The 3D-CAM is a brief verbal assessment tool that can be used to test patients for delirium. The 3D-CAM can be completed in an average of 3 minutes and performs very well compared to an expert evaluation. This document will explain how to use the 3D-CAM in a research setting and will provide some background on delirium and how this tool came to be. We hope you find this manual very easy to use. If you have any questions, please do not hesitate to contact:

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<www.hospitalelderlifeprogram.org>

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Dear Colleagues,

We are very pleased that you are considering use of the 3D-CAM: the 3-Minute Diagnostic Interview for Confusion Assessment Method (CAM) defined delirium.

The 3D-CAM was developed with support from the National Institute on Aging. Sophisticated measurement methods were used to identify the best assessment items for each of the 4 diagnostic features of delirium in the CAM. The resulting 3D-CAM can be completed in a median of 3 minutes, and has excellent diagnostic test characteristics with a sensitivity of 95% and specificity of 94% compared to a reference standard based on an extensive clinical evaluation.

We hope that the following Users Guide will assist in your use of the 3D-CAM in your research studies. If you have any suggestions how to make this manual better, please send us feedback using the contact information above.

Thank you again for choosing the 3D-CAM.

Sincerely yours,

Edward R. Marcantonio, M.D., S.M.  Sharon K. Inouye, M.D., M.P.H.
Introduction

Delirium Assessment Specifics

Item by Item Guidance

Scoring the 3D-CAM

3D-CAM Flow Diagram

10 Tips for Delirium Interview Success

3D-CAM Instrument for Research

Acknowledgments

This manual was developed incorporating information and materials (with permission) from the following sources:


4. The SAGES Study: Training Manual and Questionnaires; 2010; Boston, Aging Brain Center.
Delirium is a sudden change in someone’s thinking ability that can have devastating consequences and can be very easily missed due to its frequent subtlety. This common condition remains distressingly under-recognized, with average detection rates of 12-35% in most clinical settings. The 3D-CAM, which stands for: “3-minute diagnostic interview for CAM-defined delirium”, will provide an efficient and reliable way to determine if a patient is delirious. The 3D-CAM can be completed in a median of 3 minutes, and has excellent diagnostic test characteristics with a sensitivity of 95% and specificity of 94% compared to a reference standard based on an extensive clinical evaluation*.

The 3D-CAM is a short interview that uses verbal responses and allows completion of the Confusion Assessment Method (CAM) diagnostic algorithm†. By providing a short, reproducible method for detecting delirium, the 3D-CAM facilitates needed systematic case-finding for delirium among vulnerable hospitalized elders.

This manual includes the 3D-CAM instrument to be used in a research setting. Please use this manual in any way that fits the needs of your team. We have found that assessing patients in teams of two and discussing the scoring together afterwards helps tremendously with understanding of the instrument and helps with consistency in the diagnosis of delirium.

We recommend the following procedure to train research staff on the use of the 3D-CAM:

1. Practice administering the instrument while coding the answers to get familiar and comfortable with the flow of the instrument.

2. Practice administering the instrument with older patients in pairs. Discuss any coding discrepancies that might occur.

3. We recommend a minimum of 5 delirious and 5 non-delirious patients be rated in pairs and discussed for the study team members to be standardized. Reminder: The team members must not know the delirium status of the patients before the assessment.


There are 4 key features of delirium that are identified in 2 ways 1) By asking the patient questions and 2) By observing the patient’s speech and behavior.

Overview: Each item in the 3D-CAM instrument directly informs one of the 4 CAM features in the algorithm that leads to determining the presence or absence of delirium. Within the instrument itself and within the item by item instructions included in this manual, each item clearly indicates which feature it informs. Within each feature, if ANY ONE of the items in the assessment is ‘positive’, the CAM feature in the final algorithm is positive. The CAM algorithm is considered positive if the following features are present: Feature 1) Acute onset or fluctuating course and Feature 2) Inattention and either Feature 3) Disorganized thinking or Feature 4) Altered level of consciousness.

Here are some general guidelines:

- Make sure the patient has GLASSES and HEARING AIDS on.

