation and a higher incidence of cognitive impairment after discharge compared with non-delirious ICU patients (7). A dose-dependent relationship has been described between prolonged hospitalisation and mortality risk with the duration of delirium with each subsequent day of delirium increasing risk of prolonged hospitalisation by 20% and mortality by 10% therefore early detection and management is key to improving patient outcomes (7, 8).

Screening tools are key to allowing for early detection of delirium, studies have shown that without the use of screening tools signs of delirium go unrecognised, this is especially true in the hypoactive sub-type (9). There are two main tools used to screen for delirium in critical care the Confusion Assessment Method for the ICU (CAM-ICU) (10) and the Intensive Care Delirium Screening Checklist (ICDSC) (11). The CAM-ICU is the current tool recommended by NICE guidelines (2). The CAM-ICU was developed in the 1990's and intended for use by non-psychiatric healthcare professionals as a bedside screen for delirium. A diagnosis of delirium is determined by the presence or absence of four features; acute onset or fluctuating course, inattention, altered level of consciousness and disorganised thinking. The CAM-ICU assessment flowsheet is shown in Figure 1. Importantly the CAM-ICU is a part of overall consciousness assessment, consciousness is measured using the Richmond Agitation-Sedation Scale (RASS) patients are required to have a RASS above or equal to -3, meaning that they are responsive to voice, in order for the CAM-ICU assessment to take place.

Confusion Assessment Method for the ICU (CAM-ICU) Flowsheet

1. Acute Change or Fluctuating Course of Mental Status:
- Is there an acute change from mental status baseline?   **OR**
- Has the patient's mental status fluctuated during the past 24 hours?

— **NO** → CAM-ICU negative NO DELIRIUM

↓ **YES**

2. Inattention:
- *"Squeeze my hand when I say the letter 'A'."*
  Read the following sequence of letters:
  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: No squeeze with 'A' & Squeeze on letter other than 'A'
- If unable to complete Letters → Pictures

0 - 2 Errors → CAM-ICU negative NO DELIRIUM

↓ **> 2 Errors**

3. Altered Level of Consciousness
Current RASS level

RASS other than zero → CAM-ICU positive DELIRIUM Present

↓ **RASS = zero**

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

Command: "Hold up this many fingers" (Hold up 2 fingers)
"Now do the same thing with the other hand" (Do not demonstrate)
OR "Add one more finger" (If patient unable to move both arms)

> 1 Error → CAM-ICU positive DELIRIUM Present

0 - 1 Error → CAM-ICU negative NO DELIRIUM

Figure 1: CAM-ICU Flow sheet (3)

Guidelines for Delirium Screening:

The 2018 Pain, Agitation/ sedation, Delirium, Immobility (rehabilitation/mobilization), and Sleep (disruption) (PADIS) guidelines recommend routine monitoring of delirium in all adult ICU patients every shift (every 8-12 hours) and as needed (12). In addition, The Faculty of Intensive Care Medicine developed Core Standards for Intensive Care Units in which they state that all patients in critical care should be screened for delirium, which should be undertaken using a "standardised assessment tool and use a multi-professional, multi-modal approach (13)." NICE recommend that patients should be assessed for clinical risk factors for delirium within 24 hours of admission and that if suspected clinical diagnosis of delirium should be done using the CAM-ICU assessment tool (2). Guidelines also recommend the use of tailored interventions for all patients at risk of delirium. NICE recommend the use of a multicomponent tailored intervention package that addresses the individual patients risk factors for the development of delirium (2). The list of potential

tailored interventions to be used in this trust are displayed in Appendix 1.

Aims:

➤ To assess whether this critical care environment was compliant with the current guidelines on a minimum of 12-hourly CAM-ICU completion.

➤ To assess whether this critical care environment was compliant with the current guidelines on the completion of tailored interventions based on patients individual risk factors for delirium.

Method:

This was a retrospective audit to assess the completion of routine delirium screening in the critical care environment of a cardiothoracic centre. The audit was carried out using the SQUIRE framework (14) (Figure 1) to ensure that the key components of clinical audit were performed. Data collection was carried out by LW retrospectively using electronic patient records on which all CAM-ICUs are completed. We aimed to collect data on a pre-set number of 30 patients, as this number was agreed upon to be representative to this hospitals critical care population and would produce comparable data to the first audit completed. Data was collected on patient demographics, number of patient days in ICU, number and time of CAM-ICU completions and the completion of tailored interventions (TIs). Data was assessed from the start of a week on critical care until the threshold of 30 patients was reached. Exclusion criteria from the study was a stay in critical care for less than a 24 hour period, all other patients were included in the data collection.

Step in the Audit Cycle	Description
Step 1: Define the standard	Determine the criteria for the current best practice. Common standards include: NICE guidance, Royal College Guidance, national service frameworks, local policies etc.
Step 2: Collect the data	Identify what data needs to be collected, how, and who is going to collect it. Decide whether the data will be collected prospectively or retrospectively and what sample size is needed.
Step 3: Compare current practice with standard	Analyse the data collected (actual performance within the department) with the set standard. Evaluate how well the standards were met and if not, identify reasons for this.
Step 4: Implement a change to improve service	Present the results to the relevant multidisciplinary teams in your organisation. Develop, agree and implement an action plan to bring actual practice closer to the standard.
Step 5: Close the audit cycle loop *(repeat steps 1-4)*	After time for the intervention to take effect, collect new data and determine the impact. Then comparing again with the standard and establish if there was an improvement in practice.

Figure 1: SQUIRE framework used to structure the audit (14)

Results:

Patient Demographics:

This study looked at the first 30 patients in critical care setting for over a 24 hour period this represented 126 patient days. The median age in our study population was 71 (Range 21-80 years). The mean number of days stayed in critical care was 4.2 days.
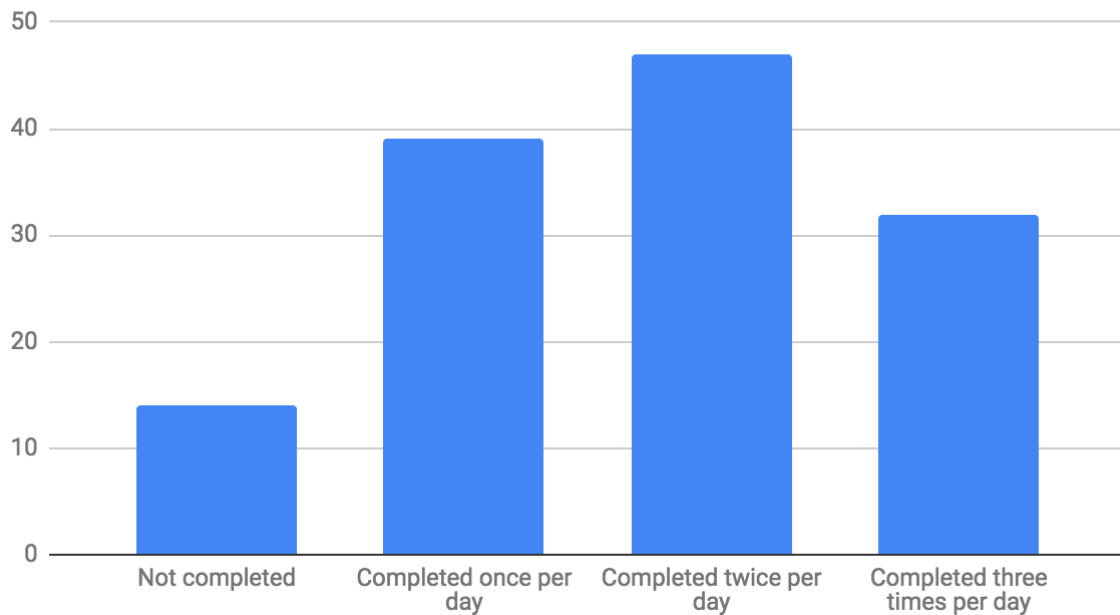
Guideline Compliance for CAM-ICU completion:

