DEL-S (Delirium Severity) Long Form Instrument

Training Manual and Coding Guide

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INTRODUCTION AND BACKGROUND

Delirium is a common, preventable, and morbid complication among older adults, associated with prolonged hospital stay, institutionalization, and increased risks for subsequent dementia and death. An estimated 12 million older Americans experience delirium each year, with excess annual healthcare costs of >$164 billion attributable to delirium. To date, instruments to assess delirium have focused on the presence or absence of delirium. Here, we propose a new instrument designed to quantify the severity of an episode of delirium.

The ability to quantify delirium severity is of critical importance for clinical care and research. Delirium severity represents an important outcome measure for clinical trials, biomarker development, and prognosis studies. Further, delirium severity can be correlated with clinical outcomes, serving as a powerful, nuanced prognostic predictor. In our prior work, increasing delirium severity was directly and strongly associated with poor hospital and post-hospital outcomes (e.g., cognitive or functional decline, length of stay, institutionalization, death within 90 days, costs, and long-term cognitive decline.) Delirium severity can also be used to facilitate risk stratification to identify high-risk patients to enroll in intervention programs or trials. Validation of biomarkers against delirium severity measures will be essential to advance mechanistic understanding and speed development of pathophysiologically-based treatments. Moreover, delirium severity measures are already used clinically to estimate clinical care staffing needs and potential costs of care.

The DEL-S is a brief assessment tool that can be used to rate the severity of delirium symptoms. The DEL-S has a short and long form that incorporates responses and observations into a summary score. The DEL-S was developed with support from the National Institute on Aging. Rigorous measurement development methods were used to determine the best assessment items for scoring delirium severity. Using item response theory, our research team selected specific items derived based on an expert panel assessment of key domains of delirium severity. Our expert panel comprised of 9 experts from general internal medicine, geriatric medicine, geriatric psychiatry, cognitive neurology, gerontological nursing and social work. These experts refined the questions to be included in the final DEL-S tool through a rigorous adjudication process. The final items were evaluated using biostatistical methods to develop the scoring procedure.

The DEL-S can be completed in less than 3 minutes on average, and demonstrates high reliability and construct validity for prediction of relevant clinical outcomes. This manual explains how to use the DEL-S for both clinical and research purposes. We hope that this systematic, reproducible method for objectively rating delirium severity will help to advance clinical care and research in delirium.

DEL-S Long Form Delirium Severity Instrument

Cognitive Assessment - *READ*: I have some questions about your thinking and memory…			*Coding Instructions: Incorrect also includes "I don't know", and No response/non-sensical responses.* *For any 'Incorrect' or 'Yes' responses, check the box in the final column designating which feature is present.*
Can you tell me your full name?	□ **CORRECT**	□ **INCORRECT**	
Can you tell me why you are here in the hospital?	□ **CORRECT**	□ **INCORRECT**	
Can you tell me what year it is now?	□ **CORRECT**	□ **INCORRECT**	
Can you tell me what day of the week it is today?	□ **CORRECT**	□ **INCORRECT**	
Can you tell me what month it is?	□ **CORRECT**	□ **INCORRECT**	
Can you tell me what time of day it is? *(morning, afternoon or evening)*	□ **CORRECT**	□ **INCORRECT**	
Can you tell me where we are? *(What is the name of this place)*	□ **CORRECT**	□ **INCORRECT**	
Can you tell me the months of the year backwards, starting with December? [D,N,O,S,A,J,J,M,A,M,F,J] *may prompt with "what is month before …." for up to 2 prompts.*	□ **CORRECT**	□ **INCORRECT**	
Can you tell me the days of the week backwards, starting with Saturday? [S,F,T,W,T,M,S] may prompt with "what is day before …." for up to 2 prompts.	□ **CORRECT**	□ **INCORRECT**	
Now I am going to say some numbers. Please repeat them back to me. Begin with: "2-9-1"	□ **CORRECT**	□ **INCORRECT**	
The next is: "3-5-7-4"	□ **CORRECT**	□ **INCORRECT**	
The next is: "6-1-9-2-7"	□ **CORRECT**	□ **INCORRECT**	
Now I am going to read some more numbers. I want you to repeat them in backwards order from the way I read them to you. For instance, if I say "6 – 4", you would say "4 -6". OK? The first one is "7-4-2" (2-4-7).	□ **CORRECT**	□ **INCORRECT**	
The next is: "5-3-8-4" (4-8-3-5).	□ **CORRECT**	□ **INCORRECT**	