- Prepare yourself to CODE WHAT YOU SEE AND HEAR. Make no assumptions as to the cause of the behavior and take ample notes as necessary.

- Each question can be stated twice. Be sure to note behavior on the paper and provide an explanation if the line is blank (ex. Patient did not answer). This also may help when you code your observations later.

- ‘I don’t know’, no response at all or a non-sense response all are coded as an ‘8’ Don’t know/no response.

- A code of ‘7’ REF is only used when a patient actively refuses to answer the question
These training instructions will provide item-by-item guidance for the 3D-CAM instrument:

1. **What is the year?**
   - A correct answer must be exact

2. **What is the day of the week?**
   - A correct answer must be exact

3. **What type of place is this?**
   - A correct answer must be exact, for example: hospital, a rehabilitation center and/or nursing home, or home as appropriate. The patient does not have to know the actual name of the facility, just that it is a facility providing care to those who are acutely ill (if in a hospital). However, if the patient voluntarily gives the wrong name for the facility, then code incorrect

   **If any of 3 items above are anything other than correct, feature 3 is present**

4. **and 5. Digits Backwards**
   - Make eye contact and attempt to gain the patient's attention. Say digits at a rate of one per second. Numbers may not be repeated. If asked to repeat, say, “I'm sorry I can only say them once. Let’s try the next one.” Directions may be repeated once.
   - Score of 'correct' is given only if completely correct and 'error' if not correct. Please go through both items regardless of whether or not preceding item is done correctly.

6. **Days of the Week Backwards**
   - If the patient stares blankly after you ask him the question, say: “Can you tell me what is the day that comes before Saturday?” If the patient starts to give the days of the week backward and stops midway through answering, encourage him to continue. Say “Can you keep going? Can you tell me what comes before (say the last day that the patient gave)?” For example, if the patient responds Thursday, Wednesday, then stops, the interviewer probes with “Can you tell me what comes before Wednesday?” If the patient cannot continue after he has been prompted twice, stop prompting and proceed to the next question.

7. **Months of the Year Backwards**
   - Use same prompting approach as above for days of week. Remember, if the patient cannot continue after he has been prompted 2 times in total, stop prompting and proceed to the next question.

   **If any of items 4, 5, 6, or 7 above are anything other than correct, feature 2 is present**
PATIENT-REPORTED SYMPTOMS

8. Have you felt confused at any time during the past day?
   - Can prompt with “Any time in the last 24 hours” if they say “Well not today but I was last night”. Can also rephrase to say “Have you felt mixed up about anything you normally wouldn’t feel mixed up about?”

9. During the past day did you think that you were not really here [in the hospital]?
   - Can give an example ‘For example, did you wake up in the middle of the night or this morning and think you were at home?’

10. During the past day, did you see things that were not really there?
    - If the patient does not understand the question or if you feel you need to rephrase the question, say “Sometimes in the hospital, people feel mixed up and think strange things have happened to them. I want to know whether any of these things have happened to you. For example, did you think you saw a cup on the table and when you reached for it, it wasn’t there”?
    - If the patient reports no perceptual disturbances in response to this question but verbally reports having a disturbance at another point in the interview, rephrase the appropriate questions and ask whether the patient did actually have the experience. For example say, “Now let me make sure that I understand you. Did you say that you thought you saw....?” Then find out exactly when it happened, that is, whether it happened within the last 24 hours. If the response is yes, within 24 hours, change the appropriate response category to reflect this.