Minimum compliance to PADIS guidelines for delirium screening requires 12 hourly completion of a structured screening tool such as the CAM-ICU. Therefore for 126 patient days the number of CAM-ICUs completed should equal to 252 CAM-ICUs, 126 completed in the day shift (08:00 – 20:00) and 126 completed in the night shift (20:00 – 08:00). A subset of patients were deemed by nursing staff as unable to assess (UTA) due to the level of sedation, this therefore would be still be considered as an attempted CAM-ICU completion. The frequency of CAM-ICUs completed by nursing staff varied from zero to three or more times per day, shown in Figure 2. The total number of attempted and completed CAM-ICUs during the recorded 126 patient days was 219, however this figure cannot be compared to the recommended guidelines due to a proportion of patients having more than 12-hourly CAM-ICU completions. In order to assess guideline compliance the number of attempted or completed CAM-ICUs up to the level of twice per day were compared to the calculated number of CAM-ICUs that would be completed in total compliance, Table 1 displays these results.

Recommended number of CAM-ICUs to be completed in 126 patient days (Twice in 24 hours)	Number of attempted and completed CAM-ICUs Day Shift	Number of attempted and completed CAM-ICUs Night Shift	Total number of attempted and completed CAM-ICUs (maximum of 2 per patient day)	Number of compliant patient days*
252	96	80	176 (69.8% of total recommended number)	63 (50% of patient days compliant)
* A compliant day is when two CAM-ICUs are completed once per day and once per night shift				

Table 1: CAM-ICU completion

Number of CAM ICUs Completed Per Day

Figure 2: Frequency of CAM-ICU completion

Guidelines recommend that the screening is carried out at 12 hourly intervals, that would correlate with ICU nursing staff day and night shifts. The nursing shifts in the studied hospital critical care are day shifts that run from 07:45 to 20:00 and night shifts that run from 20:00 – 7:45. Therefore to assess compliance practically a compliant patient day was counted as at least 1 CAM-ICU attempted or completed within each day and night shift for that 24 hour period. The results from this are that there were 63 compliant patient days out of the 126 patient days assessed resulting in a 50% compliance rate to the current recommendations.

Completion of Tailored Interventions:

A key component of delirium management is performing simple interventions tailored to individual patients to reduce the stimuli for delirium progression. After nurses complete the CAM-ICU they are then directed to complete the tailored interventions (TI) form (Appendix 1). The completion rate of TIs in all attempted and completed CAM-ICUs was 60.8% (132/219), however the rate at which TIs were completed dropped to only 9.7% (3/31) when patients were deemed unable to assess.

Informal Feedback:

During the period of data collection LW attempted to collect qualitative data via informal discussions with the nursing staff on their opinions on the CAM-ICU regarding ease of completion, frequency of completion, purpose of completion and purpose of the TIs. All nurses believed that the CAM-ICU was easy to complete using the electronic patient record system. However there appeared to be confusion surrounding two key factors; the guidelines for frequency of completion and the purpose of completing the TIs, especially if patients are deemed unable to assess.

Discussion:

In this cardiothoracic critical care environment adherence to the PADIS 2018 guideline for 12-hourly CAM-ICU completion occurred on 50% of patient days, demonstrating an improvement in comparison to the initial audit carried out this centre in 2017 as a result of a nursing education intervention. The results from this study are not directly comparable to the initial audit as a change in guideline recommendations reduced the recommended delirium screening from 8-hourly to 12-hourly. Results from the initial audit displayed a low compliance rate of 21.8%, however if they are interpreted according to current guidelines the compliance from the initial audit is 32.7%. Therefore post-intervention the compliance to guidelines has improved from 32.7% to 50%. In addition 7.16% had tailored interventions complete in comparison to 60.8% post educational intervention, displaying a 7 fold increase in completion of tailored interventions.

The results from this study demostrate that our centre is in line with the current standard of clinical practice, however is not yet reaching the reccomended gold standard. Similar results have been shown in previous studies on delirium screening, Giraud et al conducted a study across nine UK based ICUs (522 patient days) and found that routine screening (twice per 24 hours) was completed on 52% of patient days (15). Interestingly, Giraud et al compared the prevalence of screening in patients that had previously been diagnosed with delirium and found this to have a much higher completion rate at 82%. This could suggest that there is confusion around when and on whom screening should be completed, which could be improved by better education on the guidelines for screening. It also represents a missed opportunity to prevent the development of delirium in these patients.

The relatively low completion rate may also be as a result of barriers to screening, Rowley-Conwy et al. found that common self-reported barriers to screening from nurses were when patients were intubated or non-verbal (58%) and a perceived lack of knowledge of delirium (42%) (16). The impact of education programmes in previous studies for delirium screening has been shown to be effective at increasing regularity of assessment and identification of risk factors (16, 17).

Critical appraisal of the guidelines:

In general, screening in delirium has been shown in the literature to be of benefit to patients by reducing morbidity and mortality by means of early detection, however the PADIS guidelines state that the majority of studies looking at the benefit screening also provide intervention and therefore the benefit of using screening alone is difficult to measure. Despite this the benefits of screening outweigh the potential harms and therefore it remains a recommended practice. An important consideration for this study is that the PADIS delirium guidelines were developed based on research on critically ill patients specifically not undergoing cardiac surgery therefore the recommendations made were not made based on a truly representative population of the patients within this study.

Limitations:

A key limitation of this audit is that it was an observational study conducted retrospectively and only provides a snapshot view of the patient population of this centre. This study was open to information bias as investigators were not able to ascertain the accuracy of the recorded CAM-ICU data due to the retrospective nature of the collection. In addition the outcomes of the screening were not addressed and therefore we were unable to make any inferences on whether the screening had an impact on patient outcomes.

Recommendations:

As a result of the findings from this clinical audit the following recommendations for the re-implementation of a formal nursing teaching programme are;

➢ Education on the current guideline for minimum 12-hourly screening on all critical care patients staying over the 24 hour period.

➢ Education on the purpose of completing the tailored interventions as a risk assessment tool as well as prompting actions to reduce the risk of patients developing delirium.

➢ Promotion of the message that the tailored interventions need to be completed for all patients, even patients that unable to assess on the CAM-ICU.

