Confusion Assessment Method for the ICU (CAM-ICU)

Frequently Asked Questions

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VANDERBILT UNIVERSITY MEDICAL CENTER

Frequently Asked Questions (FAQs)

Frequently Asked Questions for Feature 1:

1. **How do you determine baseline mental status?**

   This is the patient's **pre-hospital mental status**. Get this information from family, friends, or the H&P and document it in the patient's record to facilitate communication between staff. We encourage you to use critical thinking skills with this Feature. For example:

   - If the patient is young (e.g. <65) and is admitted from home with no documented neurocognitive disorder or history of stroke, then you could assume that the patient has a "normal" baseline mental status (i.e. alert and calm).
   - If the patient is older, has documentation of a stroke or dementia, or came from a nursing home, then you should probe family or the institution for more information on the patient's pre-hospital baseline mental status.

2. **Do you use that same 'baseline' with successive CAM-ICU assessments?**

   Always, unless a permanent change in baseline occurs (see #3). You should consistently use the patient's established pre-hospital baseline.

3. **How do you handle a permanent change of baseline during the hospitalization – i.e., a stroke or anoxic injury? Is that modified and permanent new baseline used for CAM-ICU purposes?**

   Yes. If there is a permanent change in baseline, the new baseline is used for subsequent CAM-ICU evaluations. This may be difficult to determine because of the difficulty in separating delirium from the new baseline. In practice, it is easiest to gather Feature 1 in such a situation by documenting 'fluctuations' in the mental status.

4. **Does it still count as fluctuation in mental status or change from baseline mental status when a patient is on sedatives?**

   Yes. Alteration in mental status includes those that are chemically induced by the healthcare team, including fluctuation due to titration of sedatives. This is not the patient's usual mental status. It is often difficult to completely distinguish a disease-induced change from a drug-induced change in mental status.

Frequently Asked Questions for Feature 2:

1. **If a patient is RASS -3 or very lethargic, is the CAM-ICU 'unable to assess' (UTA)? Is the patient delirious?**

   The ability to be tested with the CAM-ICU is wholly based on a patient being at all responsive to verbal stimulation, regardless of sedative use. The 2-step approach to assess consciousness with the RASS and CAM-ICU provides a filter for the majority of patients who cannot participate in the assessment. Comatose patients (i.e., RASS -4/-5) are not tested with the CAM-ICU because they are unconscious. Though it seems like a gray zone, most patients who are a RASS -3 can provide enough data to be rated as delirious by the CAM-ICU. Some sites have used RASS -2 as the lower border for CAM-ICU rating, but most use RASS -3 as the cutoff.

   - If a patient has any movement or eye opening to your voice directed to them and doesn't squeeze at all or stay awake long enough to squeeze for more than one letter, then this patient is obviously inattentive. At this point, assess the other CAM-ICU Features as needed to determine if the patient is delirious. Example:
     - If the patient ever squeezed, then count the errors (see Letters instructions).
     - If the patient never squeezed then the patient is inattentive. Also be suspicious for inattention when you have to repeat the instructions more than twice.
   - One way to think about this is if there is eye opening or movement to voice, then the "lights are on". Use the CAM-ICU to see if "anyone is home".

   These concepts also apply to a patient who is agitated (i.e., RASS +1 thru +4) and therefore not participating in assessment or comprehending your instructions.

2. **Do you have to complete both Letters and Pictures on every patient?**

   No. You do not have to use both tests in each assessment. Attempt the Letters first. If the patient is able to perform this test and the score is clear, record this score and move to the Feature 3. If the patient is incapable of performing the Letters or you are unable to interpret the score, perform the Pictures. If you perform both tests, use the Pictures result to determine if the patient is inattentive. See question #1 above for interpretation of scoring. The Pictures are rarely required to assess inattention (only <5% of the time).