**If any of items 8, 9, or 10 above are anything other than ‘no’, feature 1 is present

OBSERVATIONAL ITEMS

11. Was the patient sleepy, stuporous, or comatose during the interview?
    - When entering the room and waking a patient up the first time, reduced level of consciousness (LOC) should not be coded. Even if you have to prod them strongly to wake them, this first ‘wake up’ is allowed as normal. A reduced LOC should only be coded when there is evidence of falling asleep while you are still in the room.
    - Assessing level of consciousness: Utilize the following 3 successive stimuli for arousal:
      i. Loud voice
      ii. Gentle touch (hand, then arm)
      iii. Loud voice and gentle shaking of one shoulder

      **Examples:** If the patient is any of these, altered level of consciousness will be ‘yes’.
      - Sleepy: Patient arouses readily to voice or gentle touch.
      - Stupor: Patient requires loud voice and shaking repeatedly.
      - Coma: Patient is unarousable by any of these means.
Additional hints:

- If patient keeps eyes closed for entire interview but answers questions correctly and none of the stimuli described above are needed, do not score as sleepy. Evidence of actually falling asleep is needed to be coded as sleepy (see below).
- To determine if someone is really asleep, you will need to be patient. If you do not get a response to a question and the patient has their eyes closed, please wait at least 20-25 seconds to see if they respond spontaneously. If they do not respond, carefully look for additional signs of sleep (eyes rolled back, head bobbing, snoring, twitching, etc).
- If eyes are closed with no signs of sleep, say their name and ask them if you should repeat the question or if they were ‘just thinking’.

12. Did the patient show hypervigilance such as excessively strong responses to ordinary objects/stimuli in the environment, for example, being inappropriately startled, etc? Note: Triggers altered level of consciousness

- If the patient seems extremely watchful, and is constantly scanning the environment and focusing on objects he is hypervigilant. If he becomes excessively absorbed with objects, he may be hypervigilant. When the patient appears hypervigilant because he is carrying out a specific task, for example, repetitively folding sheets during interview, only code as hypervigilant if the patient is absorbed with examining the sheets at the same time. The patient would have to be examining the sheets as he was folding them for this behavior to be coded as hypervigilance. The patient can be grasping and picking the sheets but not be fixated on them. There is often a foreboding quality to the hypervigilance, with the patient appearing fearful. An example of hypervigilance with this foreboding quality is when a patient seems fixated on a cardiac monitor and cringes from it, or looks afraid.

"If either items 11 or 12 above are ‘yes’, feature 4 is present"

13. Was the patient’s Flow of ideas unclear or illogical, for example saying something that makes no sense, is unrelated to the interview (tangential) or making contradictory statements?

- Some patients are just loquacious (talkative) and take a long time to answer the interviewer’s question. Although the patient’s answer might at first appear tangential, if the stories are related to the questions and the patient eventually responds to the question, this is not coded as tangential. The talking must be about something unrelated to the question, or a change of subject to be coded as tangential. For example, the interviewer is asking questions about sleep problems and the patient responds by telling you about his family or asks you whether you are married. Also code illogical flow if a persistent thought(s) prevents patient from answering the interviewer’s question.
- Non-sense answer: You ask the patient if they needed help with eating, and the response is: “All the bags are here.”
- Contradictory statement: Patient said they slept through the night, and then later indicated the nurse kept coming in and waking them up throughout the night.
- Note: Patient must be able to speak (e.g., not comatose, intubated) to assess this item. NOTE: Do not score slurred or garbled speech, reversed words, or reversed letters as disorganized speech.
14. Conversation *rambling*, for example did he/she give inappropriately *verbose* and off *target* responses?
   
   - Did the patient respond with rambling conversation, for example tells a story upon answering the question which is inappropriately verbose or long. Some patients are just loquacious (talkative) and take a longer time to answer the interviewer's question. The talking must be excessive and off target (something minimally related to the question) to be coded as rambling.

15. Was the patient's speech unusually *limited* or *sparse*? (e.g. yes/no answers) or unusually *slow* or *halting*?
   
   - For limited or sparse speech, the patient doesn't initiate any conversation, but responds adequately to questions, with only yes/no responses. The interviewer might have to repeat the questions several times before the patient responds with anything more than yes/no answers. In severe cases, there is almost no conversation from the patient.
   - Speech is unusually slow/halting if there are long pauses during completion of a thought or if speech is markedly slower than normal conversation.

**If any of items 13, 14, or 15 above are 'yes', feature 3 is present**

16. Did the patient have trouble keeping track of what was being said during the interview, for example, fail to follow instructions or answer questions one at a time?
   