Conclusion:

In conclusion delirium is a prevalent condition seen in critical care environments and has a linear relationship with prolonged length of stay and mortality. Screening using the CAM-ICU tool has been shown to aid with early detection and therefore earlier management of symptoms. PADIS 2018 guidelines recommend 12-hourly screening to be completed once in the day and once in the nursing night shift. In this cardiothoracic critical care centre compliance to CAM-ICU completion was found moderate (50%) and the completion of TIs only occurred in 60.8% of patients, dropping to 9.7% when the CAM-ICU was unable to complete. This re-audit post educational intervention has shown a significant improvement in the completion of delirium screening using the structured assessment tool and a 7 fold increase in the rate of completion of tailored interventions. However our results highlight that there remains the need for improvement in order to comply with current guidelines on the frequency and quality of delirium screening for which further educational interventions will be developed and provided.

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Appendix:

Tailored Interventions:

- ☐ Is there a history of recent smoking, high alcohol intake or use of drugs such as opiates or benzodiazepines?

- ☐ Is the patient showing signs of disorientation in time or place?

- ☐ Is there evidence of dehydration such as a complaint of thirst, dry mouth or low urine output?

- ☐ Has the patient opened their bowels in previous 24hrs?

- ☐ Does the patient have an SpO2 >95% (or an appropriate level set by the medical team).

- ☐ Does the patient have a MEWS score >/= 3?

- ☐ Is the patient able to mobilize independently?

- ☐ Is the patient in pain?

- ☐ Is the patient currently prescribed any medications that may be contributing to their delirium?

- ☐ Is the patient eating an adequate amount at mealtimes?

- ☐ Does the patient usually wear glasses/hearing aids?

- ☐ Is the patient able to sleep at night and stay awake during the day?

- ☐ Has a referral to the safeguarding team for a Deprivation of Liberty Safeguarding assessment been made?

- ☐ Has delirium been recorded in the patient problem list?

Appendix 1: List of Tailored Interventions (TIs) to be completed for every critical care patient

Liverpool Heart and Chest Hospital NHS

NHS Foundation Trust

Delirium – Risk Reduction, Assessment and Management

Policy

Authors Name & Title: Dr C Quarterman, Mr J Doolan, Ms J Shaw, Dr J Greenwood	
Scope: Trust Wide	**Classification: Clinical**
Replaces: Delirium Guideline – Version 1.0	
To be read in conjunction with the following documents: **Trips, spills and falls policy** **Enteral feeding and administration** **Safe guarding vulnerable adults**	
Document for public display? Yes	

Unique Identifier: TC85(12)		**Review Date: 17ᵗʰ March 2020**
Issue Status: Approved	**Version No: 2.0**	**Issue Date: 12ᵗʰ April 2017**
Authorised By: Quality Patient and Family Experience Committee		**Authorisation Date: 17ᵗʰ March 2017**
After this document is withdrawn from use it must be kept in archive for the lifetime of the Trust, plus 6 years		
Archive: Document Control		**Date added to Archive:**
Officer responsible for archive: Document Control Co-ordinator		

Has the document undergone Equality Analysis?	**No**
Has Endorsement been completed?	**No**

Table of Contents

Policy Statement

Delirium (sometimes called 'acute confusional state') is a common clinical syndrome characterised by disturbed consciousness, cognitive function and inattention, which has an acute onset and fluctuating course. It usually develops over 1–2 days. It is a serious condition that is associated with poor outcomes.

A person may already have delirium when they present to hospital or long-term care, or it may develop during a hospital admission. Delirium can be hypoactive or hyperactive but some people show signs of both (mixed). People with hyperactive delirium have heightened arousal and can be restless, agitated and aggressive. People with hypoactive delirium become withdrawn, quiet and sleepy. Hypoactive and mixed delirium can be more difficult to recognise and have a worse prognosis than the hyperactive subgroup.

Older people (aged >65) and people with dementia, severe illness or a hip fracture are more at risk of delirium. The prevalence of delirium in people on medical wards in hospital is about 20% to 30%, and 10% to 50% of people having surgery develop delirium.

There is a significant burden associated with this condition. Compared with people who do not develop delirium, people who develop delirium may:
- have a longer hospital or in critical care stay
- have more hospital-acquired complications, such as falls and pressure sores
- be more likely to need to be admitted to long-term care if they are in hospital
- be more likely to die.

This policy describes methods of preventing, identifying, diagnosing and treating delirium. In particular, the policy focuses on preventing delirium in people identified to be at risk, using targeted interventions that address a number of modifiable risk factors.

It can be difficult to distinguish between delirium and dementia and some people may have both conditions. If clinical uncertainty exists over the diagnosis, the person should be managed initially for delirium.

Patients with delirium are potentially vulnerable to injury and harm during their admission. Therefore this clinical guideline should be read in conjunction with the Safe Guarding Vulnerable Adult policy and the LHCH policy on Slips, Trips and Falls.

This policy does not cover children and young people (younger than 18 years), people receiving end-of-life care, or people with intoxication and/or withdrawing from drugs or alcohol, and people with delirium associated with these states.

1. Roles and Responsibilities

Chief Executive has a duty to ensure that NICE Clinical Guideline 103 is adhered to within the Trust.

The Director of Nursing and Medical Director have a duty to ensure appropriate policy and systems are in place to care for patients who may be at risk delirium or are delirious.

All Managers have a duty to ensure this policy is adhered to in respect of assessing, identifying and treating all patients who may be at risk of delirium or are delirious and using the guidance and documents set out within this policy.

All medical staff have a duty to ensure the correct assessment, diagnosis and treatments are instigated. Assessment and management of the patient should involve completion of the Delirium Assessment and Management Tool which ensures formal diagnosis with a validated tool, screening for reversible causes, delivery of tailored interventions and reservation of pharmacological intervention for patients in distress or deemed a risk to themselves or others. The diagnosis of delirium, when made, must be recorded in the Problem List on EPR to ensure communication to the patient's GP.

All nursing staff are responsible for ensuring that the Delirium Risk Assessment section of the Risk Assessment document is completed when the patient is admitted to the Trust. Where patients are found to be at risk of delirium or suffering from delirium, all nursing staff have a duty to ensure that the Delirium Reduction flowsheet is added to the Assessment and Care Flowsheet and is completed during each shift. Where completion of the flowsheet identifies the presence of a potentially reversible precipitator off delirium, they must take action, or ensure that this is communicated to medical staff for action if appropriate.

Nursing staff within the Critical Care Areas have a duty to perform a formal CAM-ICU assessment for delirium on a twice daily basis, ideally at the start of the morning and evening shifts. This assessment should be performed within the Delirium Assessment and Management Tool. Precipitants of delirium will also be screened for within this tool and tailored interventions will be recommended. Where the patient is found to be positive for delirium, the medical team should be informed.

The Safeguarding Lead has a duty to complete a Deprivation of Liberty Safeguard assessment and application for authorisation, where required. All clinicians have a responsibility to refer patients for review where there are concerns that safeguards should be applied for, in line with the Deprivation of Liberty Safeguards Framework.

Pharmacists have a responsibility to ensure that, on discharge, any anti-psychotic medication that the patient was not admitted on is flagged as a new medication and that there is a documented plan for weaning, cessation or continuation of the drug depending upon the individual case. Where there is no evidence of clear plan this should be raised with the medical team caring for the patient, and unless the drugs is stopped a plan should be put in place.