Patient Reported Ratings - *READ: I am going to ask some questions about how you have been feeling...*				***DEL-S* Scoring**
1. During the past day have you thought you were somewhere other than the hospital or have you gotten mixed up about the time of day?	□ **NO**	□ **YES**		**+1 if yes**
2. Sometimes in the hospital people can experience unusual thoughts. Have you thought that someone was trying to hurt you when they were not?	□ **NO**	□ **YES**		**+1 if yes**
3. Did you mistake something you heard or saw for something else?	□ **NO**	□ **YES**		**+1 if yes**
4. Did objects look strange to you? For example, did they look smaller, bigger, or fuzzier than usual?	□ **NO**	□ **YES**		**+1 if yes**
5. Did you think something was moving when it was not? For example, did objects that were not moving appear to be moving in slow motion?	□ **NO**	□ **YES**		**+1 if yes**
6. Did you see, hear, or feel things that seemed out of place? For example, did you see something that did not belong in your room, such as a family member you know was not there?	□ **NO**	□ **YES**		**+1 if yes**
Observer Ratings: To be completed after patient questions 1-6 above. If answer below is YES, check mild or marked.				
1. Did the patient have difficulty focusing attention, for example asking questions to be repeated often or having difficulty keeping track of what was being said?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
2. Did the patient seem easily distracted by external stimuli?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
3. Was the patient disoriented at any time during the interview, such as thinking he/she was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
4. Did the patient demonstrate disorganized thinking, such as conversation that was rambling or off-target, ideas that were unclear or illogical, or showing a disjointed thought process that did not make sense?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
5. Overall, how would you rate this patient's level of consciousness? (Code most severe level)	□ **ALERT**	□ **LETHARGIC** □ **STUPOR**	□ **COMA**	**+1 if Lethargic, Stupor, or Coma**
6. Did the patient appear to be hypervigilant, such as being hyperalert, overly sensitive to environmental stimuli, or being startled very easily?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
7. Did the patient appear to be fearful or afraid?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
8. Did the patient have beliefs that you know were not true, for example insisting that other people were trying to harm him/her or steal from him/her?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
9. During the interview, did the patient exhibit an unusually increased level of motor activity, such as restlessness, pulling at lines, making frequent sudden changes of position, or rapid or pressured speech, such as unusually rapid responses to questions?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**
10 During the interview, did the patient exhibit an unusually decreased level of motor activity, such as sluggishness, moving very slowly or unusually delayed speech, such as unusually slow responses to questions?	□ **NO**	□ **YES, MILD**	□ **YES, MARKED**	**+1 if mild +2 if marked**

DEL-S Long Form:
Scoring Instructions

DEL-S Long Form Score (Points)	Description
0	No symptoms of delirium
1	One delirium-related symptom, but subsyndromal
2-4	Mild delirium severity
5-6	Moderate delirium severity
7-25	Severe delirium severity

DEL-S Long Form: Full questionnaire

Recommended for clinical reference standard and research use

COGNITIVE ASSESSMENT

Could you tell me your full name: _____

1- Correct 2 – Error 7 – Refusal 8 – DK 9 – Unable

Can you tell me why you are here in the hospital? *Record answer (open. ended)*:_____

_____

_____

1- Correct 2 - Error 7 – Refusal 8 – DK 9 – Unable

Now I'd like to ask you some questions about your thinking and memory. Don't worry if you don't know the answers.