   - If the interviewer has to ask questions repeatedly before the patient responds, this is a case of the patient having trouble keeping track of the interview. Additional inattentive behaviors are as follows: a) The patient does not follow what is being said during the interview, that is, he may be answering a question and in the middle looks away from the interviewer or just stops talking and does not finish responding; b) The patient loses track of the fact that he is being interviewed. For example, the patient starts to speak to someone else and doesn't come back to the interview; c) The patient can also lose track of what he is saying. The patient often has little eye contact with the interviewer. This item can also be present when the patient answers each question with the exact same response, even though it is no longer appropriate to the question.

17. Did the patient fail to attend to the interview due to being inappropriately distracted by environmental stimuli, for example, respond to questions asked of roommate?
   
   - If the patient seems inappropriately diverted by normal stimuli, code him as distractible. Such patients are generally unable to screen out easily recognizable sounds or sights. For example, the patient stops answering questions because he hears people in the hall talking, running water, or beepers. He is easily sidetracked by these sounds and turns his head away from the interviewer. If the patient is appropriately distracted by momentary noise, like something dropping outside his door or loud talk, do not code this as positive. A sure sign that the patient is not inappropriately distracted is when the interviewer is also distracted by the noise.

**If either item 16 or 17 above are 'yes', feature 2 is present**
**Note for final 3 items below:** Fluctuation refers to consistency of a symptom or symptoms across the interview. If symptom(s) are consistent throughout, then fluctuation is not present. If symptoms tend to come and go, fluctuation is more likely present.

18. Did the patient’s **level of consciousness fluctuate** during the interview, for example, start to respond appropriately and then drift off?
   - Example: For part of the interview, patient is alert and responsive to all questions, while at other times patient is sleepy and difficult to arouse.

19. Did the patient’s **level of attention fluctuate** during the interview, e.g., did the patient’s focus on the interview or performance on the attention tasks (digit span, days & months backwards) vary significantly?
   - Did patient demonstrate a fluctuating level of attention or inattention on either informal or formal tasks of attention? Formal tasks (digit span, DOW and MOY backwards): Was attention variable within or between items? Was the patient able to do the harder tasks but struggled with the easier ones?
   - Example: For part of the interview, the patient is able to focus on questions and keep track of what is being said; at other times, interviewer cannot engage the patient, who perseverates or answers inappropriately.

20. Did the patient’s **speech/thinking fluctuate** during the interview, for example, patient spoke slowly for a while, then sped up?
   - Example: For part of the interview, patient gives clear, coherent answers, and at other times, gives non-sense, incoherent answers

**If any of items 18, 19, or 20 above are ‘yes’, feature 1 is present**

SUPPLEMENTARY QUESTIONS: To be asked only if Feature 1 is NOT present, Feature 2 is present, and either Feature 3 or Feature 4 are present.

21. IF IT IS THE FIRST DAY OF HOSPITALIZATION OR NO PREVIOUS 3D-CAM RATINGS ARE AVAILABLE: Contact a family member, friend, or health care provider who knows the patient well and ask: “Is there evidence of an acute change in mental status (memory or thinking) from the patient’s baseline?”
   - This question is asking about a recent change in behavior. Is his/her relative confused? Does he/she seem disoriented? An example would be if his/her friend or relative suddenly does not make sense at times when talking. Code the item as ‘yes’ if these changes are NEW and have occurred mainly in the past few hours to days. If they have been problems for many months, answer NO. If the answer is ‘yes’, then CAM feature 1 should be coded as positive which would confirm delirium positive.