3. **Are there other Letter sequences that I can use to assess Feature 2?**

   Yes. Some other sequences that have been used to assess inattention include:

   - A B A D B A D A A Y (from the Pediatric CAM-ICU)
   - 8 1 7 5 1 4 1 1 3 6 (Chinese traditional translation using numbers instead of letters)

4. **How do I obtain Picture packets?**

We will be glad to assist you in ordering the materials. Please contact us at delirium@vanderbilt.edu. Make the subject of your email "CAM-ICU order". This ensures your request is processed in a timely manner.

Frequently Asked Questions for Feature 3:

1. **Didn't this used to be Feature 4?**

   Yes. After other institutions began switching Features 3 & 4, we decided to switch the order for ease of use and common sense. Many users had previously gotten confused thinking the Features had to be assessed in numerical order (i.e. 1, 2, 3, 4). However, there is no rigid rule to the order of assessing CAM-ICU Features. Nothing has changed with the content of this Feature.

2. **Is Feature 3 positive in coma?**

   No. Coma is not considered delirium. Remember, we do not perform the CAM-ICU if a patient is comatose (i.e. RASS -4 or -5). Many delirious patients have recently been comatose, indicating a fluctuation of mental status. Comatose patients often, but not always, progress through a period of delirium before recovering to their baseline mental status.

3. **What is the difference between Feature 3 and Feature 1?**

   - **Feature 3 (Altered Level of Consciousness)** evaluates the patient's current level of consciousness (right now). The current level of consciousness as detected with the actual current RASS regardless of the patient's baseline mental status.
   - **Feature 1 (Acute Change or Fluctuating Course of Mental Status)** evaluates the patient's pre-hospital mental status baseline and whether there has been fluctuation in mental status during the past 24 hours.
   - **Take home point:** A patient can have an alert/calm baseline, RASS fluctuations (-1 to -2) over the past 24 hours, and currently be RASS 0. Feature 1 is present due to fluctuations, but Feature 3 is absent because the patient is currently alert (RASS 0).

4. **My facility uses a different sedation assessment scale. Can I still use the CAM-ICU?**

   Yes. Any validated sedation scale can be used for completing the CAM-ICU. The RASS is not the same as other sedation assessments, and therefore not exactly equal. For that reason, it is important to determine which values on your current sedation scale correlate with the terms and descriptions of the RASS scale. (See more details in the "Putting CAM-ICU into Practice" section, question #15, page 19)

Frequently Asked Questions for Feature 4:

1. **Didn't this used to be Feature 3?**

   Yes. After other institutions began switching Features 3 & 4, we decided to switch the order for ease of use and common sense. Many users had previously gotten confused thinking the Features had to be assessed in numerical order (i.e. 1, 2, 3, 4). However, there is no rigid rule to the order of assessing CAM-ICU Features. Nothing has changed with the content of this Feature.

2. **How frequently do you have to use this Feature?**

   According to the CAM-ICU a patient is delirious if Features 1 and 2 and either 3 or 4 are present. Many times you will not need to assess this Feature because you will have the information you need from Features 1, 2, and 3. It is only when Features 1 and 2 are present and Feature 3 is absent (patient is alert) that you have to complete this Feature.

3. **If a patient answers the four questions correctly, do you still assess the command?**

   Yes. We encourage you to perform the 2-step command even if the patient scores 100% on the questions because there is a chance the patient had four lucky guesses. The combination of questions and 2-step command gives the clinician more data to make a judgment of whether there is disorganized thinking. If the patient answers all questions correctly, but the rater feels the patient randomly said yes/no, the performance on the 2-step command can help to affirm or disprove the suspicions of the clinician.

4. **Isn't there an alternate set of questions?**

   Yes. These questions can be used as an alternative to the set listed above. Try to alternate 'yes' then 'no' answers.

   - Will a leaf float on water?
   - Are there elephants in the sea?
   - Do two pounds weigh more than one?
   - Can you use a hammer to cut wood?

5. **Is it necessary to ask all 8 questions during a CAM-ICU assessment?**

   No. It is only necessary to perform one set of questions for this Feature. The second set is provided as an alternate for repeated use.