ORIENTATION	CORRECT	ERROR	REF	DK
What year is it now?	1	2	7	8
_____				
What day of the week is it today?	1	2	7	8
_____				
What is the month?	1	2	7	8
_____				
What time of day is it?	1	2	7	8
_____(				
morning, afternoon or evening)				
Can you tell me where we are?	1	2	7	8
_____				
(PROMPT: What is the name of this place?)				

MONTHS OF THE YEAR BACKWARDS (MOYB)

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

Month	Response	Correct	Error	REF	DK
1. December	_____	1	2	7	8
2. November	_____	1	2	7	8
3. October	_____	1	2	7	8
4. September	_____	1	2	7	8
5. August	_____	1	2	7	8
6. July	_____	1	2	7	8
7. June	_____	1	2	7	8
8. May	_____	1	2	7	8
9. April	_____	1	2	7	8
10. March	_____	1	2	7	8
11. February	_____	1	2	7	8
12. January	_____	1	2	7	8

Record response verbatim.

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

- ** MOYB → if incorrect, go to DOWB
  → if correct, go to digit span

DAYS OF THE WEEK BACKWARDS (DOWB)

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.

Day	Response		Correct	Error	REF	DK	NA
1.	Saturday	__	1	2	7	8	9
2.	Friday	__	1	2	7	8	9
3.	Thursday	__	1	2	7	8	9
4.	Wednesday	__	1	2	7	8	9
5.	Tuesday	__	1	2	7	8	9
6.	Monday	__	1	2	7	8	9
7.	Sunday	__	1	2	7	8	9

Record response verbatim. Coding Instructions: If the subject leaves one day out, total recorded=6; if 2 days are reversed, total recorded = 5

DIGIT SPAN

Now I am going to say some numbers. Please repeat them back to me.

[SAY DIGITS AT RATE OF ONE PER SECOND]

DIGITS FORWARD	Response	Correct	Error	Unable	REF
2 - 9 - 1	___-___- ___	1	2	6	7
3 – 5 – 7 - 4	___-___-___- ___	1	2	6	7
6 - 1 - 9 - 2 - 7	___-___-___-___- ___	1	2	6	7

Now I am going to read some more 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.

[SAY DIGITS AT RATE OF ONE PER SECOND]

DIGITS BACKWARD	Response	Correct	Error	Unable	REF
7 - 4 - 2	___-___- ___	1	2	6	7
5 - 3 - 8 - 4	___-___-___- ___	1	2	6	7

PATIENT REPORTED SYMPTOMS

Next, I am going to ask you some questions about how you have been thinking during the past day (i.e., over the past 24 hours). Just let me know if you have experienced any of these things over the past day….
[If the respondent answers yes to any of the following questions, probe for more details and note responses in the section below. If the answers are nonsensical, code as 8.]

DISORIENTATION

1. **During the past day, have you thought you were somewhere other than the hospital or have you gotten mixed up about the day or time?** *If Yes, probe for details*.

   1 - Yes 2 - No 7 - REF 8 – Uncertain

 # If question above is 'Yes', please probe for frequency, duration and disruption of care and note all details below:

_____

_____

_____

_____

_____

DELUSIONS

2. **Sometimes in the hospital people can experience unusual thoughts. Have you thought that someone was trying to hurt you when they were not?** *If Yes, probe for details in order to rate these delusions below.*

   1 – Yes 2 - No 7 - REF 8 – Uncertain

 # If question above is 'Yes', please probe for frequency, duration and disruption of care and note all details below:

_____

_____

_____

_____

_____

PERCEPTUAL DISTURBANCE

3. Did you mistake something you heard or saw for something else? *If Yes, probe for details*.

1 - Yes 2 - No 7 - REF 8 – Uncertain

 # If question above is 'Yes', please probe for frequency, duration and disruption of care and note all details below:

_____

_____

_____

_____

4. Did objects look strange to you? For example, did they look smaller, bigger, or fuzzier than usual? (If patient is blind skip and code 9) *If Yes, probe for details*.

