

**LLFS MOP**  
**Clinical Dementia Rating (CDR) Scale**

**Administration and Scoring Guidelines**

Examiners should complete CDR training and certification at the following website through Washington University: <http://knightadrc.wustl.edu/cdr/Application/Step1.htm>. The LLFS will use a modified semi-structured version of the CDR as described in the section below.

**When and to whom is CDR Administered?**

<b>Visit Type</b>	<b>CDR</b>
<b>LLFS In Person Visits</b> (For All Participants)	CDR is based on <b>in person</b> assessment <b>AND informant report whenever possible</b> . CDR should be informed by DQ and MMSE in cases when these are collected. CDR assessment begins in the home, and is finalized after conversation with an informant when possible.
<b>Phone Follow Ups For:</b> <ul style="list-style-type: none"> <li>• Proband Generation</li> <li>• Offspring <math>\geq</math> 70 yr</li> <li>• Offspring &lt; 70 yr Expanded 3 yr FU</li> </ul>	CDR is based on <b>examiner assessment during the call AND participant self-report</b> in individuals with TICS Total $\geq$ 31  <p style="text-align: center;"><b>OR</b></p> CDR based on <b>examiner assessment during the call AND informant report</b> when TICS Total < 31. CDR should be informed by DQ and TICS when available. CDR assessment begins during the phone conversation with the participant, and is finalized after a phone conversation with an informant when possible.
<b>Offspring &lt;70 Annual Brief Phone FU</b>	<b>No CDR</b>

Please note: The collection of informant data for the CDR does not necessarily REQUIRE use of a proxy for other LLFS instruments. Whether a proxy is used is determined by the criteria described in Chapter 4 (Consent Chapter). If no informant data is available for CDR, or if informant is not necessary based on above table, please mark the appropriate box regarding the availability of informant data.

**What is the CDR?**

The CDR covers six different areas of functioning including Memory, Orientation, Judgment and Problem Solving, Community Affairs, Home and Hobbies, and Personal Care. Each area is scored on a scale from 0 – 3. As elsewhere delineated in the MOP, for persons in the 0 to 3 range, the examiner should assign a score in each area based on information collected during the interview, by MMSE or TICS (e.g. memory and orientation), by observation when possible (e.g. cleanliness of house), as well as information provided by the informant on the Dementia Questionnaire (DQ) when available. For persons

with profound or terminal dementia (4 or 5) only a global score is given. Scores should be assigned on the basis of cognitive, **not physical** difficulties.

The range of CDR scores is:

<b>0</b>	<b>Normal</b>
<b>0.5</b>	<b>Borderline impairment</b>
<b>1.0</b>	<b>Mild impairment</b>
<b>2.0</b>	<b>Moderate impairment</b>
<b>3.0</b>	<b>Severe impairment</b>

**For persons with profound impairment a CDR global score of 4 is given.**

**For persons who appear to have terminal dementia (vegetative) a global score of 5 is given.**

## **How is the CDR Administered and Scored?**

Scores in each category should be derived based on the following series of questions **AND** information gathered as part of the LLFS cognitive battery and interview as detailed in the table below. For the Memory and Orientation sections of the CDR, cognitive testing as outlined in the table below is particularly informative for assigning a score in these areas. Please note that refusal to participate in cognitive assessment often indicates cognitive difficulty. If this occurs, examiners should do their best to ask the participant some basic questions to assess at least the memory and orientation domains as described below.

**Memory**: Scores of zero should be reserved for individuals who have nothing more than the occasional and **INCONSISTENT** minor short term or long term memory lapses.

**CONSISTENT**, even mild memory lapses would qualify for a 0.5 rating in this category. Note that memory for distant events (long term memory) can be “perfect”, but a person may still be having memory problems (short term). Some questions examiners can ask the participant are:

Who is the current President, Governor, Mayor, and previous President to current one?

What is/was your spouse’s birthday? What are your children’s names, and birthdays?

**Orientation**: This is addressed in the MMSE, but questions can be asked by examiner. Some questions the examiner can ask the participant are:

What month are we in?

What year is it now?

What is the date?

What day of the week is it?

What city are we in?

What state are we in?

What is the address of where we are right now?

Note, if participants are 1 day off on the date, this may be considered within the normal range. However, not knowing the day of the week, or the month, or the year, or being off by more than one day on the date is DEFINITELY disorientation. Likewise, if a participant does not know the CITY or STATE or their own address that is DEFINITELY disorientation. Examiners should be concerned about cognitive impairment in participants who suggest that they aren't oriented because they don't need to know the date, or that they have trouble remembering information because they don't care about it. Individuals should generally be expected to know the year, the month, and the day of the week, regardless of whether they "read the newspaper" or "work".