6. **Do you assess the 2-step command if the patient is paralyzed, quadriplegic, or visually impaired?**

   No. If a patient cannot move their arms or blind, score them solely on Feature 4 questions. Therefore, Feature 4 is present if the patient misses more than one question (>1 error).

7. **Weren't the criteria for this Feature listed differently in your publications?**

   Yes. The criteria for this Feature were listed incorrectly in our publications (Ely, et al. JAMA 2001; 286:2703-2710[5] and Truman, et al CCN 2003; 23:25-36[6]). Organized thinking is evidenced by 3 or more **correct** answers to the 4 questions. Therefore, Feature 4 is present when a patient answers 2 or more of the 4 questions **incorrectly.**

Frequently Asked Questions for Putting the CAM-ICU into Practice

1. **Can I use the CAM-ICU outside the Intensive Care Unit?**

   Although the CAM-ICU has been validated in mechanically ventilated and non-mechanically ventilated critically ill patients, it has not been validated in the non-ICU setting. Examples of delirium instruments that have been validated outside of the ICU include: the original CAM, Delirium Rating Scale (DRS-R-98), Memorial Delirium Assessment Scale (MDAS), and Nursing Delirium Screening Scale (NuDESC).

   Additionally, there are the following specialty versions of the CAM-ICU:

   - The Pediatric CAM-ICU (pCAM-ICU) http://www.icudelirium.org/docs/Pediatric_CAM.pdf
   - The Brief-CAM (B-CAM) for the Emergency Room - validation study currently in progress

2. **Can I use the CAM-ICU in my Neuro Intensive Care Unit or in patients with Traumatic Brain Injury?**

   Yes, however, we must acknowledge that once there is structural brain disease, it is not always possible to determine the etiology of a patient who is CAM-ICU positive. The "delirium" or abnormal test result could be due to drugs, disease, trauma, ICH, SDH, CVA, etc. One must be careful to determine the patient's baseline and whether there is structural neurologic disease. If so, the CAM-ICU may be positive because of structural disease rather than more reversible causes of delirium. We recommend that the CAM-ICU be used in this population using the patient's last known baseline and the baseline be adjusted as more information is gained.

   Once a patient is evaluated for the presence of delirium, then we must determine the cause and do whatever we can to reduce the duration of delirium. In all patients it's good to know if they are delirious or not and to monitor the trends no matter the etiology. If a patient is negative one day and positive the next, something has changed.

3. Can you perform a CAM-ICU assessment on a patient with dementia?

Yes. The features of delirium are identifiable even in the presence of dementia. In fact, we performed subgroup assessments of the CAM-ICU in patients with dementia in our validation studies (as did Dr. Inouye in her original CAM validation study). The CAM-ICU was found to be reliable and valid in patients with and without dementia. However, these patients can be more difficult to assess. Varying degrees of baseline dementia may be present, often having gone unrecognized. It is important to correctly identify the patient's baseline cognitive functional status and differentiate chronic cognitive impairments due to dementia from acute changes in attention and thinking due to delirium. A good question to ask the family to help you get this information is, "Do you think he/she could do this test at baseline?" Watching the trend is also important.

4. Can I use the CAM-ICU in patients having alcohol withdrawal?

Yes. Alcohol withdrawal can include a type of delirium which usually manifests as hyperactive delirium. The CAM-ICU can be used to detect delirium in these patients. However, it should not be used by itself as a tool to manage/guide alcohol withdrawal syndrome treatment. The ICUs at Vanderbilt use the CIWA-Ar (Clinical Institute Withdrawal Assessment for Alcohol revised), a commonly used tool in the U.S. to guide therapy for alcohol withdrawal syndrome. It is important to note that the CIWA-Ar has not been validated in ICU patients.[7, 8]

CAM-ICU evaluates patients for the presence of delirium. Then we must determine the cause and do whatever we can to reduce the duration of delirium. In all patients it's good to know if they are delirious or not and to monitor the trends no matter the etiology.