The specific duties and responsibilities outlined in the policy apply Trust-wide.

Temporary or Agency Staff, Students or any health care worker will be expected to comply with the requirements of all Trust policies applicable to their area of operation.

2. Document Control Standards

All Medical, Nursing and allied healthcare staff who deliver patient care must be aware of this policy and use it when applicable.

3. Procedure

3.1 Assessment

Patients who are known to have dementia at pre-admission must be referred to the Safe Guarding Vulnerable Adults team lead in order the appropriate care can be arranged prior to admission. If delirium is suspected at pre-admission by doctors or clinical nurse practitioners after completion of the Delirium Risk Assessment, the consultant for that patient should be informed and the Safe Guarding Vulnerable Adult lead alerted also.

Given the nature of cardiac and respiratory disease with respect to potentially severe illness, and the age group that these diseases effect, the majority of patients at LHCH are deemed at risk of developing delirium. Patients in critical care areas (High Dependency Unit, Coronary Care Unit, Intensive Care Unit (ICU) and the Post Operative Critical Care Unit (POCCU)) are at highest risk and staff in these areas must be vigilant for the signs and symptoms of delirium.

During the nursing admission a Risk Assessment document is completed within EPR and, within this, the patient's risk of developing delirium will be assessed and recorded within the section titled Delirium Risk Assessment. The key known risk factors, as described by NICE, included in the risk assessment are:

- Age 65 years or older
- Cognitive impairment (past or present)
  - o If cognitive impairment is suspected, confirm it using a standardised and validated cognitive impairment measure
- Dementia
- Current hip fracture
- Severe illness - A clinical condition that is deteriorating or is at risk of deterioration

3.2 Indicators of Increased Risk of Delirium

Where one of the above criteria is present, the patient is deemed at risk of developing delirium during their hospital stay and the Delirium Risk Assessment will direct further questioning regarding recent changes in behaviour that could be indicators of increased risk of delirium. The second part of the Delirium Risk Assessment comprises open questions directed to the patient and any family or carers present during the admission process. Indicators include:

- Impaired cognitive function: e.g. reduced concentration, slow responses, confusion
- Altered perception: e.g. visual or auditory hallucinations
- Reduced physical function: e.g. reduced mobility, reduced movement, restlessness, agitation, changes in appetite, sleep disturbance
- Altered social behaviour: e.g. lack of cooperation with reasonable requests, withdrawal, or alterations in communication, mood and/or attitude

If the patient answers positively to any of the above indicators on admission, or at any other time during their stay at LHCH, this should be highlighted to a healthcare professional trained to assess and diagnose delirium as soon as possible. Further assessment using the Delirium Assessment and Management Tool on EPR should be performed.

3.3 Prevention of Delirium

Where patients are deemed at risk of delirium, but without any current indicators, steps should be taken to reduce the risk of delirium developing. This should be achieved by use of the Delirium Reduction section of the Assessment and Care flowsheet, which will guide implementation of a group of targeted interventions that have been found to reduce the risk of delirium.

Through this nursing staff will observe, at least once daily, all patients for changes or fluctuations in usual behaviour. The patient, a carer or a relative may report these. If any of these behavioural changes are present, a healthcare professional trained in the diagnosis of delirium should carry out a formal clinical assessment to confirm the diagnosis using the Delirium Assessment and Management Tool on EPR.

For those patients at risk of delirium, the patient should be cared for by a team of healthcare professionals who are familiar to the person at risk. Avoid moving patients within and between wards or rooms unless absolutely necessary.

A tailored intervention package to address potential sources of delirium should be delivered by the multidisciplinary team. The Delirium Reduction section of the Assessment and Care flowsheet should be completed every shift, and if any of the factors contributing to development of delirium are found to be present, a summary of tailored interventions that should be offered will be provided within the flowsheet and should be acted upon.

The Delirium Reduction section of the Assessment and Care flowsheet addresses the following issues and, where present, provides tailored advice:

- **Cognition and orientation:**
    - Re-orientate in place and time through conversation, use of clocks and calendar
    - Appropriate lighting for time of day
    - Avoid moving patient between rooms or wards
    - Consider use of familiar staff if able
    - Talk with patient to encourage re-orientation

- **Hydration:**
    - Ensure adequate access to fluids, assess reason for dehydration, consider whether physical assistance required or IV/NG supplementation needed and seek medical review if required

- **Constipation:**
    - Consider addition or escalation of use of laxatives – seek medical review if required

- **Oxygenation:**
    - Assess for hypoxia, treat with supplemental oxygen as appropriate and seek medical review

- **Infection:**
    - Look for and treat infection, seek medical review if required
    - Avoid unnecessary catheterisation and adopt infection control procedures as per LHCH Policy

- **Acute illness**
    - Seek medical review, assess and treat as able

- **Mobility**
    - Encourage walking where appropriate (provide walking aids as needed) or full active range of movement exercises with assistance from physiotherapy team

- **Analgesia/pain**
    - Review pain management
    - Consider use of ABBEY pain score
    - Escalate if pain control inadequate, consider seeking advice from pain team
    - Review opiate medications and reduce/stop if able

- **Medications**
    - Review medicines with particular attention to polypharmacy

- **Nutrition**
    - Address poor nutrition and, where applicable, seek advice from the dietician
    - Ensure dentures are available and fit properly

- **Sensory**
    - Ensure hearing aids and visual aids are available and in good working order to those who need them

- **Sleep patterns**
    - Reduce noise during sleep periods
    - Avoid medical and nursing interventions during sleep periods
    - Use appropriate level of lighting for time of day
    - Introduce cognitively stimulating activities during waking hours

Benzodiazepines, used as a sleep aid, may increase the risk of delirium in some patients and should be avoided. If a short-term term sleep aid is required, a short acting drug such as zopiclone may have a better risk/benefit profile. Night sedation should be used in low dose and titrated to effect and should not be prescribed regularly or for long periods of time.

No pharmacologic intervention (for example, haloperidol) has been shown to reduce the incidence of delirium in at risk groups, and as such prophylactic therapy should not be started.

Information and practical guidance with regards to prevention, diagnosis and management of patients with delirium can be found in Appendix 1 - Delirium Help Sheet.

3.4 Assessment Tools

Where a patient is thought to be showing signs of delirium, assessment by a medical practitioner trained in the diagnosis and management of delirium should be performed. This

should be guided by, and recorded within, the EPR document Delirium Assessment and Management Tool.

Where the patient is located within a ward environment and is able to communicate verbally, clinical staff trained to do so should make an assessment using the *Confusion Assessment Method* Tool (CAM, Appendix 2). Details of this and step-by-step instructions on completion are also held within the Delirium Assessment and Management Tool.

In the ICU and POCCU, nursing staff must record the *Richmond Agitation and Sedation Score* (**RASS**) (Appendix 3) every hour during the day, and 4 hourly overnight. The RASS assessment tool forms part of the delirium assessment tool, the **CAM-ICU** (Appendix 4). In addition, the RASS allows sedation to be tailored to the individual patient needs and can allow clinicians to address under and over-sedation.

