Supplementary Appendix 9, Table 1 – DSM-5 Diagnostic criteria mapped on to CLSA data for mild NCD

DSM-5 Diagnostic Criteria	Components of algorithm in the CLSA	Operationalization	Limitations
A - Modest cognitive decline in one or more cognitive domains based on: **1) concern about mild decline, expressed by individual or reliable informant, or observed by clinicians**	Subjective cognitive decline	Responds "yes" to "Do you feel like your memory is becoming worse" and if yes, responds "strongly agree" or "agree" to "does this worry you?"	Questions not available at baseline
	Physician diagnosis of memory problem	Responds "yes" to "Has a doctor ever told you that you have a memory problem"	Underestimates burden of memory problems
	Multifactorial Memory Questionnaire	Individual participant t-scores will be derived and interpreted based on the recommendations of the developer. Participants categorized as "low" or "very low" based on their t-score will be classified as having mild decline	Questions not available at baseline
2) AND/OR modest impairment documented by objective cognitive assessment	Performance on the Rey Auditory Verbal Learning Test (REY1 and REY2), the Animal Fluency Test (AFT2), and the Mental Alternation Test (MAT)	Mean Z score of >-2.0 but <1.5 on two or more cognitive tests	• CLSA cognitive tests not designed to detect mild/major NCD • Missing data due to participant refusing test, technology issues, and other non-participant related factors
B - The cognitive deficits do not interfere with capacity for independence in everyday activities	Instrumental Activities of Daily Living (IADL)	Participant reports doing the following activities independently; grocery shopping, money management, housework, preparing meals, medication management, preparing meals, using telephone, getting to places out of walking distance	• Self-reported, ideal to have informant reported IADLs • Mobility, hearing, visions, and physical limitations may explain inability to complete IADLs independently. Basic Activities of Daily Living, self-rated and measured hearing/vision, and

			physical function tests such as gait speed, the Timed Up and Go, Chair Rise test, balance, and grip strength will be explored to determine if reasons other than problems with cognition may explain the presence of IADL limitations.
C- The cognitive deficits do not occur exclusively in the context of a delirium	Assumed to not be present - participants being seen for a scheduled data collection visit are unlikely to have delirium		The CLSA does not collect this information
D - The cognitive deficits are not better explained by another mental disorders (e.g., major depressive disorder, schizophrenia)	The Centre for Epidemiological Studies Depression Scale (CESD-10)	Exclude participants who have a score of ≥ 10 indicating the presence of significant depressive symptoms	May have both a cognitive disorder and a current mood disorder
	Physician diagnosis of a mood disorder	Responds "yes" to "Has a doctor ever told you that you have a mood disorder such as depression (including manic depression), bipolar disorder, mania, or dysthymia? "	• Without data on current mood (e.g., CESD-10 score), unclear if mood disorders are historic or active • Self-reported data may underestimate • May have both a cognitive disorder and a history of mood disorders.
		Responds "yes" to "Has a doctor ever told you that you suffer from major depression?"	

Supplementary Appendix 9, Table 2 – DSM-5 Diagnostic criteria mapped on to CLSA data for major NCD

DSM-5 Diagnostic Criteria	Components of algorithm in the CLSA	Operationalization	Limitations
A – Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on: **3) Concern of the individual, knowledgeable informant, or the clinician** **4) AND/OR substantial impairment in cognitive performance, preferably documented by standardized neuropsychological testing**	Physician diagnosis of dementia or Alzheimer's disease	Responds "yes" to "Has a doctor ever told you that you have dementia or Alzheimer's disease?	Underestimates burden of memory problems
		Prescription for dementia-specific medication including cholinesterase inhibitor, or memantine	Only aware of the medications provided to interviewer by participant
	All participants - Performance on the Rey Auditory Verbal Learning Test (REY1 and REY2), the Animal Fluency Test (AFT2), and the Mental Alternation Test (MAT) Comprehensive cohort participants - the Stroop test, Controlled Oral Word Association Test, and Miami Prospective Memory Tests will additionally be used.	Mean Z score of ≤-2.0 on two or more cognitive tests	• CLSA cognitive tests not designed to detect mild/major NCD • Missing data due to participant refusing test, technology issues, and other non-participant related factors
B - The cognitive deficits interfere with capacity for independence in everyday activities	Instrumental Activities of Daily Living (IADL)	Participant or proxy reports requiring assistance with one or more of the following activities; grocery shopping, money management, housework, preparing meals, medication management, preparing meals, using	• Self-reported, ideal to have informant reported IADLs • Mobility, hearing, visions, and physical limitations may explain inability to complete IADLs independently. Basic Activities of Daily Living, self-rated and

		telephone, getting to places out of walking distance.	measured hearing/vision, and physical function tests such as gait speed, the Timed Up and Go, Chair Rise test, balance, and grip strength will be explored to determine if reasons other than problems with cognition may explain the presences of IADL limitations.
C- The cognitive deficits do not occur exclusively in the context of a delirium	Assumed to not be present - participants being seen for a scheduled data collection visit are unlikely to have delirium		The CLSA does not collect this information
D - The cognitive deficits are not better explained by another mental disorders (e.g., major depressive disorder, schizophrenia)	The Centre for Epidemiological Studies Depression Scale (CESD-10)	Participant has a score of ≥ 10 indicating the presence of depressive symptoms	May have both a cognitive disorder and a current mood disorder
	Physical diagnosis of a mood disorder	Responds "yes" to "Has a doctor ever told you that you have a mood disorder such as depression (including manic depression), bipolar disorder, mania, or dysthymia? "	• Without data on current mood (e.g., CESD-10 score), unclear if mood disorders are historic or active • Self-reported data may underestimate • May have both a cognitive disorder and a current or history of mood disorder
		Responds "yes" to "Has a doctor ever told you that you suffer from major depression?"	