5. How do I perform the CAM-ICU if my patient doesn't speak English?

The CAM-ICU is available in almost 20 languages. They can all be found at this link: http://www.icudelirium.org/assessment.html.

6. How do you identify delirium in a patient who has a flat affect that is secondary to major depression?

Patients who are depressed will still exhibit features of delirium if it develops, and are assessable using the CAM-ICU. In rare cases, depression can manifest itself in a way that may cause a false positive CAM-ICU. This is because severe depression can mimic inattention and hypoactive delirium. In the majority of circumstances, a depressed patient who is found to be CAM-ICU positive is considered delirious. In general, this sort of distinction should incorporate the expertise of a psychiatrist. Watching the trend is key with these folks.

7. When should pharmacologic treatment for delirium be discontinued?

Since by definition delirium is a disorder of fluctuations in mental status, a patient is considered free of delirium when CAM-ICU negative for 24 hours. If a patient was positive one shift and negative the next, continue to assess him/her for delirium and continue pharmacologic treatment initiated for delirium until the patient has been CAM-ICU negative for 24 hours. You could certainly reduce the dose of the drugs being given for delirium during that time.

8. Is it necessary to do all four Features of the CAM-ICU assessment on every patient?

No. Only do the Features needed to get your answer. Remember a patient is considered delirious (i.e. CAM-ICU positive) when Features 1 and 2 and either Feature 3 or 4 are present. For example:

- If Features 1, 2, & 3 are present, then there is no need to assess Feature 4.
- If either Features 1 or 2 are absent then you do not have to proceed because the patient cannot be CAM-ICU positive without them.

9. How frequently should patients be assessed for delirium using the CAM-ICU?

We recommend that critically ill patients be assessed for delirium with the CAM-ICU at least once per nursing shift (every 8-12 hours). Some ICUs do this more often, and especially with changes in the patient's clinical status.

10. My patient does not meet the Features to be CAM-ICU positive, but still acting like he/she is delirious. What does this mean?

It is possible for patients to never develop all the symptoms of delirium required by the DSM-IV criteria for clinical diagnosis. When a patient exhibits only some of the symptoms of delirium it is considered subsyndromal delirium. This intermediate form of delirium is associated with prolonged ICU and hospital length of stay compared to those who never experience delirium.[9]

11. Do you have to perform the Features in succession at the bedside?

No. However, when thinking of implementing the CAM-ICU into bedside practice or for research purposes, it is important to consider that many of its components are often already used in practice (i.e., staff are usually assessing for Feature 1 via sedation scales or other neurologic assessments). A thorough evaluation of the current bedside assessment components will help identify which CAM-ICU Features are already being assessed.

An examination of your current ICU practice will also help to modify some parts of the current assessment to accurately identify delirium. We recommend incorporating the CAM-ICU Features into your regular physical assessment. The raw data are collected throughout the patient assessment and then plugged in to the CAM-ICU algorithm to discern for the presence or absence of delirium.

12. How should I document the CAM-ICU?

The first step of adaptation is to decide where the results will be documented. We recommend documenting the CAM-ICU in the hourly portion of the nursing flowsheet. Most institutions document the overall CAM-ICU score and not the individual Features. However, if you have room, the individual Feature documentation can help with compliance and accuracy of the overall assessment and provide excellent data for chart review when trying to identifying weaknesses in the assessment.

Once you have decided where to document the CAM-ICU findings, the next step is to identify what language you would like to use for the documentation. We have found that different institutions choose to record the overall CAM-ICU as either "positive" or "negative"

OR “Yes”, “No” and “UTA.” It is important to note that UTA really means that you were unable to assess delirium because the patient’s level of consciousness was too deep to assess content of consciousness. In other words, UTA = coma/stupor instead of delirium or normal. The table below shows the various terminologies that have been used. We recommend picking the language that your staff best understands.