Nursing staff within the Critical Care Areas should perform a formal CAM-ICU assessment for delirium on a twice daily basis, ideally at the start of the morning and evening shifts. This assessment should be performed and recorded within the Delirium Assessment and Management Tool. Precipitants of delirium will also be screened for within this tool to try to reduce the risk of delirium developing, and tailored interventions will be recommended. Where the patient is found to be positive for delirium, the medical team should be informed.

Upon completion of the CAM or CAM-ICU Tool, the diagnosis of delirium, if present, will be confirmed. The results must be documented within the EPR document Delirium Assessment and Management Tool and communicated to the medical team leading the patients care. Ongoing management of the patient is described below and will also be presented as a guide to clinicians within the Delirium Assessment and Management Tool.

Handover and transfer of patients from critical care areas to wards should include a comment about the psychological state of the patient and specifically note whether delirium is present and what further management plans are.

3.5 Treatment

If there is difficulty distinguishing between delirium and dementia, or delirium superimposed on dementia, treat for delirium first.

The mainstay of the management of patients with delirium is non-pharmacological. **Anti-psychotic medications should NOT be used unless de-escalation techniques are ineffective or inappropriate.** This group of drugs have a significant range of side effects and should therefore only be used for short periods and only if the patient is deemed to be at risk to self or others.

3.5.1 Identification of Underlying Cause

A key principle of delirium treatment is the identification and management of the underlying cause, or combination of causes, of delirium. A diagnosis of delirium should prompt a thorough review of the patient, medicines and environment, as guided by the Delirium Assessment and Management Tool on EPR. This will guide the medical professional through some of the common precipitants of delirium and will provide some guidance regarding tailored interventions that may reduce the severity and duration of the delirium episode. The precipitants and interventions are the same as those listed in the section on Prevention of Delirium above.

The Delirium Assessment and Management Tool may be completed on more than one occasion, should the clinical presentation of the patient change. Staff may also wish to refer to the Delirium Help Sheet (Appendix 1) for further information on non-pharmacological management of delirium.

It is the responsibility of both medical and nursing staff that movement of patients with delirium both within and between wards or rooms is avoided unless necessary. Also, where feasible, these patients should be cared for by healthcare professionals that are familiar to them.

Both medical and nursing staff should ensure effective communication and constant reorientation of the patient. Reorientation to day, date, time and place and the healthcare professional's role should occur frequently. Reassurance should be provided to the patient. Medical and nursing staff should involve family, friends and carers with reorientation and reassurance regarding the management of the patients care. Families should be provided a Delirium Patient and Family Information Leaflet in order to assist in this.

3.5.2 An Approach to De-escalation

The de-escalation of an agitated patient can be challenging for medical and nursing staff. Effective de-escalation can reduce the requirement for pharmacological intervention but there is little agreement on the recognised techniques that should most effectively be used. Appendix 1 gives some advice on approaches to these patients. In addition, the recently developed English modified De-escalation of Aggressive Behaviour Scale (EMDABS) provides a more validated approach, although mainly within the in-patient mental health arena. Some of the features of the EMDABS are listed below. Not all aspects will be applicable to all circumstances, but can be used selectively as the situation requires.

- Acknowledge the patients concerns
- Try not to argue with the patient – to them, their hallucinations and disorientation may be very real and they may become more distressed if there is repeated challenging of this. Try to gently re-orientate the patient in time and place but if there are signs that the patient is becoming antagonised further by this, try alternative methods to calm them as below
- Talk about their concerns and anxieties
- Try to reduce fear by providing distraction
- Remain calm – try to maintain a calm tone of voice, give the patient one voice to focus on and at a volume that is suitable for the patients hearing. If the presence of several members of staff in the room, all talking at once and over each other, is occurring, this can create a stressful and distressing environment that may add to the delirium.

3.6 Management of Severely Distressed or Agitated Patients

Management of the patient diagnosed with delirium should primarily be non-pharmacological and efforts should be made to reassure and de-escalate the situation where able. Pharmacological management should be reserved for patients whose symptoms of delirium would threaten their own safety or the safety of other persons or would result in the interruption of essential therapy.

There is no consistent evidence that any pharmacological treatment reduces the duration of a delirium episode.

For ward patients, the second generation anti-psychotic agent **quetiapine** is to be used as the first line treatment, or **haloperidol** where quetiapine cannot be used or an intravenous preparation is required. Advice on dosing and titration can be found in Appendix 5 – Drug Management of Delirium in Ward Patients. Quetiapine has been shown to display the lowest incidence of extrapyramidal side effects and should therefore be used as the first line treatment where the oral route is available. Caution should be exercised to avoid over-sedation and the dose should be titrated slowly and then reduced/stopped if there is a concern regarding this. Patients can also exhibit orthostatic hypotension which should be considered when mobilising them.

In the critical care environment, **quetiapine** is to be used as the first line treatment. Advice on dosing and titration can be found in Appendix 6 – Drug Management of Delirium in ICU Patients. **Risperidone** has also been used with some success and is therefore still included in the treatment algorithm. Prescribers should be aware, however, of the longer half-life of risperidone and the risk of over-sedation where it is used. **Haloperidol** can still be used where an intravenous preparation is required. Again, dosing advice for the titration of risperidone and haloperidol is provided in Appendix 6.

It should be noted that the use of anti-psychotic drugs for the treatment of delirium are 'off-label' indications. Although there is good evidence for the use of these drugs in delirium, the lowest effective dose should be used and a timely cessation of therapy should be sought.

All medications used in this context have sedating effects and staff should be alert to the potential occurrence of this and reduce/stop medication as soon as possible.

Anti-psychotic medications started during admission to LHCH should be weaned and stopped prior to discharge. If this is not possible, or where the dose is weaning at the time of discharge, clear advice for the patient's GP on cessation of treatment should be provided. Where the patient is transferred to another Trust to continue their care, it should be clearly communicated that the anti-psychotic medication is newly prescribed during this admission and ongoing review of its requirement should be performed.

Anti-psychotics should be used with caution or not at all in patients with Parkinson's disease and in Lewy-Body dementia. In these patients agitation may be managed with benzodiazepines, as per guidance in Appendix 7 – Management of Delirium in Patients with Parkinson's Disease or Lewy Body Dementia. Where control is inadequate in this patient group, guidance should be sought from the patient's neurologist who may agree to a trial of oral quetiapine, as this second generation antipsychotic drug is associated with the lowest incidence of extrapyramidal side effects. If a trial of this is planned, patients should particularly be monitored for any reduction in motor function, over sedation and orthostatic hypotension.

Review symptoms of delirium regularly as guided by the Delirium Reduction section of the Assessment and Care flowsheet and, if symptoms persist, re-evaluate for underlying causes and the possibility of dementia.

3.6.1. Benzodiazepines

These drugs can paradoxically increase agitation by way of disinhibition. Their use may prolong or worsen the course of delirium and in older patients with respiratory co-morbidities who have undergone surgery respiratory depression becomes a risk. Therefore, benzodiazepines should not be used as first line therapy in the treatment of delirium and should be reserved for the cases in which clinical circumstances limit use of antipsychotics.

3.6.2 Sedation in Emergency Situations

Rarely there may be circumstances where delirium is severe and the patient is an imminent threat to the safety of themselves or those around them e.g. trying to leave the hospital or displaying a high level of aggression. In these circumstances the use of a benzodiazepine via either an IV or IM route may be required. Advice on dosing is provided within Appendix 8 – Sedation in the Emergency Situation.