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

 # If question above is 'Yes', please probe for frequency, duration and disruption of care and note all details below:

_____

_____

_____

_____

_____

5. Did you think something was moving when it was not? For example, did objects that were not moving appear to be moving, or did objects appear to be moving in slow motion? *If Yes, probe for details*.

(If patient is blind skip and code 9)

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

 # If question above is 'Yes', please probe for frequency, duration and disruption of care and note all details below:

_____

_____

_____

_____

_____

6. Did you see, hear, or feel things that seemed out of place? For example, did you see something that did not belong in your room, such as a family member you know was not there? *If Yes, probe for details*.

1 - Yes 2 - No 7 - REF 8 - Uncertain

 # If question above is 'Yes', please probe for frequency, duration and disruption of care and note all details below:

_____

_____

_____

_____

_____

END OF INTERVIEW

OBSERVATIONAL RATINGS BY INTERVIEWERS

Immediately after completing the interview, please answer the following questions based on what you observed during the entire interview and cognitive function assessment, or based on reports from nurses or family members.

INATTENTION

1. Did the patient have difficulty focusing attention, for example asking questions to be repeated often or having difficulty keeping track of what was being said?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

2. Did the patient seem easily distracted by external stimuli?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

DISORIENTATION

3. Was the patient disoriented at any time during the interview, such as thinking he/she was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

DISORGANIZED THINKING

4. Did the patient demonstrate disorganized thinking, such as conversation that was rambling or off-target, ideas that were unclear or illogical, or showing a disjointed thought process that did not make sense?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

ALTERED LEVEL OF CONSCIOUSNESS

5. Overall, how would you rate this patient's level of consciousness? (*Code most severe level*)

Alert (Normal)	- 1
Lethargic (Drowsy, easily aroused)	- 2
Stupor (Difficult to arouse)	- 3
Coma (Unarousable)	- 4

6. Did the patient appear to be hyper-vigilant, such as being hyper-alert, overly sensitive to environmental stimuli, or being startled very easily?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

ANXIETY

7. Did the patient appear to be fearful or afraid?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

DELUSIONS

8. Did the patient have beliefs that you know were not true, for example insisting that other people were trying to harm him/her or steal from him/her?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

PSYCHOMOTOR AGITATION

9. During the interview, did the patient exhibit an unusually increased level of motor activity, such as restlessness, pulling at lines, making frequent sudden changes of position, *or* rapid or pressured speech, such as unusually rapid responses to questions?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

PSYCHOMOTOR RETARDATION

10. During the interview, did the patient exhibit an unusually decreased level of motor activity, such as sluggishness, moving very slowly *or* unusually delayed speech, such as unusually slow responses to questions?

Not present at any time during interview	- 1
Present at some time during interview but in mild form	- 2
Present at some time during interview in marked form	- 3
Uncertain	- 8

Recommended Training Procedure for Clinical Reference Standard or Research Use

We recommend the following procedure to initiate and train new interviewers to the use of DEL-S. An experienced user, Principal Investigator (PI), research coordinator or project director should provide a general overview on the DEL-S. Afterwards, we recommend the following approach:

- One-on-one sessions that pair interviewers who practice the interviews with each other. Ideally an experienced interviewer is paired with a new interviewer.
- Pilot the interviews on institutional floors with delirious and non-delirious patients (hospital, nursing home, inpatient rehabilitation). These interviews are followed up with feedback given to each other (experienced interviewer and new interviewers).
- Inter-rater reliability assessments: These are done with pairs of interviewers observing the same patient. One interviewer administers the DEL-S and the other observes. They both score the patient. On the next paired interview, the other interviewer performs the interview. Ideally, this should be done on 5 delirious and 5 non-delirious patients. This process should be repeated until they achieve and agreement of >80% on total scores on the DEL-S. Early paired ratings should be observed by the PI, research coordinator or project director. All discrepancies should be discussed and resolved.
- Ongoing special coding sessions are recommended once a month thoughout the program or study duration for all the interviewers with the PI, clinical coordinator or project director to answer questions about scoring DEL-S. In addition, the inter-rater reliability assessments are conducted every 6 months for the duration of the study.