Overall CAM-ICU score			
Yes	Positive	Present	Delirious
No	Negative	Absent	Not Delirious
UTA*	UTA*	UTA*	UTA*

*UTA = unable to assess

13. Should I do a CAM-ICU assessment before, during, or after a Spontaneous Awakening Trial (SAT)?

Before. We recommend doing the CAM-ICU assessment before the SAT (e.g. daily sedation cessation, which is the turning off of sedation to allow the patient to awaken) is started as a baseline assessment. You can always assess again after the SAT is started. It can be tricky to have a protocol that says to do the CAM-ICU after drugs have been held because patients wake up at varying speeds, and it lacks good clinical info. Some patients wake up after 15 minutes, while others may take hours.

It is good practice to do a second CAM-ICU assessment just before the SBT (spontaneous breathing trial)/CPAP trial or when the patient begins to act different, and you think the answer has changed. Try to maintain consistency by having the same person perform the CAM-ICU and the SAT (initiation/evaluation).

14. How can I determine if my staff is performing the CAM-ICU correctly?

We suggest conducting a CAM-ICU competency. This is a great way to identify misunderstandings with the CAM-ICU as well as provide an opportunity to teach about delirium. This periodic competency could include assessment case studies, delirium facts, and spot checks with CAM-ICU experts. There are spot checking details and a form available on our website at: http://www.icudelirium.org/assessment.html. Spot checking provides an excellent opportunity to educate regarding mistakes and misconceptions.

15. The CAM-ICU was validated with the RASS, but my hospital uses a different sedation scale. Can I use a different sedation scale with the CAM-ICU? (i.e. SAS [Riker Sedation-Agitation Scale]**, Ramsay, MAAS** [Motor Activity Assessment Scale]**)**

Yes. The CAM-ICU was originally validated using the RASS, but any validated sedation scale can work for evaluating the level of consciousness for the purpose of CAM-ICU assessment. The RASS is not the same as other sedation assessments and therefore the number schematic will be different. For that reason, it is important to determine which values on your current sedation scale correlate with the terms and descriptions of the RASS scale. The problem with some sedation scales is the mix of verbal and physical stimulation at the same level. This makes it difficult to distinguish the key feature that allows someone to be assessable for delirium—response to verbal stimulation.

For example (see following page):

MAAS	RASS
0	-5
1	-4
2	-4, -3, -2, -1
3	0
4	+1
5	+2, +3
6	+4

OR

Ramsay	RASS
1	+1, +2, +3, +4
2	-1, 0
3	-3, -2, -1
4	-4, -3, -2, -1
5	-4, -3, -2, -1
6	-5

OR

SAS	RASS
7	+4
6	+3
5	+2, +1
4	0
3	-3, -2, -1
2	-4
1	-5

16. How do I obtain copyright permission?

We have obtained copyright for the CAM-ICU and its educational materials and have deliberately made it unrestricted in terms of use. We ask that you include the copyright line on the bottom of the pocket cards and other educational materials, but do not require you to obtain a written letter of permission for implementation and clinical use.

Copyright line: "Copyright © 2002, E. Wesley Ely, MD, MPH and Vanderbilt University, all rights reserved"

For information on the copyright for the original CAM, please refer to the following website: http://elderlife.med.yale.edu/public/public-main.php

17. How do I obtain Picture Packets and/or Pocket Cards?

We will be glad to assist you in ordering the materials. Please contact us at delirium@vanderbilt.edu. Please make the subject of your email "CAM-ICU order". This will ensure that your request is processed in a timely manner.

18. Where can I learn more about ICU delirium and the CAM-ICU?

Check out our website: www.icudelirium.org. The site includes lots of helpful links for references, training videos, protocols, patient & family education, etc. Also, feel free to contact our team at delirium@vanderbilt.edu.

19. How can I arrange for in-person training?

Several members of our staff are available for doing onsite delirium teaching and/or CAM-ICU training at your institution. Additionally we periodically host CAM-ICU training workshops at Vanderbilt. If you are interested in any of this teaching, please contact us at delirium@vanderbilt.edu.