All patients that receive IM or IV benzodiazepines will require a period of enhanced monitoring to ensure that there is not excessive sedation that could lead to cardiorespiratory compromise. Where IM or IV benzodiazepines are required, in addition to immediate review by the medical team/ANP managing the patient, there should be immediate referral to and review by the Outreach Team during the day, and the Hospital at Night Team during the night. Monitoring of this patient group can be very challenging but as a minimum there should be assessment of respiratory rate and ideally oxygen saturation every 5-10 minutes.

Suggested doses are included in Appendix 8, along with expected times of onset depending on the route of administration. To avoid over-sedation, the smallest possible dose should be administered and titrated to effect, giving sufficient time for onset to occur before additional doses are administered.

Where the maximum dose advised by the treatment algorithm has been administered without sufficient effect and within the expected onset time, assistance from the Critical Care on-call team should be sought.

Once the safety of the patient has been confirmed, there should be assessment for any reversible causes of delirium and a tailored package of interventions should be utilised. Plans for ongoing management of delirium should be made, along with plans for pharmacological management, ideally with an oral preparation.

3.7 Sleep and Delirium

Sleep deprivation is a major contributor to the development of delirium. Where patients are deemed at risk of delirium or are suffering an episode of delirium the following are essential:
- Reduce noise during sleep periods
- Avoid medical and nursing interventions during sleep periods
- Try to group any interventions together so that repeated disturbance of the patient is limited
- Use appropriate level of lighting for time of day
- Introduce cognitively stimulating activities during waking hours e.g. newspaper, radio, books

Patients should be discouraged from sleeping during the day. Ideally pharmacological sleep aids should be avoided as they may increase the incidence and severity of delirium. Where, despite the above, the patient is struggling to sleep at night and particularly if the patient is being managed in the critical care environment where there is more significant loss of day/night differentiation and circadian rhythm, consider the use of **melatonin**. Patients cared for within the critical care area should already be in receipt of the "Sleep Bundle" of care to try to improve sleep duration and quality.

3.8 Support

The Outreach team is available to provide support in the diagnosis and management of patients with delirium during the daytime. Overnight, the Hospital At Night team will be able to provide support and should be made aware of any patient with significant delirium.

In difficult cases, the medical or Outreach team may contact the surgical lead for delirium (Dr Clare Quarterman, Anaesthetist and Intensivist) or the medical lead for delirium (Dr James Greenwood, Respiratory Physician and Intensivist).

3.9 Safeguarding

Where patients are diagnosed with delirium they are likely to require completion of a Deprivation of Liberty Safeguard (DoLS) application. Advice regarding this can be obtained by reviewing the Safeguarding Policy or following discussion with the Safeguarding Lead Nurse. A prompt for this to be performed is included in the Delirium Assessment and Management Tool.

3.10 Information for Patients and Families

Information about delirium should be offered to all patients, family and friends where delirium is suspected. A prompt to remind clinicians to provide this information is given in the Delirium Assessment and Management Tool.

The LHCH information leaflet that can be downloaded from the hospital internet site (from Homepage: Our patients -> Patient information leaflets -> Delirium) should be provided in all instances along with additional verbal support should the patient or their family require it. The link is below:

http://www.lhch.nhs.uk/media/5053/delirium.pdf

In addition to this, NICE (the National Institute for Health and Clinical Excellence) have published information that can be downloaded from the link below:

http://www.nice.org.uk/nicemedia/live/13060/49911/49911.pdf

3.11 Discharge

The diagnosis of delirium must be included in the discharge letter. As a minimum, the episode of delirium should be recorded within the Problem List on EPR and additional details recorded within the text of the discharge letter as appropriate. A prompt for the episode of delirium to be recorded within the Problem List on EPR is included within the Delirium Assessment and Management Tool. Where delirium is ongoing, or concern about the long-term diagnosis (delirium or dementia) exists, adequate discharge planning should involve the General Practitioner and the discharge planning team, along with the ward manager, with a view to involving the community elderly mental health services.

Where patients have been commenced on anti-psychotic medication during their admission, the appropriateness of continuing medication at discharge must be considered. In the majority of cases it is expected that clinical teams will review the requirement for such medicines on a daily basis and will gradually wean the dose and then stop the medication prior to discharge. Where this is not possible, either due to the imminent discharge or transfer of the patient to an alternative medical facility, the discharge or transfer letter should

clearly state the plan for weaning, discontinuing or continuing the medication as appropriate. Where the decision to continue anti-psychotic medication started at LHCH is made, this should be clearly communicated to the patient's GP.

4. Policy Implementation Plan

The drug treatment algorithms will be submitted to the Drugs and Therapeutics Committee for approval. Following this the policy will be submitted to all Divisional Governance groups for information and approval.

This policy will be implemented throughout all clinical areas by the;

- Medical Director
- Associate Medical Directors
- Clinical Leads
- Assistant Directors of Nursing to all Clinical Areas.
- Ward / Department Managers will implement this policy within their areas of responsibility.

The policy will be disseminated via clinical governance meetings, ward managers, safety huddles, group teaching sessions and one-to-one teaching of key groups including the Outreach and Hospital at Night teams. Where there are specific difficulties in the management of patients, advice can be sought directly from Clinical Leads.

Effective application of the policy will be achieved with assistance from EPR documents that will guide the user through the assessment and management of the patient as described. Regular feedback on the effectiveness of the EPR documents will be sought and they will be updated as required in order to maintain their effectiveness.

5. Monitoring of Compliance

Regular auditing of compliance with the policy will be performed by the Clinical Leads for Delirium and results of this will be disseminated and used to assess and then improve practice according to the NICE Quality Standards. The use of the Delirium Assessment and Management Tool will allow assessment of the incidence of delirium within the ward setting, along with compliance with all other aspects of the policy according to the current NICE quality standards. Within the Critical Care Areas the performance of regular routine delirium screening using the CAM-ICU tool will be audited. This will allow assessment of the current baseline prevalence of delirium and the impact of targeted interventions within this patient group. Initial reviews will be on a monthly basis while initial changes in practice are encouraged. Following this, review will be performed every three to six months to confirm continued compliance.