22. IF SECOND DAY OF HOSPITALIZATION OR LATER AND PREVIOUS 3D-CAM RATINGS ARE AVAILABLE: Review previous 3D-CAM assessments and determine if there has been an acute change in performance, based on ANY new "positive" items
   - For example if the patient scored worse on any of the attention items on interview day #2, acute change can be coded on that day. The same applies for any of the 4 CAM features. If the answer is ‘yes’, then CAM feature 1 should be coded as positive which would confirm delirium positive.
The 3D-CAM is considered positive if the following features are present: 1) acute onset or fluctuating course and 2) inattention and 3) either disorganized thinking or 4) altered LOC.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Question #</th>
<th>Positive Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acute Onset</td>
<td>Any of the items 8, 9, 10</td>
<td>Anything other than ‘no’ is coded</td>
</tr>
<tr>
<td>-OR-</td>
<td>[Any of the items 18, 19 &amp; 20]</td>
<td>Answer is ‘yes’</td>
</tr>
<tr>
<td>Fluctuation</td>
<td>[Any of the items 18, 19 &amp; 20]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Anything other than ‘no’ is coded]</td>
<td></td>
</tr>
<tr>
<td>-AND-</td>
<td>[Answer is ‘yes’]</td>
<td></td>
</tr>
<tr>
<td>2. Inattention</td>
<td>Any of the items 4, 5, 6, 7</td>
<td>Anything other than ‘correct’ is coded</td>
</tr>
<tr>
<td></td>
<td>Either of the items 16 &amp; 17</td>
<td>Answer is ‘yes’</td>
</tr>
<tr>
<td>-AND EITHER-</td>
<td>[Anything other than ‘correct’ is coded]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Answer is ‘yes’]</td>
<td></td>
</tr>
<tr>
<td>3. Disorganized Thinking</td>
<td>Any of the items 1, 2, 3</td>
<td>Anything other than ‘correct’ is coded</td>
</tr>
<tr>
<td></td>
<td>Any of the items 13, 14, 15</td>
<td>Answer is ‘yes’</td>
</tr>
<tr>
<td>-OR-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Altered Level Of Consciousness</td>
<td>Either of the items 11 or 12</td>
<td>Answer is ‘yes’</td>
</tr>
</tbody>
</table>

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**Feature 1: Acute Change/Fluctuating Course**
Any ONE of the following present?*
Assessment questions: Self report of confusion OR disorientation OR hallucinations
Observed fluctuations in: consciousness OR attention OR speech

**Feature 2: Inattention**
Any ONE of the following present?
Assessment questions incorrect: Digit Span 3 backwards OR 4 backwards OR days of week backwards OR months of year backwards
Observed: Trouble keeping track of interview or inappropriately distracted

**Feature 3: Disorganized Thinking**
Any ONE of the following present?
Assessment questions incorrect: Orientation to year, day of week, type of place
Observed: Flow of ideas unclear/illogical, conversation rambling/off target or abnormally sparse

**Feature 4: Altered Level of Consciousness**
Any ONE of the following present?
Observed: Patient sleepy, stuporous, comatose and/or hypervigilant

*Feature 1 Supplementary Questions: To be asked only if feature 2 is present and either feature 3 or feature 4 is present, but feature 1 is uncertain:
Contact a family member, friend or health care provider and ask, “Is there evidence of acute (sudden) change in mental status (memory or thinking) from the patient’s baseline?”
OR
If 2nd day of hospitalization or later and previous 3D-CAM ratings are available: Has there been an acute change in performance, based on ANY new "positive" items?

**3D-CAM FLOW DIAGRAM**

DELIRIUM NOT PRESENT

DELIRIUM PRESENT
(only if the first box, feature 1, is a yes. If not, see last box)

DELIRIUM NOT PRESENT

DELIRIUM PRESENT
1. The interview “begins” at the door as you observe the patient and his/her behavior on approach. It ends when you leave sight of the patient.

2. When approaching a patient, first observe patient response as he/she sees you approach. If no engagement made, seek patient’s attention with progressively stronger stimuli: speak to patient, lightly touch, gently shake or tap, and lastly shake moderately to arouse.


4. In assessing for disturbance of behavior remember the comparison is to the norm of human behavior. No excuses because in hospital, ill, older, just got medication, etc…

5. If patient shows increasing impatience with interview and seems to be tiring of questions, offer positive reinforcement and insure that there are just a few more questions remaining.