Specific Item-By-Item Instructions for Training

General Instructions: For all cognitive items, continue the interview even if the patient cannot answer. Make a note if the answer is inaccurate AND whether questioning was challenging for any reason (visitor or nurse in the room, room service bringing food tray, transport coming to take patient, etc.). If the patient answers nonsensically, or does not answer at all, code as an error. Each question can be stated twice; follow exact wording. Be sure to note behavior on the paper and provide an explanation if left blank (ex: Patient did not answer). This also may help when you code your observations later.

ORIENTATION

Question: Could you tell me your full name?

- Must give exact first and last names; confirm with patient wristband or medical record.

Question: Can you tell me why you are here in the hospital?

- Probe for details. Confirm with medical record.

Question: What year is it now?

- Answer must be exact

Question: What day of the week is it today?

- Answer must be exact

Question: What is the month?

- Answer must be exact

Question: What time of day is it?

- Note: Options are morning, afternoon, or night

Question: Can you tell me where we are?

- **Prompt (Alternate question): What is the name of this place?**

MONTHS OF YEAR BACKWARDS (MOYB)

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

- If the patient does not answer after you ask him/her the question, say: “Can you tell me what month comes before December?” If the patient starts to give the months of the year backwards and stops midway through answering, encourage him/her to continue. Say, “Can you keep going? Can you tell me what comes before (say the last month that the patient gave)? If the patient cannot continue after s/he has been prompted two times for the same month, stop prompting and proceed to the next question.

DAYS OF WEEK BACKWARDS (DOWB)

Can you tell me the days of the week backwards? Say Saturday as your first day.

- Use the same prompting approach as above for months of the year. If the patient cannot continue after being prompted 2 times in total, stop prompting and proceed to the next question.

Digits Forward

2 – 9 – 1
3 – 5 – 7 – 4
6 – 1 – 9 – 2 – 7

- Recite at about one per second
- Make sure you have the patient's attention and make eye contact. 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."
- "Unable" should be reserved for a *true inability* to perform the item for physical reasons, such as complete deafness or coma. All other reasons should be coded as incorrect.

Digits Backward

7 – 4 – 2
5 – 3 – 8 – 4

- Use the same approach as above for Digits Forward

Patient Reported Symptoms:

For all of the questions below (#1-6), if the patient responds yes (1), **ask for details and provide notes in the section provided**. If the patient hesitates and is noncommittal, such as "Well, I'm not sure, but I don't think I've had anything like that..." code as (2) no. The assumption is that patients who have had this experience are sure about it and are able to describe it. If he responds "I don't know, I don't remember," code as an (8) DK (don't know)/Uncertain. **Any nonsensical responses should also be coded as DK/Uncertain**.

Please note for all of these questions, please prompt that the "past day" refers to the past 24 hours (and includes the previous night). Record any details the patient provides. For all of these questions, can provide prompts or probes as per examples below.

DISORIENTATION

1. **Have you thought you were somewhere other than the hospital or have you gotten mixed up about the day or time?**

- Probe: Can give an example-- 'For example, did you wake up this morning and think you were at home?'

DELUSIONS

2. **Sometimes in the hospital people can experience unusual thoughts. Have you thought that someone was trying to hurt you when they were not?**

- Probe: If the patient does not understand, ask “Did you think that people were trying to do bad things to you when they really were not,” or “Did you think that people were scheming against you when they really were not?” For any positive response, seek details about frequency, duration and disruption of care, rate the severity of the delusions as either mild, moderate or severe; record notes in section provided.
- Example: When a patient tells you that he thought he was tied up and someone was trying to kidnap him or beat him up, or that he fell and a nurse let him lie on the floor and wouldn't help him up. This item specifically asks patient about delusional thinking (thought disorder).