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7. Appendices

APPENDIX 1

Delirium Help Sheet

PROBLEM	GOAL	ACTION	RATIONALE
Patient <u>at risk</u> of delirium/ confusion and may present with alterations in any of the following: Cognitive function: e.g., worsened concentration, slow responses, confusion. Perception: e.g., visual or auditory hallucinations. Physical function: e.g., reduced mobility, reduced movement, restlessness, agitation, changes in appetite, sleep disturbance. Social behaviour: e.g., lack of cooperation with reasonable requests, withdrawal, or alterations in communication, mood and/or attitude.	**To have a calm and well rested patient who is orientated to time and place, and to identify and treating any underlying causes of confusion/delirium.**	<u>**Ensure the following;**</u> • Lighting levels appropriate for time of day. • Regular and repeated (at least 3 times daily) cues to improve personal orientation. • Use of clocks and calendars to improve orientation. • Hearing aids and spectacles should be available as appropriate and in good working order. • Continuity of care from nursing staff. • Encouragement of mobility and engagement in activities and with other people. • Approach and handle gently. • Elimination of unexpected and irritating noise (e.g. pump alarms). • Regular analgesia • Encouragement of visits from family and friends who may be able to help calm the patient. Explain the cause of the confusion to relatives. Encourage family to bring in familiar objects and pictures from home and participate in rehabilitation • Fluid intake to prevent dehydration (use subcutaneous fluids if necessary) -Avoid constipation with good diet, fluid intake and mobility • Adequate CNS oxygen delivery (use supplemental oxygen to keep saturation above 95% unless patient has COPD). • Good sleep pattern (use milky drinks at bedtime, exercise during the day). Where feasible • Provide environmental and personal orientation • Encourage mobility • Maintain a good sleep pattern • Avoid complications (immobility, malnutrition, pressure sores, over sedation, falls, incontinence) • ***<u>Avoid</u>:*** • *inter- and intra-ward transfers* • *use of physical restraint* • *constipation* • *anticholinergic drugs where possible, and keep drug treatment to a minimum* • *catheters where possible*	Patients nursed in a good sensory environment and with a reality orientation approach, and with involvement of the multidisciplinary team help reduce the likelihood of confusion/delirium. Optimum physical health reduces the likelihood of delirium/confusion
Patient may become agitated due to confusion/delirium and become a danger to themselves and	**Prevent harm and reduce agitation**	<u>**Ensure the following;**</u> • Inform medical staff immediately • Consider drug sedation	Drug sedation may be necessary: - to carry out essential investigations/treatment -to prevent patient endangering themselves or others

			-to relieve distress in a highly agitated/hallucinating patient.
Complications of confusion/delirium

The main complications of delirium are:

falls
pressure sores
nosocomial infections
functional impairment
continence problems
over-sedation
malnutrition. | **Prevention of complications** | <u>**Ensure the following;**</u>
• ensure the Trust's Slips, Trips and Falls policy is adhered to
• Ensure pressure areas are assessed and managed in line with Trust policy
• Record MEWS score at least 4 hourly or as indicated. Ensure Sepsis care bundle is followed.
• Ensure that there is a daily multidisciplinary review
• A full continence assessment should be carried out. Regular toileting and prompt treatment of urinary tract infections may prevent urinary incontinence. Catheters should be avoided where possible because of the increased risks of trauma in confused patients, and the risk of catheter associated infection.
• Refer to dietician and complete MUST tool as per Trust policy | Adhering to STF policy will prevent falls

Adhering to Trust policy for pressure areas will reduce the likelihood of pressure sores

Early identification & treatment of infection will prevent episodes of confusion/delirium

Episodes of incontinence increase the likelihood of delirium/confusion

Food alternatives that take into account the patient's preferences, and the option of finger foods should be considered. Adequate staffing levels should be ensured to support and encourage eating. Oral nutritional supplements can be considered. |
| **Wandering**
Patient may wander with potential to cause harm | **Prevent harm to patient and others** | <u>**Ensure the following;**</u>
• patient requires close observation at all times
• encourage next of kin and family to communicate with patient
• consider where the patient should be nursed i.e. side room, small bay
• seek advice of medical staff | Attempts should be made to identify and remedy possible causes of agitation. If the cause of the agitation cannot be remedied, the next least restrictive option is to try distracting the agitated wandering patient. Relatives could be encouraged to assist in this kind of management. The use of restraints or sedation should only be used as a final option. |
| **Rambling speech** | **To have meaningful communication** | <u>**Ensure the following;**</u>
• tactfully disagree (if the topic is not sensitive)
• change the subject
• acknowledge the feelings expressed – ignore the content. | Patients with delirium often exhibit confused and rambling speech. It is usually preferable not to agree with rambling talk, but to adopt strategies, depending on the circumstance: |
| **Post traumatic stress** | **To reduce the psychological effects of delirium** | <u>**Ensure the following:**</u>
• Communication with all parties, including family and carers, involved in the patient's care is vital.
• Prior to discharge assess the patient's cognitive and functional status.
• Discharge summaries should be completed promptly. | As with all older people discharge should be planned in conjunction with all disciplines involved in caring for the patient, both in hospital and in the community (including informal carers). Practical arrangements should be in place prior to discharge for activities such as washing, dressing, medication etc. in accordance with the joint statement of the British Geriatrics Society and the Association of Directors of Social Services. |

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Check with Intranet that this printed copy is the latest issue | **Page 17 of 26** |

APPENDIX 2

Confusion Assessment Method (CAM) Algorithm

Note: The diagnosis of delirium requires a present or abnormal rating for criteria 1, 2, and 3 or 4.

1. Acute onset and fluctuating Course

    Indicated by positive responses to the following questions:
    - Is there evidence of an acute change in mental status from the patient's baseline?

    And

    - Did this behavior fluctuate during the past day-that is tend to come and go or increase and decease in severity?

2. Inattention

    Indicated by a positive response to the following question:
    - Does the patient have difficulty focusing attention –for example, being easily distractible or having difficulty keeping track of what is being said?

3. Disorganized thinking

    Indicated by a positive response to the following question:
    - Is the patient's speech disorganized or incoherent, with rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

4. Altered level of consciousness

    Indicated by any response other than alert (normal) to the following question:
    - Overall, how would you rate this patient's level of consciousness?
        - Alert (normal)
        - Vigilant (hyperalert)
        - Lethargic (drowsy, easily aroused)
        - Stupor (difficult to arouse)
        - Coma (unarousable)

Adapted from Inouye SK, van Dyck CH, Alessi CA, et al: Clarifying Confusion: the Confusion Assessment Method: A New Method for Detection of Delirium. Ann Intern Med 113:941-948,1990

APPENDIX 3

The Richmond Agitation and Sedation Scale: The RASS*

Sedation Assessment

Score Term	Description
+4 Combative	Overtly combative, violent, immediate danger to staff
+3 Very agitated	Pulls or removes tube(s) or catheter(s); aggressive
+2 Agitated	Frequent non-purposeful movement, fights ventilator
+1 Restless	Anxious but movements not aggressive vigorous
0 Alert and calm	
-1 Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to *voice* **(>10 seconds)**
-2 Light sedation	Briefly awakens with eye contact to *voice* **(<10 seconds)**
-3 Moderate sedation	Movement or eye opening to *voice* **(but no eye contact)**
-4 Deep sedation	No response to voice, but movement or eye opening to *physical* stimulation
-5 Unarousable	No response to *voice or physical* stimulation

Procedure for RASS Assessment
1. Observe patient
a. Patient is alert, restless, or agitated. **(score 0 to +4)**

2. **If not alert, state patient's name and *say* to open eyes and look at speaker**.
a. Patient awakens with sustained eye opening and eye contact. **(score –1)**
b. Patient awakens with eye opening and eye contact, but not sustained. **(score –2)**
c. Patient has any movement in response to voice but no eye contact. **(score –3)**

3. **When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum.**
a. Patient has any movement to physical stimulation. **(Score –4)**
b. Patient has no response to any stimulation. **(Score –5)**
If RASS is -4 or -5, then **Stop** and **Reassess** patient at later time
If RASS is above - 4 (-3 through +4) then **Proceed to Step 2**

*Sessler, et al. AJRCCM 2002; 166:1338-1344. Ely, et al. JAMA 2003; 289:2983-2991.