6. Complete observational scoring sections of interview as soon as interview ends.

7. Review each item of the interview before submitting. Every item should have a code.

8. The assessment of attention is key in delirium detection. Carefully observe patient’s ability to maintain and appropriately shift attention during both informal and formal testing items.

9. In cases of incomplete patient questioning the observational items should still be competed.

10. Jot notes describing patient behavior and performance to support observations and aid coding decisions.
APPENDIX

3D-CAM Instrument
For Research

Evaluator:
Date:
Patient:
Time:

COGNITIVE FUNCTION

Now I’d like to ask you some questions to check your memory. Don’t worry if you don’t know the answers.

[YOU MAY REPEAT EACH QUESTION ONCE]

(WRITE PATIENT’S ANSWERS TO ALL QUESTIONS AND CIRCLE NUMBER AS INDICATED)

<table>
<thead>
<tr>
<th>ORIENTATION</th>
<th>CORRECT</th>
<th>ERROR</th>
<th>REF</th>
<th>DK/No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the year?</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What is the day of the week?</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. What type of place is this?</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

"If any of 3 items above are anything other than correct, feature 3 is present"
DIGIT SPAN

[SAY DIGITS AT RATE OF ONE PER SECOND]

Now I am going to read some numbers, but I want you to repeat them in backwards order from the way I read them to you. So for example if I said 6-4, you would say 4-6.

<table>
<thead>
<tr>
<th>DIGITS BACKWARD</th>
<th>Response</th>
<th>Correct</th>
<th>Error</th>
<th>REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. 7 - 5 - 1</td>
<td>___ - ___ - ___</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>5. 8 - 2 - 4 - 3</td>
<td>___ - ___ - ___ - ___</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

6. DAYS OF WEEK BACKWARDS
Can you tell me the days of the week backwards? Say Saturday as your first day.

(May prompt with: “what is the day before Saturday? or if subject stops with Day X, say “what is the day before day X? ....” This prompt may be used 2 times in total. If participant starts reciting days forward repeat overall instructions.

<table>
<thead>
<tr>
<th>Day</th>
<th>Response</th>
<th>Correct</th>
<th>Error</th>
<th>REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Friday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Thursday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Wednesday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Tuesday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Monday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Sunday</td>
<td>____________</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

Record response verbatim

Coding Instructions: If the subject leaves 1 day out, total recorded = 6, if 2 days are reversed, total recorded =5
7. MONTHS OF YEAR BACKWARDS

Can you tell me the months of the year backwards? Say December as your first month?

(May prompt with: “what is the month before December? or if the subject stops with Month X, “say what is the month before Month X? ….” This prompt may be used 2 times in total. If participant starts reciting months forward repeat overall instructions)

<table>
<thead>
<tr>
<th>Month</th>
<th>Response</th>
<th>Correct</th>
<th>Error</th>
<th>REF</th>
<th>DK/No Response</th>
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<tbody>
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<td>December</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>November</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>October</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>September</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>August</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
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<tr>
<td>July</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>June</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>May</td>
<td>__________</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
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<tr>
<td>April</td>
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<td>March</td>
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<tr>
<td>February</td>
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<td>January</td>
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<td>7</td>
<td>8</td>
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</tbody>
</table>

Record response verbatim.

Coding Instructions: If the subject leaves one month out, total recorded = 11, if the months are reversed, total recorded = 10

**If any of items 4, 5, 6, or 7 above are anything other than correct, feature 2 is present**
PATIENT-REPORTED SYMPTOMS:
If the respondent answers yes to any of the following questions, probe him/her for more details and note responses. E.g. Frequency

If the respondent’s answers are nonsensical, code as 8.

Now I am going to ask you some questions about how you have been thinking during the past day.

8. Have you felt confused at any time during the past day?

1 - No 2 - Yes 7 - REF 8 – DK/Uncertain/NR 9 – NA

9. During the past day did you think that you were not really here [in the hospital]?

1 - No 2 - Yes 7 - REF 8 – DK/Uncertain/NR 9 – NA

10. During the past day, did you see things that were not really there? (If patient is blind skip and code 9)

1 - No 2 - Yes 7 - REF 8 -DK/Uncertain/NR 9 – NA

**If any of items 8, 9, or 10 above are anything other than ‘no’, feature 1 is present**

End of Patient Interview

Thank you so much for your time.