PERCEPTUAL DISTURBANCES

- Probe: If the patient reports no perceptual disturbances in response to this question but verbally reports having a disturbance later (or earlier) in the interview, rephrase the appropriate questions and ask whether the patient did actually have the experience at *any* time. For any positive response, please probe for frequency, duration and disruption of care, and rate the severity of the perceptual disturbances as either mild, moderate or severe. Write open-ended notes in section provided.
- Example: 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 (including the previous night). If the response is yes, within 24 hours, then change the appropriate response category to yes (1).
- When the patient is Uncertain**:** If the patient does not understand the question or gets anxious, 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.” Choose ‘uncertain’ if patient continues to states s/he is unsure or cannot answer.

3. **Did you mistake something you heard or saw for something else?**

- Probe: Can give an example -- 'Maybe you thought the nurse was a waitress when she came into the room' or 'You heard a siren and thought it was your phone ringing' or 'You thought your IV equipment was actually a camera.'

4. **Did objects look strange to you? For example, did they look smaller, bigger, or fuzzier than usual?**

- Probe: If participant says something like, ‘Well the TV seems a lot closer to me at one point”, then probe by asking “When it seemed closer, was it bigger?”

5. **Did you think something was moving when it was not? For example, did objects that were not moving appear to be moving, or did objects appear to be moving in slow motion?**

- Example: When a patient says the ceiling looks like it is caving in, or when a picture on the wall seemed to waver.

6. **Did you see, hear, or feel things that seemed out of place? For example, did you see something that did not belong in your room, such as a family member you know was not there?**

- Probe: Have you seen or heard things that you know were not really there?
- Example: When patient says he thought the pile of laundry was a person in his room, or heard a pager and thought it was a gunshot.
- Record all details: For this question, if the patient responds yes (1), ask for details about frequency, duration and disruption of care, rate the severity of the perceptual disturbances as either mild, moderate or severe. Record open-ended notes in section provided. If the patient hesitates and is noncommittal, such as "Well, I'm not sure, but I don't think I've had anything like that..." code as no (2). The assumption is that patients who have had this experience are sure about it and are able to describe it. If he/she responds "I don't know, I don't remember," code as I don't know (8). Any nonsensical responses should be coded as DK/Uncertain.

Observational Ratings By Interviewer

- **Important: Please code this section as much as possible based on your observations of the patient, even if the interview cannot be completed.**
- The response **Mild** is defined as the behavior was present or observed during the interview process, but did not significantly interfere with the interview process.
- The response **Marked** is defined as behavior was present or observed during the interview process, and did significantly interfere with the interview process.
- The response **Uncertain** should be used rarely, and only when the interviewer could not assess the behavior at all, such as incomplete interview, intubation, coma, etc.

INATTENTION

1. **Did the patient have difficulty focusing attention, for example asking questions to be repeated often or having difficulty keeping track of what was being said?**

- Definition: Reduced ability to maintain attention to external stimuli and to appropriately shift attention to new external stimuli. Respondent seems unaware or out-of-touch with environment (example: dazed, fixated, or darting attention).

- Examples:
    - Questions must be frequently repeated because attention wanders, NOT because of decreased hearing
    - Unable to gain respondent's attention or to make any prolonged eye contact. Respondent's focus seems to be darting around room
    - Respondent keeps repeating answers to previous question (perseveration)
    - Respondent is dazedly staring at the television. When you ask a question, he looks at you momentarily but does not answer. Then he continues to stare at the TV.
    - Cognitive function tests during interview: errors on digit spans, days of week backwards, months of year backwards (NOTE: multiple errors needed to code as present).
- Note: Should be assessed separately from level of consciousness. A subject who is lethargic or stuporous may still have intact attention during periods of arousal.