**Judgment and Problem Solving:** Two main areas to consider for evaluation are financial affairs and household maintenance. Some questions the examiner can ask are:

Does the person do their own bills?

Does / did the person have trouble with this and turn it over to others?

Does the person take care of their housekeeping/cleaning needs?

**Community Affairs:** The focus for this domain should be on the extent to which individuals can carry out independent activities outside of the home. Do they need assistance or help? If they need assistance but this is not obvious to an observer, this would qualify as a 0.5. If they appear normal to a casual observer but would be determined to be cognitively impaired if engaged in a conversation, this would qualify as a 1.0. Some questions the examiner can ask are:

Does the person go out on their own shopping, to social engagements, sports events, etc.?

**Home and Hobbies:** For this domain, the examiner should focus on what individuals do in comparison to what they used to be able to do with regard to interest in engaging in hobbies and activities, as well as ability level. Some questions the examiner can ask are:

Does the person do household chores such as the dishes?

Does the person engage in prior hobbies such as gardening, reading, etc.?

**Personal Care:** Here it is important not to accept EXCUSES for disorganization in the home or clothing or personal appearance. Unkempt apartments, homes, clothing, persons are UNLIKELY to be due to physical difficulties only. Such problems are frequently a sign of cognitive impairment. Questions of informants may be useful, but the examiner should OBSERVE the surroundings including the person and home. Some questions the examiner can ask are:

Are there food stains on the clothing, the counter, the table?

Are household items put away properly?

Is there odor or stains suggesting incontinence of bladder or bowel?

OR DOES THE PERSON REQUIRE assistance to take care of the above items?

## How can other LLFS data help you with the CDR?

Information from the IADL questionnaire, Dementia Questionnaire (DQ), cognitive testing (TICS, MMSE, etc.) can be utilized by the examiner to supplement or substitute for some of the questions above, in assisting in assignment of a Clinical Dementia Rating (CDR) score.

### Information from LLFS evaluation to inform CDR scoring

Category	DQ Items	IADL Items	Cognitive Test	Notes
<b>Memory</b>	1, 3, 4, 7		MMSE, HVLT, LogMemory	If DQ items = 0, CDR should be $\leq .5$ . If any DQ items are = 1, the CDR score should be at least 1.
<b>Orientation</b>	5, 6		MMSE	If orientation score on MMSE = 10, CDR score should be $\leq .5$ . If time is $< 5$ and place = 5, the CDR score should be either .5 or 1. If the person is disoriented to place, the CDR score should be $\geq 2$ .
<b>Judgment and Problem Solving</b>	14	8		If DQ item is = 1 or IADL item $\geq 2$ , the CDR score should be $\geq .5$ .
<b>Community Affairs</b>	16c	2 (6*)		If DQ item #2 is = 1 or IADL item $\geq 2$ , the CDR score should be $\geq .5$ .
<b>Home and Hobbies</b>	13	3, 4, 5		If DQ item is = 1 or any IADL item $\geq 2$ , the CDR score should be $\geq .5$ .
<b>Personal Care</b>	17, 18, 19			If DQ item 17 or 18 is = 1, the CDR score should be at least .5. If DQ item 19 is = 1, the CDR score should be at least 3 (except if due to a known physical condition).

### Assignment of CDR Rating

Use all information available and make the best judgment. Score each category as independently as possible. Mark in only one box, for each category, rating impairment as decline from the person's usual level due to cognitive loss alone, not impairment due to other factors, such as physical handicap or depression. Occasionally the evidence is ambiguous and the clinician's best judgment is that a category could be rated in either one of two adjacent boxes, such as mild (1) or moderate (2) impairment. Overall CDR scores usually correspond broadly to MMSE scores as per guidance in table below.

### Overview of General Association between CDR Scores and MMSE

Dementia Stage	Overall CDR Score	MMSE Score Guide Range	Appearance
Borderline	0.5	27 - 30	Appears normal, and may or may not have cognitive complaints.
Mild Dementia	1	20 - 26	Appearance is normal and general observer may not notice any dementia.
Moderate Dementia	2	12 - 19	Appearance is normal but cognitive problems apparent when in conversation
Severe, Dementia	3	3 - 11	Marked cognitive difficulty obvious to all.

Profound Dementia	4	0 – 2	Severe speech and comprehension problems, problems feeding self.
Terminal Dementia	5	0	Mute, bedridden, incontinent.