Proceed to area for completion of interview observation items and final coding.

Used with permission. The SAGES Study: Training Manual and Questionnaires; 2010; Boston, Aging Brain Center.
<table>
<thead>
<tr>
<th>INTERVIEWER OBSERVATIONS</th>
<th>FEATURE 4 IS PRESENT?</th>
<th>FEATURE 3 IS PRESENT?</th>
<th>FEATURE 2 IS PRESENT?</th>
<th>FEATURE 1 IS PRESENT?</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Was the patient sleepy, stuporous, or comatose during the interview?</td>
<td>1 – No 2 - Yes</td>
<td></td>
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<tr>
<td>12. Did the patient show hypervigilance such as excessively strong responses to ordinary objects/stimuli in the environment, for example, being inappropriately startled, etc? Note: Triggers altered level of consciousness</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>13. Was the patient's Flow of ideas unclear or illogical, for example saying something non-sensical, unrelated to the interview (tangential) or making contradictory statements</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>14. Conversation rambling, for example did he/she give inappropriately verbose and off target responses?</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>15. Was the patient's speech unusually limited or sparse? (e.g. yes/no answers) or unusually slow or halting?</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>16. Did the patient have trouble keeping track of what was being said during the interview, for example, fail to follow instructions or answer questions one at a time?</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>17. Did the patient fail to attend to the interview due to being inappropriately distracted by environmental stimuli, for example, respond to questions asked of roommate?</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>18. Did the patient's level of consciousness fluctuate during the interview, for example, start to respond appropriately and then drift off?</td>
<td>1 – No 2 - Yes</td>
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</tr>
<tr>
<td>19. Did the patient's level of attention fluctuate during the interview, e.g., did the patient’s focus on the interview or performance on the attention tasks (digit span, days &amp; months backwards) vary significantly?</td>
<td>1 – No 2 - Yes</td>
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<tr>
<td>20. Did the patient's speech/thinking fluctuate during the interview, for example, patient spoke slowly for a while, then sped up?</td>
<td>1 – No 2 - Yes</td>
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<td></td>
</tr>
</tbody>
</table>
CAM Summary – FEATURES 1-4

Coding for features 1 -4  (0)NO  (1)YES

1. **Acute Onset and Fluctuating Course** - Code ‘Yes’ if any of the items 8, 9, 10, 18,19 and 20 are incorrect/present

2. **Inattention** - Code ‘Yes’ if any of the items 4,5,6,7, 16 and 17 are incorrect/present

3. **Disorganized Thinking** - Code ‘Yes’ if any of the items 1, 2, 3, 13, 14 and 15 are incorrect/present

4. **Altered Level of Consciousness** - Code ‘Yes’ if any of the items 11 and 12 are present

COMPLETE ONLY IF FEATURE 1 IS NOT PRESENT AND FEATURE 2 AND EITHER FEATURE 3 OR 4 IS PRESENT

21. **IF IT IS THE FIRST DAY OF HOSPITALIZATION OR NO PREVIOUS 3D-CAM RATINGS ARE AVAILABLE:**

   Contact a family member, friend, or health care provider who knows the patient well and ask: “Is there evidence of an acute change in mental status (memory or thinking) from the patient’s baseline?”

   FEATURE 1 IS PRESENT?
   1 – No  2 – Yes  9 – Skip

22. **IF SECOND DAY OF HOSPITALIZATION OR LATER AND PREVIOUS 3D-CAM RATINGS ARE AVAILABLE:** Review previous 3D-CAM assessments and determine if there has been an acute change in performance, based on ANY new "positive" items

   FEATURE 1 IS PRESENT?
   1 – No  2 – Yes  9 – Skip

The diagnosis of delirium by CAM requires the presence of features 1 AND 2 AND either 3 or 4.

5. **Delirium present?** (0) No  (1) Yes

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