2. Did the patient seem easily distracted by external stimuli?

- Definition for "Easily distracted by external stimuli" means more distracted than would be considered normal or expected. Examples: hallway noises, traffic outside, medical staff coming in, family visiting, or lunch tray being brought in are reasonable distractions for most patients – but if patient is highly distracted by these kinds of stimuli, that should be noted. The interviewer should also document what the distraction was.
- Examples: Same as #1.
- Note: Same as #1.

<u>DISORIENTATION</u>

3. Was the patient disoriented at any time during the interview, such as thinking s/he was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?

- Definition: Impaired ability to locate oneself in one's environment, in reference to <u>time, place or person.</u>
- Examples:
    - During the interview in the hospital, respondent thinks she is at home
    - Respondent thinks it is night-time, during the day
    - Respondent repeatedly thinks you are her grandson (NOT due to visual difficulties)
    - Cognitive function tests: errors on orientation items

DISORGANIZED THINKING

4. **Did the patient demonstrate disorganized thinking, such as conversation that was rambling or off-target, ideas that were unclear or illogical, or showing disjointed thought process that did not make sense?**

- Definition: Disorganized thinking, as indicated by rambling, irrelevant or incoherent speech.
- Examples:
    - (Irrelevant or nonsense answer) You ask the respondent if they needed help with eating, and the response is: “Let’s go get the sailor suits!”
    - (Illogical flow of ideas) You ask the respondent, “How tall are you?” The reply is: “Tall? I need to get to the yellow brick road. Where’s the party? My, oh no….!”
- Note: Patient must be able to speak or write (example: not comatose, intubated) to assess this item. Do not score slurred or garbled speech, reversed words, or reversed letters as disorganized speech.

ALTERED LEVEL OF CONSCIOUSNESS

5. **Overall, how would you rate this patient’s level of consciousness?**

- Definition:
    - Alert - Normal
    - Lethargic – Drowsy, easily aroused
    - Stupor – Difficult to arouse
    - Coma – Unarousable
- Examples:
    - Lethargic – The respondent repeatedly dozes off while you are asking questions. Difficult to keep respondent awake for interview, but does not respond to voice or touch.
    - Stupor – The respondent is very difficult to arouse and keep aroused for the interview, requiring shaking and/or repeated loud speaking.
    - Coma – The respondent cannot be aroused despite shaking and speaking very loudly.
- Notes:
    - When entering the room and waking a patient up the first time, reduced level of consciousness 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 level of consciousness should only be coded when there is evidence of falling asleep while you are still in the room. *This should be more than lying down with their eyes closed.*
        - 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' etc.
- Assessing level of consciousness: After the initial wake-up (which can require more stimuli)--to assess level of consciousness, we will utilize the following 3 successive stimuli for arousal:
    - Loud voice
    - Gentle touch (hand, then arm)
    - Loud voice and gentle shaking of one shoulder
- For scoring:
    - If patient arouses readily to voice or gentle touch, then classify as lethargic.
    - If requires loud voice and shaking repeatedly, then classify as stupor.
    - If unarousable by any of these means, classify as coma.
    - If patient's eyes are closed, patient answers questions correctly and none of the stimuli described above are needed, score as alert.
    - Always note if any prodding was needed to get questions answered.

6. **Did the patient appear to be hypervigilant, such as being hyperalert, overly sensitive to environmental stimuli, or being startled very easily?**

- Definition: Vigilant - Hyperalert, overly sensitive to environmental stimuli, startles easily. This should be outside the range of normal behavior.
- Example: The respondent startles easily to any sound or touch. His/her eyes are wide open. Note: This rating does NOT require agitation; it is a state of consciousness that is hyperalert, but may or may not be associated with increased psychomotor activity/agitation.

<u>ANXIETY</u>

7. **Did the patient appear to be fearful or afraid?**

- Definition: A state of mind characterized by excessive fear, unease or apprehension; in severe cases accompanied by physical signs such as rapid heart rate, darting eyes, shallow breathing, tremulousness.
- Examples:
    - Respondent appears nervous and fretful
    - Respondent expresses worry, fear, anxiousness, unease.
    - In response to questions, respondent can be guarded or suspicious with answers.