APPENDIX 4

CAM-ICU Worksheet

	Positive	Negative
Feature 1: Acute Onset or Fluctuating Course Positive if you answer 'yes' to either 1A or 1B.		
1A: Is the pt different than his/her baseline mental status? <center>Or</center> 1B: Has the patient had any fluctuation in mental status in the past 24 hours as evidenced by fluctuation on a sedation scale (e.g. RASS), GCS, or previous delirium assessment?	Yes	No
Feature 2: Inattention Positive if either score for 2A or 2B is less than 8. Attempt the ASE letters first. If pt is able to perform this test and the score is clear, record this score and move to Feature 3. If pt is unable to perform this test or the score is unclear, then perform the ASE Pictures. If you perform both tests, use the ASE Pictures' results to score the Feature.	Positive	Negative
2A: **ASE Letters**: record score (enter NT for not tested) 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. <center>**S A V E A H A A R T**</center> Scoring: Errors are counted when patient fails to squeeze on the letter "A" and when the patient squeezes on any letter other than "A."	Score (out of 10): _____
2B: **ASE Pictures**: record score (enter NT for not tested) Directions are included on the picture packets.	Score (out of 10): _____
Feature 3: Disorganized Thinking Positive if the combined score is less than 4	Positive	Negative
3A: Yes/No Questions (Use either Set A or Set B, alternate on consecutive days if necessary): <table><tr><td>Set A</td><td>Set B</td></tr><tr><td>1. Will a stone float on water?</td><td>1. Will a leaf float on water?</td></tr><tr><td>2. Are there fish in the sea?</td><td>2. Are there elephants in the sea?</td></tr><tr><td>3. Does one pound weigh more than two pounds?</td><td>3. Do two pounds weigh more than one pound?</td></tr><tr><td>4. Can you use a hammer to pound a nail?</td><td>4. Can you use a hammer to cut wood?</td></tr></table> Score ___(Patient earns 1 point for each correct answer out of 4) **3B: Command** Say to patient: "Hold up this many fingers" (Examiner holds two fingers in front of patient) "Now do the same thing with the other hand" (Not repeating the number of fingers). **If pt is unable to move both arms, for the second part of the command ask patient "Add one more finger)* Score___(Patient earns 1 point if able to successfully complete the entire command)	Combined Score (3A+3B): _____ (out of 5)
Feature 4: Altered Level of Consciousness Positive if the Actual RASS score is anything other than "0" (zero)	Positive	Negative
Overall CAM-ICU (Features 1 and 2 and either Feature 3 or 4):	Positive	Negative

APPENDIX 5

<u>Management of Hyperactive Delirium in Ward Patients</u>

**Drug treatment should only be used after
reviewing for reversible causes
employing de-escalation techniques
and only if the patient is severely distressed or deemed a risk to themselves or others**

All patients receiving anti-psychotic medication for delirium should undergo daily ECG monitoring of QTc duration as all anti-psychotic drugs may precipitate QTc prolongation

Do not use in patients with Parkinson's disease or Lewy body dementia

1st Line – Second generation Anti-psychotic

Quetiapine 12.5-25mg BD PO/NG, titrated by 12.5-25mg every 24 hours, if required, to maximum dose of 200mg BD. If exceeding dose of 100mg BD, consider seeking expert advice from psychiatry services. In elderly patients, always start at lower dose and titrate cautiously.

OR

Haloperidol 2.5-10mg PO/IV/IM titrated in 2.5mg aliquots over 30 minutes to ensure safety. Where treatment found to be effective, but repeated dosing required, consider dividing total dose required to achieve control into 3-4 doses and administer regularly PO

2nd Line – Rescue therapy for significant agitation

Haloperidol 2.5-10mg IV/IM titrated in 2.5mg aliquots over 30 minutes to ensure safety. Where treatment found to be effective, but repeated dosing required, consider dividing total dose required to achieve control into 3-4 doses and administer regularly PO

APPENDIX 6

Management of Hyperactive Delirium in ICU Patients

**Drug treatment should only be used after
reviewing for reversible causes
employing de-escalation techniques
and only if the patient is severely distressed or deemed a risk to themselves or others**

All patients receiving anti-psychotic medication for delirium should undergo daily ECG monitoring of QTc duration as all anti-psychotic drugs may precipitate QTc prolongation

Do not use in patients with Parkinson's disease or Lewy body dementia

1st Line – Second generation anti-psychotic agent

Quetiapine 12.5-25mg BD PO/NG, titrated by 25mg every 24 hours, if required, to maximum dose of 200mg BD. If exceeding dose of 100mg BD, consider seeking expert advice from psychiatry services. In elderly patients, always start at lower dose and titrate cautiously.

OR

Risperidone 0.5mg BD PO/NG, titrated by 0.5mg every 48 hours, if required, to maximum dose of 4mg/day

2nd Line – Rescue therapy for significant agitation

Haloperidol 2.5-10mg IV/IM titrated in 2.5mg aliquots over 30 minutes to ensure safety. Where treatment found to be effective, but repeated dosing required, consider dividing total dose required to achieve control into 3-4 doses and administer regularly PO

APPENDIX 7

<u>Management of Delirium in Patients with</u>
<u>Parkinson's Disease or Lewy Body Dementia</u>

This group of patients **should not** receive haloperidol as this may exacerbate their motor dysfunction

All patients should immediately referred to, and reviewed by
the medical team/ANP involved in the patient's care,
along with either
a member of the Outreach Team or Hospital @ Night Team

IV Lorazepam 0.5-4mg, titrate in 0.5mg IV aliquots every 5-10 minutes until safety achieved

IM Lorazepam 1-4mg, titrate in 1mg aliquots, may take up to 30 minutes for onset

Where control is inadequate or delirium recurs, seek advice from neurologist who may advocate trial of quetiapine (see policy).

APPENDIX 8

<u>Management of Patients with Severe Agitation requiring Rapid Sedation</u>

<u>ONLY TO BE USED FOR SEVERE AGITATION WHERE DE-ESCALATION TECHNIQUES AND FIRST/SECOND LINE INTERVENTIONS HAVE FAILED AND THE PATIENT IS AT RISK OF IMMEDIATE SIGNIFICANT HARM</u>

The patient must be referred for immediate senior medical/ANP review and the Outreach or H@N Team should be informed and must review and monitor as per policy

IV Lorazepam 1-4mg, titrate in 1mg IV aliquots every 5 minutes until safety achieved

IM Lorazepam 2-4mg, may take up to 30 minutes for onset

OR

IV Midazolam 1-5mg, titrate in 0.5-1mg IV aliquots every 5 minutes until safety achieved

IM Midazolam 2.5mg-5mg, may take up to 15 minutes for onset

8. Endorsed By:-

Name of Lead Clinician/ Manager or Committee Chair	Position of Endorser or Name of Endorsing Committee	Date

9. Record of Changes

Section Number	Version Number	Date of Change	Description of Amendment	Description of Deletion	Description of Addition	Reason