DELUSIONS

8. **Did the patient have beliefs that you know were not true, for example insisting that other people were trying to harm him/her or steal from him/her?**

- Definition: Evidence of a thought disorder or paranoid ideation. This is a fixed notion about an event that the patient has misinterpreted, and reflects thinking that would not be considered within the frame of normal thinking.
- Examples:
  - (Persecutory delusion): Thinking someone was trying to harm him/her. Won't take his/her pills because he/she thinks nurses or physicians are trying to kill him.
  - (Paranoid delusion): Thinking that the nursing staff is talking about him/her or that other patients are constantly trying to steal from him/her.
  - (Complex delusion): Thinking there is a government or FBI plot that involves many parties scheming to keep him/her in the hospital.
- Note: Some degree of suspiciousness is quite common among older adults. However, a delusion would be considered something definitely outside of the range of normal.

PSYCHOMOTOR AGITATION

9. **During the interview, did the patient exhibit an unusually increased level of motor activity, such as restlessness, pulling at lines, making frequent sudden changes of position, *or* rapid or pressured speech, such as unusually rapid responses to questions?**

- Definition: Greatly increased level of activity as compared with the norm. These behaviors would indicate restlessness of agitation. Cardinal features include repeated or constant shifting of position, increased speed of motor responses, repetitive movements (example grasping or picking behaviors). May be voluntary or involuntary.
- Examples:
  - The respondent appears "antsy" and is constantly shifting his position in bed.
  - The respondent is repeatedly pulling at her sheets and IV tubing (note: behavior appears inappropriate and purposeless).
  - The respondent is pacing about the room during the interview.
- Note: Should be assessed separately from level of consciousness. Psychomotor agitation may be present even in the face of stupor.

PSYCHOMOTOR RETARDATION

10. **During the interview, did the patient exhibit an unusually decreased level of motor activity, such as sluggishness, moving very slowly *or* unusually delayed speech, such as unusually slow responses to questions?**

- Definition: Greatly reduced or slowed level of activity as compared with the norm. These behaviors indicate sluggishness, slowing. Cardinal features include decreased movement, slowness of motor responses, staring (but still aware of environment). May be voluntary or involuntary.
- Examples:
    - Prolonged delay between when interviewer asks question and respondent begins to answer.
    - Respondent moves body very slowly to pick up a cup.
    - Respondent stares into space but is still aware of the environment.
- Note: Respondent need not be lethargic (altered level of consciousness) to have slowness of response. Should be assessed separately from level of consciousness. Psychomotor retardation may be present with normal level of consciousness; also, patients with lethargy, stupor do NOT necessarily have psychomotor retardation.

Tips for Success: The Delirium interview

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 is made, seek patient’s attention with progressively stronger stimuli: speak to patient, lightly touch, gently shake or tap, and lastly shake moderately to arouse.
3. Make sure the patient has glasses on and hearing aids in if available.
4. Speak slowly and clearly. Do not rush.
5. Each question can be stated twice. “I don’t know,” no response at all or a nonsense response all count as incorrect. “Refused” is only used if the patient actively refuses to answer a question.
6. Prepare yourself to code what you see and hear. Make no assumptions as to the cause of the behavior and take ample notes to support your ratings.
7. Jot notes describing patient behavior and performance to support observations.
8. In assessing for disturbance of behavior, remember the comparison is to the norm of human behavior. No excuses, such as the patient is in the hospital, ill, older, just got medication, etc.
9. If patient shows increasing impatience with interview and seems to be tiring of questions, offer positive reinforcement and assure that there are just a few more questions remaining.
10. Complete observational scoring sections of interview as soon as interview ends.
11. Review each item of the interview before completing the scoring.
12. The assessment of attention is key in delirium. Carefully observe patient’s ability to maintain and appropriately shift attention during both informal and formal testing items.
13. In cases of incomplete patient questioning, the observational items should still be completed.

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